

WASHINGTON SEA GRANT INVESTS IN WASHINGTON

PROGRAM HIGHLIGHTS 2020

WSG (WSG) invests in a range of marine programs supporting four focus areas in Washington State: Sustainable Fisheries and Aquaculture, Healthy Coastal Ecosystems, Resilient Communities and Economies, and Ocean Literacy and Workforce Development.

Below is a sampling of programs and recent activity:

FOUR-YEAR PROGRAM EVALUATION

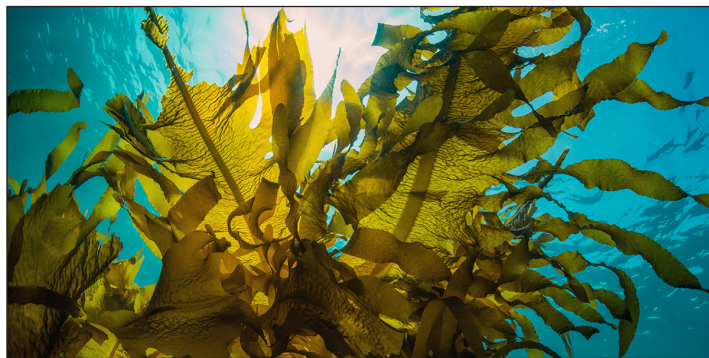
WSG successfully completed a program-wide evaluation, which is conducted every four years by the National Sea Grant office at NOAA.

- ◆ **Outcomes:** Our program exceeded the standards of excellence required for all Sea Grant Programs and received high marks in organization and management, effective stakeholder engagement, leadership and productivity. The program was particularly commended for an effective analysis of the management structure; saving lives and protecting families along the coast through safety training workshops; developing a DEI Values Statement and Diversity Plan; creation of a Keystone Fellowship; and leveraging partnerships.

ENHANCING OUR CAPACITY TO SERVE

By increasing staff in key coastal communities across the state, WSG is ensuring that these communities have the support they need.

- ◆ **Outcomes:** A coastal specialist was recently hired and placed in Southwest Washington, while plans for a new fisheries specialist are being developed. We are currently recruiting two new assistant directors: one focusing on science and technical assistance to communities, and the other with a focus on community engagement.



SUSTAINABLE FISHERIES AND AQUACULTURE

SEAWEED AQUACULTURE TRAINING PROGRAM

Responding to requests from constituents, WSG and partners developed a tiered training program on seaweed farming in Washington State. This was the first of its kind in the state, and was designed to help aspiring seaweed farmers and entrepreneurs get started in this emerging market.

- ◆ **Outcomes:** The program, which culminated in a final three-day intensive training, covered everything from local seaweed ecology, how to choose a farm site, the agencies involved in securing an aquaculture permit, and how to market a seaweed product and manage a business. The workshops were funded, in part, through a grant from the National Sea Grant Aquaculture Initiative.
- ◆ **Partners:** Puget Sound Restoration Fund; Hood Canal Mariculture; NOAA Veterans Conservation Corp Internship Program; Ken Chew Manchester Environmental Laboratories; Baywater Shellfish Company



WASHINGTON COAST SHELLFISH AQUACULTURE STUDY

Working with Southwest Washington shellfish growers, WSG is leading a three-year, multi-partner, applied research project to assist planning and collaboration amongst tideland managers, owners and regulators in the coastal communities of Willapa Bay and Grays Harbor, Washington. The study aims to sustain shellfish aquaculture in the two bays by establishing a collaborative ecosystem-based management framework to identify solutions to current challenges, such as ghost shrimp overpopulation, and to provide support for ongoing participation from tideland managers, owners and regulators.

- ◆ **Outcomes:** A literature review summarizing key ecological interactions and identifying knowledge gaps in coastal Washington's shellfish aquaculture industry; a series of public workshops highlighting these knowledge gaps; an advisory group established in southwest Washington; and setting future research goals in this region.
- ◆ **Partners:** Willapa Bay/Grays Harbor Oyster Growers Association; Pacific Shellfish Institute; Washington Governor's Office; WSU Extension; Washington State Department of Natural Resources; UW Department of Biology

INDIGENOUS AQUACULTURE CROSS-PACIFIC COLLABORATIVE HUB

WSG is leading a three-year grant to advance sustainable Indigenous Aquaculture practices and enhance seafood production in the Pacific region. Working in coordination with Hawaii and Alaska Sea Grants, WSG launched a cross-Pacific regional collaborative effort integrating research, outreach and education funded, in part, through a grant from the National Sea Grant Aquaculture Initiative.

- ◆ **Outcomes:** Over 125 guests recently attended the first collaborative summit meeting held on Oahu, including representatives from 13 Pacific Northwest tribes and many more from across the globe. Attendees learned about traditional Hawaiian aquaculture practices and technologies. It was a catalyzing event resulting in a number of new collaborations amongst participants.
- ◆ **Partners:** Alaska Sea Grant; Hawaii Sea Grant; Swinomish Indian Tribal Community; Central Council of the Tlingit and Haida Indian Tribes of Alaska; Sitka Tribe of Alaska; Lummi Tribe; Jamestown S'Klallam Tribe; Suquamish Tribe; Makah Tribe; Squaxin Island Tribe; Kua'aina Ulu 'Auamo (KUA); Puget Sound Restoration Fund; Northwest Indian College; Simon Fraser University; Western Washington University; Gulf Islands National Park Preserve



SAFETY AT SEA AND TECHNICAL TRAINING FOR FISHERMEN

Commercial fishing ranks as the second most deadly job in the United States. In response, WSG provides U.S. Coast Guard-approved vessel safety and first aid workshops for fishermen and boaters year-round.

- ◆ **Outcomes:** About 250 tribal and commercial fishermen take first aid at sea, marine weather and drill, and other technical training courses annually, offering workshops upon request where needed. Lives have been saved or accidents prevented nearly every year of the program.
- ◆ **Partners:** U.S. Coast Guard and regional tribal and non-tribal fishing communities

COMMERCIAL FISHERIES CAMPAIGN

The Washington Department of Fish and Wildlife (WDFW) and WSG are partnering with commercial fishermen to increase awareness of Washington State's sustainably harvested seafood products. This initiative will address a gap in consumer information about fisheries management and the measures taken by WDFW to ensure that seafood delivered to Washington consumers is sustainably caught, while raising consumer awareness of fishing techniques, business practices, and economic impact.

- ◆ **Outcomes:** A suite of communications tools will be produced, including social media coverage of local commercial fisheries, profile stories on commercial fishermen; infographics for seafood distributors, chefs and consumers; traditional media stories focused on accurate data, fisheries management and how WDFW monitors to ensure seafood is sustainably caught; and outreach at targeted events.
- ◆ **Partners:** The Washington Department of Fish and Wildlife and a coalition of fishermen and crabbers



HEALTHY COASTAL ECOSYSTEMS

WSG CRAB TEAM

At the urging of the Washington Department of Fish and Wildlife, WSG created the Crab Team, a volunteer-based early detection and monitoring program to prevent the spread of the invasive European green crab in the Salish Sea. The program includes more than 225 volunteers and 25 partner staff monitoring 56 sites in the Salish Sea from April through September each year. WSG also provides outreach to the public and technical expertise to state, federal and tribal resource managers in the collective effort to prevent the spread of this potentially damaging invader.

- ◆ **Outcomes:** WSG Crab Team volunteers detected the first green crab in Washington inland waters in late 2016. Since then, through the efforts of WSG Crab Team and partners, approximately 350 green crabs have been detected at ten sites in Washington inland waters. The majority of these crabs came from Dungeness Spit; sizable numbers were also found at Drayton Harbor and Lummi Bay. WSG continues to provide critical scientific advice and monitoring services to management agencies working to prevent further invasion.
- ◆ **Partners:** Washington Department of Fish and Wildlife; Department of Fisheries and Oceans, Canada; Puget Sound Partnership; Jamestown S’Klallam Tribe; Lower Elwha Klallam Tribe; Makah Tribe; Port Gamble S’Klallam Tribe; Swinomish Indian Tribal Community; Stillaguamish Tribe; Suquamish Tribe; Samish Tribe; and volunteers

SOUNDTOXINS

WSG cultivates and trains volunteers for SoundToxins, a phytoplankton monitoring program in partnership with NOAA’s Northwest Fisheries Science Center. Volunteers monitor harmful algal species and identify potential human health threats.

- ◆ **Outcomes:** SoundToxins has proven invaluable to state health officials, natural resource managers and shellfish growers. SoundToxins has grown into a reliable network with over 100 individuals and 40 groups that consistently produces data needed for immediate management decisions by the Washington State Department of Health and many Washington shellfish growers.
- ◆ **Partners:** Northwest Fisheries Science Center; Washington State Department of Health; citizen science volunteer groups.



RESILIENT COMMUNITIES AND ECONOMIES

WASHINGTON COASTAL RESILIENCE PROJECT

Over three years, WSG led a consortium of agencies, academic partners and nonprofit organizations to improve support for local resilience efforts. The project increased the state’s capacity to support local action on hazards planning and resilience, with a focus on community-scaled projections for sea level rise and coastal flooding. Key deliverables included a 2018 Sea Level Rise Report of localized sea level rise projections for 171 locations in Washington, a new website providing user-friendly planning resources, and trained “ambassadors” to carry on the work beyond the grant period.

- ◆ **Outcomes:** Coastal communities are integrating the materials into their regional planning. Last year, Metro Parks Tacoma implemented projections to adjust placement of buildings and structures in area parks on shorelines. Over 35 workshops around Puget Sound shared the sea level rise predictions data with area planners and over 70 percent of workshop attendees have reported using the projections in their planning and policy-making.
- ◆ **Partners:** Washington State Department of Ecology (Coastal Zone Management Program); The Nature Conservancy; Island County; City of Tacoma; U.S. Geological Survey; King County; UW Pacific Northwest National Laboratory; UW Climate Impacts Group

OCEAN ACIDIFICATION VULNERABILITY STUDY

WSG, UW and NOAA partners are collaborating with Coastal tribes on a regional effort to assess vulnerability to ocean acidification on the Washington Olympic Coast, with a specific focus on vulnerability of tribal communities.

- ◆ **Outcomes:** Through interviews with more than 60 community members in four coastal treaty tribes, the project team has begun to assemble information to identify marine species with economic, cultural or subsistence value to guide an assessment of those species’ biological vulnerability. This information, along with data for 56 indicators of community and human well-being, is being presented in four participatory community workshops to help communities identify vulnerabilities and opportunities for increased resilience. In addition, the project team has produced a 20-minute film on the project to share amongst tribal members.
- ◆ **Partners:** UW Applied Physics Lab; Olympic Coast National Marine Sanctuary; Makah Nation; Quileute Tribe; Hoh Tribe; Quinault Nation



SMALL OIL SPILLS PREVENTION AND PUMPOUT WASHINGTON

WSG each year reliably educates the public on marine water quality through the Pumpout Washington and Small Oil Spills Prevention programs. WSG recently evaluated boater sewage impacts on rural treatment facilities and completed a state-wide inventory of functioning pumpout stations. Boaters received free small spills prevention pillows at marinas around the state to reduce small oil spillage in Washington waters.

- ◆ **Outcomes:** In 2019, Pumpout Washington helped boaters divert over 10 million gallons of sewage to pumpout facilities around the state and educated over 10,000 boaters on both small spills prevention and proper sewage disposal.
- ◆ **Partners:** Washington State Parks; Washington State Department of Ecology; Puget Sound Keepers Alliance; School of Environmental and Forest Sciences

OCEAN LITERACY AND WORKFORCE DEVELOPMENT

ORCA BOWL

Orca Bowl is a day-long competition in which teams of high school students put their marine knowledge to the test — and the winners go onto the National Science Bowl competition. Orca Bowl functions as a career pipeline, guiding students into higher education and ocean-related careers.

- ◆ **Outcomes:** This year, over 100 high school students on 20 teams competed in the 23rd annual Orca Bowl.
- ◆ **Partners:** National Ocean Sciences Bowl; UW Joint Institute for the Study of the Atmosphere and Ocean (JISAO); UW School of Aquatic and Fishery Science; Ocean Peace, Inc.; NOAA



NOAA SCIENCE CAMP

Since its inception in 2003, NOAA Science Camp has evolved into a highly regarded collaborative science program. This annual summer science camp offers a rare hands-on program for middle and high school students held on site at the NOAA Western Regional Center campus, where students work with more than 10 NOAA offices, learning the multidisciplinary nature of research. Scientists and educators interact directly with camp participants to demonstrate how NOAA research addresses environmental issues on both local and international scales.

- ◆ **Outcomes:** NOAA Science Camp serves as an introduction to marine science, encouraging students to pursue STEM skills in school and beyond. Last year, over 130 middle school and high school students participated in NOAA Science Camp, including the camp sessions, remotely operated vehicle workshops, and Junior Leadership Program.
- ◆ **Partners:** NOAA Western Regional Center; JISAO



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