NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA In Your State

Hawai‘i

***NOAA** is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.*

The following is a summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory: Starting with highlights, then by congressional districts and cities or towns, and then statewide programs.

Highlights of NOAA in Hawai‘i

Humpback Whale National Marine Sanctuary	Kihei, Honolulu, Lihue	HI-1,2
Papahānaumokuākea Marine National Monument	Honolulu and Hilo	HI-1,2
Marine Operations Center - Pacific Islands	Honolulu	HI-1
NOAA Ship *Oscar Elton Sette*	Honolulu	HI-1
Joint Institute for Marine and Atmospheric Research	Honolulu	HI-1
He'eia National Estuarine Research Reserve	Kane‘ohe Bay	HI-2
Mauna Loa Observatory	Mauna Loa	HI-2
Pacific Islands Ocean Observing System	Statewide	HI

Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects	Project Specific	HI

The state of Hawai‘i also has one Cooperative Institute, Weather Forecasting Office, one Regional Office, 3 Science on a Sphere® exhibitions, one National Estuarine Research Reserve, and one Habitat Focus Area.

Weather Forecast Offices

Honolulu HI-1

National Weather Service (NWS) Weather Forecast Offices (WFO) are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of Hawai‘i. There are 122 WFOs nationwide of which one is in Hawai‘i. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media,weather.gov, and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction centers and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current Hawai‘i weather, visit www.weather.gov and, on the national map, click on the relevant county or district.

Science On a Sphere®

Honolulu HI-1

Honolulu HI-1

Hilo HI-2

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. They are located at the Inouye Regional Center, Bishop Museum, and Imiloa Astronomy Center of Hawai‘i.

HI-1
Honolulu

National Ocean Service (NOS) - OR&R Preparedness, Response, and Restoration Coordinators

NOAA's Office of Response and Restoration (OR&R) is a center of expertise in preparing for, evaluating, and responding to threats to coastal environments, including oil and chemical spills, releases from hazardous waste sites, disasters, and marine debris. To fulfill its mission of protecting and restoring NOAA trust resources, OR&R provides scientific and technical support to prepare for and respond to environmental threats that coastal communities face; determines damage to natural resources from those releases; protects and restores marine and coastal ecosystems; and works with coastal communities to address critical local and regional coastal challenges.

- Eleven regionally based **Scientific Support Coordinators (SSC**) harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental trade-offs, best practices, resources at risk, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC in Hawai‘i is based in Honolulu.
- The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) supports national and international efforts to reduce the impacts of marine debris. The **MDP Pacific Islands Outreach Coordinator**, based in Honolulu, works with communities and partners across the Pacific to provide marine debris educational resources and communications support.

National Weather Service (NWS) - International Tsunami Information Center

The International Tsunami Information Center (ITIC) office is co-located with the National Weather Service (NWS) Pacific Region Headquarters in NOAA’s Daniel K. Inouye Regional Center on Ford Island in Pearl Harbor. ITIC was established in 1965 by the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, which provides partial funding. The NWS funds salaries and provides in-kind support, including office space and administrative assistance. ITIC maintains and develops relationships with scientific research and academic organizations, civil defense/emergency management agencies and the general public in order to carry out its mission to mitigate the hazards associated with tsunamis by improving tsunami preparedness for all Pacific Ocean nations. To accomplish this mission, ITIC monitors international tsunami warning activities in the Pacific; assists member states in establishing national warning systems; makes information available on current technologies and equipment for tsunami warning systems; disseminates information including educational materials and research reports; and publishes a newsletter for all parties interested in the activities of ITIC and other organizations involved in tsunami warning or tsunami hazard reduction. ITIC works closely with the NWS Richard H. Hagemeyer Pacific Tsunami Warning Center and Hawai‘i State and County Civil Defense in an advisory capacity and to conduct public education programs.

National Weather Service (NWS) - Pacific Region Headquarters

Located in NOAA’s Daniel K. Inouye Regional Center on Ford Island in Pearl Harbor, the NWS Pacific Region Headquarters is the administrative and support center for NWS field operations in Hawai‘i and the territories of American Samoa, Guam and the Commonwealth of the Northern Mariana Islands. These areas include offices in Honolulu, Hilo, Kahului, and Lihue in Hawai‘i; Guam; Pago Pago in American Samoa; Koror in the Republic of Palau; Majuro in the Republic of the Marshall Islands; and Pohnpei, Yap and Chuuk in the Federated States of Micronesia. The NWS Pacific Region operates its five Micronesian offices in cooperation with the Republic of the Palau, Republic of the Marshall Islands and the Federated States of Micronesia in accordance with the provisions of the Compact of Free Association between the United States and each Micronesian government. The five Micronesian Weather Service Offices provide the United States with critical Upper-Air Data and Aviation Weather Observations. These offices also provide adaptive weather forecasts and warnings to their local constituents. The Pacific Region Headquarters also oversees the NWS Central Pacific Hurricane Center and the NWS Richard H. Hagemeyer Pacific Tsunami Warning Center, and it also hosts the International Tsunami Information Center. The headquarters is also the home office of the Pacific Region Director, who oversees the management and administration of the NWS entities listed above, as well as other region-level officials and program managers.

National Weather Service (NWS) - Richard H. Hagemeyer Pacific Tsunami Warning Center
The NWS Richard H. Hagemeyer Pacific Tsunami Warning Center (PTWC), located in Ewa Beach, serves as the operational center of the Tsunami Warning System in the Pacific, an international program requiring the participation of many seismic, tide, communication and dissemination facilities operated by most of the nations bordering the Pacific Ocean. The operational objective of PTWC is to detect and locate major earthquakes in the Pacific Basin to determine whether tsunamis have been generated and to provide timely and effective tsunami information and warnings to the population of the Pacific. PTWC also acts as the Hawai'i Regional Tsunami Warning Center for tsunamis generated within the Hawaiian Islands. The center works closely with Hawai'i State and County Civil Defense to issue timely warnings and conduct public education programs.

National Weather Service (NWS) - Weather Forecast Office- See Page 2 for details.

Office of Oceanic and Atmospheric Research (OAR) – Climate Adaptation Partnerships (CAP) Program
The Pacific Regional Integrated Sciences and Assessments is a cooperative agreement between NOAA's Climate Program Office (CPO) and Arizona State University. It is one of several Climate Adaptation Partnerships (CAP), formerly Regional Integrated Sciences and Assessments (RISA), that contribute to the advancement of equitable climate adaptation through sustained regional research and community engagement.The Pacific CAP serves Hawai'i and the US-Affiliated Pacific Islands, a region with over 2,000 islands and home to some of the populations most vulnerable to climate-related hazards due to their location, small size, and isolation. The team seeks to support and develop sustainable, equitable, and just climate solutions that increase Pacific Island resilience to compound disasters and extreme events. The Pacific CAP incorporates the needs of resource managers, policy makers, and communities throughout the Pacific to provide stakeholders with regionally relevant and sector specific climate knowledge at the seasonal, inter-annual, and decadal to end-of-century timescale to inform real-world adaptations. Underpinning all projects are commitments to environmental and climate justice, transparency, and the inclusion of communities that are vulnerable as a result of social and physical conditions.Core partners of Pacific CAP include Arizona State University's Global Institute of Sustainability and Innovation, the East-West Center,the University of Hawai'i at Manoa, NOAA/NCEI's Center for Weather and Climate, and the NOAA Joint Institute for Marine and Atmospheric Research.

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Institute for Marine and Atmospheric Research Studies (CIMAR)
The Cooperative Institute for Marine and Atmospheric Research (CIMAR) was awarded to the University of Hawai'i at Mānoa (UHM). CIMAR serves as a mechanism to promote collaborative research between university scientists and those in NOAA. The principal NOAA lab with which CIMAR collaborates is the Pacific Islands Fisheries Science Center (PIFSC) on O'ahu Island, Hawai'i. CIMAR is a part of the UHM School of Ocean and Earth Science and Technology (SOEST) within the University of Hawai'i. CIMAR conducts research across eight themes: (1) Ecological Forecasting; (2) Ecosystem Monitoring; (3) Ecosystem-based Management; (4) Protection and Restoration of Resources; (5) Oceanographic Monitoring and Forecasting; (6) Climate Science and Impacts; (7) Air-Sea Interactions; (8) Tsunamis and Other Long-period Ocean Waves.

National Marine Fisheries Service (NMFS), National Ocean Service (NOS), National Weather Service (NWS) and Office of Oceanic and Atmospheric Research (OAR)- Cooperative Institute for Marine and Atmospheric Research
The Cooperative Institute for Marine and Atmospheric Research (CIMAR) serves as NOAA's cooperative institute (CI) for the Pacific Islands region. Since 1988, CIMAR (formerly JIMAR) has been part of the University of Hawai'i's School of Ocean and Earth Science and Technology (SOEST)CIMAR serves as a mechanism to promote collaborative research between university scientists and those in NOAA. The primary NOAA research partner for CIMAR is the Pacific Islands Fisheries Science Center, but CIMAR scientists also interact closely with NOAA's Office of Oceanic and Atmospheric Research, National Ocean Service, National Weather Service, and National Environmental Satellite, Data, and Information Service line offices. CIMAR conducts research across eight themes: (1) ecosystem forecasting; (2) ecosystem

monitoring; (3) ecosystem-based management; (4) protection and restoration of resources; (5) oceanographic monitoring and forecasting; (6) climate science and impacts; (7) air-sea interactions; and (8) tsunamis and other long-period waves.

National Marine Fisheries Service (NMFS) - Honolulu Service Center
NOAA Fisheries' Pacific Islands Regional Office maintains the NOAA Fisheries Honolulu Service Center at the Pier 38 Fishermen's Village in Honolulu, Hawai'i, to facilitate public access to fisheries staff and resources, including fishing logbooks and permit renewals, protected species workshop training and other services.

Office of Oceanic and Atmospheric Research (OAR) and Office of the Chief Information Officer (CIO) - N-Wave NOAA Science Network
N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

NOAA Office of Education - Science On a Sphere® at the NOAA Inouye Regional Center and at the Bishop Museum. See Page 2 for details.

Office of the Chief Administrative Officer (OCAO) - Ford Island Office
The Office of the Chief Administrative Officer (OCAO) provides comprehensive facility project management support services for NOAA's Daniel K. Inouye Regional Center project, at Ford Island in Pearl Harbor. In addition to providing overall facility project management support for the project, once the Center is constructed, CAO will provide overall campus management services for this regional facility.

NOAA Office of Education — Coastal Ecosystem Learning Centers (CELC) network
In Hawai'i, NOAA's Office of Education provides support to the Waikiki Aquarium in Honolulu as part of the Coastal Ecosystem Learning Centers (CELC) network, which is made up of 25 aquariums and marine science education centers located throughout North America. The CELC network collaborates on a variety of initiatives, ranging from youth summits to multi-institution projects, with the goal of better engaging the public in understanding, appreciating, and protecting marine and freshwater ecosystems. Through the CELC network, the Office of Education provides guidance, resources, and scientific expertise to these institutions, which collectively reach an estimated 20 million people annually across North America. By coordinating with the CELC network, NOAA helps to further its mission of engaging the public in protecting and preserving coastal and marine ecosystems.

Office of Marine and Aviation Operations (OMAO) - Marine Operations Center-Pacific Islands
Honolulu is the home to the Marine Operations Center Pacific Islands (MOC-PI), which provides regional management of NOAA Fleet vessels operating throughout the Pacific Islands and Western Pacific. All vessels support NOAA's mission to protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management. Vessels are operated under the direction of officers from the NOAA Commissioned Officer Corps in concert with NOAA Professional Mariners. The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Officers operate ships, fly aircrafts, conduct diving operations, and serve in other NOAA staff positions. NOAA Professional Mariners perform the deck, engineering, steward, and survey tech functions aboard NOAA vessels, providing critical support to NOAA missions.

Office of Marine and Aviation Operations (OMAO) - NOAA Ship *Oscar Elton Sette*
The NOAA Ship *Oscar Elton Sette* is managed by the Marine Operations Center-Pacific Islands (MOC-PI) and is homeported in Honolulu, Hawai'i. The *Oscar Elton Sette* operates throughout the central and western Pacific and conducts fisheries assessment surveys, physical and chemical oceanography, marine mammal projects, marine debris removal, and coral reef research. The vessel is operated under the direction of officers from the NOAA Commissioned Officer Corps in concert with NOAA Professional Mariners.

NOAA Commissioned Officer Corps (NOAA Corps) - Line Office Support Officers
The NOAA Commissioned Officer Corps stations multiple officers in Honolulu, Hawai'i in support of various line office missions. These officers perform a wide array of duties, including serving on the Pacific Islands Regional Administrator's staff; liaising with senior staff members throughout PIRO, NMFS, other NOAA line offices, other uniformed services, and State and other Federal agencies; serving as the manager and curriculum developer of the Biological Survey Technician journeyman program; supporting dive operations both directly and indirectly; participating in projects aboard NOAA vessels as a researcher or Operations Lead; serving as the Chair of the Working Group on Operational Climate Observations; leading communications, education, and outreach for programs; ensuring climate information deliverables are disseminated appropriately; and serving as vessel operations coordinator for the four vessels in the Papahānaumokuākea Monument small boat fleet.

National Environmental Satellite, Data, and Information Service (NESDIS) - The Center for Satellite Applications and Research (STAR) - CoastWatch/OceanWatch Central Pacific, co-located with NOAA Fisheries Pacific Region, Honolulu, Hawai'i
NOAA CoastWatch exists to help people find, choose, access, and use observations from satellites for ocean, coastal and inland water applications that inform and benefit society. Our primary users include federal, state, and local marine scientists, coastal resource managers, and the public, including commercial users. The CoastWatch Program is managed within the Center for Satellite Applications and Research in the National Environmental Satellite, Data, and Information Service (NESDIS) of NOAA in College Park, MD. The program rests on four legs". Three of the legs, the central operations; training and outreach; and research and applications science teams, are located in College Park, MD. The fourth leg is composed of the seven CoastWatch Regional Nodes, maintained in collaboration with other NOAA Line Offices and located across the US.

OceanWatch Central Pacific is hosted by the National Marine Fisheries Service and includes Hawai'i and U.S.-affiliated Pacific Islands Territories of Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Republic of Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands (RMI). The Central Pacific node is based at the NOAA Pacific Islands Fisheries Science Center (PIFSC) in Honolulu, Hawai'i. Our office acquires and processes satellite information and creates a variety of satellite data products for the Pacific Islands region. In this manner we seek to serve as an updated source of daily regional and global satellite oceanographic observations. Anyone may access data free of charge. Our satellite-based activities include:

- Observation
- Monitoring
- Analysis
- Data Distribution
- Capacity Building and User Training

Midway Island

Office of Oceanic and Atmospheric Research (OAR) - Global Greenhouse Gases Reference Network
NOAA's Global Monitoring Laboratory(GML) operates the Greenhouse Gas Reference Network to measure the distribution and trends of carbon dioxide (CO2) and methane (CH4), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected in specially designed flasks each week and delivered to GML in Boulder, CO for analysis. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. These measurements help determine the magnitude of carbon sources and sinks.

HI-1, 2
Kīhei and Līhuʻe

National Ocean Service (NOS) - Hawaiian Islands Humpback Whale National Marine Sanctuary

The warm, shallow waters surrounding the main Hawaiian Islands provide some of the most important humpback whale habitat in the world and are the only place in the U.S. where these iconic creatures reproduce. Hawaiian Islands Humpback Whale National Marine Sanctuary encompasses 1,370 square miles of nearshore waters around the islands of Maui, Molokaʻi, Lānaʻi, Kauaʻi, Oʻahu, and Hawaiʻi Island. The sanctuary has visitor and discovery centers in Kīhei, Maui and Līhuʻe, Kauaʻi. Scientists estimate that two-thirds of the entire North Pacific humpback whale population migrates to Hawaiian waters each winter to breed, calve and nurse their young. The sanctuary is co-managed with the State of Hawaiʻi to protect humpback whales and their habitat, conduct research to inform management, and educate the public about humpback whales and their importance to Hawaiʻi's culture, economy, and marine environment. An advisory council, representing local communities, business, cultural practitioners, and other government agencies provides guidance to sanctuary management.

National Ocean Service (NOS) – Climate Resilience Regional Challenge

In July 2024, NOAA announced $575 million in funding for the Climate Resilience Regional Challenge, provided by the Inflation Reduction Act, to invest in holistic, collaborative approaches to coastal resilience at regional scales. This grant program focuses on increasing resilience to extreme weather events, such as hurricanes and storm surge, and longer-term, chronic hazards such as sea level rise, drought, wildfire, extreme heat, and coastal erosion. The program awarded 19 grants that are part of NOAA's larger Climate-Ready Coasts initiative to forge new partnerships, protect coastal habitats, and close equity gaps. They will help scale up proven best practices across 17 states and territories to take resilience and adaptation plans off paper and into coastal communities across the country.

A Climate Resilience Regional Challenge grant, awarded to University of Hawaiʻi Sea Grant College Program for $68,497,799 will reinvigorate the moku system (a Native Hawaiian framework for traditional land tenure and contemporary biocultural stewardship) to build a resilient future for the Hawaiian Islands (HI-01, HI-02). Actions include 1) conservation and restoration of watersheds by removing invasive species and establishing native forests to reduce wildfire risk and decrease sediment loading downstream; 2) community-based coastal stewardship through building natural infrastructure to protect communities and habitat; 3) restoring marine abundance by restoring loko iʻa (Native Hawaiian fishponds), limu (seaweed), and coral reefs to reinvigorate habitat and support thriving cultural and subsistence practices; 4) sharing knowledge and creating partnerships by strengthening networks of Indigenous and place-based organizations to engage in collective action and work toward common goals; 5) reducing risk and improving disaster resilience by establishing new green infrastructure projects and building capacity within at-risk communities; and 6) advancing community governance and co-stewardship models.

NOAA Commissioned Officer Corps (NOAA Corps) - Maui Facility and Vessel Coordinator, HIHWNMS

The NOAA Commissioned Officer Corps stations an officer at the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS) in support of facility and vessel operations management. This officer performs various administrative and operational duties, including operating the Sanctuary vessels; scheduling, coordinating, and managing the small boat operations, maintenance, and training programs; and coordinating with local, state, federal, or other agencies for permits, permissions, or joint exercises. In addition, they serve as OIC of the small boat KOHOLA for upwards of 100 days out of the year, and participate as a core member of the Large Whale Entanglement Response Team. The officer fulfills the role of safety officer, as well as facility operations coordinator and liaison to the USCG, NOAA Office of Law Enforcement, Department of Land and Natural Resources, Kohoʻolawe Island Reserve Commission and other agencies with small boat operations.

Honolulu and Hilo

National Ocean Service (NOS) - Pacific Islands Regional Office of National Marine Sanctuaries
Located in Honolulu on the island of Oʻahu, and in Hilo on Hawaiʻi Island, the Pacific Islands Regional office administers the two sanctuaries, Hawaiian Islands Humpback Whale National Marine Sanctuary and the National Marine Sanctuary of American Samoa, and two monuments: Rose Atoll Marine National Monument and Papahānaumokuākea Marine National Monument.Through a partnership with the National Marine Sanctuary Foundation, the Pacific Islands Region manages the Pacific Islands Ocean Exploration Center at Aloha Tower on the island of Oʻahu. In addition, the Region partners with many local and regional organizations including the Waikīkī Aquarium, University of Hawaiʻi Institute of Marine Biology,, Outrigger Resorts, the American Samoa Government and the Commonwealth of the Northern Mariana Islands.

HI-2
Hilo

National Ocean Service (NOS) - NOAA's Papahānaumokuākea Marine National Monument Mokupāpapapa Discovery Center
NOAA's Mokupāpapa Discovery Center in Hilo, Hawaiʻi Island was established in 2003 to interpret the natural science, culture and history of the Northwestern Hawaiian Islands and surrounding marine environment. An important educational hub in the Hilo community for more than a decade, the Mokupāpapa Discovery Center hosts more than 75,000 visitors annually and also provides free monthly lectures and learning activities to schools and other community groups. The 30,000 square-foot facility features exhibits, artwork and activities including: a 3,500 gallon saltwater tank showcasing rare Hawaiian coral reef fish from Papahānaumokuākea Marine National Monument; wall-size map of the Hawaiian Archipelago with interactive iPad kiosks; Liquid Galaxy immersive theater for virtual explorations of the Monument; Keiki area for children's activities and explorations, life-size Hawaiian monk seal exhibit featuring Crittercam footage; a Marine Debris exhibit; a double-hulled canoe interactive voyaging exhibit; artwork and photographs by celebrated artists and award-winning photographers; guided tours, activities and programs for school and community groups; and facility rental and meeting spaces for special events. Since most people will never have the opportunity to visit these remote islands and atolls, Mokupāpapa serves to "bring the place to the people" and spur greater public awareness of **Papahānaumokuākea** and ocean conservation issues.

Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network
The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

National Weather Service (NWS) - Hilo Data Collection Office
The Hilo Data Collection Office has responsibility for the Island of Hawaiʻi. The office provides surface and upper air observations; critical input on forecasts, watches and warnings to the Honolulu NWS forecast office for the Big Island; assistance in collecting significant weather observations for the Big Island; and outreach and education programs.

NOAA Office of Education - Science On a Sphere® at the ʻImiloa Astronomy Center. See Page 2 for details.

Office of Oceanic and Atmospheric Research (OAR) - Ozone Measurements; Water Vapor Measurements
NOAA's Global Monitoring Laboratory (GML) conducts long-term monitoring of stratospheric ozone with balloon sondes. Balloon sonde ozone profiles enhance our understanding of surface pollution/air quality events, lower and upper atmosphere mixing dynamics, boundary layer stability, ozone trends, and the health and recovery of the ozone layer. Once per month, balloon payloads flown from Hilo, Hawaiʻi also carry a stratospheric water vapor instrument that uses chilled mirror hygrometers to obtain water vapor profiles in the upper troposphere and lower stratosphere (to ~28 km). The

Hilo flights began in 2007 and support the 40+-year record of measurements at Boulder showing changes in stratospheric water vapor. These ongoing observations are essential for improving our understanding of stratospheric ozone and climate processes.

National Ocean Service (NOS) - NOAA Marine Debris Program (MDP)
The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) supports national and international efforts to reduce the impacts of marine debris. The MDP Pacific Islands Regional Coordinator, based in Hilo, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences.

Kāne'ohe Bay

National Ocean Service (NOS) – He'eia National Estuarine Research Reserve
The National Estuarine Research Reserve System is a network of protected areas focused on long-term research, monitoring, stewardship, education, and training. NOAA's Office for Coastal Management provides funding and national guidance, and each site is managed on a daily basis by a lead state agency or university with input from local partners. The 1,385 acres of land and water constituting the He'eia National Estuarine Research Reserve is located in Kāne'ohe Bay on the windward side of the O'ahu, Hawai'i. Designated in 2017, the reserve is managed by the University of Hawai'i's Hawai'i Institute of Marine Biology in collaboration with a wide array of state and local partners. This reserve includes unique and diverse upland, estuarine, and marine habitats within the He'eia estuary and a portion of Kāne'ohe Bay, protecting features such as the He'eia stream, coral reefs, sand flats, and important cultural components. The cultural sites include traditional agricultural and heritage lands and the He'eia Fishpond.

National Ocean Service (NOS) – Margaret A. Davidson Graduate Fellowship
The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at the He'eia National Estuarine Research Reserve will focus their research on adapting the reserve's reciprocal collaboration process to enhance education programming and empower the next generation of scientists.

Līhu'e

National Weather Service (NWS) - Lihu'e Data Collection Office
The Lihu'e Data Collection Office has responsibility for the Island of Kaua'i. The office provides surface and upper air observations; critical input on forecasts, watches and warnings to the Weather Forecast Office Honolulu for Kaua'i; assistance in collecting significant weather observations for Kaua'i; and outreach and education programs is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

National Ocean Service (NOS) - Kaua'i Ocean Discovery, National Marine Sanctuaries
Through a partnership with the National Marine Sanctuary Foundation and Kukui Grove Center, ONMS opened a small, year-round discovery center on the island of Kaua'i in January, 2020. Kaua'i Ocean Discovery features interactive displays, maps, illustrated panels, and a special children's learning area designed to share the traditions and knowledge of Hawai'i's ocean connections and inspire lifelong learning and stewardship. The facility features attractions for all ages and presents information about Hawaiian Islands Humpback Whale National Marine Sanctuary and Papahānaumokuākea Marine National Monument, as well as Kaua'i's unique marine environment. Visitors learn about humpback whales, endangered Hawaiian monk seals, sea turtles, albatross, and more while touring the extensive Hawaiian archipelago and visiting an underwater world through videos, displays, and hands-on activities. Guests can also learn about the Kumulipo, or Hawaiian creation chant, that details the ancient history of island culture.

Mauna Loa

Office of Oceanic and Atmospheric - U.S. Climate Reference Network

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

Office of Oceanic and Atmospheric Research (OAR) - Mauna Loa Atmospheric Baseline Observatory

The Mauna Loa Atmospheric Baseline Observatory (ABO) is one of four baseline observatories operated by the NOAA Office of Oceanic and Atmospheric Research, Global Monitoring Laboratory, located in Boulder, CO. The observatories are part of a global network of observatories that acquire long-term records of atmospheric gases, aerosol particles, and surface radiation to study the causes and consequences of change. Air samples are collected weekly in specially designed flasks that are then delivered to GML in Boulder for analysis. This program allows us to track trends in the trace greenhouse gases associated with climate change and those most responsible for anthropogenic depletion of the ozone layer (halocarbons). Measured aerosol optical properties (how the particles absorb and scatter solar radiation), aerosol number concentration and the chemical composition of the aerosol particles inform our understanding of the Earth's radiative balance on regional scales. Surface monitors track ozone and sulfur dioxide concentrations, the latter of which are emitted by volcanic activity on the Big Island. Over 250 different atmospheric and solar radiation properties are monitored at the Mauna Loa ABO, located at over 11,000 ft above sea level.

The observatory's 60+ year record of continuous atmospheric carbon dioxide concentrations is one of the longest atmospheric constituent records on earth. The observatory is a key facility in the international Network for the Detection of Atmospheric Composition Change, which monitors long-term changes in the composition of the atmosphere to understand impacts, study air quality, and provide satellite observation validation, initiated in 1991. Ultraviolet (UV) radiation reaching the surface is measured with a world-standard UV instrument as part of an international program tracking the health and recovery of the ozone layer. GML operates a NIWA UV spectroradiometer that measures ultraviolet radiation (UV) at Mauna Loa in collaboration with NIWA (National Institute of Weather and Atmospheric Research, New Zealand). The Mauna Loa site is a global reference site for this UV work. Research efforts are devoted to the extent and cause of observed variations in long-term radiation and meteorological measurements, using satellite observations and climate model calculations.

In addition, observations of spectral solar radiation are made for the purpose of remote sensing of certain atmospheric constituents and spectral solar UV is measured for the investigation of the interaction of ozone and solar radiation. GML operates three stratospheric lidar systems to measure atmospheric aerosol profiles. The Mauna Loa record extends back to 1974. Stratospheric lidar systems measure light which is backscattered from particles suspended in the air and which are used for monitoring stratospheric aerosols. This includes aerosols from volcanic origins and from potential geo-engineering activities in the future. Stratospheric aerosols act as catalysts for large-scale stratospheric ozone depletions and therefore need to be considered when studying the recovery of the ozone layer. Stratospheric aerosols also have a cooling effect on the earth by scattering sunlight back into space and are therefore a candidate for geo-engineering.

The Mauna Loa ABO is host to over 75 cooperative programs from around the world, including the NASA stratospheric ozone lidar and the National Center for Atmospheric Research High Altitude Observatory, supported by the National Science Foundation.Due to the eruption of Mauna Loa in November 2022, the access road and line power were severed. While we await restoration of the road, science instrumentation is operating at about 30% on solar power. Flask sampling and other limited operations have been established at the nearby Mauna Kea Observatory for continuity of records.

O‘ahu

Office of the Chief Information Officer (OCIO) - Inouye Regional Center

The Office of the Chief Information Officer (OCIO) at NOAA’s Inouye Regional Center (IRC), in O‘ahu, Hawai‘i maintains staff and offices to provide support for corporate services such as telecommunications, cable plant and colocation facilities, supervisory control and data acquisition, A/V and Exhibits, networking, computing, software and hardware management, and cyber security. In addition, the OCIO at IRC provides select enterprise and regional IT support services to all of the NOAA Line and Program Offices as well as other government agencies located in the Pacific region. This work includes IT infrastructure design, operations and maintenance, network and server management and administration, desktop configuration and maintenance, application and system design and implementation, IT security, and telecommunications.

Honolulu, Hawai‘i is also one of five NOAA Trusted Internet Connection Access Points (TICAPs) which monitors the connection of NOAA networks with the greater Internet. This is required by OMB policy to ensure secure communication from NOAA IT systems to untrusted networks. TICAPs are NOAA’s first line of defense for protecting NOAA’s mission from external cyber-attacks. The information the TICAPs provide is invaluable for determining the nature and scope of cyber threats. NOAA is also able to offer this as a service to other government agencies, eliminating the requirement for them to build and manage their own TICAPs

NOAA Commissioned Officer Corps (NOAA Corps) - NOAA Liaison to PACOM

The NOAA Commissioned Officer Corps stations an officer at Camp Smith as a liaison to the US Pacific Command. This officer performs a variety of functions, most notably educating and communicating with USPACOM on NOAA initiatives, products, and services which could be of value to USPACOM and NOAA. In addition, the officer serves on and advises the NOAA Pacific Island Regional Team and Pacific Region Executive Board; serves as duty watch officer as required during 24/7 stand-up for catastrophic events in the Area of Responsibility; maintains awareness of the overall status for NOAA resources in the region and offer or request support where appropriate or when necessitated by PACOM; represents NOAA, PACOM, and the nation through delegation visits; and engages in discussions regarding climate-related impact, a primary, long-term concern of USPACOM and the Pacific Islands.

Office of Oceanic and Atmospheric Research (OAR) -Ocean Acidification Observing Network (NOA-ON)

The NOAA Ocean Acidification Observing Network (NOA-ON) is a sustained investment in ocean chemistry observing networks in U.S. waters and abroad. There are currently 16 buoys sponsored by the NOAA OAR Ocean Acidification Program in coastal, open-ocean and coral reef waters that contribute to this network. The long-term datasets collected from these moorings are key to understanding how ocean chemistry and other ocean conditions are changing over time, and their impacts on marine and coastal ecosystems. These buoys are located in Alaska (Gulf of Alaska, Bering Sea), American Samoa (Fagatele Bay),California (California Current Ecosystem 1 & 2), Chesapeake Bay (MD, VA), Louisiana (Coastal_LA), Florida (Cheeca Rocks), Georgia (Grays Reef), Hawai‘i (Kāne‘ohe Bay and CRIMP-II, both in O‘ahu) Oregon (Coos Bay), Maine (Gulf of Maine), Puerto Rico (La Parguera), Washington (Cha’ba), and Lake Huron (Thunder Bay).

Pahoa [Cape Kumukahi]

Office of Oceanic and Atmospheric Research (OAR) - Global Greenhouse Gases Reference Network; Halocarbon Measurements

NOAA’s Global Monitoring Laboratory (GML) operates the Greenhouse Gas Reference Network to measure the distribution and trends of carbon dioxide (CO2) and methane (CH4), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected in specially designed flasks each week and delivered to GML in Boulder, CO for analysis. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. These measurements help determine the magnitude of carbon sources and sinks. Weekly flask

samples are also analyzed at GML in Boulder for halocarbon content. These gases are most responsible for human-caused depletion of the stratospheric ozone layer. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer - so it can protect us from the sun's ultraviolet radiation. Early in 2018, GML's halocarbon flask sampling was compromised at the Kumukahi site due to the Kilauea lava flow cutting off the access road to the old tower used for sampling. Starting in 2023, GML was able to begin augmenting the halocarbon flask sampling with a UAV (unmanned aerial vehicle), which raises the inlet ~30 meters agl, reducing the impact of sea spray contamination on the halocarbon flask samples.

Wahiawa

National Environmental Satellite, Data, and Information Service (NESDIS) - Office of Satellite and Product Operations (OSPO) - Search and Rescue Satellite Aided Tracking (SARSAT)

The Naval Computer Telecommunication Area Master Station Pacific delivers and operates a reliable, secure and battle-ready Navy network. A Coast Guard facility on the base, houses eight NOAA Search and Rescue Satellite Aided Tracking (SARSAT) antennas and associated ground equipment supporting Medium-Altitude Earth Orbiting Search and Rescue Satellites and polar satellite search and rescue operations. These ground systems, referred to as Local User Terminals (LUTs), can receive signals relayed through polar orbiting satellites, from ships, aircraft or individuals in distress. The location of the distress signal is automatically forwarded to the SARSAT Mission Control Center, which notifies the appropriate Rescue Coordination Center. SARSAT is part of an international humanitarian effort helping to improve the rescue of persons in distress. SARSAT has saved more than 10,804 lives in the United States, and over 50,000 people rescued worldwide since 1982.

Statewide

National Environmental Satellite, Data, and Information Service (NESDIS) - Center for Satellite Applications and Research (STAR) - Marine Optical Buoy Project

The Marine Optical Buoy (MOBY) project supports the calibration of satellite ocean color radiometry data. MOBY measures hyperspectral water-leaving radiance in clear ocean waters off shore of Hawai'i. MOBY's unique role as the primary ocean color reference standard requires high quality consistent measurements over time to maintain a true ocean color climate data record. MOBY is a 14-meter long buoy system developed and instrumented to measure upwelling radiance and downwelling irradiance at the sea surface and at three deeper depths. Submarine light is transmitted by fiber optics to the MOBY spectrograph for continuous energy measurements at subnanometer resolution from 340 (ultraviolet) to 950 (near-infrared) nanometers.

National Ocean Service (NOS) - Papahānaumokuākea Marine National Monument

Papahānaumokuākea Marine National Monument was created by Presidential Proclamation 8031 in June 2006 to protect the extraordinary natural and cultural resources of the Northwestern Hawaiian Islands. Expanded by Presidential Proclamation 9478 in August 2016, the site now encompasses 582,578 square miles; it is the largest fully-protected/highly-protected permanent conservation area on the planet. In July 2010, Papahānaumokuākea was designated as the first mixed UNESCO World Heritage site in the United States for its universal and outstanding natural and cultural values. The management office is located in Honolulu, O'ahu. NOAA also facilitates the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Advisory Council, a group of community, scientific, educational and Native Hawaiian representatives that provide the Office of National Marine Sanctuaries with advice and recommendations on management of the reserve. Papahānaumokuākea is cooperatively managed to ensure ecological integrity and achieve strong, long-term protection and perpetuation of Northwestern Hawaiian Islands ecosystems, Native Hawaiian culture, and heritage resources for current and future generations. Four co-trustees–the Department of Commerce, Department of the Interior, State of Hawai'i and the Office of Hawaiian Affairs–work collaboratively to protect this special place.

National Environmental Satellite, Data, and Information Service (NESDIS) **National Centers for Environmental Information (NCEI) - Pacific Regional Climate Services Director**
NOAA's six Regional Climate Services Directors (RCSDs), which are part of NCEI, support the development and delivery of a wide range of place-based climate science and information products and services to help people make informed decisions. RCSDs regularly communicate with stakeholders about climate information needs, and help build and strengthen active partner networks with public and private constituents. They play a primary role in integrating the work within NOAA and among its partners in developing and delivering climate services at the regional level. These efforts serve to increase the value of climate information to users and support more efficient, cost-effective delivery of products and services. The Pacific RCSD region encompasses Hawai'i, Guam, and the U.S.-affiliated Pacific Islands.

National Marine Fisheries Service (NMFS) - Office of Law Enforcement
NOAA's Office of Law Enforcement is the only U.S. conservation enforcement agency that is exclusively dedicated to Federal fisheries and marine resource enforcement. Its mission is to protect global marine resources by enforcing domestic laws, international treaties, and regulations dedicated to protecting wildlife, and their natural habitat. Our Special Agents and Enforcement Officers ensure compliance with these laws and take enforcement actions if there are violations. In addition, the Cooperative Enforcement Program gives OLE the ability to leverage their resources with the assistance of 27 coastal states and U.S. territorial marine conservation law enforcement agencies in supporting its Federal enforcement mission. Effective fisheries law enforcement is critical to creating a level playing field for U.S. fishermen and enabling sustainable fisheries to support all the communities throughout the Pacific Islands. The Office of Law Enforcement's Pacific Islands Division is headquartered on Ford Island in Honolulu, Hawai'i, with field offices in American Samoa and Guam.

National Marine Fisheries Service (NMFS) - Pacific Islands Regional Office and Pacific Islands Fisheries Science Center
NMFS is responsible for the management, conservation, and protection of living marine resources within the U.S. Exclusive Economic Zone. The Pacific Islands Region includes the waters surrounding American Samoa, Guam, Hawai'i, and the Commonwealth of the Northern Mariana Islands as well as the Pacific Remote Island Areas. It is the largest geographic area within NMFS jurisdiction, with a U.S. Exclusive Economic Zone of more than 1.7 million square nautical miles of ocean. Four major laws drive NOAA Fisheries work in the region he Magnuson-Stevens Fishery Conservation and Management Act, the Marine Mammal Protection Act, the Endangered Species Act, and the National Environmental Policy Act:

The Pacific Islands Regional Office uses ecosystem-based strategies to manage the marine resources of the region. Key responsibilities include:

- Maintaining healthy fish stocks for commercial, recreational and subsistence fishing in coordination with the Western Pacific Fishery Management Council and the Western and Central Pacific Fisheries Commission,
- Protecting and recovering populations of protected species
- Preserving and restoring marine habitat
- Coordinating with international organizations to implement and monitor fishery agreements and treaties.

The Pacific Islands Regional Office also supports co-management of four marine national monuments; provides consultation support; manages the Hawai'i and American Samoa the at-sea observer program; and fosters sustainable aquaculture in the region. The regional aquaculture coordinator assists federal and state agencies with permitting and other activities. They also support aquaculture outreach and education, and work with industry, academia, and other stakeholders on a variety of regional marine aquaculture topics.

The **Pacific Islands Fisheries Science Center** conducts scientific research, monitoring, and analysis in support of the effective management of living marine resources in the region and surrounding high seas. Its mission is to provide

essential scientific information and foster partnerships that enable the sustainability of living marine resources within Pacific Island communities.

- The Ecosystem Sciences Division conducts research, monitoring, and analysis of environmental and living resource systems in the waters of the Pacific Ocean. Humans are a key part of these ecosystems, and this research also includes the social, cultural, and economic aspects of fishery and resource management decisions.
- The Fisheries Research and Monitoring Division coordinates fisheries monitoring, fisheries data management, fisheries interactions, fish life history studies, and stock assessment. They work closely with local, state, federal, and international governmental and non-governmental partners.
- The Protected Species Division provides the scientific foundation for the conservation of whales, dolphins, Hawaiian monk seals, and sea turtles in the Pacific Islands through the Marine Mammal Protection Act, Endangered Species Act, and international agreements. Their work includes assessing populations, identifying and mitigating threats, and understanding habitats and trends.

The Regional Office and Science Center are based out of the NOAA Inouye Regional Center (IRC), located on Ford Island, Honolulu, Hawai‘i. At the IRC , the Science Center operates a seawater facility—which is capable of housing sea turtles, Hawaiian monk seals, and fishes—and multiple laboratories to complement its field research activities. The NOAA Ship *Oscar Elton Sette* serves as the Science Center’s primary at-sea research platform. It is managed and operated by NOAA’s Office of Marine and Aviation Operations and the NOAA Commissioned Officer Corps. In addition to the offices at the IRC both the Regional Office and Science Center have field offices serving American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands

National Marine Fisheries Service (NMFS) - Cooperation with States Program and Species Recovery Grants
Under the authority of section 6 of the Endangered Species Act, the Cooperation with States Program brings states, NMFS, and other partners together to recover threatened and endangered species. A total of 25 U.S. territories and coastal states, including Hawai‘i, currently participate in this program. Competitive grants are awarded to states through the Species Recovery Grants to States Program to support management, monitoring, research and outreach efforts for species that spend all or a portion of their life cycle in state waters. The funded work is designed to prevent extinctions or reverse the decline of species, and restore ecosystems and their related socioeconomic benefits. The Hawai‘i Department of Land and Natural Resources has received multiple awards through this program, including grants to support the conservation and recovery of monk seals and sea turtles, and research on insular false killer whales.

National Marine Fisheries Service (NMFS) - Marine Animal Stranding and Entanglement Response and John H. Prescott Marine Mammal Rescue Assistance Grant Program
NOAA Fisheries and trained professionals respond to dead or live marine mammals and protected sea turtles in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Entanglement Response Network provides valuable environmental intelligence, helping NOAA establish links among the animals’ health, coastal ecosystems, and coastal communities as well as develop effective conservation programs for populations in the wild. There are four stranding network members in the state. NOAA Fisheries funds eligible members of the Stranding Network through the competitive John H. Prescott Marine Mammal Rescue Assistance Grant Program. The Hawai‘i Statewide Marine Animal Stranding, Entanglement, and Reporting Hotline is (888) 256-9840.

National Marine Fisheries Service (NMFS) - Restoration Center
The NOAA Restoration Center, within the Office of Habitat Conservation, works with partners across the nation to restore habitat to sustain fisheries, recover protected species, and maintain resilient coastal ecosystems and communities. We have over 30 years conducting habitat restoration through competitive funding opportunities and technical assistance. We also work to reverse habitat damage from disasters like oil spills, ship groundings, and severe storms. In Hawai‘i, we focus on restoring habitats from ridge to reef. We support a variety of projects, from stabilizing erosion and sedimentation in the watersheds to removing invasive algae on coral reefs. We also support traditional community practices such as

fishpond restoration. See the interactive Restoration Atlas to find habitat restoration projects near you. Site visits to see habitat projects may be available in your state, please inquire if interested.

In addition, the Office of Habitat Conservation is responsible for executing an unprecedented $1.4 billion in funding under Bipartisan Infrastructure Law and Inflation Reduction Act for habitat restoration and fish passage. We are working with our partners to do this through our expert technical assistance and four funding competitions: Fish Passage, Tribal Fish Passage, Transformational Habitat Restoration, and Habitat Restoration for Tribes and Underserved Communities. We have funded 214 awards totaling $985M in rounds one and two with more to come in round 3. We are funding work all over the country, explore them on our interactive map.

National Marine Fisheries Service (NMFS), National Ocean Service (NOS), and NOAA General Counsel - Damage Assessment, Remediation, and Restoration Program
NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) assesses and restores habitat, fisheries, protected species, and recreational uses that have been harmed by oil spills, chemical releases, and ship groundings. Working with federal, state, and tribal entities, and responsible parties, we have recovered funding from responsible parties for restoration of critical habitats, fisheries, protected species, and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values, and quality of life. Hawai'i is a co-trustee with NOAA for assessment and restoration after pollution incidents in Hawai'i. For more information about our work in Hawai'i, visit: DARRP in Your State (and use the top menu to navigate to "Hawai'i & American Samoa") and this interactive map.

National Marine Fisheries Service (NMFS) - Deep-Sea Coral Research and Technology Program -
NOAA's Deep Sea Coral Research is administered by NOAA Fisheries' Office of Habitat Conservation. Mandated by the Magnuson-Stevens Fishery Conservation and Management Act, it is the nation's only federal research program dedicated to increasing scientific understanding of deep-sea coral ecosystems. Deep-sea corals occur off of every coastal state in the country, and create important habitats for countless species, including many fish species. The Program collaborates closely with partners, including other NOAA offices, to study the distribution, abundance, and diversity of deep sea corals and sponges. This work then informs critical management decisions in the waters of the United States and its territories. These decisions enhance the sustainability of deep-sea fisheries and other ocean uses, while conserving deep-sea coral and sponge habitats.

The Program works with partners to complete multi-year regional fieldwork initiatives, as well as smaller projects around the country, centered on integrating new and existing information on these vulnerable and biologically diverse habitats. The first research initiative took place from 2009 to 2011 in the U.S. South Atlantic region and provided valuable information to help decision-makers refine protected area boundaries. The Program's focus from 2025-2027 is the U.S. Pacific Islands

National Marine Fisheries Service (NMFS) - National Coral Reef Monitoring Program
NOAA's Coral Reef Conservation Program established an integrated and focused monitoring effort with partners across the United States—the National Coral Reef Monitoring Program. Coral reef monitoring data can help to inform science-based management decisions about these invaluable natural resources. These findings are shared with local agencies, partners, and communities to inform both federal and local management strategies. The Pacific Islands Fisheries Science Center conducts monitoring efforts. Teams survey coral reefs at more than 40 islands and atolls throughout the Pacific ocean on a rotational basis. They monitor reef fish populations, corals, and ocean conditions. To track biological trends and monitor climate-driven impacts, the teams use the same suite of survey methods at each island. Over time, scientists track how reefs have changed—an important part of reef conservation. After collection and a thorough review process, results are shared with local management agencies and the public. This data gives us a snapshot of coral reef health and is presented in status reports, and used to answer questions from local resource

managers. These long-term surveys across a wide variety of reefs illuminate the drivers of reef health and help predict future impacts.

National Marine Fisheries Service (NMFS) - Protected Species Assessment and Recovery Camps
Monitoring threatened and endangered species is critical to supporting their protection and recovery. The Hawaiian monk seal was designated as endangered in 1976 due to their rapid historical decline. The Endangered Species Act provides NOAA Fisheries with the framework to support their protection, conservation, and recovery. NOAA researchers began a standardized monitoring Hawaiian monk seal program to assess their population in the Papahānaumokuākea Marine National Monument in the early 1980s. This created the foundation of the work NOAA continues to do to this day. Small field teams of researchers from the Pacific Islands Fisheries Science Center spend 2 to 6 months each year in the monument to monitor Hawaiian monk seal and green sea turtle populations at: Lalo (French Frigate Shoals), Kamole (Laysan Island), Kapou (Lisianski Island), Manawai (Pearl and Hermes Atoll), Kuaihelani (Midway Atoll), and Hōlanikū (Kure Atoll). Hawaiian monk seal and green sea turtle research objectives for all sites include:

- Measuring and tagging all weaned seal pups and nesting and basking turtles
- Identifying all individuals in each subpopulation
- Conducting systematic beach counts of seals and turtles
- Documenting births, deaths, serious injuries, and entanglement in marine debris
- Reuniting separated seal mother-pup pairs, disentangling seals, and conducting other life-saving interventions to increase seal survival
- Conducting necropsies on dead seals and turtles
- Collecting and removing marine debris
- Participating in huliʻia observational data

At the end of each field season, researchers analyze their collected data to assess population statuses and guide future recovery efforts. Annual field camps in the Papahānaumokuākea Marine National Monument have resulted in important long-term datasets and have greatly increased our knowledge of the natural history of these species.

National Ocean Service (NOS) – Bipartisan Infrastructure Law
The Bipartisan Infrastructure Law is helping coastal communities build the future they want to see. The legislation provides a historic investment in coastal protection and restoration that will increase community resilience to climate change and extreme weather events, and improve how we manage our ocean resources. Projects funded under this law protect and restore ecologically significant habitats, including conserving lands that play a critical role in helping communities become more resilient to natural hazards. Hawaiʻi received funding for one project in FY22 and two projects in FY23, as well as funds to build the state's capacity to protect its coastal communities and resources.

National Ocean Service (NOS) - National Water Level Observation Network
NOS operates six long-term continuously operating tide stations in the state of Hawaiʻi, which provide data and information on tidal datum and relative sea level trends, and are capable of producing real-time data for tsunami warning and for storm surge warning. These stations are located at Nawiliwili, Honolulu, Mokuoloe, Kawaihae, Kahului, and Hilo. NOS also operates four continuously operating stations at Sand (Midway) Island, Guam, Kwajalein, Wake Island, and Pago Pago across the Pacific Ocean. Station data feeds into many CO-OPS products that are used to support safe navigation, mitigate coastal hazards, and protect communities. Such products include:

- Coastal Inundation Dashboard - view water levels in real-time and during storms
- High Tide Flooding Outlooks
- Sea level trends and maps
- Real-time current measurements
- Hydrodynamic models
- Tidal and water level datums

National Ocean Service (NOS) - U.S. Integrated Ocean Observing System (Pacific Islands Ocean Observing System)
The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. IOOS regional partners provide coordination with regional stakeholders while contributing data and other outputs to the national system. The Pacific Islands Ocean Observing System (PacIOOS) empowers ocean users and stakeholders throughout the Pacific Islands, by providing accurate and reliable coastal and ocean information, tools, and services that are easy to access and use. Fishermen, commercial operators, surfers, resource managers, scientists, and many others rely on PacIOOS' real-time, model, and archival coastal and ocean information to make well-informed decisions and to enhance our understanding of the Pacific Ocean. The PacIOOS wave buoys around the main Hawaiian Islands, for example, provide real-time information on wave height, direction and period, and sea surface temperature.

National Ocean Service (NOS) – Office for Coastal Management
The NOAA Office for Coastal Management practices a partner-based, boots-on-the ground regional approach to coastal management, with staff available in the eight regions. Assistance is provided to local, state, and regional coastal resource management efforts. Constituent feedback and assessments are an important part of the effort. Pacific representatives are located in Hawai'i, American Samoa, Guam and the Commonwealth of Northern Marianas Islands. These employees represent NOAA on several regional ocean governance initiatives (e.g., Hawai'i Ocean Resource Management Plan), coordinate NOAA involvement in ocean observing system activities, and support research reserves, coastal zone management, and other NOAA and state coordinated activities.

National Ocean Service (NOS) – Pacific Risk Management 'Ohana
NOAA's Office for Coastal Management facilitates and engages in Pacific Risk Management 'OHana (PRiMO) to bring people and organizations together to promote resilient communities in the face of many natural and man-made challenges. PRiMO members participate in hui, or working groups, to develop and implement action plans that improve resilience in the Pacific region. A highlight of the PRiMO effort is the annual conference, which alternates locations throughout the Pacific Region, where hundreds of participants gather to discuss ongoing initiatives, learn from each other, and make the connections and action plans that ultimately result in improved safety and sustainability for Pacific Island communities.

National Ocean Service (NOS) - Coastal and Estuarine Land Conservation Program
The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. Subject to availability of funding, the program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. Since 2002, the program has protected more than 110,000 acres of coastal land nationally, including over 16,000 acres protected as in-kind matching contributions. NOAA awarded six grants in Hawai'i, and these lands are protected in perpetuity.

National Ocean Service (NOS) - Coral Reef Conservation Program
NOAA's Coral Reef Conservation Program brings together multidisciplinary expertise from over 30 NOAA offices and partners to protect, conserve, and restore coral reef resources. The program focuses on three threats to coral reefs - climate change, fishing impacts, and land-based sources of pollution - as well as coral reef restoration. In response to identified threats and management priorities developed by coral reef managers in Hawai'i, the program invests in initiatives that reduce anthropogenic threats to priority coral reef sites, increase the abundance and size of coral reef fishery species, promote resilience to climate change, and increase public stewardship. Examples of projects include coral

reef monitoring, support for coral reef restoration efforts, revegetation efforts, fencing of sensitive areas upland of coral reefs, assessing herbivore-focused management strategies, community involvement and support for innovative management initiatives. Priority sites in Hawai‘i include South Kohala on the Big Island and West Maui. NOAA’s Coral Management Liaison is located in Honolulu.

National Ocean Service (NOS) – Susan L. William National Coral Reef Management Fellowship
The Susan L. Williams National Coral Reef Management Fellowship Program is a partnership between NOAA’s Coral Reef Conservation Program, the U.S. Department of Interior Office of Insular Affairs, Nova Southeastern University’s Halmos College of Natural Sciences and Oceanography, and the U.S. Coral Reef All Islands Committee. The program recruits Coral Reef Management Fellows for the seven U.S. coral reef jurisdictions, including Hawai‘i. The Fellow for Hawai‘i is working with the Division of Aquatic Resources focusing on water quality monitoring and management for nearshore ecosystems with the development of a Water Quality Action Plan. The Fellow will use a ridge to reef approach for this work and engage various watershed organizations and stakeholders to gather information needs and priorities.

National Ocean Service (NOS) - Phytoplankton Monitoring Network
The Phytoplankton Monitoring Network (PMN) is a nationwide community-based volunteer program of citizen scientists monitoring for the presence of organisms that can lead to Harmful Algal Bloom (HAB) formation. Volunteers serve as data collectors for marine and freshwater blooms at more than 200 coastal and inland sites in the U.S. and Caribbean. Monitoring is conducted year-round and volunteers are trained to measure salinity, air and water temperatures, and how to collect phytoplankton samples using a plankton net. Samples are then analyzed for any HAB organisms via microscopy. Data collected by PMN volunteers enhances the Nation’s ability to respond to and manage the growing threat posed by HABs by collecting important data for species composition and distribution in coastal and freshwater environments and creating working relationships between volunteers and professional marine biotoxin researchers. Event monitoring can assist state and federal agencies to issue timely warnings about shellfish consumption and other public health concerns.

National Ocean Service (NOS) - Mussel Watch Program
The National Oceanic and Atmospheric Administration (NOAA) Mussel Watch Program (MWP) monitors the status and trends of chemical contaminants and biological stressors in the nation’s coastal waters. MWP began in 1986, and is based on the periodic collection and analysis of bivalves (oysters and mussels) and sediment from a network of more than 300 monitoring sites nationwide. Contaminants monitored at each site include the EPA’s Priority Pollutant List of toxic substances and a suite of chemicals of emerging concern such as flame retardants, PFAS, pharmaceuticals, and current use pesticides.

National Ocean Service (NOS) – National Coastal Zone Management Program
Through a unique federal-state partnership, NOAA’s Office for Coastal Management works with the Hawai‘i Office of Planning and Sustainable Development to implement the National Coastal Management Program in Hawai‘i. NOAA provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

National Ocean Service (NOS) – Digital Coast
The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA’s Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related tools, training, and information needed to make these data useful for coastal decision makers. The Digital Coast Act authorizes the Digital Coast as a standing national program and supports NOAA’s efforts to increase access to authoritative data, tools, and training that enable coastal communities to plan for long-term resilience, manage water resources, and respond to emergencies.

National Ocean Service (NOS) – National Coastal Resilience Fund
The National Coastal Resilience Fund restores, increases, and strengthens natural infrastructure to protect coastal communities while also enhancing habitats for fish and wildlife. The National Fish and Wildlife Foundation (NFWF) executes this program in partnership with NOAA to invest in conservation projects that restore or expand natural features, such as coastal marshes and wetlands, dune and beach systems, oyster and coral reefs, forests, coastal rivers and floodplains, and barrier islands, which minimize the impacts of storms and other naturally occurring events on nearby communities. In Hawai‘i, 20 projects have been funded: two in FY18, two in FY19, two in FY20, four in FY21, five in FY22, and six in FY23.

National Ocean Service (NOS) - OR&R Regional Coordinators
NOAA's Office of Response and Restoration (OR&R) is a center of expertise in preparing for, evaluating, and responding to threats to coastal environments, including oil and chemical spills, releases from hazardous waste sites, disasters, and marine debris. To fulfill its mission of protecting and restoring NOAA trust resources, OR&R provides scientific and technical support to prepare for and respond to environmental threats that coastal communities face; determines damage to natural resources from those releases; protects and restores marine and coastal ecosystems; and works with coastal communities to address critical local and regional coastal challenges.

- OR&R identifies and quantifies environmental injury caused by releases of oil and hazardous materials. Our network of **Regional Resource Coordinators** work with multidisciplinary scientific, economic, and legal teams with the goal of securing the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. We collaborate with NMFS Restoration Center and NOAA General Council through the Damage Assessment, Remediation, and Restoration Program (DARRP) to ensure the process is efficient, legally defensible and restoration focused. The RRCs serving the West Coast/Pacific region are based in Seattle, Washington and Anchorage, Alaska.
- The **Regional Preparedness Coordinator (RPC)** is strategically placed within the region to ensure that NOS and our partners are able to effectively prepare for, respond to, and recover from all hazards, including coastal disasters. The RPC serves as a liaison between NOS and its federal, state, and local disaster preparedness and emergency response partners. A key role of the RPC is to better understand the needs and opportunities within the region and to ensure partners have the tools and resources necessary to inform decision-making. The RPC has expertise across the spectrum of emergency management and provides preparedness, response, and recovery services including planning, training, exercises, response coordination, continuous improvement, and long-term recovery. The RPC, based in San Diego, California, serves the West Coast and Pacific Islands region – California, Oregon, Washington, Hawai‘i, American Samoa, Guam, and Northern Mariana Islands.

National Ocean Service (NOS) - Navigation Manager
OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with a variety of navigation related challenges. NOAA’s navigation managers work directly with pilots, port authorities, and recreational boating organizations in Hawai‘i. They help identify the navigational challenges facing marine transportation in Hawai‘i and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. The Office of Coast Survey has a navigation manager in Seattle, WA to support mariners and stakeholders in the Pacific Northwest and the Pacific Islands region.

National Ocean Service (NOS) - Navigation Response Team
The Office of Coast Survey (OCS) maintains the nation’s nautical charts and publications for U.S. coasts and the Great Lakes. OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with navigational challenges. The Office of Coast Survey's Navigation Response Branch (NRB) conducts routine and emergency hydrographic surveys; and working with the regional Navigation Managers, navigation response teams (NRT) work around-the-clock after storms to speed the reopening of ports and

waterways. During emergency response, the NRTs provide time-sensitive information to the U.S. Coast Guard or port officials, and transmit data to NOAA cartographers for updating Coast Survey's suite of navigational charts. The mobile integrated response team (MIST) kit is available to Hawai'i and can be deployed on a vessel of opportunity and staffed by NRT members.

National Ocean Service (NOS) - Marine Debris Projects and Partnerships in Hawai'i

The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, prevention, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP Pacific Islands Regional Coordinator, based in Hilo, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences. In Hawai'i, the MDP is working with the Kewalo Marine Laboratory at the University of Hawai'i at Mānoa to study coral ingestion of microplastics in American Samoa. Funding for this project was provided through the National Marine Sanctuary Foundation's Ocean Odyssey Marine Debris Awards for Diversity, Equity, Inclusion, Justice, and Accessibility (DEIJA). These funds were provided to support initiatives that investigate and prevent the adverse impacts of marine debris in communities that are underserved, underrepresented, or overburdened. In Hawai'i, the MDP is supporting Hawai'i Pacific University's program to provide financial incentives for commercial fishers to collect and bring in derelict fishing gear they encounter during regular fishing operations.In addition, Within the remote islands and atolls of Papahānaumokuākea Marine National Monument, MDP supports the Papahānaumokuākea Marine Debris Project's large-scale marine debris removal efforts. The NOAA Marine Debris Program is supporting a 5-year grant to the National Fish and Wildlife Foundation using $5.8 million in funding provided by the Bipartisan Infrastructure Law. Federal funding to the National Fish and Wildlife Foundation is being matched by a private donor for a total investment of $12M over FY22-FY26. Further, MDP has partnered with the National Parks Service to install an educational marine debris display at the Kaloko-Honokōhau National Historical Park. The MDP has facilitated and maintained the Hawai'i Marine Debris Action Plan, along with state and local governments, and other stakeholders, since 2010. The 2024 Hawai'i Marine Debris Action Plan is the first 2-year update to the 2021-2031 Action Plan. In August of 2023, 23 organizations gathered together to discuss goals and actions to tackle the complex and continuously evolving problem of marine debris. The 2024 update resulted in removing the Ocean-Based Marine Debris Goal and consolidating actions to create a more approachable format. The Action Plan establishes a comprehensive framework for strategic action to help reduce the impacts of marine debris on Hawai'i and its coasts, people, and wildlife.

National Ocean Service (NOS) - OR&R Pacific Islands Environmental Response Management Application and Response Tools for Oil and Chemical Spills

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Pacific Islands Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as ship locations, weather, and ocean currents, providing an easy-to-use common operating picture for environmental responders and decision makers. ERMA staff continued to work closely with Federal and State agencies for drills, hurricane response, and incidents. Maintained habitat data for sensitive species. Ensured data was kept up-to-date and data collection methods were kept consistent. In addition to ERMA, the Office of Response and Restoration (OR&R) offers a suite of tools to support emergency responders dealing with oil and chemical spills. From Environmental Sensitivity Index (ESI) maps and data which provide concise summaries of coastal resources including biological resources and sensitive shorelines to GNOME, a trajectory and fate model that predicts the route and weathering of pollutants spilled on water, and so much more, these tools provide easy-access to critical data that support a wide range of needs for emergency responders, ultimately supporting our coastal communities.

National Ocean Service (NOS) - OR&R Support Disaster Preparedness in Coastal Communities
The Office Response and Restoration (OR&R) Disaster Preparedness Program and National Sea Grant College Program (Sea Grant) partnered to support coastal communities prepare for, respond to, and recover from all hazards. A combined total of $1,966,331 in federal funds from fiscal years 2022, 2023, and 2024 have been used to support eleven projects. In fiscal year 2022, three projects selected in Hawai‘i Sea Grant, MIT Sea Grant and Wisconsin Sea Grant focused on strengthening local disaster readiness and recovery in underserved communities.

National Ocean Service (NOS) - Hawai‘i Bay Watershed Education and Training Program
The NOAA Bay Watershed Education and Training (B-WET) program is a competitive grants program that provides funding for locally relevant environmental education projects for K-12 audiences. The Hawai‘i B-WET program is administered by NOAA’s Office of National Marine Sanctuaries in partnership with NOAA’s Office for Coastal Management on behalf of the NOAA Office of Education. The Hawai‘i B-WET program recognizes that Indigenous knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. Hawai‘i B-WET regional grant competitions are responsive to local education and environmental priorities. Please see the funding opportunities for specifics.

National Ocean Service (NOS) - NOAA Ocean Guardian School Program
A NOAA Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries. Funds are provided to schools at $4,000 per year if the school makes this commitment by proposing and then implementing a school- or community-based conservation project. Once the school has completed its project, the school receives official recognition as a NOAA Ocean Guardian School. To date, the Ocean Guardian School Program has reached more than 88,797 students and 3,599 teachers.

National Ocean Service (NOS) - NOAA Ocean Guardian Youth Ambassador Program
Youth aged 13-18 from across the United States and its territories that are committed to ocean conservation and stewardship of our blue planet can apply to become a NOAA Ocean Guardian Youth Ambassador. This year-long program looks for enthusiastic youth with new ideas and a unique perspective who want to learn more about America’s underwater treasures and share their passion with others. Youth learn how to become a leader at their school or in their local community to make a difference in the conservation of the ocean through marine protected areas.

National Ocean Service (NOS) – Regional Geodetic Advisor
The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in Honolulu, Hawai‘i serving the Pacific region – American Samoa, Guam, Hawai‘i, and the Northern Mariana Islands. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

National Weather Service - **NEXRAD (WSR-88D) Systems**
NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and

shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which four are in Hawai‘i.

National Weather Service (NWS) - Automated Surface Observing Systems Stations
The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are seven ASOS stations in Hawai‘i.

National Weather Service (NWS) - Cooperative Observer Program Sites
The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars’ worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals’ energy bills monthly. There are 204 COOP sites in Hawai‘i.

National Weather Service (NWS) - NOAA Weather Radio All Hazards Transmitters
NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages). Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are eight NWR transmitters in Hawai‘i.

National Weather Service (NWS) - National Data Buoy Center Buoys
The National Weather Service (NWS), through its National Data Buoy Center (NDBC), develops, deploys, operates, and maintains the current national data buoy network of moored and drifting weather buoys and land stations that serve all of the Nation’s coastal states and territories. Within this network, 110 of the buoys and 51 of the land stations are maintained directly by NDBC. Located at NASA's Stennis Space Center in Mississippi, supports weather and marine warning and forecast services in real time by providing deep ocean and coastal meteorological and oceanographic observations. These data provide valuable information used by NWS supercomputers to produce computer-generated model forecasts of the atmosphere and climate. NDBC manages the Volunteer Observing Ship program to acquire additional meteorological and oceanographic observations supporting NWS mission requirements. NDBC also operates NOAA’s network of Deep-ocean Assessment and Reporting of Tsunami (DART®) stations, for the early detection and real-time

reporting of tsunamis in the open ocean. Data from the DART®s are used by the National Weather Service Tsunami Warning Centers in Alaska and Hawai'i to provide tsunami forecasts, warnings, and information. NDBC also operates the Tropical Atmosphere Ocean Array of buoys in the tropical Pacific. The TAO/TRITON array consists of approximately 70 moorings in the Tropical Pacific Ocean, telemetering oceanographic and meteorological data to shore in real-time via the Argos satellite system. The array is a major component of the El Niño/Southern Oscillation (ENSO) Observing System, the Global Climate Observing System (GCOS) and the Global Ocean Observing System (GOOS).

Office of Oceanic and Atmospheric Research (OAR) - University of Hawai'i Sea Grant College Program
The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. As part of the prestigious School of Ocean and Earth Sciences and Technology, the University of Hawai'i Sea Grant College Program links NOAA to its constituents by connecting academia, federal, state, and local government, industry and community members through state of the art technology transfer. Hawai'i Sea Grant is dedicated to achieving resilient coastal communities characterized by vibrant economies, social and cultural sustainability, and environmental soundness. Research and extension activities cover a broad spectrum of areas including design sciences, coastal natural hazards, coastal and nearshore resources, sustainable coastal tourism, aquaculture, traditional knowledge, and environmental literacy. Get involved with Sea Grant through state and national opportunities like the John A. Knauss Marine Policy Fellowship program at seagrant.noaa.gov.

Office of Oceanic and Atmospheric Research (OAR) - Global Ocean Monitoring and Observing Program (GOMO)
The Global Ocean Monitoring and Observing Program supports research conducted at the University of Hawai'i Sea Level Center, which operates more than 20% of the Global Sea Level Observing System. Sea level data is useful for coastal protection during events such as storm surges; providing flood warning and monitoring tsunamis; tide tables for port operations, fishermen, and recreation; and research into sea level change and ocean circulation. In Hawai'i, UHSLC both operates local tide gauges and provides tidal data through an online web portal.

National Ocean Service (NOS) - Students for Zero Waste Week
Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects

The National Oceanic and Atmospheric Administration (NOAA) was entrusted with billions of supplemental federal funding dollars with passage of the Bipartisan Infrastructure Law on November 15, 2021 and the Inflation Reduction Act on August 16, 2022. This historic infrastructure funding has been invested in communities across the nation to build resilience in the face of climate change. NOAA distributed funding to communities, tribal, state and local governments, higher education programs, businesses, non-profit organizations, and facilities in need. NOAA funded billions of dollars in grants and cooperative agreements across the country to fund projects that enhance climate resilience, restore coastal and marine habitats, improve safety, and create jobs.For an interactive map of NOAA BIL and IRA investments in your state, visit https://www.noaa.gov/bil-ira-awards-explorer.

BIL

Waihee Coastal Dunes and Wetlands Refuge Kapoho Loko Ia and Loi Kalo Restoration, $803,770
This project will work together with Native Hawaiians from the Waihee and Waiehu communities to restore the flow of water to the taro fields and fish pond at the Waihee Coastal Dunes and Wetlands Refuge on Maui. They plan to build a ridge-to-reef model for collaborative land and ocean stewardship by engaging the community through outreach meetings, workshops, volunteer workdays, and educational activities.

Baseline Sea level Climatologies and Coastal Flood Monitoring and Reporting, $166,667
The objective of this project is to formulate a set of baseline water level climatologies and associated indicators that can be used to support coastal flood monitoring, prediction, and reporting. Products may include mean and extreme sea levels (e.g., magnitude and frequency) as well as wave and rain as measured by coastal gauges, buoys and satellites for the US including the Great Lakes. These baseline climatologies and flood indicators will be established for at least one region.Existing data sets will be reviewed for both content and format, as a precursor to establishing an integrated Foundational Sea Level Monitoring Product Set.

Coral Community Dive Program: Restoration, Resilience, Monitoring Dedicated to Improving Coastal, Community and Climate Resilience in West Oʻahu, $460,563
This project will launch a program to engage community members on West Oʻahu in coral reef conservation and reduce barriers to environmental work for Native Hawaiians. The Community Dive Program will provide professional certifications and training in coral restoration to local residents, and conduct on-the-ground coral restoration at community-selected sites to help build coastal resilience.

Enhancing ocean observing and data sharing infrastructure in the Pacific Islands through the Pacific Islands Ocean Observing System, $1,906,000
This project will improve and enhance specific elements of PacTOOS that require significant asset replacements and/or upgrades to sustain and improve existing operations. It will advance observing assets within Marine Operations (high frequency radar stations and wave buoys), Water Quality (near shore sensors and coastal moorings), Ecosystems and Living Marine Resources (animal tagging), Modeling, and Data Management (acoustic data node). It will also enhance associated sharing and integration of Federal and non-Federal data by advancing the priorities of the local coastal resource managers as identified through recent efforts of the Regional Ocean Data Sharing Initiative in the Pacific Islands region.

IIJA Capacity Building for He’eia NERR, $298,262
This funding will build the capacity of the He'eia National Estuarine Research Reserve (NERR) with University of Hawaiʻi to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, He'eia NERR will use these funds to increase the reserve and partner capacity to effectively manage incoming project funds in the realm of program management, accounting, and human resources through the hiring staff at the NERR and their land management partner.

HawaiʻiCoastal Zone Management Program Infrastructure Investment and Job Act Capacity Building Project, $361,579
This funding will build the capacity of the state within HawaiʻiCoastal Zone Management Program (HICZMP) to plan for and implement habitat restoration and conservation projects proposed through funding opportunities connected to the Bipartisan Infrastructure Law. Specifically, the HawaiʻiCoastal Zone Management Program Infrastructure Investment and Job Act Capacity Building Project will hire a HICZMP BIL Project Coordinator who will coordinate with key stakeholders to refine the statewide proposal process and identify priority sites and activities, develop funding proposals and a network of collaboration for BIL funding.

Affordable Wastewater Disposal for Coastal Households Adapting to Sea Level Rise, $3,263
Rising sea levels and king tide flooding in coastal areas across America are saturating onsite wastewater disposal systems (OSDS), resulting in the degradation of coastal ecosystems and 200,000+ illnesses annually. Many States are mandating system upgrades, with 88,000 upgrades required by 2050 in Hawai‘ialone. Unfortunately, existing upgrade options are unaffordable for 97% of homeowners and offer poor performance for coastal properties with high groundwater levels. WaiHome LLC is developing an aboveground and affordable wastewater disposal system for coastal households adapting to sea level rise.

Carbon-Negative Oceanic Reef for Aquatic Life (CORAL) Surveying via Hyperspectral Imaging-Equipped Littoral Drones (SHIELD), $42,000
Oceanit proposes the design, construction, and testing of a hyperspectral imaging equipped Unmanned Aerial System (UAS) for the detection of various coral species and the monitoring of coral health. This system will be the prototype for the sensor part of a robust, COTS-based UAS system to aid the NOAA National Coral Reef Monitoring Program. Different coral families and species will be identified by close inspection of spectral responses combined with advanced machine learning algorithms. Once a system is built to collect hyperspectral aerial imagery of corals, Oceanit will apply computer vision and machine learning techniques to identify coral families and species based on this data.

Nets to Roads: Innovative research to scale-up removal and repurposing of derelict fishing gear, $2,990,627
The Hawai‘i Sea Grant was awarded $2,990,627 to accelerate the removal of large plastic marine debris across the entire Hawaiian archipelago and recycle it into public infrastructure. The team will build and test an oceanographic model to forecast the arrival of large marine debris in nearshore waters of Hawai‘i to enable rapid at-sea removals, then create a centralized, relational database that captures critical information about each distinct large marine debris item at multiple stages. This project aims to contribute to a circular economy in which 40 tons of ocean plastics are recycled into public asphalt roads annually in the state of Hawai‘i.

Development of New Cutting and Lifting Technologies to Increase Efficiency of Derelict Fishing Gear Removal, $1,830,345
The Hawai‘i Sea Grant was awarded $1,830,345 to utilize unmanned aerial vehicles and test commercially available electric diver propulsion vehicles to determine the effectiveness of identifying and geo-locating large derelict fishing gear in Hawai‘i's shallow waters and reducing survey time. This project aims to develop innovative solutions for the mitigation and clean-up of derelict fishing gear in the Papahanaumokuakea Marine National Monument that, when scaled up, have the potential to positively impact derelict fishing gear removal efficiency worldwide.

Assessing opportunities for improved coastal data assimilation in ocean model analyses and seasonal forecasting systems, $739,040
Existing seasonal forecasting systems have poor skill predicting sea level anomalies for most of the U.S. East Coast and in the Gulf of Mexico. The poor capability of forecasting monthly sea level anomalies for the U.S. East and Gulf Coasts are especially disappointing because outlooks of high tide flooding in these regions would benefit from skillful predictions. Since coastal flooding occurrence is strongly influenced by monthly anomalies of sea level, better seasonal forecasts are highly relevant to improving resilience.

University of Hawai‘i at Manoa - Baseline Sea level Climatologies and Coastal Flood Monitoring and Reporting, $166,861
The objective of this work is to formulate a set of baseline water level climatologies and associated indicators that can be used to support coastal flood monitoring, prediction, and reporting. Products may include mean and extreme sea levels (e.g., magnitude and frequency) as well as wave and rain as measured by coastal gauges, buoys and satellites for the US including the Great Lakes. These baseline climatologies and flood indicators will be established for at least one region.

Olowalu Resilient Reef: Transformational Habitat Solutions from the Forest to the Sea, $9,909,551
This project will work from forest to sea to reduce land-based sources of pollution impacting the Olowalu Reef in West Maui. They will help stabilize soils by reforesting native plants, controlling feral ungulates, and reducing the frequency and intensity of fires in the watersheds above the reef. They will construct a sediment capture basin to prevent sediment from entering the ocean and begin plans for restoration of a wetland in the area. This project will incorporate Native Hawaiian traditional and cultural knowledge and will partner with community organizations to implement restoration and malama ʻāina (care for the land).

Transforming Habitat, Transforming Place: Community-led Restoration in Kealakekua, Hawaiʻi, $4,928,001
This project will restore 1,300 acres of coral reef and coastal habitats at Kealakekua Bay on Hawaiʻi. This mauka to makai (ridge-to-reef) effort will include expanding coral restoration and creating reef restoration training programs for community members. It will also include efforts to reduce erosion, sedimentation, and other land-based sources of pollution, and reduce human-caused degradation of coral reef and fish habitat, such as littering, coral trampling, and wildlife harassment.

Coastal Inundation Community of Practice Coordinator, $251,634
A nationwide Coastal Inundation Community of Practice (CoP) will unite adaptation and resilience experts to promote equitable engagement, reliable science, and local knowledge in decision-making for flood preparedness and resilience. Hawaiʻi Sea Grant will coordinate the CoP, leveraging Extension expertise for geographic representation and support. This effort will enhance understanding of coastal inundation knowledge, increased awareness of inundation products, improved communication between coastal practitioners and communities, and better-informed decisions on coastal flooding. Beneficiaries include diverse professionals and the coastal communities they serve.

IRA

Holistic Community-led Habitat Restoration in a Hawaiian Context, $8,008,721
This project will use a traditional Native Hawaiian-based ridge-to-reef strategy to restore habitat in the Niu, Kuli'ou'ou, and Wailupe watersheds in southeast Oʻahu. Restoration across the mountains, flatlands, and coral reefs of the bay itself will holistically build resilience across the ecosystem, supporting the many species and communities that rely on these habitats.

Pacific Islands Marine Debris Community Action Coalition, $299,987
The Hawaiʻi Sea Grant was awarded $299,987 to include partners in their Marine Debris Action Plan efforts throughout the Pacific region, such as Guam and American Samoa, who are disproportionately affected by marine debris due to their geographic locations and lack of sufficient waste infrastructure. The Coalition formed in this project will connect communities who have not been traditionally engaged with nonprofit organizations, government agencies, academic institutions and the business sector to build partnerships to more comprehensively and effectively address marine debris.

Developing dynamically constrained projections of ENSO activity and associated coastal hazards - An application to the Hawaiian and US-affiliated Pacific Islands, $537,833
El Nino-Southern Oscillation (ENSO) has widespread effects on weather, climate, and societies. While pronounced changes in ENSO intensity, patterns, and extremes are expected in the 21st century, multi-decadal projections of these changes remain highly uncertain, in large part due to climate model deficiencies and biases. Existing research has demonstrated potential for improving projections of ENSO changes by dynamically constraining future projections of key features of ENSO activity from state-of-the-art climate models.

University of Hawaiʻi at Manoa - CIMAR Climate Change and Fisheries, $423,013
This project seeks to demonstrate the ability to use numerical climate and oceanographic information to predict how a changing ocean will influence the distribution and growth of marine resources and their habitats around Hawaiʻi and the

United States Pacific Islands. These predictions will be used to estimate the shifts in fisheries catches and interactions with protected species. Combined with socioeconomic information, these predictions will facilitate improved climate-informed stock assessments and management strategies.

University of Hawai‘i at Manoa - CIMAR Essential Data Acquisition Project, $1,771,752
To prepare coastal communities and economies to be ready for and resilient to climate change impacts on the nation’s marine resources, advances in the acquisition and analysis of the data across disciplines is required to make informed decisions. The project informs effective marine resource management within the US affiliated Pacific Islands region by providing high-quality research to advance data acquisition in six key areas: (1) passive and active acoustics, (2) molecular tools/ ‘omics, (3) optical systems, (4) remote sensing, (5) social science, (6) data gap mitigation.

University of Hawai‘i at Manoa - Supporting Protected Species in a Changing Climate, $842,464
This project will use Cooperative Institute for Marine and Atmospheric Research expertise to develop and conduct research that supports protected species adaptation and resilience to climate change in the central tropical Pacific Ocean. Specifically, the project informs effective marine resource management for protected species within the United States-affiliated Pacific Islands region in two phases: Phase One entails research to fill information gaps and support recovery planning for threatened corals in Pacific Ocean; Phase Two entails research to fill information gaps about Hawaiian monk seal and sea turtle populations and their responses to climate change threats in the Northwestern Hawaiian Islands.

University of Hawai‘i at Manoa - Supporting Electronic Monitoring in Pacific Fisheries, $150,000
This project will use expertise from the Cooperative Institute for Marine and Atmospheric Research to develop and conduct research that support advancing electronic monitoring capabilities for Pacific fisheries by testing cloud-based storage and evaluating electronic monitoring software to optimize machine learning model integration. This proposal is focused on advancing these machine learning models by augmenting the training dataset with additional annotations to address data gaps, evaluating the efficacy of cloud-based data access and storage solutions, assessing review software, and exploring the application of machine learning models to infer data for automated catch and bycatch detection.

Fishery Management Councils, $1,743,477
The Western Pacific Regional Fishery Management Council (WPFMC) will use funding to enhance climate resilience and readiness and address climate-related challenges. This includes creating plans and actions for fishery management that can support underserved Pacific Island communities and creating products such as ecosystem status reports and assessments to support future climate-informed management decisions by the WPFMC.

HITIDE Studio: Guiding the Commercialization Voyage of Ocean-Based Climate Resilient Technologies, $250,000
This project will be a collaborative endeavor with ecosystem partners, both in Hawai‘i and outside Hawai‘i, in designing an accelerator program providing support to Hawai‘i startups to increase the potential for long term success, while leveraging University of Hawai‘i programs, experience and relationships with key partners.

Enhancing Coastal Resilience in the Pacific Islands, $5,000,000
PacIOOS will use this funding to support coastal resilience in the U.S. Pacific Islands, including Hawai‘i, American Samoa, Guam and the Commonwealth of the Northern Mariana Islands, through a focus on enhanced engagement and education, capacity sharing and the co-design of data visualization and decision-making tools — using wave, water and other ocean conditions — with Indigenous and other underserved coastal communities throughout the region.

Hawai‘i Coastal Zone Management Program FY2024 and FY2025 Inflation Reduction Act Regional Shoreline Resilience Project, $433,000
This funding will build the ability of Hawai‘i’s federally-approved coastal management program within the Hawai‘i Department of Business, Economic Development, Tourism’s Office of Planning and Sustainable Development to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, the Office of Planning and Sustainable Development will use these funds to refine the regional shoreline delineation methodology, to apply the methodology to priority shoreline areas statewide, and to integrate mapped regions in the Hawai‘i Coastal Atlas.

IRA Coastal Zone Management for the He’eia NERR, $400,000
This funding will build the ability of the He'eia National Estuarine Research Reserve within the University of Hawai‘i to implement projects, initiatives, and programs that increase the climate resilience of coastal communities within coastal counties. Specifically, He'eia NERR will use these funds to build the capacity of staff to engage in coastal restoration and resilience projects. Projects include the removal of invasive trees, the replanting of living infrastructures, the restoration of coastal native forest to create essential habitat for native birds and fishes. Additionally, the installation of food forests and edible landscaping will reduce the local community’s risk to food security in the face of climate change.

Ola i ka Lo‘i Wai (Life through Indigenous Knowledge), $3,400,000
Kākoʻo ʻŌiwi will use these funds to restore 40 acres within the reserve, using Indigenous knowledge relating to wetland agroecology (loʻi wai) as a means to increase community resilience in regard to climate change, food security, and economic stability. This project is based on Indigenous knowledge (Native Hawaiian) relating to the management of wetlands and estuaries.

Dune Restoration, Community Outreach, and Capacity Building Project at Hanapepe Salt Pond, Kaua‘i, $458,821
To develop and implement immediate design solutions to projected coastal impacts, such as dune restoration and other mitigative measures, and identify long-term solutions to preserve this hydrogeologically unique, historically significant, and actively cultivated wahi pana (special place) as this area is projected to experience severe impacts due to sea level rise under the 3.2 feet of sea level rise scenario. The Project will enhance coastal resilience by preserving this important gathering place and ecosystem and providing an important model for future projects along our shorelines in terms of nature-based solutions for erosion, wave runup, and passive flooding.

Aina restoration through community governance to advance climate resilience in the Hawaiian Islands, $68,497,799
The goal of this project is to reinvigorate the moku system (a Native Hawaiian framework for traditional land tenure and contemporary biocultural stewardship) to build a resilient future for the Hawaiian Islands. Actions include 1) conservation and restoration of watersheds: invasive species removed and native forests established to reduce wildfire risk and decrease sediment loading downstream; 2) community-based coastal stewardship: natural infrastructure built to protect communities and habitat; 3) restoring marine abundance: restoring loko iʻa (Native Hawaiian fishponds), limu (seaweed), and coral reefs to reinvigorate habitat and support thriving cultural and subsistence practices; 4) sharing knowledge and creating partnerships: strengthening networks of Indigenous and place-based organizations to engage in collective action and work towards common goals; 5) reducing risk and improving disaster resilience: establishing new green infrastructure projects and building capacity within at-risk communities; and 6) advancing community governance and co-stewardship models. *This project was funded through the Climate Resilience Regional Challenge.*

Empowering a resilient workforce for American Samoa, $1,748,942
To address the impacts of climate change in American Samoa, this project will strengthen critical infrastructure by empowering a resilient workforce in collaboration with the American Samoa Power Authority (ASPA), the Territory’s sole utility provider. The initiative includes training and certifying ASPA employees for climate-ready positions to tackle

challenges like sea-level rise. The goal is to fill approximately 110 vacancies within ASPA's 439-person workforce, enhancing the community's capacity to manage climate threats.

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