



Gulf of America
Coastal Ocean Observing System

2025 Annual Report

Introduction

GCOOS Board of Directors

The Gulf of America Coastal Ocean Observing System (GCOOS) emerged from early efforts to enable open data sharing via the web. The idea was to create software that could extract vast amounts of ocean data no matter the format from remote servers located at various host institutions. Dr. Worth Nowlin, GCOOS founding director, was involved in the initial development of the Open-source Project for a Network Data Access Protocol — today known as OPeNDAP — with Office of Naval Research funding through a project titled “Installation and Use of DODS (Distributed Ocean Data System) servers for the Gulf of Mexico region.”

In 2001, additional federal funding supported the installation of DODS servers at five Gulf institutions — creating the basis of a data sharing organization that would eventually become GCOOS. In 2005, during a stakeholder meeting in New Orleans, 88 attendees from sectors that included energy and other industry, academia, nonprofit and governmental organizations signed on to a Memorandum of Agreement to establish a regional ocean observing association in the Gulf.

As systems were developing for sharing ocean data in the Gulf region, parallel efforts were taking place to develop a nationwide ocean data sharing network as part of a Global Ocean Observing System (GOOS). That system would eventually become the U.S. Integrated Ocean Observing System, officially authorized by Congressional legislation in 2009.

GCOOS — one of the first ocean observing system regional associations developed as part of the IOOS network — has today grown to encompass:

- 1,783 sensors providing ocean data from 296 regional stations and 158 federal stations;
- 62 data-sharing partners;
- 194 voting and individual members.

The evolution of the regional association has been more than two decades in the making — nearly all of it on the cutting edge of data aggregation and integration, technology innovations and — especially — user-driven service delivery.

Today, GCOOS continues to work on the cutting edge — modernizing Gulf assets and adding new technologies to ensure that ocean data flows freely to the communities that need it to protect lives, support the region’s blue economy and maintain a healthy Gulf for the plants and animals that call it home. As we celebrate our 20th Anniversary, we’re also looking ahead to the next-generation technology that will help us continue to advance ocean science in the Gulf!



Jorge Brenner, Ph.D.
Executive Director
Gulf of America Coastal Ocean Observing System

Our Mission

The GCOOS mission is to provide on-demand information about the Gulf’s coastal and open ocean waters that is accurate, reliable and benefits people, ecosystems and the economy.

Executive Committee

Kimberly Yates, Ph.D.
Chair

Suraida Nañez-James
Vice Chair

Rafael Ramos, Ph.D.
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Sergio Jaramillo, Ph.D.

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Brian Roberts, Ph.D.

Nick Shay, Ph.D.

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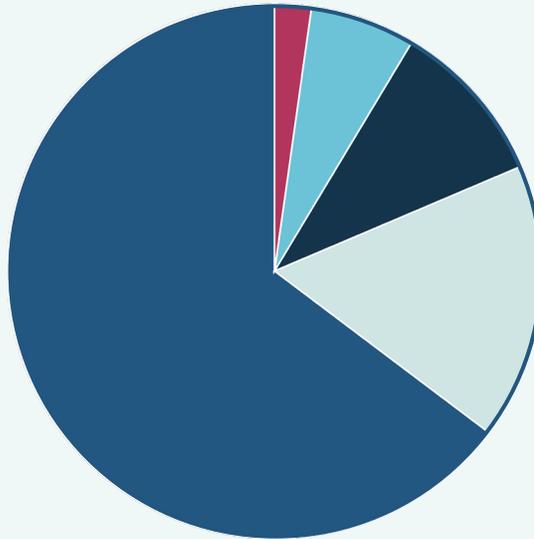
On the Cover: This compilation uses NASA images to show the distribution of muddy fresh water from the Mississippi River as it flows into the Gulf of America from New Orleans.



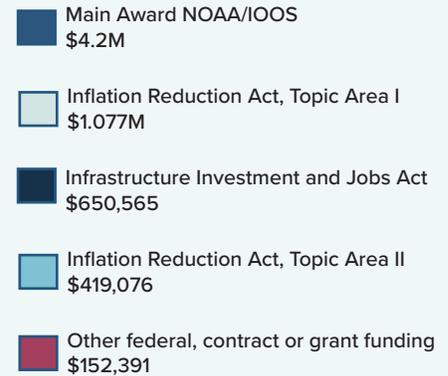
Funding the System

GCOOS core funding

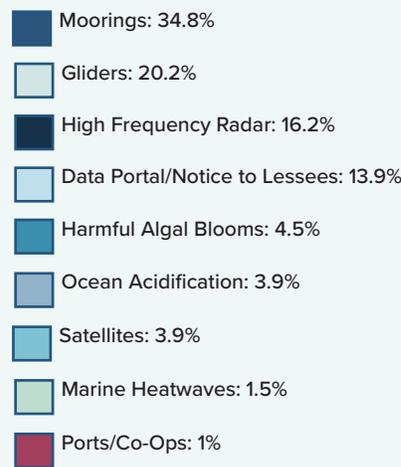
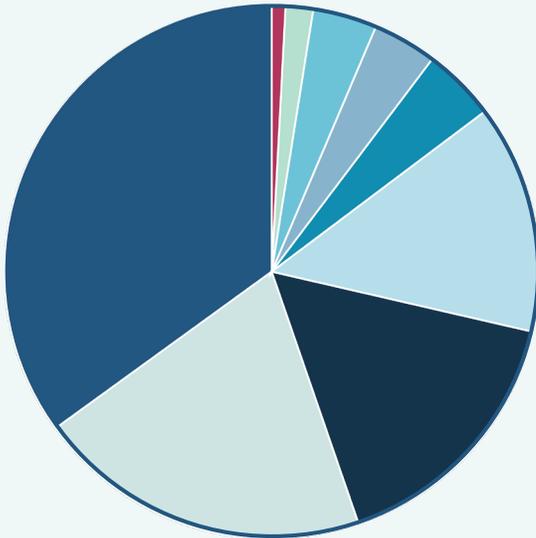
comes via a competitive award process through the National Oceanic and Atmospheric Administration's U.S. Integrated Ocean Observing System (IOOS). Core funding is typically awarded in five-year grant cycles. GCOOS is in year five of the current cycle. Additional funding typically comes through other federal legislation, grants and/or contracts.



Total Funding by Source in 2025

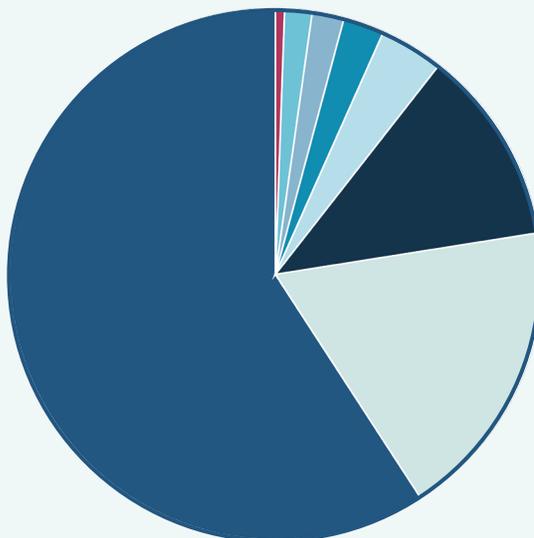


Percent of Main Award by Project or Asset Type



Since 2005, GCOOS has been working to build a robust, sustained, operational network in the Gulf of America that integrates physical, meteorological, biogeochemical, biological, bathymetric and other types of data critical to understanding our climate, as well as the short- and long-term impacts of changing weather patterns. The system's tools include hardware like Slocum gliders, as well as white papers and reports to help coastal communities understand and mitigate impacts from emerging ocean trends such as marine heatwaves.

GCOOS is housed within the Department of Oceanography at Texas A&M University. From there, the organization has built a network of Principal Investigators throughout the region that are focused on collecting oceanographic data and performing other essential ocean observing services. More than half of GCOOS's core funding is provided as sub-awards to this network via competitive process.



Expenses, Main IOOS Award



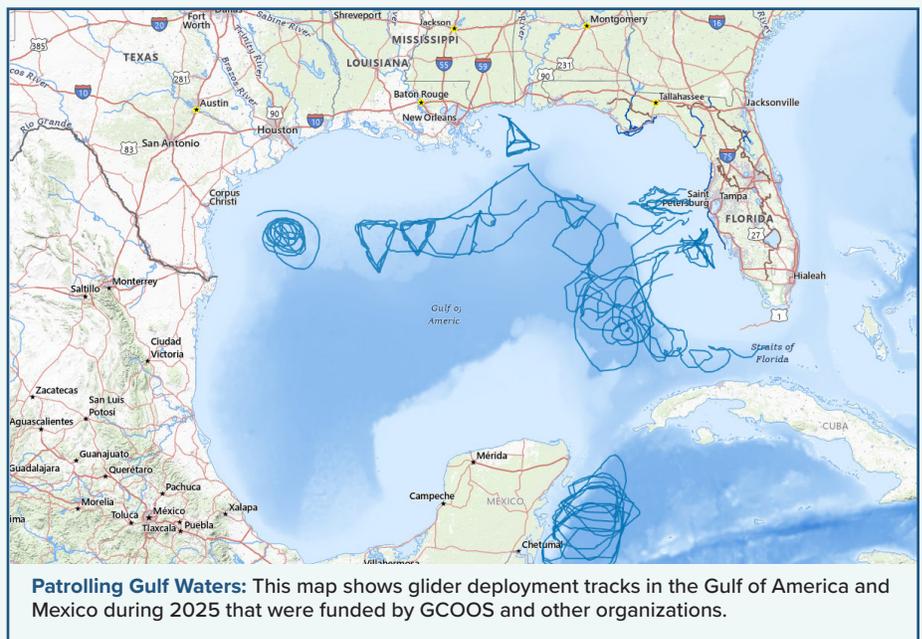
Data Platforms for Resilient Communities

The concept of the Slocum glider — an autonomous vehicle that could gather ocean data in near-real time — was proposed in 1989 as the Global Ocean Observing System was ramping up and GCOOS itself was getting started. Early on, GCOOS recognized the value of these mobile platforms and the variety of sensors they can carry. Gliders became a key component of the GCOOS Build-Out Plan and GCOOS investigators were at the forefront of developing new applications for gliders to gather a wider array of water quality data and even begin collecting acoustic data related to tagged and untagged marine life. The GCOOS Gulf Glider Task Team provided an early forum for scientists, manufacturers and others interested in developing a community of practice for the IOOS system. Today, gliders remain a key platform for gathering ocean data in the Gulf, and GCOOS and its partners and members remain at the forefront of testing new platforms to deliver data needed to keep communities safer.

Gliders and New Autonomous Vehicles

Uncrewed systems operate even during dangerous conditions, gathering and transmitting critical ocean temperature and salinity data in near-real-time that can be used immediately by hurricane modelers to help predict how and where storms will develop and how intense they could become. These factors are critically important for protecting lives in the face of destructive hurricane-force winds and storm surge. They can be outfitted with a wide array of sensors, operate for weeks at a time and regularly surface to transmit data while still on mission. Gliders have proven crucial for hurricane forecasting thanks to their ability to operate in dangerous conditions gathering water temperature and salinity information from within the water column — data that is critical for predicting hurricane intensification. In 2025, GCOOS supported eight glider deployments during hurricane season that provided 796 days of critical observations and funded replacements for two gliders lost as sea with the latest-generation Slocum vehicles.

The Gulf also continues to be a proving ground for new types of autonomous vehicles tested by GCOOS members as part of projects funded by other federal and industry partners.



- The University of Southern Mississippi teamed up with NOAA and the robotics company Oshen to support the launch of a new, small uncrewed surface vehicle (USV) called a C-Star to collect critical data to better understand hurricane development and activity. This small, wind-powered ocean robot became the first uncrewed surface vehicle to capture and transmit data from inside a Category 5 hurricane on Sept. 28, 2025, when it gathered data from the eye wall of Hurricane Humberto.
- GCOOS Principal Investigators at Mote Marine Laboratory are testing another new autonomous surface vehicle called a Seasat. This long-range autonomous vehicle was outfitted with a Mote-developed Programmable Hyperspectral Seawater Scanner (PHySS) — an optical scanner that collects water samples and uses hyperspectral light spectrometry to identify phytoplankton species associated with red tide and other harmful algal bloom events.



Testing New Platforms: This Seasat surface vehicle was tested as a platform for sensors designed to detect red tide in the Gulf.

Expanding the Gulf's Radar Network

High frequency radar (HFR) measures the speed and direction of ocean surface currents in near-real time. The information is crucial for conducting search and rescue operations, tracking contaminant spills and providing vital information for ship navigation safety, where immediate information about ocean height is necessary to move large vessels in and out of ports and channels.

Growing the network in the Gulf has been a key GCOOS priority for more than a decade. When the Deepwater Horizon oil spill occurred, data on the speed and direction of ocean surface currents — needed to track the spill — were lacking. By working with teams across the Gulf, GCOOS has expanded the Gulf's HFR network to 19 stations in the U.S. and two in Mexico, and continues to bridge gaps in high-priority areas.

In 2025, GCOOS restored HFR locations that were damaged by weather events at the Padre Island National Seashore and Surfside Beach, Texas.



Restoring HFR: High frequency radar deployments in the Gulf provide surface current and wave data to support U.S. Coast Guard search and rescue operations.

GCOOS Joins Coastal Webcam Network

GCOOS officially joined the Webcam Coastal Observation System (WebCOOS) project being implemented nationwide by the Southeast Coastal Ocean Observing Regional Association (SECOORA) with NOAA funding. This network supports quantitative scientific analysis, public safety and resource management for coastal municipalities, scientists and local communities. WebCOOS includes cameras across all 11 of the IOOS regional associations.

The University of Texas at Austin has installed two real-time cameras — facing east and west — on the roof of the Pier Lab in Aransas Pass, the point of access to the Port of Corpus Christi, the largest crude oil export gateway in the U.S. and the third-largest port by total waterborne tonnage. The Pass connects the Gulf with a network of estuarine systems and is also used by commercial fishers and recreational anglers.

GCOOS has also installed east- and west-facing cameras on the Tidewater Beach Resort at Panama City Beach, Florida.



Collecting Ocean Data: Webcam deployments can be used to monitor visibility, ship traffic and even bird nesting and feeding hot spots.

Buoys Protecting Lives

Dauphin Island Sea Lab (DISL) has launched a new Sofar Spotter buoy as part of the Alabama Real-Time Coastal Observing System (ARCOS) to help support National Weather Service (NWS) rip current forecasting and general maritime safety. Sofar buoys are a boon to ocean data collection because they're a less expensive, smaller, more easily deployable platform that can collect and transmit data in real time.

The Alabama wave buoy was funded by GCOOS as part of the Supporting Coastal Resilience with Inflation Reduction Act supplemental NOAA-IOOS award. The buoy collects and reports significant wave height, mean wave direction, surface water temperature, and barometric pressure and enhances the NWS-Alabama rip current advisories and validates their predictive models. It was installed about 10 miles south of Dauphin Island and DISL is working to install a second buoy south of Pensacola Beach.

GCOOS and the Southeast Coastal Ocean Observing Regional Association (SECOORA) helped to support the installation of a new Sofar spotter buoy in the Flower



Data for Rip Currents: Sofar buoys off the Alabama coast are being used in rip current forecasts.

Garden Banks National Marine Sanctuary. The buoy was deployed in the Sanctuary's West Bank and outfitted to collect data on wave height, wind speed, temperatures from the surface and reef cap depth, as well as dissolved oxygen data from the midwater column and at reef cap depth. This buoy provides important real-time information for FGBNMS staff and visitors to assess offshore conditions and the data can also be tracked historically to see changes over time.

New GCOOS Products Make Gulf Data Accessible

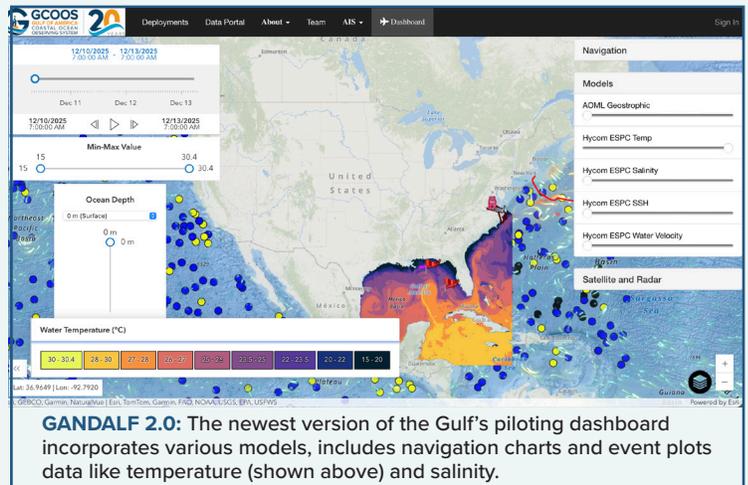
GCOOS and its partners deliver ocean observing products designed to make quality assured Gulf data more connected, transparent and accessible. From mariners and offshore energy operators to scientists, educators and coastal communities, stakeholders can access platforms that integrate real-time observations, forecast models, regulatory datasets and biological information through data portals that are increasingly intuitive and customizable. Each product launched or upgraded in 2025 reflects a strategic investment in technologies that not only enhance data availability but also elevate how that data can be explored, interpreted and applied to real-life situations.

Supporting the Hurricane Prediction Fleet

Hurricane modelers and forecasters rely on ocean temperature and other data from autonomous vehicles to help predict storm development, intensity and even movements. GCOOS developed a tool nicknamed GANDALF — the Gulf of America AUV Network, Data Archive and Layer Fusing — to track these vehicles, help pilots plot their courses and visualize data they gather.

In 2025, GCOOS released GANDALF 2.0, which offers significant improvements in rapid layer loading, new legends and three-day hind-, now- and forecast animations on the model outputs. We've also added the NOAA Electronic Navigational Charts (ENC) General Charts as a new tile layer that is much more performant and contains far more detail. GANDALF also now offers water temperature and salinity anomaly comparisons that are run automatically and updated in near real-time.

In 2025, GANDALF tracked a record 39 autonomous underwater vehicle deployments across the Gulf of America, Caribbean and Atlantic coastal waters. Missions accumulated more than six years of continuous ocean observations. In addition to gathering data for hurricane prediction and science, GANDALF also supports scientific



advances in red tide monitoring, Loop Current tracking and even right whale conservation.

■ Online at <https://gandalf.gcoos.org>

Ocean Data for Species Tracking and Recovery

GCOOS launched the CETACEAN (Compilation of Environmental, Threats, and Animal Data for Cetacean Population Health Analyses) data portal in 2024. This five-year project compiles data needed to restore offshore cetacean populations — including common bottlenose dolphins, Atlantic spotted dolphins, Rice's whales and sperm whales — injured during the Deepwater Horizon spill. In 2025, the GIS-based data portal received 1.2 million views; GCOOS has also completed collection of priority population datasets, compiled information on human-induced threats and developed an educational curriculum to help students learn how to use ocean data.

GCOOS has also created the Sea Turtle Atlas, another GIS-based portal that compiles population and anthropogenic threat data on Gulf sea turtle species. The portal includes a log-in so proprietary data can be hosted securely.

The Atlas and CETACEAN were funded by the Open Ocean Trustee Implementation Group for the Deepwater Horizon Natural Resource Disaster Assessment via the National Marine Fisheries Service.

GCOOS is also developing a new acoustic database for Rice's whales, one of the world's rarest and most endangered cetacean species. This newly recognized species of baleen whale is estimated to have a population of only about 51



individuals in the Gulf and faces severe threats from vessel strikes, noise, pollution and fishing gear. Working with the University of South Florida and NOAA on a project funded by Florida RESTORE, GCOOS is developing an acoustic database to study the species and prevent its extinction. The AI classifier being developed by GCOOS will also be trained to recognize right whales and the commercially important black grouper.

■ Online at <https://cetacean.gcoos.org> and <https://seaturtleatlas.gcoos.org>

Transforming Data into Actionable Intelligence

Since 2021, GCOOS has been hosting the Bureau of Safety and Environmental Enforcement (BSEE) Notice to Lessees and Operators (NTL) data. This portal provides offshore operators, researchers and managers with access to crucial oceanographic/metocean (meteorological and oceanographic) data required by BSEE regulations, and transforms it into an actionable resource for both industry compliance and broader environmental stewardship and safety.



Regulatory Data Viewer: By law, energy platforms in the Gulf gather ocean data. By making this information widely available, GCOOS is helping to improve industry safety and environmental stewardship.

The GCOOS portal helps to ensure regulatory compliance, inform environmental safety, support storm preparedness (like hurricane tracking), and offer critical insights for ecosystem management and emergency response in the Gulf. It also centralizes data that was previously scattered, making it easier to visualize trends, understand environmental conditions, and meet reporting mandates for offshore energy activities. Based on feedback from BSEE and operators, GCOOS has upgraded the portal with new features, including:

- Selective plotting of active and inactive stations;
- Visualization of the latest HYCOM model (ESPC-D-V02);
- Representation of Argo floats;
- Integration of high frequency radars (HFRs) and gliders.

The portal collects data from 49 active stations while also retaining records from all previously active stations, boasting more than 670 million ocean current data points and more than 12 million seawater temperature data points. As new data is received, the map dynamically animates station locations and preliminary data is plotted accordingly.

- Online at <https://ntl.gcoos.org>

Tracking an Emerging Trend

The world's oceans are getting hotter — global sea surface temperatures and heat in the upper ocean reached historical records in 2024. Warming trends continued in 2025 on sea and on land, with the U.S. experiencing a prolonged heat dome across much of the nation in July and record-high temperatures in Florida, the Mid-Atlantic, Northeast and Great Lakes regions. Warmer ocean temperatures can mean more frequent and more intense hurricanes, but that's just one impact. Marine heatwaves (MHW) — warmer than normal water temperatures over an extended period — can impact fisheries, coral reefs, energy production and even inland temperatures for coastal communities.

In addition to creating a series of actionable intelligence reports on MHWs, GCOOS has partnered with the University of South Alabama/Dauphin Island Sea Lab (DISL) to develop an Interactive Marine Heatwave Analysis Tool that allows users to analyze marine heatwave data from Gulf monitoring stations using interactive analysis tools.

Gulf and Caribbean Marine Heatwave Impacts

Overview: Coastal Ecosystems, Communities, and Industries

Marine heatwaves (MHWs), extended periods of higher-than-normal ocean temperatures, have myriad impacts on coastal and marine ecosystems, communities, and industries. Through their influence on weather and storms, they can also have impacts that extend further inland. Here we provide an overview of the impacts of MHWs on coastal communities in the Gulf of America (hereafter "Gulf") and Caribbean, organized loosely into economic, sociocultural, health, governance, and species/ecological impacts.

MHWs can influence regional weather. Specifically, they are associated with hotter and more humid conditions in coastal regions, more severe thunderstorms in the southeast U.S., and higher risk of more and more intense tropical cyclones. Both hurricanes and tornadoes are exacerbated by — but do not require — MHWs to form. Therefore, for the sake of space, we will not discuss the impacts of thunderstorms and tropical cyclones, and instead focus on the impacts of elevated ocean temperatures and corresponding high temperature and humidity in coastal regions.

This document serves as an overall general reference of issues on the science and impacts of MHWs. More detailed information is contained in a series of short reports focused on:

- Terrestrial Agriculture and Silviculture
- Coastal and Urban Temperature and Humidity
- Corals
- Northern and Southern Quagga Clams
- Recreational Fishing
- Energy Infrastructure
- Fisheries
- Harmful Algal Blooms
- Marine Birds, Mammals and Sea Turtles
- Eastern Oyster
- Seagrass
- Seagrass
- Tropical Cyclones/Hurricanes
- Utilities

Additionally, these short reports on agriculture, fisheries, and energy infrastructure include details of industry-specific impacts.

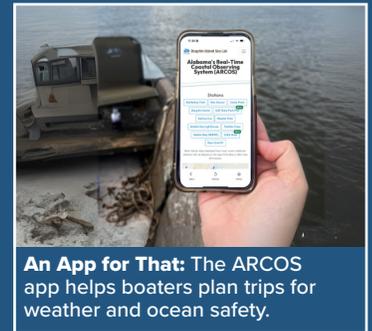
Ocean heat content during hurricane season. Marine heatwaves (MHWs) occur more frequently during hurricane season. Photo: NASA

Marine Heatwaves: Prolonged MHWs can have profound weather impacts even far inland. New GCOOS reports and a website can help communities mitigate effects.

- Online at <https://gwu.gcoos.org/mhw/>

New App for Alabama Boaters

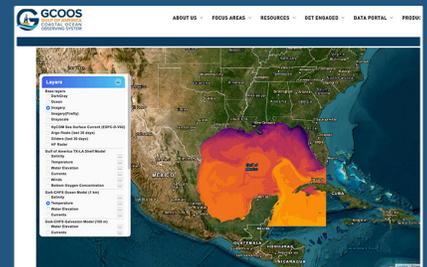
GCOOS member Dauphin Island Sea Lab has updated its Alabama Real-Time Coastal Observing System (ARCOS). It has also developed a new app for coastal Alabama that allows boaters to check weather conditions across Mobile Bay on their smart phones. The free app — available for iOS and Android — helps users make informed boating decisions.



An App for That: The ARCOS app helps boaters plan trips for weather and ocean safety.

Forecast Models for a Safer Gulf

GCOOS has released version 2.0 of its Regional Model Handler/Viewer (ReMHV). The ReMHV is an online platform that allows users to visualize and analyze various oceanographic and meteorological data for the Gulf and integrates real-time observations with simulated data (like currents, temperature, wind) in a map-based interface.



Collecting Ocean Models: The ReMHV brings the top 10 Gulf metocean models into a single viewer, allowing users to integrate real-time information with predictions for a powerful tool that helps to protect public safety.

- Online at <https://modelhandler.gcoos.org>

GCOOS News in Brief

Reauthorizing the Nation's Ocean Observing System

GCOOS was invited to the Hill this year for hearings on the reauthorization of the act that created the national Integrated Ocean Observing System (IOOS). This year's reauthorization bill, introduced as H.R. 2294 by U.S. Rep. Mike Ezell (R-Mississippi) in March, underpins the nationwide ocean observing network dedicated to providing critical infrastructure that supports national security, economic resilience, efficient maritime commerce and public health and safety. The bill creating IOOS was initially enacted in 2009 and reauthorized in 2020 under the first Trump administration.

In May, GCOOS Board Member Dr. Stephan Howden, Professor at the University of Southern Mississippi and Director of the Hydrographic Science Research Center, who has helped lead GCOOS for more than two decades, was invited to testify at Congress in support of Rep. Ezell's bipartisan bill. The bill will reauthorize IOOS for the next five fiscal years, maintaining its authorized funding level at \$56 million annually. In July, the bill was passed by the House Natural Resources Committee.



Ensuring the Future of the Nation's Ocean Observing System: "Reauthorizing [IOOS] it is not just smart policy — it's essential for public safety, national defense, economic growth, and resilience," said GCOOS Board member Dr. Stephan Howard during his testimony.

GCOOS, Gulf Alliance Renew MOU

GCOOS and the Gulf of America Alliance (GOAA) renewed their longtime partnership with an updated collaboration agreement in May during the GOAA All-Hands Meeting in Biloxi after the meeting's opening plenary. Through this updated agreement, GCOOS and GOAA renewed their commitment to collaborating on data and data accessibility, outreach, education and other projects as opportunities arise.



Signing Ceremony: Laura Bowie, Executive Director of the Gulf of America Alliance (left) and Dr. Jorge Brenner, Executive Director of GCOOS, sign a new memorandum of understanding to formalize the organizations' collaborative relationship in May 2025.

Board of Directors Updates

In the fall, GCOOS welcomed newly elected and returning members to our Board of Directors:

- Newly elected: Nick Gagliano, Kongsberg Discovery, representing the private sector.
- Re-elected members: Government sector: Dr. Pat Hogan, NOAA's National Centers for Environmental Information (NOAA-NCEI); academic sector: Dr. Stephan Howden, University of Southern Mississippi; outreach and education Sector: Dr. Nan Walker, Louisiana State University's Earth Scan Laboratory.
- New Appointment: Dr. Sergio Jaramillo, Shell Global Solutions US Inc., representing the private sector.

GCOOS also thanked retiring board members for their long service and dedication to ocean observing in the Gulf:

- Jan van Smirren, DHI Water and Environment and Ocean Sierra, LLC, a 20-year Board member who served as GCOOS' long-time Treasurer;
- Dr. Ruth Perry, who served on the Board for nearly a decade. We congratulate Dr. Perry on her new role as Acting Principal Deputy Assistant Secretary in the Bureau of Oceans and International Environmental and Scientific Affairs for the U.S. State Department;
- Thomas Wissing, of the U.S. Naval Oceanographic Office.

GCOOS Staff News

GCOOS welcomed three new staff members in 2025:

Marcus Ogle, GCOOS Associate Director. Marcus is an oceanographer, metocean engineer and project manager specializing in offshore environmental monitoring, data analysis and marine operations. Throughout his career, he has managed large-scale offshore projects across the Americas for industry leaders such as Fugro, Shell, BP and Chevron. Marcus holds a Master of Science in Oceanography and a Bachelor of Science in Meteorology from Texas A&M University.



Dr. Natalia López Figueroa, 2025-26 Gulf Science Policy Fellow with the National Academies of Sciences, Engineering and Medicine at GCOOS and Coordinator for the Gulf of America Coastal Acidification Network (GCAN). Natalia earned her Ph.D. in Marine Science from the University of South Florida (USF) and holds an M.Sc. in Biology from Hampton University, and graduate certificate in Academic Advising from USF and a B.Sc. in Coastal Marine Biology from the University of Puerto Rico Humacao. In November, Natalia was recognized with the inaugural Ansley Abraham Outstanding Sloan Scholar Graduate Award by the Alfred P. Sloan Foundation.



Pallavi Tummeti, GCOOS GIS Administrator and Developer. Pallavi joins our Data Management and Cyberinfrastructure Team to expand the GCOOS Enterprise GIS infrastructure, collaborate closely with CETACEAN, the



Sea Turtle Atlas and other existing projects, and support development of new data visualization platforms for GCOOS. Pallavi holds a Master's degree in Information Systems from Saint Louis University, and a Bachelor's degree in Civil Engineering from India.

And a special congratulations go to GCOOS Program Assistant Laura Caldwell for celebrating her 30 (plus)-year anniversary with Texas A&M University, GCOOS's host institution. Caldwell joined the university staff in 1991 and later began working at GCOOS after its official incorporation in 2005. Laura officially "retired" from TAMU/GCOOS in June 2019, but we were able to bring her back into the fold part time as our Program Assistant.

Matt Howard Fellowship Award

Dafrosa Kataraihya received the GCOOS Matt Howard Fellowship in 2025. Kataraihya is a Ph.D. student in Earth Systems Sciences at Florida International University studying sea level variability and coastal flooding hazards in the Gulf states with an interest in using ocean data to provide actionable insights that support coastal resilience and sustainable management. Kataraihya, a hydrographer & oceanographer, data analyst, and ocean sciences researcher, has a master's degree in hydrography and oceanography from the University of Genova, Italy, and a bachelor of science degree in geomatics from Ardhhi University, Tanzania.

The Fellowship is supported through the Howard Scholarship Fund, named in honor of Dr. Matt Howard, a founding GCOOS member and TAMU oceanographer. Scan the QR code to donate to the fund today!



GCOOS Anniversary Celebration in April 2026

In April 2026, GCOOS will host its official 20th Anniversary Celebration during its in-person Spring Members' Meeting, rescheduled from the Fall due to the lapse in federal appropriations.

GCOOS started as a visionary idea back in the 1990s, then officially hosted by Texas A&M University (TAMU) in 2005. In 2013, GCOOS officially incorporated as a nonprofit organization and continues to be hosted by TAMU. Today, GCOOS has more than 30 principal investigators and 62 partners providing data from 1,783 Gulf sensors via 454 regional and federal stations. GCOOS has 194 institutional and individual members. Over two decades, GCOOS leaders have been working to build a robust, sustained, operational observing system that integrates physical, meteorological, biogeochemical, biological, bathymetric and other types of data critical to understanding our climate, as well as the short- and long-term impacts of changing weather patterns. Please be sure to watch our newsletter and website for Anniversary Celebration planning updates!



*Celebrating
Two Decades of
Ocean Observing
in the Gulf!*

GCOOS Spring Members' Meeting
& Anniversary Celebration
• April 2026

 **GCOOS**
GULF OF AMERICA
COASTAL OCEAN
OBSERVING SYSTEM

 **20**
YEARS

- Not already receiving our news? Please sign up at www.GCOOS.org/newsletter

Principle Investigator	Organization	Project
Main GCOOS Award-Funded Projects		
Dr. Zach Cobell & Hugh Roberts	The Water Institute (TWI)	Evaluation of operational modeling frameworks and model coupling for water-level forecasting
Dr. Steve DiMarco & Dr. Tony Knap	TAMU's Geochemical and Environmental Research Group (TAMU-GERG)	Maintenance and Operation of the Texas high frequency radar (HFR) network; system upgrades to the Texas automated buoy system; Glider operations in support of tropical cyclone intensification forecasts
Dr. Brian Dzwonkowski	Dauphin Island Sea Lab (DISL)	Gulf of Mexico harmful algal bloom (HAB) pilot testbed project; coastal monitoring from Alabama's real-time coastal observing system (ARCOS)
Dr. Chris Fuller	Rates Inc.	Galveston Bay and Sabine Lake HFR networks (repair funds)
Felimon Gayanilo	TAMU-Corpus Christi (TAMU-CC)	Support services to maintain and enhance interoperable data portals for GCOOS and OA monitoring at a coastal bay in Texas
Dr. Darren Henrichs & Dr. Lisa Campbell	Texas A&M University (TAMU)	Texas Observatory for Algal Succession Time Series (TOAST) — high-resolution time series for observations of long-term trends and prediction of HABs in Texas
Dr. Sharon Herzka	University of Texas Marine Science Institute (UTMSI)	Validation and monitoring of holoplanktonic sargassum along the Texas coastal bend
Dr. Stephan Howden & Dr. Arne Dierks	University of Southern Mississippi (USM)	Sustained coastal monitoring of surface currents in the Mississippi Bight through the Central Gulf of Mexico Ocean Observing System; northern Gulf of Mexico glider sentinel line; ocean acidification (OA) monitoring in the hypoxic zone of the Louisiana Shelf
Dr. Ken Hoadley & Dr. Behzad Mortazavi	University of Alabama (UA)	HAB pilot testbed project
Kevin Claridge & Reilly Maguire	Mote Marine Laboratory (MML)	Maintenance and augmentation of an existing HAB observatory
Chad Lembke, Dr. Chuanmin Hu, Dr. Mark Luther & Dr. Frank Muller-Karger	University of South Florida (USF)	Maritime transportation, satellite Earth observations and glider deployments
Dr. Robert Leben	University of Colorado (UC)	Continued development of the Gulf of Mexico Coastal Ocean Observing System with satellite altimetry data
Dr. Chunyan Li & Dr. Nan Walker	Louisiana State University (LSU)	Satellite remote sensing
Dr. Eric Milbrandt	Sanibel-Captiva Conservation Foundation (SCCF)	Real-time water quality and weather for Southwest Florida from the River, Estuary and Coastal Observing Network (RECON)
Dr. Beth Stauffer	University of Louisiana-Lafayette (ULL)	Building a nutrient-sensing network in the northern Gulf of Mexico, Phase I
Infrastructure Investment and Jobs Act		
Kevin Claridge & Reilly Maguire	MML	Expanding Horizons: Acquisition of a New Underwater Glider to Enhance Fleet Capacity and Mission Capabilities
Dr. Brian Dzwonkowski & Pat David	DISL	Real-time water current velocity and wave data for ARCOS
Dr. Chris Fuller	Rates Inc.	Galveston Bay and Sabine Lake high frequency radar networks: modernization and recapitalization
Felimon Gayanilo	TAMU-CC	GCOOS DMAC modernization and resilience building
Dr. Cathrine Hancock & Kevin Speer	Florida State University (FSU)	HFR network expansion, Florida Panhandle

Principle Investigator	Organization	Project
Infrastructure Reinvestment and Jobs Act cont'd		
Dr. Stephan Howden & Dr. Arne Dierks	USM	Continued Infrastructure for the Central Gulf of Mexico Ocean Observing System
Chad Lembke	USF	USF glider fleet component
Dr. Natalia Sidorovskaia	University of Louisiana at Lafayette (ULL)	GCOOS/NOAA Infrastructure Procurement with USF
Inflation Reduction Act Funded Projects		
Dr. Sue Lowerre-Barbieri	University of Florida (UF)	Integrated Tracking of Aquatic Animals in the Gulf of Mexico (iTAG): building membership, a database and national and international tracking capacity
Dr. Matt Bethel	LSU	Supporting Coastal Resilience with the Pointe-au-Chien Indian Tribe (PACIT) through inundation sensor technology and traditional ecological knowledge
Dr. Brian Dzwonkowski	DISL	Expanding the availability of real-time wave data to support rip-current prediction in the Mississippi Bight
Dr. Chris Fuller	Rates Inc.	Operation and maintenance of the Galveston Bay and Sabine Lake HFR networks
Felimon Gayanilo	TAMU-CC	BSEE/NTL continuing maintenance and system synchronization with Bureau of Ocean Energy Management (BOEM) records
Dr. Cathrine Hancock	FSU	Florida Panhandle HFR station operation and maintenance
Dr. Stephan Howden	USM	Publicly providing surface currents and waves data from western Mississippi Sound
Mike Lee	United States Geological Survey (USGS)	Expansion of OA monitoring in the Gulf of Mexico and development of a GCOOS-OA monitoring network and data delivery approach – Galveston Bay/Tampa Bay pilot study
Chad Lembke	USF	Gulf of Mexico ecosystem monitoring with underwater gliders
Dr. Antonietta Quigg	TAMU-Galveston (TAMU-G)	Connecting the dots: utilizing data from a bench-top Imaging FlowCytobot (IFCB) to provide information on phytoplankton community dynamics while monitoring for HAB species
Dr. Rafael Ramos	Woods Hole Group (WHG)	Quality Assurance/Quality Control (QA/QC) and curation of NTL current profile measurements in the Gulf of Mexico
Dr. Brian Roberts	Louisiana Universities Marine Consortium (LUMCON)	Environmental monitoring network: providing critical data to the Gulf Coast community
Dr. Brian Roberts	LUMCON	Environmental monitoring network: Providing Critical Data to the PACIT community
Disaster Supplement Funded Projects		
Kevin Claridge and Reilly Maguire	MML	Replacing a programmable hyperspectral seawater scanner (PHySS)
Dr. Eric Milbrandt	SCCF	Rebuilding the River, Estuary and Coastal Observing Network (RECON)

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With 194 voting and individual members and 62 data-sharing partners, GCOOS is the only certified, comprehensive data collection and dissemination center for coastal and ocean data in the Gulf. As the regional component of the U.S. Integrated Ocean Observing System, GCOOS coordinates ocean data gathered from 1,783 sensors on 296 regional stations and 158 federal stations in the Gulf's coastal to deep ocean waters, ensuring that it is timely, reliable, accurate and freely available to all who need it.

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- Increases public and professional awareness of your activities and programs and helps you gain broader impact by sharing your data more widely through targeted outreach and communications support;
- Provides letters of support for proposals.

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- Participating on GCOOS councils, committees and task teams.

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Key Access Points for GCOOS Data and Products

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- GCOOS.org

Main Data Portal

- data.gcoos.org

GCOOS ArcGIS Site

- gcoos.maps.arcgis.com

Data by Type

- Moorings and coastal stations: data.gcoos.org
- High frequency radar: data.gcoos.org/hfradar
- Autonomous underwater and surface vehicles: gandalf.gcoos.org
- Bureau of Safety and Environmental Enforcement (BSEE) Notice to Lessees (NTL): ntl.gcoos.org
- Water quality: wq.gcoos.org/
- Estuary nutrient monitoring pilot project: wq.gcoos.org/sensor_pilot
- Historical meteorology: boem.gcoos.org
- Models: modelhandler.gcoos.org/

Key Current and Historical Repositories

- Cetacean species in the Gulf: cetacean.gcoos.org/
- Sea turtles in the Gulf: seaturtleatlas.gcoos.org
- Marine Heatwaves in the Gulf: gwu.gcoos.org/mhw/
- Oceanographic and meteorological data and near-real-time data from in-situ observing systems: erddap.gcoos.org/erddap
- Biological and socioeconomic data: gcoos4.tamu.edu/erddap
- Historical collection of oceanographic and meteorological data: gcoos5.geos.tamu.edu/erddap

Data Products for the Public

- The Red Tide Respiratory Forecast: www.RedTideForecast.com
- All Things Beaches: all-things-beaches-tamu.hub.arcgis.com/
- Offshore wind assessment tool: experience.arcgis.com/experience/dda5a6fc6a1b485da0418ded885641b7



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