

## OTHER NOS SERVICES

When a disaster is imminent or strikes unexpectedly, NOS is prepared to provide a broad range of scientific, technical, and policy experts to support the response and inform recovery. When a Stafford Act declaration is made, this support may or may not require the issuance of a FEMA Mission Assignment depending on the scope of the disaster, cost of the service, and the length of time NOS experts are reassigned from their normal, appropriated duties and missions. The issuance of a Mission Assignment for a Coastal Advisor would provide FEMA and others with direct access to an NOS expert who would facilitate the delivery of other NOS expertise and services as might be needed.

This document and other information on NOS response capabilities, including links to NOS services, can be accessed at [oceanservice.noaa.gov/disaster-response/](https://oceanservice.noaa.gov/disaster-response/). Examples of other NOS services that could be valuable for preparedness, response, and recovery include:

### CAMEO

Computer-Aided Management of Emergency Operations: A software suite designed to help prepare for and respond to chemical emergencies.

### GNOME

General NOAA Operational Modeling Environment: A software modeling tool used to predict how oil and other pollutants might move and spread on the water.

### ERMA

Environmental Response Management Application: An online mapping tool integrating static and real-time data in an easy-to-use format for environmental responders and decision-makers.

### ESI Maps

Environmental Sensitivity Index Maps: Provide a concise summary of coastal resources at risk for contamination.

If you have questions regarding this document or NOS services, please go to [oceanservice.noaa.gov/disaster-response/](https://oceanservice.noaa.gov/disaster-response/) or contact NOS at [nos.responseinfo@noaa.gov](mailto:nos.responseinfo@noaa.gov).

### Digital Coast

A NOAA-sponsored partnership and website focused on helping communities address coastal issues by providing tools, training and data on everything from economic data to satellite imagery.

### Storm QuickLook

A product that provides a synopsis of near real-time oceanographic and meteorological observations at locations affected by a tropical cyclone.

### PORTS®

Physical Oceanographic Real Time System: A NOS service to deliver real-time oceanographic and meteorological data designed primarily for mariners, but with applications for coastal management and emergency operations.

### IOOS®

Integrated Ocean Observing System: A network of regional ocean observing systems designed to track, predict, manage and adapt to changes in the ocean, coastal and Great Lakes environment.

## Services in Support of Disaster Response:

# EXPERTISE AND CAPABILITIES OF NOAA'S NATIONAL OCEAN SERVICE

NOAA's National Ocean Service provides expertise and services to inform and assist disaster response, especially along the coast. NOS works closely with NOAA's National Weather Service to ensure first responders have forecasts and warnings of potential impacts before, during and after an event.

In the spirit of FEMA's "whole community" approach, NOS is committed to improving the nation's capability to prepare for, protect against, respond to, recover from and adapt to natural and man-made hazards. A fundamental step—and the purpose of this document—is to inform others of NOS capabilities.

NOS expertise and services stem from its long-standing, core Federal missions to build and maintain the Nation's nautical charts, water level network, and spatial reference system. NOS serves as the scientific support coordinator to the U.S. Coast Guard for marine oil and chemical spills, is home to NOAA's marine debris program, and has extensive expertise in marine toxicology. Also, as the administrator of the National

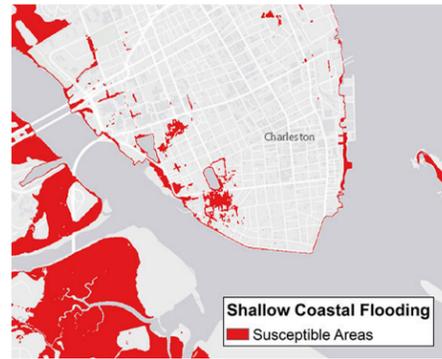
Coastal Zone Management Program, Integrated Ocean Observing System, and other services, NOS has long-standing relationships with coastal states, communities, academia and non-governmental partners that can be leveraged to support disaster response.

In 2015, FEMA approved six NOS Pre-Scripted Mission Assignments (PSMAs). The key PSMA is for a Coastal Advisor to be dispatched to the FEMA response center(s). This advisor will serve as a conduit to the full-range of NOS expertise and services that might support the response. Whether this support is provided with or without issuing a formal Mission Assignment would depend on the scope and circumstances of each disaster.

Whether it be: (1) providing the most recent nautical chart, (2) linking responders to an NOS scientific or technical expert, or (3) putting boots on the ground, the Coastal Advisor will ensure responders have the best information NOS has to offer.



## FEMA-Approved Pre-Scripted Mission Assignments for the National Ocean Service



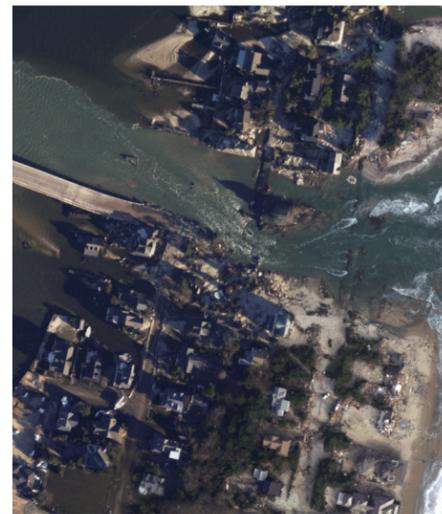
### COASTAL ADVISOR(S) – EMERGENCY SUPPORT FUNCTION (ESF) 5

*To be dispatched to FEMA to support coastal response and facilitate the provision of additional NOAA/NOS personnel and services as requested.*

Upon FEMA's request, NOAA will deploy staff to FEMA's National Response Coordination Center, Regional Response Coordination Center, Joint Field Office and/or other teams. The NOAA coastal advisor will serve to inform FEMA, other federal partners, and impacted states of relevant NOAA/NOS capabilities and resources and facilitate the delivery of NOAA/NOS science, technical, management and natural resource services.

### AERIAL IMAGERY – ESF 5

*To assist in planning and to rapidly acquire and deliver high-resolution aerial imagery to facilitate emergency response and inform damage assessments.*



As requested by FEMA or the State/Territory/Tribe in coordination with FEMA, NOS experts will participate in interagency planning and coordination activities to execute survey operations in the most efficient and expeditious manner. NOS will rapidly collect, process, and deliver high-resolution imagery and/or Light Detection and Ranging (LIDAR) data as directed. These data and images can support evacuations, facilitate search and rescue efforts, identify hazards and HAZMAT spills, locate errant vessels, and damage assessments through the comparison of before-and-after imagery. The support may include the pre-positioning, mobilization/demobilization of a NOAA aircraft with remote sensing aerial survey crew.

### HYDROGRAPHIC SERVICES – ESF 1

*To locate submerged obstructions and support safe emergency response operations and the rapid reopening of waterways for delivery of emergency supplies and resumption of commerce.*

As requested, NOS will conduct emergency hydrographic surveys to support search and recovery, obstruction location, and vessel traffic rerouting in ports and waterways. NOS will deploy to the Marine Transportation System Recovery Unit in the U.S. Coast Guard Incident Command System Planning Unit and coordinate with FEMA. Hydrographic data will be rapidly collected, processed, and distributed and NOS experts will assist in the evaluation of survey data and identification of hazards. NOS teams can be strategically prepositioned for predicted events.



## FEMA-Approved Pre-Scripted Mission Assignments for the National Ocean Service



### GEODETTIC SURVEYS – ESF 3

*To assess fundamental shifts in vertical and horizontal geographic positions, re-establish basic geodetic control, and assess changes that may pose risks to first responders and others in harm's way.*

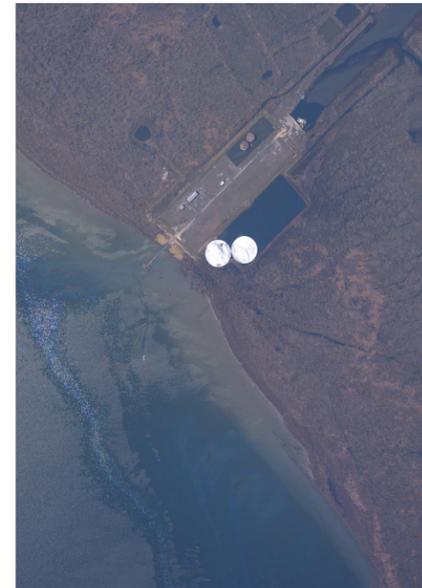
As requested, NOS experts will participate in planning meetings, provide technical and operational expertise, and coordinate with other agencies and the ESF 3 desk. NOS can deploy crews to conduct terrestrial leveling and GPS/GNSS surveys. Ensuring accurate positioning is critical to many response efforts, including assessing risk to first responders. NOS maintains the National Spatial Reference System, which defines position (latitude, longitude, and elevation), distances and directions between points, strength and direction of gravity, and how these change over time.

### OIL AND CHEMICAL SPILL RESPONSE – ESF 10

*To provide scientific support for oil and chemical spill response, including 24/7 information on spill trajectory, toxicity and threats to people, marine life, and infrastructure.*

As requested, NOS will provide scientific support to oil and chemical spills. Capabilities include serving as a scientific support advisor, providing oceanographic modeling and forecasts of pollutant transport; synthesizing real-time data for use in decision-making; providing tools for a common operational picture; providing air dispersion estimates of toxic gases in conjunction with the Interagency Modeling and Atmospheric Assessment Center (IMAAC); and providing assessments of environmentally sensitive habitats and species in the coastal environment and recommendations on protection or appropriate response activities.

*NOTE:* NOS most commonly provides this type of support to the United States Coast Guard under authorities such as the Oil Pollution Act. That said, NOS is also prepared to provide similar services under a Stafford Act declaration that may not trigger other legal authorities.



### MARINE DEBRIS ASSESSMENT – ESF 3

*To provide technical support to assess the extent, scope, content, and fate of debris in the marine environment.*

As requested, NOS will coordinate marine debris assessment with appropriate Federal, State and local agencies, including FEMA and U.S. Army Corps of Engineers. This support includes identifying needs and developing maps, models, and decision support tools including: Aerial and submerged debris mapping; model and track debris fate and movement; risk estimates of the potential impact of debris based on its type, trajectory, or the species and habitats affected; and providing information on the potential risks to communities of debris containing hazardous materials.