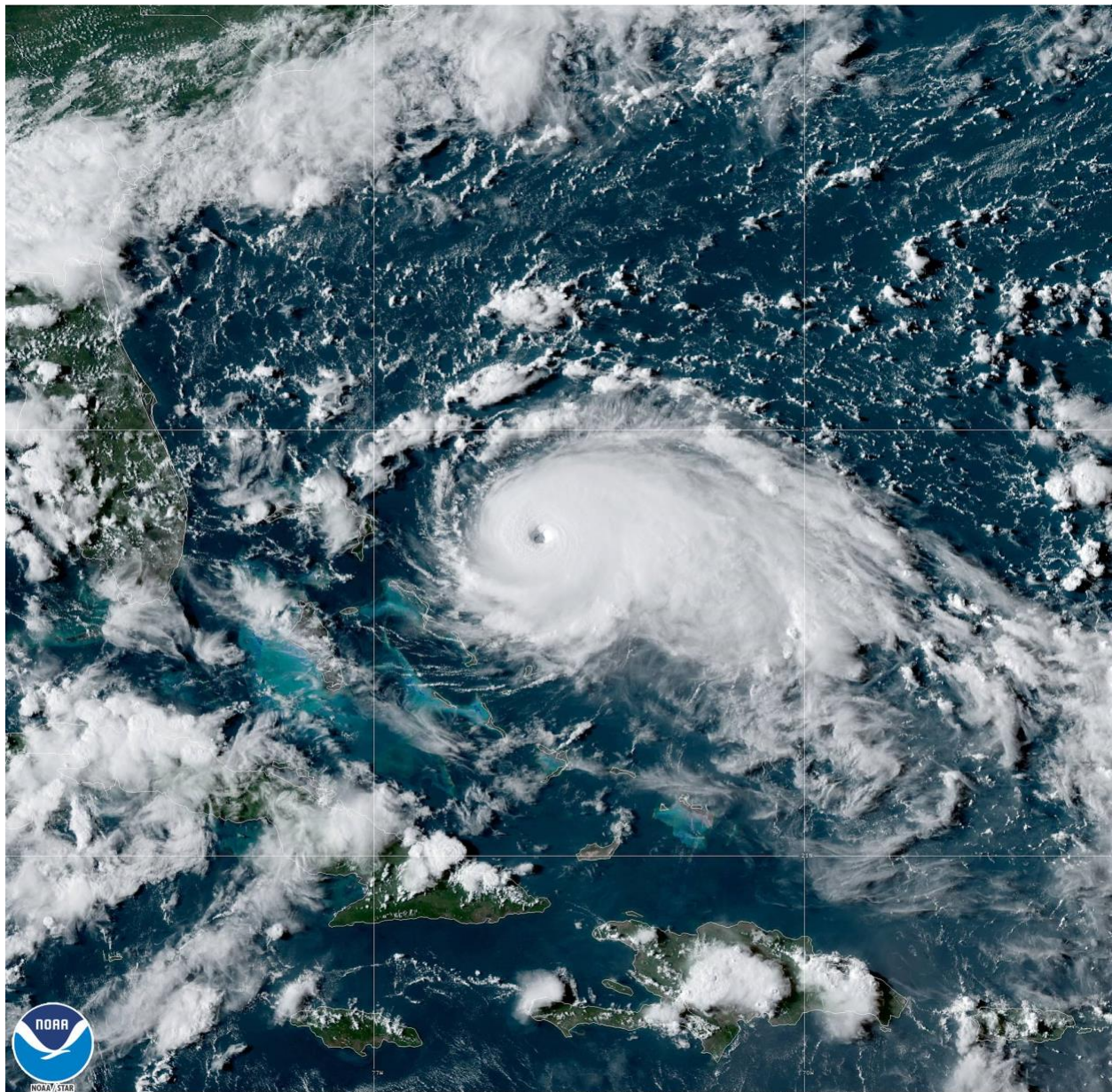


# Guide to Integrated NOAA Disaster Resilience in the Southeast and Caribbean

March 2022



31 Aug 2019 21:00Z NOAA/NESDIS/STAR GOES-East ABI GEOCOLOR

# Guide to Integrated NOAA Disaster Resilience in the Southeast and Caribbean

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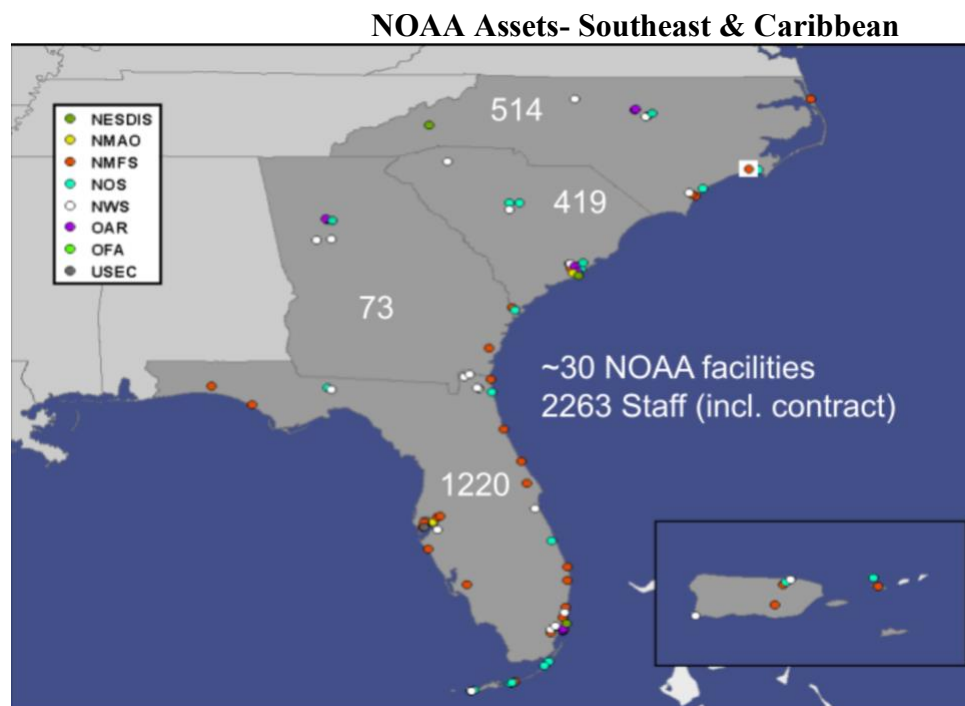
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## Preface

NOAA's Southeast and Caribbean region is composed of the land areas of North and South Carolina, Georgia, Florida, Puerto Rico (PR), and the U.S. Virgin Islands (USVI), and the marine environment adjacent to these lands.

The population in the region continues to increase, especially along the coast and Piedmont area (Atlanta to Raleigh corridor). Of the almost 45 million people living in the four Southeast states, approximately 38% reside in the coastal counties bordering the Atlantic Ocean. In PR and USVI, a substantial number of the 3.8 million residents live in close proximity to the coast. While living along the coast is highly desirable, this proximity comes with an elevated risk of natural hazards, particularly tropical cyclones (hurricanes).

NOAA has over 2,300 staff and 30 facilities in the region, including workforce concentrations in Beaufort/Morehead City, NC; Asheville, NC; Charleston, SC; Miami, FL; and St. Petersburg, FL (see [Fig. 1](#)). NOAA also operates three National Marine Sanctuaries: Monitor NMS, offices in NC and VA; Gray's Reef NMS, Georgia; and Florida Keys NMS, Florida. A National Weather Service (NWS) River Forecast Center (RFC) is located in Atlanta, while NWS Weather Forecast Offices (WFOs) are distributed throughout the region. The NOAA Aircraft Operations Center is located in Lakeland, FL, and two ships (Ronald Brown and Nancy Foster) claim Charleston, SC as their home port. Other NOAA personnel, including fishery port agents and law enforcement staff, are distributed along the entire coast.



**Figure 1. Locations of NOAA offices and NOAA partner offices in the Southeast and Caribbean Region. Colors indicate NOAA Line Office or Line Office for partners.**

In addition to NOAA employees and facilities, NOAA engages with and benefits from long-term, close partnerships with state/territorial and university partners to address shared priorities,

including six National Estuarine Research Reserves (NERRs), six Coastal Management Programs, five Sea Grant Programs, and three Cooperative Institutes. Enhanced organizational awareness and coordination between these assets is necessary to improve disaster resilience in the Southeast and Caribbean Region.

NOAA's Southeast and Caribbean Regional Team (SECART) works to improve NOAA's service delivery through enhanced communication and coordination across NOAA offices and with partners. SECART has identified the goal of improving economic, environmental, and social resilience of communities to weather, water, and climate impacts as a top priority. SECART hosted a series of workshops to bring together NOAA offices across the region to improve understanding of offices roles and responsibilities related to planning for, responding to, and recovering from disasters. Workshop participants agreed that a "guide" to NOAA roles, responsibilities, and resources related to disasters would itself be a valuable asset for the region.

This *Guide to Integrated NOAA Disaster Resilience in the Southeast & Caribbean (Guide)* is designed to enhance coordination of NOAA's diverse expertise, services, and resources when preparing for, responding to, or recovering from a natural or anthropogenic emergency that involves a threat or damage to human health or life, to property, or to the environment. In addition, the *Guide* is intended to help raise awareness of NOAA roles and responsibilities and promote coordination during these events with NOAA partners (listed above). This *Guide* addresses emergencies such as:

1. a large-scale / high-impact weather event including tsunami, hurricane, and flooding;
2. an oil spill, hazardous chemical release, or maritime accident;
3. a large-scale fire event; and
4. a radiological release.

For some emergencies, only one NOAA Line Office is needed to provide an effective response. When two or more NOAA Line Offices are involved in a large-scale event, clear and efficient communication and coordination are needed to simultaneously provide a high level of service and efficiently use NOAA's *own* expertise and resources.

The focus of this *Guide* is on communication and collaboration within and among NOAA's Line Offices, programs, and partners. Effective communication among federal, state, and local agencies and within each NOAA Line Office is critical to response outcomes. The ultimate objective of the *Guide* is to advance communication and better integrate Line Office capabilities to support a "OneNOAA" response to emergency events. The *Guide* also addresses communications with partners and stakeholders who will be engaged in NOAA's efforts. The *Guide* is *not* designed to challenge existing mandates or supersede existing policies. The *Guide* was created in recognition that all disaster preparation, response, recovery, and mitigation activities involving more than one NOAA Line Office can benefit from greater knowledge of NOAA's resources and more established communication protocols.

The process of developing the *Guide* was itself collaborative. Contributions from the National Weather Service (NWS), National Ocean Service (NOS), National Marine Fisheries Service (NMFS), National Environmental Satellite, Data, and Information Service (NESDIS), Office of

Marine and Aviation Operations (OMAO), and the Office of Oceanic and Atmospheric Research (OAR) were incorporated into the text. The findings from workshops and two tabletop exercises also contributed to improving communication across Line Offices and fostered discussions that were incorporated into the *Guide*.

**The *Guide* is divided into three sections:**

**Section 1.** This section provides background and contextual information on individual NOAA Line Office or program capabilities and resources that can be leveraged during an emergency response, including all phases of the disaster cycle (preparedness, response, recovery, and mitigation or adaptation). Section 1 provides details regarding the NOAA Line Office- and Staff Office-specific roles during a disaster, event, or incident. This includes NOAA Line Office deployment and engagement protocols, and specific emergency events that could occur in the Southeast and Caribbean region.

**Section 2.** This section provides an overview of federal response and recovery command structures that dictate NOAA's engagement in large-scale emergency response, extending from initial deployment to follow-up assessments. This section describes the National Response Framework (NRF), Emergency Support Functions (ESF), the National Incident Management System (NIMS), the NOAA All-Hazards Concept of Operations Plan (CONOPS), the Natural Resource Damage Assessment (NRDA), the National Disaster Recovery Framework (NRDF), and the Recovery Support Federal Leadership Group (RSFLG) and their roles.

**Section 3.** Section 3 provides the legal authorities and mandates that govern NOAA's responsibilities in response and recovery, including reimbursement for services rendered. The section begins with legal mandates and authorities that govern the participation and actions of NOAA Line Offices in an emergency response.

**Appendix A - G.** The appendices provide supporting information to sections 1-3 .

**Disaster Management Cycle Phases:** NOAA is involved in all phases of the disaster cycle, though responsibilities among Line Offices vary with type of disaster and the phase of the disaster cycle. For this Guide, we use the definitions of the Disaster Management Cycle Phases provided by Sandler and Schwab<sup>1</sup>.

- **Preparedness:** a state of readiness to respond to any emergency or disaster.
- **Response:** activities to meet the urgent needs of victims during or immediately following a disaster
- **Recovery:** actions that begin after a disaster, after emergency needs have been met. Recovery actions are designed to put the community back together or restore the community to a new normal.
- **Mitigation:** any sustained action to reduce or eliminate long-term risk to people and property from hazards and their effects.

### **Corrections and updates**

If you have corrections or updates to information in this document, please send those (with document section and page number) to [region.secarib@noaa.gov](mailto:region.secarib@noaa.gov)

## SECTION I. NOAA LINE/STAFF OFFICE ROLES

Each Line Office has distinct resources and capabilities for responding to emergency events. Beyond providing a brief background of relevant offices and programs, this section details relevant services and expertise that each can bring to an emergency response for major events.

This section is organized by Event → Line office → Program/ Office involved in each phase of the event.

**Table 1:** Directory of Line Office Programs / Roles for each Phase of Event, categorized by event

Event	Line Office	Program/ Office
<b>1.1 <a href="#">Hurricane, Flooding, Tsunami, Earthquake</a></b>	National Weather Service ( <a href="#">NWS</a> )	Weather Forecast Offices (WFOs) <a href="#">Preparedness</a> <a href="#">Response</a>
		Eastern Region Regional Operation Center (ROC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Southern Region Regional Operation Center (ROC) <a href="#">Preparedness</a> <a href="#">Response</a>
		River Forecast Centers (RFCs) <a href="#">Preparedness</a> <a href="#">Response</a> <a href="#">Recovery</a>
		Center Weather Service Units (CWSUs) <a href="#">Preparedness</a>
		Port Meteorological Offices (PMOs) <a href="#">Preparedness</a>
		Ocean Prediction Center (OPC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Tropical Analysis and Forecast Branch (TAFB) <a href="#">Preparedness</a> <a href="#">Response</a>
		National Ocean Service ( <a href="#">NOS</a> )
	OR&R Emergency Response Division (ERD) <a href="#">Response</a>	

<u><a href="#">Hurricane, Flooding, Tsunami, Earthquake</a></u>	NOS	OR&R Marine Debris Program (MDP) <a href="#">Response</a> <a href="#">Recovery</a>
		Office for Coastal Management (OCM) <a href="#">Preparedness</a> <a href="#">Response</a> <a href="#">Recovery</a> <a href="#">Mitigation/Adaptation</a>
		Office of National Marine Sanctuaries (ONMS) <a href="#">Preparedness</a> <a href="#">Response</a>
		Integrated Ocean Observing System (IOOS) <a href="#">Preparedness</a>
		National Geodetic Survey / Remote Sensing Division (RSD) <a href="#">Preparedness</a> <a href="#">Response</a> <a href="#">Recovery</a>
		National Marine Fisheries Service (NMFS)
	Southeast Regional Office (SERO) Protected Resources (PR) <a href="#">Preparedness</a> <a href="#">Response</a>	
	SERO Habitat Conservation (HC) <a href="#">Preparedness</a> <a href="#">Response</a>	
	SERO Sustainable Fisheries (SF) <a href="#">Preparedness</a> <a href="#">Response</a>	
	SERO National Environmental Policy Act (NEPA) <a href="#">Preparedness</a>	
Office of Habitat Conservation Restoration Center (RC) <a href="#">Response</a>		
Oceanic and Atmospheric Research (OAR)	National Sea Grant <a href="#">Preparedness</a>	
1.2 <u><a href="#">Oil Spills, Hazardous Chemical Releases, and / or Maritime Accidents</a></u>	National Ocean Service (NOS)	Office of Response and Restoration (OR&R) Assessment and Restoration Division (ARD) <a href="#">Preparedness</a> <a href="#">Response</a> <a href="#">Recovery</a>
		OR&R Disaster Preparedness Program (DPP) <a href="#">Preparedness</a>



		<a href="#">Recovery</a>
		OR&R Emergency Response Division (ERD) <a href="#">Response</a>
		Office of National Marine Sanctuaries (ONMS) <a href="#">Preparedness</a> <a href="#">Response</a>
	<a href="#">OAR</a>	National Sea Grant <a href="#">Preparedness</a>
	<a href="#">NMFS</a>	Southeast Regional Office(SERO) Protected Resources (PR) <a href="#">Preparedness</a> <a href="#">Response</a>
		Southeast Regional Office (SERO) Habitat Conservation (HC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Southeast Regional Office (SERO) Sustainable Fisheries (SF) <a href="#">Preparedness</a> <a href="#">Response</a>
		Office of Habitat Conservation Restoration Center (RC) <a href="#">Response</a>
	<a href="#">NWS</a>	Weather Forecast Offices <a href="#">Preparedness</a> <a href="#">Response</a>
		Eastern Region (ER) Regional Operations Center (ROC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Southern Region (SR) Regional Operations Center (ROC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Ocean Prediction Center (OPC) <a href="#">Preparedness</a> <a href="#">Response</a>
		Tropical Analysis and Forecast Branch (TAFB) <a href="#">Preparedness</a> <a href="#">Response</a>
1.3 <a href="#">Large Scale Fire Event</a>	<a href="#">NWS</a>	Weather Forecast Offices (WFO) <a href="#">Preparedness</a> <a href="#">Response</a>

		Eastern Region (ER) Regional Operations Center (ROC) <a href="#">Preparedness Response</a>
		Southern Region (SR) Regional Operations Center (ROC) <a href="#">Preparedness Response</a>
	<a href="#">OAR</a>	National Sea Grant <a href="#">Preparedness</a>
1.4 <a href="#">Radiological Release</a>	<a href="#">NWS</a>	Weather Forecast Offices (WFO) <a href="#">Preparedness</a>
		Eastern Region (ER) Regional Operations Center (ROC) <a href="#">Preparedness</a>
		Southern Region (SR) Regional Operations Center (ROC) <a href="#">Preparedness</a>
	<a href="#">OAR</a>	National Sea Grant <a href="#">Preparedness</a>
	<a href="#">NOS</a>	Office of Response & Restoration Disaster Preparedness Program (OR&R DPP) <a href="#">Preparedness</a>
		OR&R Emergency Response Division (ERD) <a href="#">Response</a>
	<a href="#">NMFS</a>	Southeast Regional Office(SERO) Protected Resources (PR) <a href="#">Preparedness Response</a>
		Southeast Regional Office(SERO) Habitat Conservation (HC) <a href="#">Preparedness Response</a>
		Southeast Regional Office(SERO) Sustainable Fisheries (SF) <a href="#">Preparedness Response</a>
		Southeast Regional Office(SERO)National Environmental Policy Act (NEPA) <a href="#">Preparedness</a>
Office of Habitat Conservation Restoration Center (RC) <a href="#">Response</a>		

### **1.1 Large Scale or High Impact Event: Hurricane, Flooding, Earthquake, Tsunami**

Event response may involve multiple agencies, including the Federal Emergency Management Agency (FEMA), United States Environmental Protection Agency (USEPA), U.S. Army Corps of Engineers (USACE), U.S. Geological Survey (USGS), National Guard, U.S. Bureau of Reclamation (USBR), U.S. Department of Transportation (USDOT), and U.S. Coast Guard (USCG) at the federal level, plus state and local emergency management officials, engineers, and water managers. In the aftermath of any large-scale and/or high-impact environmental event, FEMA is normally the primary federal agency to manage disaster response and recovery per the National Disaster Response and Recovery Frameworks (see appendix). NOAA's weather forecasting and tsunami role in the lead-in to a major event is clear-cut. In the event aftermath, however, NOAA has significant capacity to provide decision support to agencies involved in rescue, clean-up, and recovery operations. This is particularly true of weather and tsunami support, but may also include other activities to address injury to public trust resources from the event impacts or in the event of a release of oil or hazardous materials, and assistance if needed.

**National Weather Service (NWS)**– The NWS organizationally consists of a mix of local, regional, and national forecast centers across the United States and its territories. These include nine national centers that provide expertise in environmental modeling and severe storm, tropical, aviation, hydrometeorological, climate, space weather, and ocean forecasting. In addition to regional-level headquarters and national centers, the NWS Southeast and Caribbean Region is served by some 16 Weather Forecast Offices, the National Hurricane Center, the Tropical Analysis and Forecast Branch, and the Caribbean Tsunami Warning Program office. The NWS Operations Center provides timely Impact-Based Decision Support Services (IDSS) to meet the evolving needs of NWS partners and stakeholders and supports agency readiness by proactively collaborating and facilitating the exchange of critical information, setting operational posture, and briefing leadership. The Southeast and Caribbean region is served by the Southern and Eastern Regional Operations Centers and they are supported by the National Operations Center (NOC). The Regional Operations Centers are responsible for overseeing and coordinating NWS emergency response efforts during high-impact events. ROCs serve an Emergency Operations Center (EOC) function when any NWS office is involved in an ICS deployment.

Together, national, regional, and local NWS resources provide diverse support services during an emergency response. NWS capabilities include general seven-day forecasts for temperature; dew point temperature; relative humidity; Quantitative Precipitation Forecast (QPF) for rain, snow and ice; wind speed and direction; weather type; precipitation probability; sky cover; wave height; apparent temperature; and river stage. These forecasts are updated on a 24/7 basis. All of these forecasts and warnings are available to the general public on NWS web pages and graphically and digitally through the NWS National Digital Forecast Database (NDFD).

More importantly, in addition to extensive public forecast and warning information, NWS has the capacity to forecast the previously listed pertinent weather and environmental elements, plus others, at a level of detail and sophistication far beyond what is available to the general public. These capacities are reserved mostly for emergency situations involving local, state, and federal government response. These situations include tropical cyclones, tsunamis, oil spills, rangeland and forest fires, urban fires, airborne chemical releases, radiological releases, and search and rescue efforts. Examples of advanced decision-support products and services include hourly

snowfall rate probabilities for road and runway crews; high resolution wave spectra (max waves) and return frequency for marine operations; hourly probabilistic winds, mixing height and plume forecasts for fires, airborne releases and aviation operations; detailed river stage and streamflow forecasts for flood operations and inland river spills; and extreme heat/cold and thunderstorm forecasts for outdoor recovery operations. Typically, these are provided by request through an in-person briefing, a webinar or telephone briefing, or web delivery. In the event that NOAA personnel outside NWS, including the Scientific Support Coordinators (SSC), are asked to provide weather information, they are encouraged to consult with NWS. NWS has extensive forecast datasets that are not automatically posted. NWS employees can readily access, interpret, and disseminate this higher-level information to the SSC and emergency responders, with the likely outcome of improved response decision-making and actions.

The large number of WFOs—122 across the nation—makes NWS explicitly community-based. WFOs in particular communicate regularly with state and local agencies, media, and local Emergency Managers, which means that during a large emergency event, they are likely to be contacted before other NOAA Line Offices. A 24/7 operation and presence throughout the region also allows NWS personnel to quickly deploy to almost any Emergency Operations Center (EOC) or Incident Command Post (ICP). NWS also maintains a cadre of trained Incident Meteorologists (IMETs) or Emergency Response Specialists/Meteorologists (ERS/ERM) specifically for emergency response purposes. While these positions were originally intended to deploy for fires, personnel are trained and equipped to respond to other natural or human-caused incidents as well.

The local WFOs are among the primary responders from within NWS; they are responsible for forecasting weather and water conditions that influence recovery and response efforts. National Tsunami Warning Center (NTWC), Pacific Tsunami Warning Center (PTWC), International Tsunami Information Center (ITIC), and the Caribbean Tsunami Warning Program are responsible for providing real-time tsunami information via text and graphical products to include watches and warnings for tsunamis supporting emergency managers and first responders. During and after large-scale/high-impact weather events, NWS personnel can provide on-site decision support at Emergency Operations Centers (EOCs) for extended periods. These personnel are often provided from the affected WFO, but may also include emergency response personnel from other offices. This is coordinated through the NWS Eastern and Southern Region ROCs.

**National Ocean Service (NOS)**– The NOS consists of several program offices in this region. The Office of Response and Restoration Emergency Response Division (ERD) should be contacted during significant weather events where there is an occurrence or risk of oil or hazardous materials being released into coastal or inland waterways. The Disaster Preparedness Program provides coordination of personnel, products, and resources within NOS to ensure that NOS resources are maximized. They have also developed an internal NOAA, [NOS Disaster Coordination Dashboard](#), that provides quick access to active reports, documents, and tools needed during disaster responses or exercises. They serve as a coordination platform for NOS staff and offices. The Marine Debris Program staff provides scientific support from defined core expertise and services based on requests from responding agencies, or self-activation in severe debris events. The Marine Debris program has developed state Marine Debris Emergency

Response Guides which can be employed during response. In addition, MDP Regional Coordinators and staff will coordinate with ESF-10 response and may also provide assistance in marine debris mapping.

Office for Coastal Management (OCM) may become involved to assess impacts to state and territorial partners including safety of staff, the operational status of their programs and damage to any NOAA funded property or equipment, as well as receive updates on the impacts to coastal resources under their management. OCM should be contacted for those wishing to conduct or obtain assessments of coral, mangrove, submerged aquatic vegetation (SAV), dunes, or other coastal resources after an event in order to coordinate with any existing efforts. In addition to receiving updates, OCM (at least CRCP) has been heavily engaged in emergency response (i.e., triage) and damage assessment of coral reefs immediately after storms. OCM provides staff support (in the field and FEMA office) during the ESF phase. This has been actual in-the-water work.

Office of National Marine Sanctuaries (ONMS) may become involved in either assessing impacts to NOAA trust resources or as a provider of vessels of opportunity. For an oil spill, participation assumes operations outside areas of active oiling. In some instances, larger ONMS vessels have been used as temporary office/shelter space for employees and partners.

The primary mission of the Office of Coast Survey (OCS) assets in an emergency is to respond to requests from the USCG D7 Captain of the Port (COTP) in collaboration with the maritime pilots, USACE, and regional port authorities'. Requests typically include providing one or more hydrographic survey assets capable of detecting shoaling and obstructions using Multibeam and Side-Scan Sonar systems. Survey requests will vary from approach channels in the Open Ocean to navigable inner harbor areas. The primary reason the COTP will request NOAA OCS support following a storm is to help re-open a port by verifying the channels and navigable waterways are safe for navigation from new and unknown shoaling and obstructions. During field operations NOAA assets will also verify ATON's are on-station and serving their intended purpose as well as reporting other hazards, such as floating or exposed debris. NOAA assets will generally pre-stage prior to the storm making landfall and be ready to start field work as soon as the waterway is accessible and conditions are safe. Field units normally report preliminary findings of general shoaling and obstructions to the COTP daily during the response and submit final reports and products within 2-3 days following acquisition.

The National Geodetic Survey (NGS) acquires and rapidly disseminates a variety of spatially-referenced remote-sensing datasets to support homeland security and emergency response requirements.

**National Marine Fisheries Service (NMFS)**– Hurricane and flood events can lead to multiple long term impacts which may involve NMFS offices. Impacts could include releases of hazardous substances, triggering the Damage Assessment, Remediation and Restoration Program (DARRP); strandings of marine mammals or sea turtles, managed by Protected Resources; losses to fisheries, leading to a fisheries disaster declaration and Sustainable Fisheries involvement; or habitat impacts that may be addressed either through restoration (Restoration Center) or consultations (SERO Habitat Conservation Division and Protected Resources).

The Habitat Conservation Division (HCD) provides technical advice and recommendations for minimizing or addressing the adverse effects of emergency response activities on federally managed resources. They assist with essential fish habitat consultations where response and recovery activities may affect essential fish habitat, and participate in FEMA's Unified Federal Review to assist with streamlining the permitting process.

The Protected Resources Division (PRD) oversees, coordinates, and authorizes stranding network responses, including rescues of animals that are washed inland due to storm surge, and may implement (or alleviate) certain regulatory requirements on a temporary basis to protect trust resources or assist regulated fishermen following a severe weather event. This includes exempting affected fisheries from turtle excluder device (TED) requirements on a temporary basis if TEDs are being clogged by debris and authorizing affected fishermen and dealers to use paper-based in lieu of electronic transactions if electronic systems go offline. PRD also consults on response and recovery actions which may impact listed species or marine mammals, and they participate in FEMA's Unified Federal Review.

The Sustainable Fisheries Division evaluates information provided by the states in support of fishery disaster determination requests and works with affected entities to distribute any Congressionally appropriated funds consistent with statutory requirements and conditions of the appropriation.

NMFS also houses the Restoration Center (RC). The RC is part of the DARRP matrix that provides technical expertise in assessing injuries to fish and wildlife, as mandated by Oil Pollution Act (OPA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The RC also plans, implements, and funds coastal habitat restoration throughout the Southeast Region, often through regional partnerships. In addition to providing financial and technical assistance to remove dams and barriers, construct fish passages, and remove invasive species, the RC also provides resources to clean up marine debris and restore coastal wetlands.

**Oceanic and Atmospheric Research (OAR)**– The Atlantic Oceanographic and Meteorological Laboratory (AOML), a federal research laboratory, is part of NOAA's Office of Oceanic and Atmospheric Research (OAR), located in Miami, Florida. AOML's research spans hurricanes, coastal ecosystems, oceans and human health, climate studies, global carbon systems, and ocean observations. OAR may become involved in a response in a consultant role, applying resources and technologies to support National Weather Service response and recovery needs. These can be in the form of hydrologic support from the Weather Prediction Center at the National Centers for Climate and Weather Predictions, weather science support from the National Severe Storms Lab (NSSL) in Norman, Oklahoma, or the Earth System Research Laboratory (ESRL) in Boulder, Colorado.

**National Environmental Satellite, Data and Information Service (NESDIS)**– offers, as needed, high resolution Rapid Scan Observations satellite support services that can be used to support tropical cyclones and severe weather events among other services. NESDIS is responsible for providing secure and timely access to global environmental data and information

from satellites and other sources to both promote and protect the Nation's environment, security, economy and quality of life.

The increasing number of satellites helps provide the high definition images and data needed during incidents and disasters. The launch of GOES-S, was a game-changer for weather forecasts in the Western U.S.. The capabilities provided by the satellite include three times more data at four times better resolution, and scanning five times faster. The satellite also provides high-resolution imagery to better detect wildfires and hot spots. The Search And Rescue Satellite Aided Tracking (SARSAT) system is part of a 24x7 International search and rescue satellite program called COSPAS\_SARSAT. This system detects emergency signals, and provides coordinated response to emergencies worldwide.

NESDIS National Centers for Environmental Information (NCEI) provides the World's largest archive of environmental data from U.S. and foreign sources. They also maintain and publish the NOAA Extreme Weather Information Sheets (NEWIS). NCEI created these sheets to help coastal residents of states and the two U.S. territories that are particularly at risk from tropical storms and hurricanes. These provide detailed contact phone and website contact information for county, state, and national resources during an event.

For the Region, NOAA's NESDIS is supported by the Cooperative Institute for Satellite Earth Systems Studies (CISESS) at the University of Maryland College Park (UMD) and North Carolina State University (NCSU). CISESS contributes to NOAA mission directed research leading to greater observation, understanding, and prediction of the global Earth System. CISESS and NESDIS provide a wide variety of real-time, high-resolution satellite imagery and derived products for the Region that may be useful in any emergency response situation (e.g., fire monitoring). In addition to this, the NESDIS GOES-East (satellite weather imagery) provides satellite data to the NWS Regions. The NWS also receives satellite data across the region from ground receipt satellite dishes that are supported locally and through support from CISESS.

### **1.1.1 Preparedness– NWS, NOS, NMFS, OAR**

#### **1.1.1A NWS–**

##### **1.1.1A.1 WFOs**

- **Interagency Dependencies:** Numerous with local, state, and federal agencies. Preparation will depend on office and potential for impacts. Just prior to a system, NWS offices will begin coordination with emergency management on track, intensity, timing, and confidence level.
- **Products/Resources:** NWS supports National Hurricane Preparedness week and most states also have their own week. Work with local, state, and federal partners to urge people to prepare through the use of NOAA weather radio, social media, broadcast/print media, etc. Several days in advance of a system, work with emergency management providing input for critical decisions points (e.g. evacuations, interstate "turn-arounds", shelters, etc.). The local WFO Integrated Warning Team (IWT) brings together emergency managers, broadcast and print media, amateur radio network controllers, government and special district

officials, and the National Weather Service with the goal of finding the best ways to communicate a consistent warning message during an event.

Office	Contact <sup>2</sup>	Source
WFO Wakefield, VA	Jeff Orrock	<a href="http://www.weather.gov/akq">www.weather.gov/akq</a>
WFO Blacksburg, VA	Douglas Butts	<a href="http://www.weather.gov/rnk">www.weather.gov/rnk</a>
WFO Newport, NC	David Glenn	<a href="http://www.weather.gov/mhx">www.weather.gov/mhx</a>
WFO Wilmington, NC	Mark Willis	<a href="http://www.weather.gov/ilm">www.weather.gov/ilm</a>
WFO Raleigh, NC	Jonathan Blaes	<a href="http://www.weather.gov/rah">www.weather.gov/rah</a>
WFO Greer, SC	Steve Wilkinson	<a href="http://www.weather.gov/gsp">www.weather.gov/gsp</a>
WFO Columbia, SC	Rich Okulski	<a href="http://www.weather.gov/cae">www.weather.gov/cae</a>
WFO Charleston, SC	Michael Emlaw	<a href="http://www.weather.gov/chs">www.weather.gov/chs</a>
WFO Atlanta, GA	Keith Stellman	<a href="http://www.weather.gov/ffc">www.weather.gov/ffc</a>
WFO Jacksonville, FL	Scott Cordero	<a href="http://www.weather.gov/jax">www.weather.gov/jax</a>
WFO Melbourne, FL	Dave Sharp	<a href="http://www.weather.gov/mlb">www.weather.gov/mlb</a>
WFO Miami, FL	Pablo Santos	<a href="http://www.weather.gov/mfl">www.weather.gov/mfl</a>
WFO Key West, FL	Chip Kasper	<a href="http://www.weather.gov/key">www.weather.gov/key</a>
WFO Tampa Bay, FL	Brian LaMarre	<a href="http://www.weather.gov/tbw">www.weather.gov/tbw</a>
WFO Tallahassee, FL	Felicia Bowser	<a href="http://www.weather.gov/tae">www.weather.gov/tae</a>
WFO Mobile, AL	Jeff Medlin	<a href="http://www.weather.gov/mob">www.weather.gov/mob</a>
WFO San Juan, PR	Roberto Garcia	<a href="http://www.weather.gov/sju">www.weather.gov/sju</a>

#### 1.1.1A.2 NWS– Eastern Region Operations Center (ER ROC)

- **Role/Procedures:** First contact for NWS Offices in NC and SC
- **Contact:** David Manning

#### 1.1.1A.3 NWS– Southern Region Operations Center (SR ROC)

- **Role/Procedures:** First contact for NWS Offices in GA, FL, PR and VI.
- **Contact:** Jennifer McNatt

#### 1.1.1A.4 NWS– River Forecast Centers (RFCs)

- **Interagency Dependencies:** Coordination with NWS offices and partners to account for any last minute hydrologic changes. Coordinate with WPC and NWC on predicted rainfall amounts.
- **Products/Resources:** In the days and hours before a storm, begin forecasting expected river levels and timing of crest(s) through the river and lake basins.



Office	Contact	Source
Southeast RFC	John Schmidt	<a href="https://www.weather.gov/serfc">https://www.weather.gov/serfc</a>
Lower Mississippi RFC	Suzanne Van Cooten	<a href="https://www.weather.gov/lmrfc">https://www.weather.gov/lmrfc</a>
Mid-Atlantic RFC	Peter Anher	<a href="https://www.weather.gov/marfc">https://www.weather.gov/marfc</a>

#### 1.1.1A.5 NWS– Center Weather Service Units (CWSUs)

Office	Contact	Source
Washington CWSU	Richard Winther	<a href="https://www.weather.gov/zdc/">https://www.weather.gov/zdc/</a>
Atlanta CWSU	Charles “Chip” West	<a href="https://www.weather.gov/ztl/">https://www.weather.gov/ztl/</a>
Jacksonville CWSU	Brian Schroeder	<a href="https://www.weather.gov/zjx/">https://www.weather.gov/zjx/</a>
Miami CWSU	Liam Lynam	<a href="https://www.weather.gov/zma/">https://www.weather.gov/zma/</a>

#### 1.1.1A.6 NWS– Port Meteorological Offices (PMOs)

Office	Contact
Charleston, SC PMO	Tim Kenefick Timothy.Kenefick@noaa.gov
Jacksonville, FL PMO	Rob Niemeyer pmojax@noaa.gov
Miami, FL PMO	David Dellinger pmomia@noaa.gov
New Orleans, LA PMO	Rusty Albara rusty.albara@noaa.gov

#### 1.1.1A.7 NWS– Ocean Prediction Center

**Ocean Prediction Center (OPC)** originates and issues marine warnings and forecasts, continually monitors and analyzes maritime data, and provides guidance of marine atmospheric variables for purposes of protection of life and property, safety at sea, and enhancement of economic opportunity.

- **Interagency Dependencies:** Primarily with federal and international partner agencies and organizations.
- **Products/ Resources:** Provides over 150 products each day for the safety of life at sea, including for much of the north Atlantic north of 31N, and with high seas warnings west of 35W.
- **Contact:** Darin Figurskey, Ocean Forecast Branch Chief (darin.figurskey@noaa.gov)

#### 1.1.1A.8 NWS– Tropical Analysis and Forecast Branch (TAFB)

**Tropical Analysis and Forecast Branch (TAFB)** is an integral part of the National Hurricane Center and performs forecasting, outreach, and support functions, covering the waters beyond 60 nautical miles from shore. TAFB provides daily forecasts, as well as episodic support for the USCG in these offshore waters.

- **Interagency Dependencies:** Primarily with federal and international partner agencies and organizations.
- **Products/ Resources:** The [TAFB forecasts](#) cover an area which covers 10,000,000 square nautical miles and produces over 100 products per day. TAFB products include but are not limited to the following: [High Seas Marine Forecasts](#) over the tropics and subtropics, [Offshore Waters Marine Forecasts](#) over the tropics and subtropics, [Tropical Weather Discussions](#) over the tropics and subtropics, [Surface weather analyses](#) and forecasts over the tropics, subtropics, and mid-latitudes, and [Experimental Gridded Marine Forecasts](#) over the tropics and subtropics.
- **Contact:** Chris Landsea ([chris.landsea@noaa.gov](mailto:chris.landsea@noaa.gov))

#### 1.1.1B.1 NOS– OR&R DPP

**Disaster Preparedness Program (DPP)** prepares NOS and partners to respond to disasters through trainings, exercises, planning, and continuous improvement. NOAA's Disaster Response Center (part of the DPP) is a regional hub for disaster preparedness that was created to aid in NOAA's coordination and emergency planning in the Gulf of Mexico and enhance this preparedness culture. The DRC hosts experts in oil and chemical spill response; environmental damage assessment; habitat conservation and restoration planning; marine debris; and navigation management. DPP provides coordination within NOS to ensure that NOS resources are maximized. The DPP holds planning workshops targeting regional preparedness gaps. In addition, the DPP works closely with OCM and the National Earnestine Research Reserves (NERRS) to develop and train disaster response plans. They also coordinate NOS storm preparation and response activities such as:

- **Interagency Dependencies:** NOS partner agencies and organizations
- **Products/Resources:** Science of Coastal Natural Disasters class, NOAA-Specific ICS 300 course
- **Contact:** Kate Wheelock ([kate.wheelock@noaa.gov](mailto:kate.wheelock@noaa.gov))

#### 1.1.1B.2 NOS– OCM

**DATA:** The Office for Coastal Management (OCM) Digital Coast assists NOAA Offices as well as state, territorial, and community partners by providing access to elevation and land cover data and imagery that can be used to improve planning for and implementation of adaptation strategies to reduce future impacts and enhance community resilience along the coast. For

example, OCM assists NOAA's National Hurricane Center by providing underlying elevation models and sea level rise data, which is used to develop storm surge forecast maps.

- **Products/Resources:** Historical hurricane tracks, Topo Bathy LIDAR, land cover, imagery, economic data, potential sea level rise data; Quick Ref - Additional Data Needs and Information for a Community Risk and Vulnerability Assessment
- **Contact:** Miki Schmidt ([nicholas.schmidt@noaa.gov](mailto:nicholas.schmidt@noaa.gov)), Jeff Payne ([jeff.payne@noaa.gov](mailto:jeff.payne@noaa.gov)) for Hurricane

**TOOLS:** OCM's Digital Coast provides access to a number of its own and others tools that can give the public a visual idea of where flooding is possible from CAT I-V storms along their coasts, and what types of critical infrastructure is potentially vulnerable (e.g., Coastal Flood Exposure Mapper) and provides links to other agency tools (e.g., USGS Flood Event Viewer)

- **Products/Resources:** Coastal Flood Exposure Mapper
- **Contact:** Miki Schmidt

**FUNDING:** States and territories may use Coastal Zone Management Act (CZMA) funding to undertake preparedness planning or projects.

#### **STATE AND TERRITORIAL COASTAL ZONE MANAGEMENT**

**(CZM) PROGRAMS:** All 6 Coastal States and territories in the Southeast & Caribbean Region (NC, SC, GA, FL, USVI, and PR) have developed federally approved coastal management programs making them eligible for federal CZMA funding which may include planning, regulatory, and acquisition activities to mitigate coastal hazards and enhance resilience. Several state Coastal Programs have worked with OR&R's Marine Debris Program to develop Marine Debris Reduction Guidance Plans. OCM works closely with these programs to provide coordination, communication, and response capacity. The National Coastal Resilience Fund, executed in partnership with NOAA OCM, has funded projects in all states and territories to enhance disaster resilience using natural infrastructure, some with the Coastal Management Program as the recipient.

- **Products / Resources:** Florida, Marine Debris Reduction Guidance Plan
- **Contact:** Laura Petes, NOAA/OCM [laura.petes@noaa.gov](mailto:laura.petes@noaa.gov); Becky Prado, FL DEP [ebbecca.prado@dep.state.fl.us](mailto:ebbecca.prado@dep.state.fl.us)

#### **NATIONAL ESTUARINE RESEARCH RESERVE (NERR)**

**PROGRAMS:** There are six NERRs in the Southeast & Caribbean Region. Several Reserves have developed disaster preparedness plans to reduce damages to reserve facilities, equipment, and other assets. In the past, some NERRs have served as derelict vessel or marine debris temporary storage areas.

**CORAL REEF CONSERVATION PROGRAM:** Coral Reef Management positions located on site in Florida, US Virgin Islands (USVI), and Puerto Rico provide coordination, communications, and response capacity for local coral and CZM programs and related NOAA programs and are able to contribute to recovery planning and implementation activity.

- **Contact:** [Jennifer.Koss@noaa.gov](mailto:Jennifer.Koss@noaa.gov), [Harriet.Nash@noaa.gov](mailto:Harriet.Nash@noaa.gov), or [Dana.Wusinich-Mendez@noaa.gov](mailto:Dana.Wusinich-Mendez@noaa.gov)

#### 1.1.1B.3 NOS– Office of National Marine Sanctuaries (ONMS)

**PLANNING:** ONMS Headquarters (HQ) will review existing All Hazards and Continuity of Operations (COOP) plans for each site. COOP Alternate Site plans need further development for the entire ONMS system. All sites should review site-specific elements within the USCG-EPA Area Contingency Plans that are part of the Regional Response Plans. ONMS HQ will also review how to support relocation of non-federal personnel for extended periods and evaluate the feasibility of extended evacuation and or recovery periods.

- **Interagency Dependencies:** Evacuation and re-entry is dependent on state and local authorities.
- **Contact:** Lisa Symons ([Lisa.Symons@noaa.gov](mailto:Lisa.Symons@noaa.gov))

**FORWARD STAFFING PLATFORM:** ONMS can provide a forward staffing component for other NOAA and NOS services during preparation for a significant weather event. This may require deployment of ONMS personnel in county and state EOCs.

- **Interagency Dependencies:** Request of support may come from state or federal (FEMA, USCG) agencies; USCG, OR&R, NMFS Restoration Center, GC, DOI (NPS & USFWS) state trustees
- **Products/Resources:** Technical expertise in marine and coastal resources and NOS and NOAA products and services.
- **Contact:** Lisa Symons ([Lisa.Symons@noaa.gov](mailto:Lisa.Symons@noaa.gov))

#### 1.1.1B.4 NOS– Integrated Ocean Observation Systems (IOOS)

**DATA AND IOOS DATA PORTALS:** US Integrated Observation System Program (IOOS) works closely with its Caribbean ([CARICOOS Latest Conditions and Forecast](#)) and Southeast U.S. (SECOORA <https://secoora.org/>) regional associations to provide ocean observations before, during, and after storms using high-frequency radars and gliders. Both CARICOOS and SECOORA developed data portals and web pages for each storm.

- **Products/Resources:** Data dashboards and storm centers are customized on each Regional Association (RA) site (links under "Source"). Additionally the complete RA and U.S. IOOS data catalogs are available to meet additional data needs.

**1.1.1B.5 NOS– National Geodetic Survey / Remote Sensing Division:** NGS participates in planning meetings, provides technical and operational expertise, and coordinates with other agencies.

- **Products / Resources:** Pre-event Oblique Aerial Imagery, LIDAR
- **Contact:** Mike Alasken (mike.alasken@noaa.gov)

**1.1.1C.1 NMFS– Southeast Regional Office (SERO) Protected Resources Program (PR)**

**REGULATORY:** NMFS provides technical advice and recommendations, including Best Management Practices and other guidance, for minimizing or addressing the adverse effects of emergency response activities on our trust resources. Federal action agencies, which fund, permit, or carry out activities that may affect threatened or endangered species or their critical habitat are required to consult with NMFS regarding the potential impacts of their actions on these trust resources. SERO offers expedited consultations during urgent emergency situations involving an act of God, disasters, casualties, and national defense or security emergencies. Included are response activities, which must be taken during hazardous material clean up, response to natural disasters, or actions to protect public safety. These emergency consultations are intended to enable Federal agencies to complete their critical missions in a timely manner while minimizing the adverse effects of response activities on our trust resources. They recognize that public safety takes precedence if there is a conflict between the two. Expedited consultation services for remedial actions or mitigation activities that are taken after an emergency situation has ended that are intended to address damages that occurred during the emergency are not offered. Emergency Endangered Species Act (ESA) consultations can be initiated by emailing a completed Emergency Consultation Request Form to SERO at nmfs.ser.emergency.consult@noaa.gov. Contact should be made by Federal agencies early in response planning, but may consult after-the-fact, if consultation on an expedited basis is not practicable before taking an emergency response action.

- **Interagency Dependencies:** There is a standing ESA Emergency Consultation MOA for Oil and Hazmat Spills signed by DOI, FWS, NOAA, NMFS, EPA and USCG. This MOA provides the structure for ESA consultation for Spill Response and Planning (<https://www.nrt.org/sites/2/files/ESAMOA.pdf>).
- **Products/Resources:** Emergency ESA consultations, including technical advice and suggested mitigation (email request form online at [http://sero.nmfs.noaa.gov/protected\\_resources/section\\_7/emergency\\_consultation/documents/nmfs\\_emergency\\_consultation\\_form.pdf](http://sero.nmfs.noaa.gov/protected_resources/section_7/emergency_consultation/documents/nmfs_emergency_consultation_form.pdf) )
- **Contact:** EMAIL: [nmfs.ser.emergency.consult@noaa.gov](mailto:nmfs.ser.emergency.consult@noaa.gov); TELEPHONE: 727-824-5312 (only staffed during business hours)

**REGULATORY:** In the event of an emergency, NOAA Fisheries may implement (or alleviate) certain regulatory requirements on a temporary basis to protect public health or trust resources, or assist regulated fishermen. Specifically, we may exempt affected fisheries from turtle excluder device (TED) requirements. With few exceptions, shrimp trawlers operating in Gulf of Mexico and South Atlantic waters must have an approved TED installed in each net rigged for fishing. However, NOAA Fisheries can authorize shrimp vessels to use tow time restrictions in lieu of TEDs following hurricanes or other severe weather events if we determine that trawling with TED-equipped nets is impracticable, effectively impeding their conservation benefits. Such an authorization would take the form of an emergency rulemaking that could be effective for up to 30 days and may be renewed for additional 30-day periods, if the conditions necessitating the imposition of tow-time restrictions continue to exist. The appropriate state or federal fishery officials should make requests for temporary TED exemptions where the affected shrimp fishery is located to the Southeast Regional Administrator, Dr. Andy Strelcheck.

- **Products/Resources:** Turtle Excluder Device (TED) exemptions

#### **1.1.1C.2 NMFS– Southeast Regional Office (SERO) Habitat Conservation Program (HC)**

Federal action agencies which fund, permit, or carry out activities that may affect essential fish habitat (EFH) are required to consult with NMFS regarding the potential impacts of their actions on these trust resources. Emergency EFH consultations can be initiated by emailing a completed Emergency Consultation Request Form to SERO at [nmfs.ser.emergency.consult@noaa.gov](mailto:nmfs.ser.emergency.consult@noaa.gov). Contact should be made by Federal agencies early in response planning, but may consult after-the-fact, if consultation on an expedited basis is not practicable before taking an emergency response action.

- **Products/Resources:** Emergency EFH consultations, including technical advice and suggested mitigation (email request form online at [http://sero.nmfs.noaa.gov/protected\\_resources/section\\_7/emergency\\_consultation/documents/nmfs\\_emergency\\_consultation\\_form.pdf](http://sero.nmfs.noaa.gov/protected_resources/section_7/emergency_consultation/documents/nmfs_emergency_consultation_form.pdf))
- **Contact:** EMAIL: [nmfs.ser.emergency.consult@noaa.gov](mailto:nmfs.ser.emergency.consult@noaa.gov); TELEPHONE: David Dale, EFH Coordinator (727-551-5736; only staffed during business hours)

#### **1.1.1C.3 NMFS– Southeast Regional Office (SERO) Sustainable Fisheries Program (SF)**

**Regulatory:** Establish fishery closures or exempt affected fisheries from electronic recordkeeping and reporting requirements. Through emergency rulemaking, NMFS closes and reopens areas to fishing activities, as needed, to

protect public health. Any such closure could remain in effect until the circumstances that created the emergency no longer exist if the public has an opportunity to comment on the closure and the Secretary of Health and Human Services concurs with the action. If NMFS determines catastrophic conditions exist, authorization of affected fishermen and dealers to use paper-based in lieu of electronic transactions for basic required functions of our commercial Individual Fishing Quota (IFQ) program until those conditions cease. Similar allowances for other NOAA regulated fisheries programs are pending.

- **Products/Resources:** Fishery disaster assistance
- **Contact:** (727) 824-5305 (this number is only staffed during business hours)

#### **1.1.1C.4 NMFS– Southeast Regional Office National Environmental Policy Act Program (NEPA)**

**REGULATORY:** Advises regarding NEPA compliance for response-related activities for which NMFS is the federal action agency.

- **Interagency Dependencies:** n/a
- **Products/Resources:** NEPA advice
- **Contact:** Noah Silverman, NEPA Coordinator (727-824-5353); only staffed during business hours

#### **1.1.1D.1 OAR– National Sea Grant Program**

**Role:** There are five Sea Grant Programs in the Southeast & Caribbean Region. The sea grant programs support integrated research, education, and extension programs that align with our mission of generating and applying science-based information on issues and opportunities to enhance the practical use and conservation of coastal and marine resources to foster a sustainable economy and environment.

- **Regional Contact:** Lacy.Alison@noaa.gov

**North Carolina Sea Grant:** based out of North Carolina State University, but has offices in Manteo, Morehead County, and Wilmington.

- **Contact:** <https://ncseagrant.ncsu.edu/about-us/our-team/>

**South Carolina Sea Grant:** The Consortium member institutions are Clemson University, Coastal Carolina University, College of Charleston, Medical University of South Carolina, S.C. Department of Natural Resources, S.C. State University, The Citadel, and University of South Carolina

- **Contact:** (843)953-2078 <https://www.scseagrant.org/staff-directory/>

**Georgia Sea Grant:** Based out of the University of Georgia.

- **Contact:** <https://gacoast.uga.edu/about/about-us/staff-list/>

**Florida Sea Grant:** Based out of the University of Florida (UF - Gainesville), but with funded PIs and extension agents in coastal counties around the state

- **Contact:** <https://www.flseagrant.org/faculty-and-staff/>

**Puerto Rico Sea Grant:** Based out of the University of Puerto Rico Mayaguez campus, but works island-wide and in the USVI

- **Contact:** <https://seagrantpr.org/about-the-sea-grant-program/staff/>

## 1.1.2 Response– NWS, NOS, NMFS

### 1.1.2A.1 NWS - Weather Forecast Offices (WFOs)

- **Interagency Dependencies:** Depending on location/track of system—local, state, and federal emergency management support fully engaged. Coordination between NHC and NWS offices occurs at regular intervals along with coordination between NWS offices for state emergency managers. Many NWS offices coordinate for multiple states.
- **Products/Resources:** Numerous briefings ranging from Emergency Operations Centers (EOCs) to conference calls and broadcast/print media. Watches, warnings, and advisories continue. High danger time due to system impacts (e.g. hurricane winds, tornadoes, tropical rainfall, etc.) continuing and emergency response personnel wanting to get out to evaluate the situation. Begin producing maps for system attributes (e.g. highest winds, surge, rainfall, etc.).

### 1.1.2A.2 NWS– Eastern Region Operations Center (ER ROC)

See Section [1.1.1A.2](#)

### 1.1.2A.3 NWS– Southern Region Operations Center (SR ROC)

See section [1.1.1A.3](#).

### 1.1.2A.4 NWS– River Forecast Centers (RFCs)

- **Interagency Dependencies:** Interaction with NWS offices for ground truth and forecasting for rainfall and runoff to propagate through the river basins. Numerous hydroelectric operations will also impact the amount of water through the system. Dam operators may run above flood levels if water level threatens dam structure.
- **Products/Resources:** Numerous briefings ranging from Emergency Operations Centers (EOCs) to conference calls and broadcast/print media. Watches, warnings, and advisories continue. High danger time due to system impacts (e.g. hurricane winds, tornadoes, tropical rainfall, etc.) continuing and emergency response personnel wanting to



get out to evaluate the situation. Begin producing maps for system attributes (e.g. highest winds, surge, rainfall, etc.).

#### **1.1.2A.5 NWS– Ocean Prediction Center (OPC) Ocean Prediction (OPC)**

See [1.1.1A.7](#)

#### **1.1.2A.6 NWS– Tropical Analysis and Forecast Branch (TAFB)**

See [1.1.1A.7](#)

#### **1.1.2B.1 NOS– OR&R Emergency Response Division (ERD)**

**Emergency Response Division (ERD)** hosts training for responding to oil spills and hazmat emergencies, serves as a member of the Interagency Coordinating Committee on Oil Pollution Research, participates in Regional Response Teams for local disaster planning, and maintains tools that can be used for preparedness such as Environmental Sensitivity Index (ESI) maps and data. OR&R Scientific Support Coordinators (SSCs) will embed with US Coast Guard Incident Command Centers/Posts (ICC/ICP) to assist with hazardous materials response efforts. ERD Scientific Support Coordinators (SSCs) provide scientific support to the Federal On-Scene Coordinator, either remotely or at the Incident Command Center/Post (ICC/ICP), to carry out the most effective clean-up operations. Tools including ESI maps, CAMEO, and GNOME are used to provide support. ERMA is used as the Common Operating Picture (COP) at Incident Command Posts.

- **Interagency Dependencies:** US Coast Guard, USACE, FEMA, and other federal, state, and local agencies.
- **Products/Resources:** Scientific Support Coordinators (SSCs), Environmental Sensitivity Index Maps and data (ESIs), CAMEO, GNOME, ADIOS, Science of Oil Spills/Chemical Releases classes, Shoreline Cleanup and Assessment Technique (SCAT) class.
- **Contact:** Brad Benggio ([brad.benggio@noaa.gov](mailto:brad.benggio@noaa.gov))

#### **1.1.2B.2 NOS– OR&R Marine Debris Program (MDP)**

**Marine Debris Program (MDP)** facilitates a marine debris response planning effort in coastal states to develop guides that outline existing response structures at the local, state, and federal levels. These guides assist with a coordinated, well-managed, and immediate response to waterway debris incidents impacting the state. MDP provides scientific support from defined core expertise and services based on requests from responding agencies, or self-activation in severe debris events.

- **Interagency Dependencies:** US Coast Guard, USACE, FEMA, and other federal, state, and local agencies.

- **Products/Resources:** Marine Debris Emergency Response Guides. Best Management Practices for removal of debris from wetlands and other intertidal areas, and lessons learned documents.
- **Contact:** Sarah Latshaw (sarah.latshaw@noaa.gov) for the SE and Ashley Hill (ashley.hill@noaa.gov)

#### 1.1.2B.3 NOS– OR&R DPP

**Disaster Preparedness Program (DPP)** serves as the Incident Coordinator for the NOS Incident Management Team, and DPP/OR&R also serve as the NOS liaison to the National Response Coordination Center when activated for major incidents

#### 1.1.2B.4 NOS– OCM

**Office for Coastal Management (OCM)** conducts communication with in-region staff, state, and territorial partners to make them aware of NOAA data and tools to support their needs, as well as to assess the status of staff and facilities

- **Interagency Dependencies:** Coast Guard (and states and Territories) needs aerial imagery to identify marine debris and derelict vessels to target for removal of contaminants and ultimate removal.
- **Contact:** Jeff Payne ([jeff.payne@noaa.gov](mailto:jeff.payne@noaa.gov))

**National Estuarine Research Reserve (NERR) Program:** Reserve staff conduct structural resource assessments on reserve properties, and some support natural resource assessments on reserve properties or other priority areas. Contact: Erica Seiden ([erica.seiden@noaa.gov](mailto:erica.seiden@noaa.gov))

**Coral Reef Conservation Program:** Depending on funding, coral programs in concert with others may undertake coral reef assessments during response.

- **Interagency Dependencies:** May be dependent on other NOAA programs (i.e. NMFS Restoration Centers, NMSP) staff to design and execute assessments.)
- **Products / Resources:** Rapid response assessments of coral damage in consultation with NMFS Restoration Center (RC)
- **Contact:** Jen Koss ([jennifer.koss@noaa.gov](mailto:jennifer.koss@noaa.gov))

#### 1.1.2B.5 NOS– ONMS

The National Marine Sanctuary System may be able to provide vessels of opportunity. For an oil spill, ONMS assumes operations outside areas of active oiling.

- **Interagency Dependencies:** May be dependent on other program and partner needs and would require specific tasking through OPA (FOSC) or via FEMA.
- **Products/Resources:** ONMS small boats

- **Contact:** Site Superintendents and VOCs
- Environmental Unit Resources at Risk Specialists.** ONMS has personnel across the system that can serve within a response RAR specialists for both natural and cultural resources.
- **Interagency Dependencies:** ONMS has personnel across the system that can serve within a response RAR specialists for both natural and cultural resources
  - **Contact:** Lisa Symons (Lisa.Symons@noaa.gov)

**ESF-10 Support (Derelict and Abandoned vessel removal).** ONMS staff (FKNMS). Provides Incident Command Post (ICP) support for the ESF-10 Environmental Unit including emergency consultation and permitting as well as regional and statewide coordination. Provides field personnel to evaluate potential environmental issues with salvage of derelict vessels. This is done in accord with Best Management Practices that were established under emergency consultation for the National Marine Sanctuaries Act (NMSA), Magnuson-Stevens Act (MSA), Marine Mammal Protection Act (MMPA), Essential Fish Habitat (EFH) and Endangered Species Act (ESA) with both state and federal partners.

- **Interagency Dependencies:** ORR, USCG, FEMA, DOI (NPS & USFWS) state trustees and state law enforcement personnel
- **Products/Resources:** Scientific expertise in coastal and marine habitats and an understanding of how salvage and removal activities could impact habitats. Understanding of federal consultation and emergency permitting requirements. Knowledge of ICS and ERMA.
- **Contact:** lisa.symons@noaa.gov

#### 1.1.2B.6 NOS– National Geodetic Survey / Remote Sensing Division (NGS / RSD)

NGS flies aerial survey missions to capture high resolution mapping imagery to provide situation awareness to first responders and to support search and rescue, safety of navigation, damage assessment, and recovery efforts. The data collected are rapidly processed and provided to emergency responders and coastal managers, often within hours of collection.

- **Interagency Dependencies:** FEMA typically assigns NOS to provide Emergency Response Imagery for damage assessment and response priorities. This imagery is usually the first look at the extent of damage caused by the hurricane.

#### 1.1.2C.1 NMFS– SERO PR

**RESPONSE:** NMFS oversees, coordinates, and authorizes stranding network responses to marine mammal and sea turtle strandings in the South Atlantic, the Gulf of Mexico, and the U.S. Caribbean. Provides responders technical guidance, assists in locating veterinarians and rehabilitation facilities, and

authorizes certain response measures, such as euthanasia or rehabilitation, as appropriate. In addition, NMFS SERO PR investigates the cause of strandings, and may undertake emergency rulemaking to address the issue if the cause is fishery-related. To report dead, debilitated, or distressed live marine mammals (i.e., whales, dolphins, or manatees) on land or in the water, including either oiled or non-oiled animals, call 1-877-WHALE HELP (1-877-942-5343). NMFS also has created a Dolphin and Whale 911 telephone app that can be used to direct calls to the nearest stranding response hotline. To report dead, debilitated, or distressed sea turtles on land or in the water, including either oiled or non-oiled animals, call the Sea Turtle Stranding and Salvage Network state coordinator in the state where the animal is located. Marine Mammal Health and Stranding Response Program also provides direction for Unusual Mortality Events (UMEs) and will form a working group when necessary. A UME is defined under the MMPA as: “a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response.”

- **Products/Resources:** Marine mammal and sea turtle stranding response coordination and authorizations
- **Contact:** Marine Mammal Strandings (1-877-942-5343); Dolphin & Whale 911

**RESPONSE:** NMFS offers local expertise and technical assistance and guidance to Unified Command Centers (UCCs) regarding our trust resources. Depending upon the location and nature of a disaster event, agency employees may staff the Incident Command Post (ICP), or otherwise support wildlife response, shoreline cleanup and assessment technique operations, and other field activities, as assigned. The nature and duration of the services provided will depend on the services requested by the ICP, the type and scope of the event, and the availability of staff resources.

- **Products/Resources:** ICP services may include: coordinating reconnaissance for protected resources; receiving reports of oiled, injured, or distressed marine mammals and sea turtles through the wildlife reporting hotline (if activated), and relaying information to network responders in the field; activating and coordinating personnel, equipment, transportation, and material response resources through the Command Post; coordinating de-oiling and rehabilitation of affected marine mammals and sea turtles; coordinating necropsy and sampling protocols; considering and implementing hazing options; working with the Environmental Unit to implement best management practices; facilitating ephemeral data collection for the Natural Resource Damage Assessment team; reporting out numbers of affected animals; and facilitating contact between NOAA Fisheries public information officers and the Joint Information Center on issues related to our trust resources.
- **Contact:** (727) 824-5312 (only staffed during business hours); David Dale, EFH Coordinator (727-551-5736); only staffed during business hours

### **1.1.2C.2 NMFS– Southeast Regional Office (SERO) Habitat Conservation Program (HC)**

See [1.1.1C.2](#)

### **1.1.2C.3 NMFS– Southeast Regional Office (SERO) Sustainable Fisheries (SF)**

**RESPONSE:** NMFS administers disaster assistance under the Magnuson-Stevens Fishery Conservation and Management Act and the Interjurisdictional Fisheries Act. If an eligible entity (state governor or elected or duly appointed representative of an affected fishing community) asks the Secretary of Commerce to make a fishery disaster determination, NMFS evaluates the information provided in support of that request. The Secretary may also initiate a review at his or her own discretion. If the Secretary determines that a fishery disaster has occurred, then the fishery is eligible for disaster assistance subject to a Congressional appropriation. If Congress appropriates funds, we work with the eligible entities to distribute those funds consistent with the statutory requirements and conditions of the appropriation.

- **Contact:** Mike Travis (Mike.Travis@noaa.gov)

### **1.1.2C.4 NMFS– Office of Habitat Conservation Restoration Center (RC)**

**RESPONSE:** NMFS participates in the Natural Resource Damage Assessment (NRDA) process as part of the Damage Assessment Remediation and Restoration Program (DARRP) and provides expertise on restoration planning and implementation.

- **Interagency Dependencies:** NOS OR&R ARD; GCNR
- **Products/Resources:** Expertise on issues relating to assessment of injuries to fish and aquatic wildlife.

## **1.1.3 Recovery– NWS, NOS**

### **1.1.3A.1 NWS –River Forecast Centers (RFCs)**

- **Interagency Dependencies:** RFCs send river forecasts to NWS offices. NWS offices ingest and issue flood watches, warnings, and advisories.
- **Products/Resources:** Rainfall reports are collected from ground observations, WSR-88D estimates, river gages, and river observers. Water levels remain high and new rainfall will likely have a larger and faster impact due to saturated soils.

### **1.1.3B.1 NOS– Disaster Preparedness Program (DPP)**

provides lessons learned to integrate into future incident response activities. (see [1.1.1B.1](#))

### 1.1.3B.2 NOS– Marine Debris Program (MDP)

Marine Debris Program (MDP) The MDP provides leveraging opportunities in situations where marine debris events are beyond the scope of any one program. Supplemental funding may be appropriated and the MDP can facilitate the efficient use of those funds by supporting entities addressing this debris. Funding is typically used for assessment, removal, and disposal of marine debris related to a disaster. The MDP provides annual competitive funding opportunities focused on the removal of marine debris, and projects can focus on priority areas impacted by a disaster.

- **Contact:** Jason Rolfe ([jason.rolfe@noaa.gov](mailto:jason.rolfe@noaa.gov)),
- **Southeast Regional Contact:** Sarah Latshaw ([sarah.latshaw@noaa.gov](mailto:sarah.latshaw@noaa.gov)) and Ashley Hill ([ashley.hill@noaa.gov](mailto:ashley.hill@noaa.gov))

### 1.1.3B.3 NOS– Office for Coastal Management (OCM)

**STAFFING RECOVERY SUPPORT FUNCTIONS:** Depending on the event, OCM may deploy staff via mission assignment to assist with one or more Long-Term Recovery Support Functions (RSFs) under the National Disaster Recovery Framework. The Natural and Cultural Resources (NCR) RSF is where NOAA has had the most involvement, although NOAA may also contribute to Community Planning and Capacity Building (CPCB), Economic, and/or Infrastructure RSFs.

- **Interagency Dependencies:** FEMA Recovery Support Functions (Supporting role to lead agencies)
- **Contact:** Regional Directors and Leads

**FUNDING:** OCM will work with NOAA Global Management Division (GMD), Office of Management and Budget (OMB) to provide flexibility to award recipients that have been affected by the event

- **Interagency Dependencies:** NOAA Grants Management Division (GMD)
- **Contact:** Joelle Gore ([joelle.gore@noaa.gov](mailto:joelle.gore@noaa.gov))- Director, OCM Stewardship

**NATIONAL COASTAL ZONE MANAGEMENT PROGRAMS:** Some program staff support ESFs such as marine debris removal, while others are engaged with Natural and Cultural Resources RSFs. Some Programs have developed disaster recovery and redevelopment plans following the National Disaster Recovery Format, or have developed to better prepare for and increase smart rebuilding after events. Many state programs are involved in emergency permitting post storm.

- **Interagency Dependencies:** Emergency Recovery functions
- **Products/Resources:** Disaster Recovery and Redevelopment Plans
- **Contact:** Laura Petes ([laura.petes@noaa.gov](mailto:laura.petes@noaa.gov))

## **NATIONAL ESTUARINE RESEARCH RESERVE (NERR)**

**PROGRAMS:** Reserves provided staging areas for marine debris/derelict vessels after being removed from the disaster-impacted/sensitive environment..

- **Contact:** Kim Texiera
- **Coral Reef Conservation Program** (see [above](#))

### **1.1.3B.4 NOS– National Geodetic Survey/Remote Sensing Division (NGS/RSD)**

NGS Emergency Response Imagery is used by FEMA, USGS, USACE, coastal planners, and the general public to assess damage from a storm, discover obstructions to navigation, and make decisions about various recovery related efforts.

- **Products/Resources:** Pre- and post-event Oblique Aerial Imagery, LIDAR
- **Contact:** Mike Alasken

### **1.1.4 Mitigation or Adaptation– NOS Office for Coastal Management (OCM)**

#### **1.1.4A.1 NOS– OCM**

OCM Provides state and territorial CZM, NERR, and CRCP partners and other coastal managers information, tools, trainings and case studies, funding, and convenes partners, managers, and experts to improve understanding planning for and implementing adaptation strategies to reduce future impacts and enhance community resilience along the coast.

See [above \(DATA\)](#)

**FUNDING:** OCM has a number of funding sources that can be used for adaptation and mitigation planning and implementation: The Coastal Zone Management Act (CZMA) provides funds to approved coastal programs and Estuarine Reserves to conduct research, outreach planning, policy development, and related to risk and vulnerability analysis, mitigation, and adaptation planning and enhancing community resilience. The Coral Reef Conservation Act provides funding that may be used to enhance resilience to coastal hazards and climate change.

- **Products/Resources:** Coastal Zone Management Act Cooperative Agreements. Coral Reef Conservation Act

**TRAININGS:** OCM partners with local hosts to provide a variety of resources and formats to coastal managers. This includes instructor-led classroom and online courses, self-guided modules, quick references, case studies, videos, and publications related to resilience and adaptation (e.g. Adaptation Planning for Coastal Communities, Risk Communication, Green Infrastructure for Resilience, Coastal Inundation Mapping.) These trainings

and resources help coastal decision-makers identify, implement, and communicate resilience and adaptation strategies to reduce future impacts and enhance community resilience along the coast.

- **Products/Resources:** Adaptation Planning for Coastal Communities Training; Introducing Green Infrastructure Building Risk Communication Skills; Coastal Inundation Mapping; Coral Reef Information System (CoRIS <https://www.coris.noaa.gov/>); Nature-Based Solutions for Coastal Hazards; Funding and Financing Coastal Resilience; Seven Best Practices for Risk Communication; Social Science Basics for Coastal Managers; How to Consider Climate Change in Coastal Conservation; How to Map Open Space for Community Rating System Credit; How to Calculate Coastal Flood Frequency; Green Infrastructure Mapping Guide; Naturally Resilient Communities; Coastal and Waterfront Smart Growth Guide.
- **Contact:** Ginger Hinchcliff ([ginger.hinchcliff@noaa.gov](mailto:ginger.hinchcliff@noaa.gov))– Director, Learning Services Division; Donna McCaskill ([Donna.McCaskill@noaa.gov](mailto:Donna.McCaskill@noaa.gov)), Communications Program

**CASE STUDIES:** Digital Coast provides a number of peer-to-peer case studies that share approaches and techniques that have been used in coastal areas across the nation. Many of the case studies share approaches and successes about increasing community resilience.

- **Contact:** Ginger Hinchcliff ([ginger.hinchcliff@noaa.gov](mailto:ginger.hinchcliff@noaa.gov)), Donna McCaskill ([Donna.McCaskill@noaa.gov](mailto:Donna.McCaskill@noaa.gov))

#### **GEOSPATIAL INDEFINITE DELIVERY INDEFINITE QUANTITY**

**CONTRACT:** This task order contracting vehicle is managed by OCM and is available to partners for acquiring geospatial services such as the collection of LiDAR data.

- **Products/Resources:** Geospatial IDIQ
- **Contact:** Dave Stein ([dave.stein@noaa.gov](mailto:dave.stein@noaa.gov))

**CONVENING:** OCM convenes partners, managers, and experts to improve understanding and planning for and implementing adaptation strategies to reduce future impacts and enhance community resilience along the coast.

- **Products/Resources:** Assistance to hold workshops, meetings for CZM, NERR, Coral and other partners.
- **Contact:** Ginger Hinchcliff ([ginger.hinchcliff@noaa.gov](mailto:ginger.hinchcliff@noaa.gov))

**NATIONAL ESTUARINE RESEARCH RESERVES (NERRs):** NERRs programs conduct research on natural and nature-based responses to mitigate hazards (e.g. living shorelines) and provide outreach to communities, local, and state decision makers on coastal hazards and options for enhancing resilience.

**CORAL REEF CONSERVATION PROGRAM (CRCP):** Coral Reef Management positions located on-site in Florida, U.S. Virgin Islands (USVI), and Puerto Rico may provide assistance and/or information regarding



applicability of certain types of mitigation that could help conserve coral reef ecosystems in preparation for hurricane events.

## **1.2 Oil Spills, Hazardous Chemical Releases, and/or Maritime Accidents**

Oil spills, hazardous chemical releases, and maritime accidents are classified together. NOAA's engagement in response would likely be similar for these emergencies, as its predominant role in a maritime accident would be to respond to the associated spill of oil or other hazardous chemicals.

Per National Incident Management System (NIMS) protocols, a Federal On-Scene Coordinator (FOSC) is assigned to a significant spill response or hazardous substance release. For coastal operational areas, the Captain of the Port (COTP) of the U.S. Coast Guard is generally assigned as the FOSC. For inland operational areas, US Environmental Protection Agency On-Scene Coordinators generally serve as the FOSC. In the Southeast and Caribbean Region, the following U.S. Coast Guard Sectors oversee spill responses along the coast:

- USCG Sector St. Petersburg, FL
- USCG Sector Key West, FL
- USCG Sector Miami, FL
- USCG Sector Jacksonville, FL
- USCG Sector Charleston, SC
- USCG Sector North Carolina (Wilmington, NC)
- USCG Sector San Juan, PR

In addition, U.S. Coast Guard District 7 Headquarters oversees spill responses in the Straits of Florida beyond the Exclusive Economic Zone (EEZ) boundary. For significant maritime accidents, the National Transportation Safety Board (NTSB) plays an investigative role and coordinates with supporting agencies, as needed. It is incumbent upon responding NOAA Line Offices and programs to work with these and other agencies as necessary and appropriate.

**\*Note** NIMS structures responses to events such as hurricanes, tornadoes, and terrorist attacks differently from spills that fall under the National Contingency Plan (NCP). In spill responses, two entities are added: the Environmental Unit and the Wildlife Branch, which typically are staffed by NOAA.

**Damage Assessment, Remediation, and Restoration Program (DARRP)** is a cross-Line Office program that conducts the Natural Resource Damage Assessment (NRDA) process. Deployment of the DARRP team, consisting of members from OR&R ARD, the NMFS Restoration Center (RC), and the General Counsel of Natural Resources (GCNR), is at the discretion of the Regional Managers from ARD, RC, and GCNR. The Regional Resource Coordinator (ARD) conducts the NRDA and advises emergency responders on potential impacts to natural resources from oil or chemical spills, and spill response activities. For purposes of conducting the NRDA, DARRP members do not need to be requested by the FOSC due to the

fact that they are deploying under a separate legal mandate. There can be overlap between the individuals who are part of DARRP and the individuals who make up the NOAA SST. Several DARRP participants are located in the Southeast & Caribbean region and are available to participate on the SST or in NRDA.

- **NMFS** (both nationally and regionally) participates in the NRDA process as part of DARRP and provides expertise on restoration planning and implementation. NMFS' Southeast Regional Office (SERO) may establish temporary fishery closures, as needed, to ensure seafood safety. In addition, SERO provides technical advice and recommendations for minimizing or addressing the adverse effects of emergency response activities on marine mammals, other threatened and endangered species and habitats protected under the Endangered Species Act (ESA), and essential fish habitat protected under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). SERO oversees, coordinates, and authorizes stranding network responses to marine mammal and sea turtle strandings.
- **NMFS Office of Law Enforcement (OLE)** supports the core mission mandates of NMFS: maximizing productivity of sustainable fisheries and fishing communities and protection, recovery, and conservation of protected species. OLE protects marine wildlife and habitat by enforcing domestic laws and international treaty requirements designed to ensure these global resources are available for future generations. Special agents and enforcement officers ensure compliance with the nation's marine resource laws and take enforcement action when these laws are violated.
- **General Counsel of Natural Resources (GCNR)** participates in the NRDA process as part of DARRP and provides legal support for injury assessment, restoration planning, and resolution of legal liability related to natural resource injuries.

**NOS Office of Response and Restoration (OR&R)** assumes a primary role for NOAA concerning the emergency response to oil and hazardous substance spills in the Southeast and Caribbean. OR&R consists of three divisions: Assessment and Restoration Division (ARD), Business Operations Division (BOD), Disaster Preparedness Program (DPP), Emergency Response Division (ERD), and Marine Debris Program (MDP). OR&R also has several specific positions and teams essential to emergency response: the Scientific Support Coordinator (SSC), the Scientific Support Team (SST), and the Regional Resource Coordinator (RRC). Each of these positions is housed in one of the aforementioned divisions. OR&R's expertise spans oceanography, biology, chemistry, geology, and natural resource economics, allowing the response team to estimate oil and chemical trajectories, analyze chemical hazards, and assess risks and injuries to coastal wildlife and habitats. OR&R's ERD facilitates spill prevention, preparedness, and response at national and local levels. ERD represents NOAA and DOC on the National Response Team (NRT) and Regional Response Team (RRT), and ERD employees are part of the SST led by the SSC (see below for details on this position). In the event of an oil or hazardous chemical spill in the Southeast and Caribbean, ERD should be the first NOAA division contacted. ERD's SSC, described below, represents NOAA in emergency responses to spills when requested by the USEPA or USCG, depending on the location of the spill. Two ERD

Scientific Support Coordinators (SSC) serve this region: one located in Miami, FL (serving SC, GA, FL, PR, and VI) and the other located in New Jersey (serving NC). The NOAA SSC (or OR&R HAZMAT Duty Officer) is responsible for appropriate NOAA notifications required by OR&R. Expertise spans oceanography, biology, chemistry, and geology. Capabilities include spill trajectories, chemical hazard analysis, and habitat risk assessments. ERD employees, including SSCs, offer extensive scientific expertise with regard to oil and chemical spills. Specific capabilities include:

- Supporting emergency response in coordination with DARRP damage assessment and remediation activities;
- Developing contingency plans in conjunction with other offices;
- Developing tools and providing training; and
- Providing expertise on such issues as dispersant use, alternate response technologies, and response countermeasures.

Though oil and chemical spills are ERD's primary focus, the Division also provides support for incidents such as downed aircraft, search and rescue, and tracking of floating objects. Also, perform the role of Natural Resource Advisor under ESF-10.

NOAA Scientific Support Coordinators (SSCs) are housed within OR&R's ERD and are regionally associated with USCG Districts. The National Oil and Hazardous Substances Pollution Contingency Plan, described in [Section 3.1B](#) stipulates the NOAA SSC as the principal science advisor to the FOSC for spill response. During a response, the SSC may be designated by the FOSC to assume the following responsibilities:

- Serve as the principal advisor for scientific issues: chemical hazards, environmental and weather conditions, field observations, trajectory analysis, resources at risk, chemical hazards analyses, assessments of the sensitivity of biological and human-use resources, and environmental tradeoffs of countermeasures and cleanup methods;
- Seek consensus on scientific issues impacting the response, communicate differing opinions, and resolve conflicting scientific information within the scientific community;
- Coordinate required emergency consultations for protected resources (e.g., threatened and endangered species, cultural resources, and sensitive habitats);
- Communicate with and coordinate the federal, state, and academic scientific community and trustee agencies;
- Coordinate requests for assistance from federal and state organizations; and integrate expertise from governmental agencies, universities, community representatives, and industry to assist the [FOSC](#) in evaluating the hazards and potential effects of releases and in developing response strategies.

**\*Note:** Although the SSC for coastal zone response is from NOAA, that SSC does not represent only NOAA during the response process. The SSC is the lead NOAA representative to the Unified Command (per NIMS, described in [Section 2.1B](#)) during the emergency phase of the response, but the SSC is responsible for obtaining the best science available from all sources. In the event of a spill, the NOAA representative to the Regional Response Team (RRT) is the designated NOAA representative and advocate for NOAA-specific issues.

The SSC may assemble a Scientific Support Team (SST) consisting of members from the OR&R ERD, Assessment and Restoration Division (ARD), Marine Debris Division, and others. The SSC serves as the NOAA/DOC principal scientific advisor to the FOSC and leads the SST. The Hazmat Duty Officer in ERD provides resources, including SST personnel, during emergency response. In a spill response, each SSC is supported by an SST, which is composed primarily of staff from OR&R's ERD and ARD (described below).

The SST's expertise includes:

- Oil slick trajectory forecasting and monitoring
  - Pollutant transport modeling
  - Environmental chemistry
  - Chemical hazard assessment
  - Health and safety
  - Information management
  - Resources at risk
  - Biological assessments
  - Environmental tradeoffs of cleanup strategies
- 
- **Assessment and Restoration Division (ARD)** OR&R's ARD is composed of biologists, toxicologists, ecologists, policy analysts, information specialists, attorneys, geologists, environmental engineers, and natural resource economists. Like ERD, ARD assesses and restores coastal habitats and resources affected by the release of hazardous materials or ship groundings. The division has particular expertise in aquatic risk assessment techniques, contaminated sediment, and data interpretation, and may be called upon by the USEPA to assist with these issues. In such circumstances, ARD might work with the USEPA to:
    - Coordinate NOAA technical support provided to USEPA during removal or remedial actions;
    - Determine the severity of risk posed to natural resources from site releases;
    - Review and recommend approaches to minimize coastal resource impacts as part of remedial investigation and feasibility studies;
    - Act as technical liaison between NOAA and USEPA, or other federal, state, or local agencies on coastal resource issues of common interest;
    - Estimate pollutant fate and transport in water and sediments to allow prediction of concentration gradients resulting from a pollutant release or hazardous waste site;
    - Evaluate clean-up strategies and their potential effects on natural resources;
    - Incorporate mitigation and restoration recommendations into cleanup decisions; and
    - Develop guidelines on implementation of cleanup of contaminated water and sediments to protect resources and minimize the risk of human exposure through the marine food chain.

As part of the DARRP, ARD, in coordination with co-trustee agencies, assesses injury and restores natural resources.

- **Regional Resource Coordinator (RRC)** RRCs are housed within ARD. RRCs work with USEPA regional offices to provide technical support to evaluate natural resource concerns at hazardous waste release sites and improve coordination with federal and state natural resource trustee agencies. As environmental scientists, RRCs assist the EPA in identifying and assessing risks to coastal resources from hazardous waste sites, as well as in developing cost-effective strategies to minimize or mitigate those risks. Early notification of potential natural resource injuries allows federal and state resource trustees to carry out responsibilities in a manner consistent with EPA requirements and schedules for remedial actions and cost recovery negotiations with responsible parties.
- **Marine Debris Program (MDP)** OR&R's MDP supports national and international efforts to research, prevent, and reduce the impacts of marine debris. Marine debris is any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment. The MDP serves as a centralized capability within NOAA, coordinating and supporting activities within NOAA and with other federal agencies, as well as using partnerships to support projects carried out by state and local agencies, tribes, nongovernmental organizations, academia, and industry. Within the Southeast and Caribbean, the MDP works with local partners to address marine debris through removal efforts and prevention using education and outreach. Additionally, the MDP coordinators provide scientific support to plan for and respond to impacts of significant, acute marine debris events, such as during Hurricanes Irma (2017), Maria (2017), and Michael (2018).

**Office of Oceanic and Atmospheric Research (OAR) and NOAA's National Centers for Coastal Ocean Science (NOS)** provide scientific and technical expertise and support as requested by other NOAA Line Offices, and specifically the SSC.

**National Weather Service (NWS)** provides weather decision-support services for response efforts to oil and hazardous chemical spills upon SSC or FOOSC request. NWS also provides services in response to federal, state, and local government requests. Regional-scale impact-based weather decision support services (IDSS) across the Southeast and Caribbean Region are covered by NWS Eastern and Southern Regions, and may be coordinated through the local NWS office or the NWS Southern and Eastern Regional Operations Centers (ER-ROC and SR-ROC). Actual weather support for emergency response and IDSS generally are provided by the local Weather Forecast Offices (WFOs), as well as the National Hurricane Center/Tropical Analysis and Forecast Branch. Tsunami-based IDSS for the Southeast and Caribbean Region is covered by ER-ROC and SR-ROC. Tsunami support for emergency response in the Southeast and Caribbean is provided by the National Tsunami Warning Center (NTWC), Pacific Tsunami Warning Center (PTWC), International Tsunami Information Center (ITIC), and Caribbean Tsunami Warning Program (CTWP).

**Office of National Marine Sanctuaries (ONMS)** may become involved in either assessing impacts to NOAA trust resources or as a provider of vessels of opportunity if spill in or near sanctuary --assumes operations outside areas of active oiling. For a several week event, assumes evacuation orders have been lifted or staff are able to return early, vessels are unimpacted and that ramps for launching vessels are available. In some instances larger ONMS vessels have been used as temporary office/shelter space for employees and partners.

## **1.2.1 Preparedness– NOS, OAR, NMFS, NWS**

### **1.2.1A.1 NOS–OR&R ARD**

**Assessment and Restoration Division (ARD)** develops protocols for data collection in the aftermath of a pollution event.

- **Interagency Dependencies:** US Coast Guard, EPA, and other federal, state, and local agencies.
- **Products/Resources:** DIVER and ERMA
  - ERMA is a web-based GIS tool that integrates and synthesizes various real-time and static datasets into a single interactive map, thus provides a fast visualization of the situation and improves communication and coordination among responders and environmental stakeholders.
  - DIVER Explorer allows users to search and download a broad array of environmental characterization and project planning data specific to geographic regions or activities.
- **Contact:** Kevin Kirsch ([kevin.kirsch@noaa.gov](mailto:kevin.kirsch@noaa.gov))

### **1.2.1A.2 NOS– OR&R DPP**

See section [1.1.1B.1](#)

### **1.2.1A.3 NOS– ONMS**

See section [1.1.1B.3](#)

### **1.2.1B.1 OAR–**

See section [1.1.1D.1](#)

### **1.2.1C.1 NMFS–**

See section [1.1.1C.1](#)

### **1.2.1D.1 NWS–WFOS, ER ROC, SR ROC, OPC, TAFB**

See section [1.1.1A.1](#)

## 1.2.2 Response– NOS, NMFS, NWS

### 1.2.2A.1 NOS– OR&R ARD

**Assessment and Restoration Division (ARD)** assesses impacts to natural resources and human uses of those resources impacted by oil spills, chemical releases, and groundings.

- **Products / Resources:** DIVER and ERMA (see [1.2.1A \(ARD\)](#) above for more info)

### 1.2.2A.2 NOS– OR&R ERD– See section [1.1.2B.1](#)

### 1.2.2A.3 NOS– ONMS– See section [1.1.2B.5](#)

### 1.2.2B.1 NMFS– See section [1.1.2C.1](#)

### 1.2.2E NWS– WFOS, ER ROC, SR ROC, OPC, TAFB See section [1.1.1A](#)

## 1.2.3 Recovery–

### 1.2.3A.1 NOS– OR&R ARD

**Assessment and Restoration Division (ARD)** Develops and implements restoration projects to offset the impacts. Provides lessons learned to integrate into future incident response activities.

- **Interagency Dependencies:** Co-trustees (federal, state, and tribal agencies depending on case)
- **Products/Resources:** NRDA
- **Contact:** Kevin Kirsch (kevin.kirsch@noaa.gov)

### 1.2.3A.2 NOS– OR&R DPP

**Disaster Preparedness Program (DPP)** Provides operational coordination, working the national RSF coordinators and incident level RSF field coordinators to help connect NOAA resources to community needs and facilitate mission assignments/support agreements.

See section [1.1.1B.1](#)

### **1.3 Large Scale Fire Event**

NWS is the primary NOAA Line Office to provide decision-support services for large fire events. In the event of a particularly large or challenging fire, it is likely that an NWS Incident Meteorologist (IMET) will be called and deployed for on-site support services. In this scenario, NOAA would be more involved, and more communication between NOAA Line Offices could be warranted.

NWS responsibilities in fire response are detailed in the [Interagency Agreement for Meteorological and Other Technical Services](#). Upon request, the NWS is required to provide weather forecasts, consultation, and technical advice; provide IMETs in support of the fire weather program; provide short-range fire weather outlooks; and provide and participate in fire weather and wildland fire response training.

Although IMETs operate out of WFOs, they are trained for regional- and national-scale fire weather response. IMET deployment decisions fall to the National Fire Weather Operations Coordinator (NFWOC) located at the National Interagency Fire Center (NIFC). Both the IMET and WFOs coordinate with the appropriate NWS PR-ROC, and the latter works with the National Fire Weather Operations Coordinator to ensure sufficient on-site NWS capability.

OAR houses the Regional Integrated Sciences and Assessments (RISA) Program, which is working to develop a national map for fire risk and management. OAR may also provide expertise via atmospheric chemical transport and dispersion models (CMAQ and HYSPLIT) in the National Air Quality Forecast Capability (NAQFC). The (Hybrid Single Particle Lagrangian Trajectory)HYSPLIT plume dispersion model has been used by NWS for requested support from federal, state, and local agencies conducting prescribed burns.

NESDIS offers multiple operational and developmental fire and smoke products from satellite imagery. Operational products show hot spots and smoke plumes indicating possible fire locations, provide aerosol optical depth, and detect and monitor fires using high-resolution satellite data and the Geostationary Operational Environmental Satellite (GOES) Imager.

#### **1.3.1 Preparedness– NWS, OAR**

##### **1.3.1A.1 NWS– WFOS, ER ROC, SR ROC**

See section [1.1.1A](#)

##### **1.3.1B.1 OAR–**

See section [1.1.1D.1](#)



### **1.3.2 Response– NWS**

#### **1.3.2A NWS– WFOS, ER ROC, SR ROC**

See section [1.1.1A](#)

### **1.4 Radiological Release**

For the purposes of this document, this section refers only to radiologic releases (either accidental or deliberate) from non-Department of Defense (DOD) facilities. Response to a domestic radiological release involves a large number of federal agencies and resources, with leadership varying according to the circumstances of the release. In general, incidents are managed via Unified/Area Command, and a designated coordinating entity may be a federal, state, or local government agency. For a federal response in the Southeast and Caribbean, this would most likely be the Department of Homeland Security/USCG or the Nuclear Regulatory Commission (NRC).

Response to a radiological release requires extensive communication among the multiple federal agencies involved. Upon request from the coordinating agency, the Federal Radiological Monitoring and Assessment Center (FRMAC), an interagency organization, is available to respond to a radiological incident. NOAA is a member of the Interagency Modeling and Atmospheric Assessment Center (IMAAC), which coordinates federal production and dissemination of model predictions of airborne hazardous material concentrations. In addition, various state-level agencies support local response and recovery with atmospheric trajectory (plume) and dispersion models. It is advised that NOAA participants neither provide nor disseminate airborne trajectory or waterborne dispersion forecasts unless first coordinated with other federal (via IMAAC) or state participants.

**NWS** is likely to be the first NOAA Line Office notified by local Emergency Management following a radiological release. Upon notification of the need for on-site decision support services, the WFO will notify the NWS Eastern or Southern Region ROC. The ROC, in turn, will coordinate deployment of on-site NWS Emergency Response personnel.

**OAR** could offer scientific expertise in the event of radiological release and use of the Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) Model to compute the atmospheric transport, dispersion, and deposition of radioactive material. Specific expertise/consultation would be provided by the NOAA Air Resources Laboratory (ARL).

**NOS OR&R and NMFS** are involved in radiological release response, via DARRP, if hazardous substances released cause injury to public trust resources.

#### **1.4.1 Preparedness– NWS, OAR, NOS, NMFS**

#### **1.4.1A.1 NWS– WFOS, SR ROC, ER ROC**

See section [1.1.1A](#)

#### **1.4.1B.1 OAR–**

See section [1.1.1D.1](#)

#### **1.4.1C.1 NOS– OR&R**

See section [1.1.1B.1](#)

#### **1.4.1D.1 NMFS**

See section [1.1.1C.1](#)

### **1.4.2 Response– NOS, NMFS**

#### **1.4.2A.1 NOS– OR&R**

See section [1.1.2B.1](#)

#### **1.4.2B.1 NMFS**

See section [1.1.2C.1](#)

### **1.5 Cross Line Office Communication and Coordination**

At the NOAA level, Cross-Line Office coordination is typically handled by [NOAA’s Homeland Security Program Office \(HSPO\)](#), especially gathering information from the Line Offices on impacts to personnel, mission and infrastructure. Within NOAA Line Offices, coordination takes place through organizational structures such as Incident Management Teams (NOS) or Regional Operation Centers (NWS). Cross-Line-Office communication and coordination occurs not only in the context of formal, large-scale activities. For example, in the Florida Keys, NOAA offices communicate and coordinate routinely in areas of education/outreach, environmental monitoring, maritime operations (and weather impact-based decision support services), and even applied research.

For some emergencies, only one NOAA Line Office is needed to provide an effective response. For example, when NOAA’s Office of Response and Restoration provides support to the US Coast Guard on a local spill. However, when two or more NOAA Offices are involved in a large-

scale event, clear and efficient communication and coordination are needed to simultaneously provide a high level of service and efficiently use NOAA's own expertise and resources.

The goal of the series of workshops SECART hosted was to enhance cross office understanding and communication before, during and after during events. This guide resulted from a need expressed during the workshops and gives offices (and partners) in the region a resource to better understand disaster-related office roles and responsibilities, and provides contact information for those offices.

Communication tools used to enhance coordination across NOAA are mentioned throughout this Guide. These include (but are not limited to): NOAA Emergency Notification System (ENS), NOS Event Dashboard, NOAA Response Asset Directory (NRAD), and NWSSchat. For additional communication tools please see [Appendix C](#).

SECART will continue to promote cross office communication and coordination as related to extreme events in the region.

## SECTION 2: FEDERAL COMMAND STRUCTURE

In the event of an emergency response, NOAA Line Offices adhere to the National Response Framework (NRF), the National Incident Management System (NIMS), NOAA's All-Hazards Concept of Operation (CONOPS), and regulations relating to Natural Resource Damage Assessment (NRDA) under the Oil Pollution Act of 1990 (OPA 90) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended. Each is discussed below. This Section includes two components:

- **2.1**– an overview of federal response command structures that dictate NOAA's engagement in large-scale emergency response, extending from initial deployment to follow-up assessments. This section describes the National Response Framework (NRF), Emergency Support Functions (ESF), the National Incident Management System (NIMS), the NOAA All-Hazards Concept of Operations (CONOPS), and the Natural Resource Damage Assessment (NRDA) and their roles.
- **2.2**– an overview of the federal recovery command structure. This section describes the National Disaster Recovery Framework (NRDF) and the Recovery Support Federal Leadership Group (RSFLG). Most event-specific protocols fall within federal response command structures. Contact directories, which include the names of all positions that might need to be notified for each emergency event are included in [Appendix F](#).

### 2.1 Federal Response Command Structures

#### A. National Response Framework (NRF) and Emergency Support Functions (ESF)

The National Response Framework is a guide to how the Nation responds to and recovers from all types of disasters and emergencies in a systematic unified manner. The NRF establishes principles that enable all responding entities (federal, state, local, tribal, private-sector, and other nongovernmental) to prepare for and provide a unified national response to domestic disasters and emergencies. It works hand-in-hand with the National Incident Management System (NIMS), described in [Section 2.1B](#).

The NRF identifies key response principles, as well as the roles and structures that organize national response. It describes how communities, states, federal agencies, the private sector, and nongovernmental partners apply these principles for a coordinated, effective national response. The NRF is designed to be flexible and can be partially or fully implemented, depending on the threat or response circumstances.

NRF development was mandated by the Homeland Security Act of 2002 and Homeland Security Presidential Directive-5 (HSPD-5), "Management of Domestic Incidents." NOAA's Homeland Security Program Office (HSPO) is responsible for ensuring NOAA's compliance with the NRF during a response. Emergency Support Functions (ESFs) are mechanisms at the operational level of NRF and are used to organize responding parties and provide assistance during an emergency response. ESFs that would likely require operational participation by NOAA include, but are not limited to, ESF-3 (Marine Debris), ESF-4 (Firefighting Annex), ESF-9 (Search and Rescue Annex),

and ESF-10 (Oil and Hazardous Materials Response Annex). Detailed descriptions of these ESFs are included in [Appendix A](#).

## **B. National Incident Management System (NIMS)<sup>3</sup>**

While the NRF describes federal roles, policies, and structures in emergency response, the National Incident Management System (NIMS) provides the template for actual incident management. Like the NRF, NIMS was developed in response to HSPD-5. The NIMS model is applicable in response protocols regardless of the cause, size, location, or complexity of the emergency. It is also applicable at all jurisdictional levels, across functional disciplines, and across sectors, drawing upon the assets of public, private, and nongovernmental agencies.

The most widely known component of NIMS is the Incident Command System (ICS).<sup>4</sup> ICS is used to organize on-scene operations for a broad range of emergencies. It is normally structured to facilitate activities across five functional areas: Command, Operations, Planning, Finance/Administration, and Logistics. Incident Command for significant and/or large events may be assumed by a Federal On-Scene Coordinator (FOSC). The ICS additionally stipulates establishment of a Public Information Officer (PIO), a Command Staff position responsible for developing and releasing information about an incident to the public and news media.

During large or multi-level pollution incidents, ICS may be expanded into a Unified Command. A Joint Information Center and/or Joint Operations Center might also be engaged. In addition, during large events, it is not unusual for NOAA employees to be deployed in multiple ICS functional disciplines, thus emphasizing the importance of Line Office coordination

## **C. NOAA All-Hazards Concept of Operations (CONOPS)**

The NOAA CONOPS establishes a comprehensive, agency-wide framework for management of incidents that require support from NOAA Line Offices. The CONOPS integrates agency activities to ensure that Mission Essential Functions (MEFs) are executed in an organized and consistent manner through the ICS. The CONOPS does not change the specific authorities and responsibilities of Line Offices or their specific program offices. Each Line Office maintains Standard Operating Procedures (SOPs) to address specific incidents, ensuring a consistent and thorough response and level of incident support. The CONOPS functions in a layered incident support structure depending on the severity or complexity of the incident.

NOAA's Homeland Security Program Office (HSPO) is responsible for NOAA Headquarters' plans, programs, and policies for execution of incident management. Specifically, the HSPO is responsible for maintaining NOAA CONOPS for all incident management and ensuring the agency's compliance with the NRF. During a significant response and recovery effort, the HSPO generally serves in an advisory capacity. Under

certain circumstances, however, the HSPO can coordinate NOAA's efforts to respond to and recover from hazardous incidents.

#### **D. Natural Resource Damage Assessment (NRDA)**

The Oil Pollution Act of 1990 (OPA) established the interagency Natural Resource Damage Assessment (NRDA) process for oil spills.<sup>3</sup> (See [Section 3.1H](#) for further details.) OPA regulations describe three phases for the NRDA process: pre-assessment, restoration planning, and restoration implementation. Additionally, for hazardous substance releases, separate regulations describe the interagency natural resource damage assessment process (43 Code of Federal Regulations Part 11.3). The Damage Assessment Remediation and Restoration Program (DARRP), which is a partnership of NOAA's National Ocean Service (NOS), National Marine Fisheries Service (NMFS), and the Office of General Counsel of Natural Resources (GCNR), implements OPA and Comprehensive Environmental Response, Compensation, & Liability Act (CERCLA) authorities and conducts NRDA in partnership with other federal, state, and tribal agencies. NOS is also working with FEMA to incorporate natural resources assessments after hurricanes for flood reducing natural infrastructure such as corals, mangroves, wetlands, etc.

## 2.2 Federal Recovery Command Structure

### **National Disaster Recovery Framework (NRDF)**

The National Disaster Recovery Framework is a guide that enables effective recovery support to disaster-impacted States, Tribes, Territorial, and local jurisdictions. It provides a flexible structure that enables disaster recovery managers to operate in a unified and collaborative manner. The NRDF establishes: a set of principles that guide recovery core capability development and recovery support activities; roles and responsibilities of recovery coordinators and stakeholders; a coordinating structure that facilitates communication and collaboration; guidance for pre- and post-disaster recovery planning and; the overall process by which communities can capitalize on opportunities to rebuild stronger, smarter and safer. The NDRF establishes six “Recovery Support Functions” (See below) that provide the coordinating structure for key functional areas of assistance to disaster recovery. The NRDF is developed and managed by FEMA.

### **Recovery Support Functions (also covered in [Appendix B](#))**

The *National Disaster Recovery Framework* sets up six “[Recovery Support Functions](#)” that establish a coordination structure to facilitate problem solving, improve access to resources, and foster coordination among State and Federal agencies, non-governmental partners and stakeholders for key functional areas of assistance. After a presidentially declared disaster as part of the National Disaster Recovery Framework, FEMA may establish Recovery Support Function (RSF) teams in the affected jurisdiction depending on the needs and input from the impacted State/jurisdiction. If established, the RSFs comprise the coordinating structure for key functional areas of assistance in the NDRF. Their purpose is to support state and local governments by facilitating problem solving; improving access to resources; and to foster coordination among State and Federal agencies, non-governmental partners, and stakeholders

There are six Recovery Support Functions; each Recovery Support Function is comprised of a coordinating Federal agency and primary and supporting Federal agencies that operate together with local, State, and Tribal government officials, nongovernmental organizations (NGOs), and private sector partners.

- Community Planning and Capacity Building (CPCB) Recovery Support Function ([PDF](#))– coordinating agency: FEMA.
- Economic Recovery Support Function ([PDF](#))– coordinating agency: U.S. Department of Commerce/Economic Development Administration.
- Health and Social Services Recovery Support Function ([PDF](#))– coordinating agency: U.S. Department of Health and Human Services.
- Housing Recovery Support Function ([PDF](#))– coordinating agency: U.S. Department of Housing and Urban Development.
- Infrastructure Systems Recovery Support Function ([PDF](#))– coordinating agency: U.S. Army Corps of Engineers.
- Natural and Cultural Resources Recovery Support Function ([PDF](#))– coordinating agency: U.S. Department of Interior.

NOAA serves as a supporting agency under the larger Department of Commerce umbrella and is usually engaged with the Community Planning and Capacity Building, Economic, and Natural and Cultural Resources Recovery Support Functions.

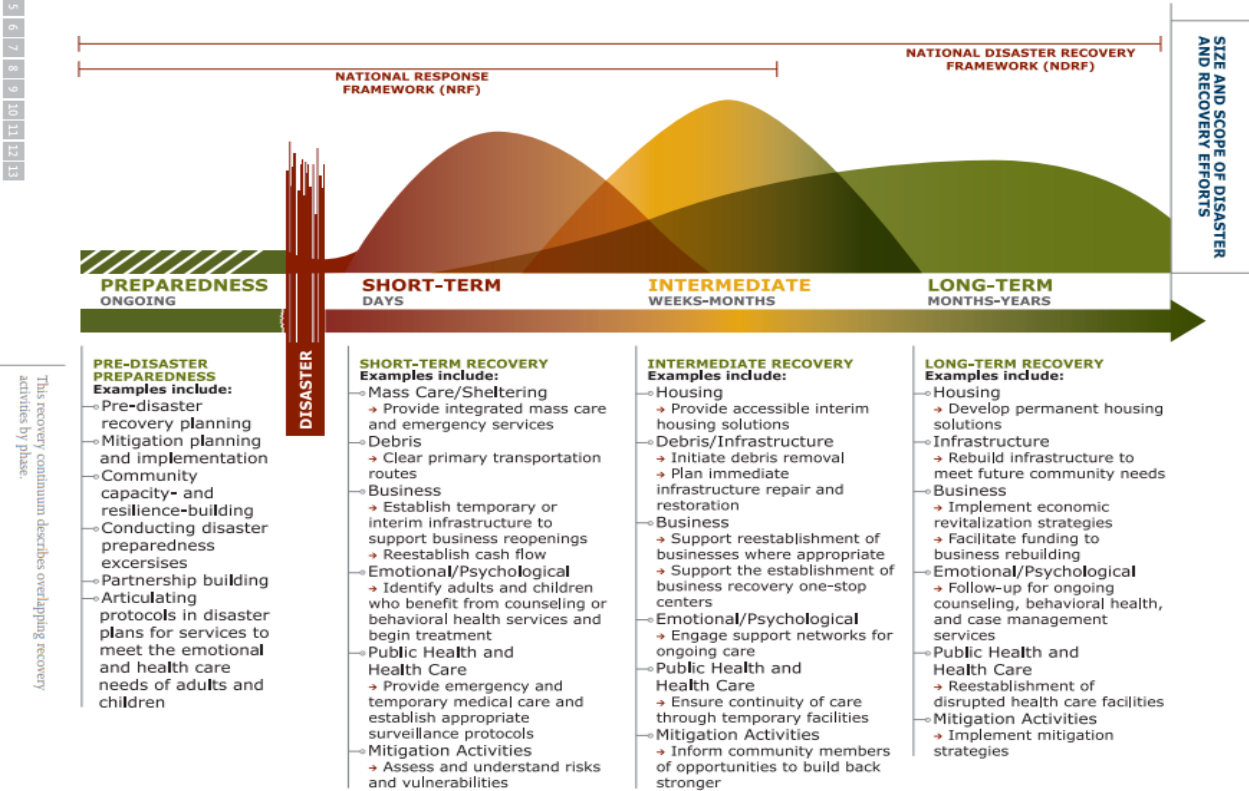
### **Recovery Support Federal Leadership Group (RSFLG)**

The Recovery Support Federal Leadership Group (RSFLG) is a Federal interagency body designed to identify and facilitate resolution of operational and policy issues related to the National Disaster Recovery Plan (see above). They also cover recovery-related elements of Presidential directives for National Preparedness and Critical Infrastructure Security and Resilience. The RSFLG provides a forum to improve the effectiveness and unity of effort in coordinating the Federal recovery support through information exchange and updates on programs that directly affect the roles and responsibilities of the RSFs. RSFLG membership consists of senior officials who can speak authoritatively and represent each coordinating, primary, and supporting Federal agency as well as the Federal Emergency Management Agency (FEMA). Headquarters and Regional offices (Regional Administrators and Federal Disaster Recovery Coordinators) and selected other Federal departments and agencies may participate as designated by the Leadership Group Chair.

NOAA's Office for Coastal Management serves as the agency's policy lead and senior executive representative to the RSFLG. The NOAA Action Officer role is filled by the Office of Response and Restoration's Disaster Preparedness Program.



FIGURE 1. RECOVERY CONTINUUM – DESCRIPTION OF ACTIVITIES BY PHASE



## **SECTION 3: FEDERAL MANDATES AND AUTHORITIES**

Section 3 offers contextual information that pertains to NOAA's role in emergency response, and particularly to the actions and engagement of specific NOAA Line Offices and programs. The section begins with legal mandates and authorities that govern the participation and actions of NOAA Line Offices in a response.

### **3.1 Legal Mandates and Authorities**

The National Response Framework (NRF), NIMS Incident Command System, and NOAA CONOPS dictate NOAA's role in an emergency response. In addition, multiple directives, statutes, and agreements shape the way in which NOAA Line Offices and programs contribute to interagency responses.

#### **A. National Weather Service Organic Act (15 U.S.C. § 313)**

The Organic Act authorizes the National Weather Service as the U.S. Government entity responsible for providing flood and weather forecasting services, issuing storm warnings, gauging and reporting of rivers, collecting and transmitting marine intelligence for the benefit of commerce and navigation, distributing meteorological information in the interests of agriculture and commerce, and taking meteorological observations as necessary to establish and record the climatic conditions of the United States.

#### **B. National Oil and Hazardous Substances Pollution Contingency Plan**

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) provides the organizational structure and procedures used by the federal government to prepare for and respond to discharges of oil and releases of hazardous substances, pollutants, and contaminants.<sup>5</sup> The plan names the Department of Commerce (DOC) as a trustee for ocean and coastal natural resources. Within the DOC, this authority has been delegated to NOAA. The NCP also tasks NOAA with providing scientific support to the FOSC through the SSC program. The NCP was first published in 1968. This plan provided the first comprehensive system of accident reporting, spill containment, and cleanup. It also established a response headquarters, a national reaction team, and regional reactions teams—precursors to the current National Response Team (NRT) and Regional Response Teams (RRTs). In the years since 1968, Congress has expanded the scope of the NCP. The latest revisions to the NCP were finalized in 1994 to reflect the oil spill provisions of the Oil Pollution Act of 1990.

#### **C. Marine Protection, Research, and Sanctuaries Act of 1972.<sup>6</sup>**

Under section 1443, the Secretary of Commerce (i.e., NOAA) may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury.

#### **D. Marine Mammal Protection Act (MMPA)**

The MMPA, enacted on October 21, 1972, provides protection for all marine mammals. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

Congress passed the MMPA of 1972 based on the following findings and policies: some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities; these species or stocks must not be permitted to fall below their optimum sustainable population level ("depleted"); measures should be taken to replenish these species or stocks; there is inadequate knowledge of the ecology and population dynamics of these species; and marine mammals have proven to be resources of great international significance.

The MMPA was amended substantially in 1994 to provide certain exceptions to the take prohibitions, including for small takes incidental to specified activities such as commercial fishing operations; preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; and studies of pinniped-fishery interactions.

#### **E. The Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) of 1972, as amended, established a voluntary partnership between the federal government and coastal and Great Lakes states and territories to implement national goals to protecting, restoring, and responsibly developing our nation's diverse coastal communities and resources as well as to protect and study estuarine systems. The state and territorial Coastal Zone Management programs are NOAA's on-the-ground partners to protect resources, mitigate natural hazards, enhance public access, among other things, through state laws and programs. The state and territorial Estuarine Research Reserves provide research and long term monitoring of critical estuaries, as well as maintaining education, outreach programs, and stewardship programs to raise awareness of coastal issues as well as approaches to address them.

Specifically, one of the goals of the Coastal Zone Management Act of 1972 is to improve the management of coastal development to minimize the loss of life and property caused by improper development in flood-prone, storm surge, geological hazard, and erosion-prone areas and in areas are also likely to be affected by or vulnerable to sea level rise, land subsidence, and saltwater intrusion, and by the destruction of natural protective features such as beaches, dunes, wetlands, and barrier islands.

Many of these state programs perform natural resources assessments, provide monitoring data, develop or support the development of state or local risk and vulnerability resilience plans, recovery, and redevelopment plans, adaptation plans, and or develop policies and programs to enhance resilience in the coastal zone following or preceding disasters.

## **F. Endangered Species Act (ESA)**

The ESA was signed on December 28, 1973, and provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The ESA replaced the Endangered Species Conservation Act of 1969. Congress has amended the ESA several times. A "species" is considered endangered if it is in danger of extinction throughout all or a significant portion of its range, and threatened if it is likely to become an endangered species within the foreseeable future. Approximately 40 species are listed as endangered or threatened under the ESA in the Southeast Region.

## **G. Robert T. Stafford Disaster Assistance and Emergency Relief Act, as amended, 42 U.S.C. 5121.**

The Stafford Act provides an orderly and continuing means of federal assistance to help state and local governments carry out their responsibility to alleviate suffering and damage resulting from disasters. Titles that relate to the NOAA mission areas include:

- Establishment of Emergency Support Teams of federal personnel to be deployed in an area affected by a major disaster or emergency. These emergency support teams assist the federal coordinating officer in carrying out his/her responsibilities;
- Assistance with emergency preparedness activities; and
- Readiness of federal agencies to issue warnings to state and local officials, including technical and advisory assistance for the performance of essential community services, issuance of warnings of risks or hazards, dissemination of public health and safety information, provision of health and safety measures, and management and reduction of immediate threats to public health and safety.

NOAA has also developed a partnership with the Federal Emergency Management (FEMA) agency. In 2015, following review and recommendations from the FEMA Pre-Scripted Mission Assignment (PSMA) Technical Review Team, NOAA approved the following PSMA:

- Geodetic Survey PSMA
- Aerial Survey PSMA
- Hydrographic Services PSMA
- Science Support for Oil and Chemical Spill PSMA
- Marine Debris Assessment PSMA

## **H. Oil Pollution Act of 1990 (OPA)/Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)<sup>7</sup>**

The OPA and CERCLA together specify NOAA's legal authorities for restoring NOAA trust resources from injury caused by oil (OPA) and hazardous substances (CERCLA). OPA was passed in the wake of the *Exxon Valdez* spill in 1989. Among other functions, OPA establishes liability for damages resulting from oil pollution. It also establishes a fund for compensation for such damages. CERCLA, meanwhile, is the principal statute governing the cleanup of sites contaminated with hazardous substances. CERCLA was amended by the Superfund Amendment and Reauthorization Act in 1986.

Both OPA and CERCLA are products of the public trust doctrine. The public trust doctrine establishes the right of public benefits over private interests and means that public lands, waters, and living resources are held in trust for the benefit of all people and future generations. Responsibility for acting on behalf of the public to assess these injuries and restore the injured resources lies with designated federal, state, tribal, and foreign natural resource trustees. OPA and CERCLA designate NOAA, acting through the agency's DARRP, as the DOC trustee for marine natural resources held in trust.<sup>8</sup> The Department of the Interior, represented by the U.S. Fish and Wildlife Service and the Bureau of Indian Affairs, is also a federal trustee of terrestrial natural resources.

### **I. Natural Resource Damage Assessment (NRDA)<sup>9</sup>**

In the event of an oil or hazardous chemical spill, DARRP is responsible (per OPA or CERCLA, respectively) for collaborating with other agencies and industry to resolve natural resource liability while protecting NOAA trust resources. Operating under OPA or CERCLA, DARRP and co-trustees work with response agencies and responsible parties to:

- Identify and quantify injury to marine natural resources and lost services;
- Ensure protection of trust resources during a spill response and cleanup (i.e., advise response agencies to minimize or mitigate harm to trust resources);
- Implement projects to restore injured resources and their associated services to their baseline condition (primary restoration); and
- Implement additional projects to compensate the public for interim losses (compensatory restoration).<sup>10</sup>

Funding for response and restoration actions comes from the responsible party (the polluter), agency base funds, the Damage Assessment and Restoration Revolving Fund, or, for oil spills, from the National Pollution Fund Center (NPFC, managed by the USCG). Funds expended by trustees for damage assessment (whether from trustee funds or from the NPFC) are eligible for reimbursement by the responsible party.

OPA directs trustees to work cooperatively with the responsible party to assess injuries and achieve restoration. The result of the NRDA process is a legal claim for damage to natural resources. This claim can be resolved through settlement or judicial process. The outcome of either process is a consent decree documenting the terms for resolving the claim. The potential for litigation in NRDA cases requires that trustees maintain detailed administrative records of data and analysis that explain and support trustee decisions. Legal chain of custody and thorough quality assurance documentation are also required. In addition, preparations for settlement or litigation may include confidential negotiations among trustees or between trustees and the responsible party. Consequently, NOAA staff involved in this work are required to maintain confidentiality.

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## **J. Magnuson Stevens Act Provisions; Essential Fish Habitat (EFH)**

Congress established the EFH mandate in 1996 to improve the nation's main fisheries law– the Magnuson-Stevens Fishery Conservation and Management Act– highlighting the importance of healthy habitat for commercial and recreational fisheries. Essential fish habitat covers federally managed fish and invertebrates, but it does not apply to strictly freshwater species. Species not covered by EFH, such as lake trout, might be managed by a state or local authority.

EFH consultations guide federal partners, such as the U.S. Army Corps of Engineers, to minimize or avoid environmental impacts during construction and other development that may impact marine fisheries and vital habitats. They function like federal dietary recommendations: we guide people to make good choices with long-term benefits. Every year, habitat experts advise federal agencies on hundreds of projects, ranging from port expansions to offshore energy development, to ensure that they do not destroy essential fish habitat.

## **K. Coral Reef Conservation**

Executive Order 13089<sup>11</sup>, signed by President Clinton in 1998, was created to preserve and protect the biodiversity, health, heritage, and social and economic value of U.S. coral reef ecosystems and the marine environment. It established the interagency U.S. Coral Reef Task Force, co-chaired by the Secretaries of the DOI and DOC (through the NOAA Administrator). The U.S. Coral Reef Task Force is charged with developing and implementing a comprehensive program of research and mapping to inventory, monitor, and identify the major causes and consequences of degradation of coral reef ecosystems.

The Coral Reef Conservation Act of 2000<sup>12</sup>(CRCA) aims to raise awareness to help protect coral reefs. It mandated the development of a National Coral Reef Action Strategy, and the establishment of a national program to conserve coral reefs and coral reef ecosystems. The CRCA promotes the wise management and sustainable use of coral reef ecosystems to benefit local communities and the nation, and support assistance in the preservation of coral reefs by supporting conservation programs, including projects that involve affected local communities and nongovernmental organizations. The CRCA also promotes the development of sound scientific information on the condition of coral reef ecosystems and the threats to such ecosystems. For the first time ever, in the aftermath of Hurricane Irma and Maria in 2017, FEMA granted a mission assignment to NOAA to undertake an assessment of and limited restoration of injuries to coral reefs in the Commonwealth of Puerto Rico.

## **L. Interagency Agreement for Meteorological and Other Technical Services (Interagency Agreement)**

Cooperation and coordination among multiple federal agencies is critical to the success of fire management, suppression, and safety. The Interagency Agreement includes NOAA/NWS, U.S. Department of Interior (Bureau of Land Management, Bureau of Indian Affairs, Fish and Wildlife Service, National Park Service), and the U.S. Department of Agriculture (Forest Service), and establishes the responsibilities of and reimbursement provided to NWS in wildland fire management. In addition, it identifies the responsibilities and roles of other federal “Wildland Fire Agencies.”

The Interagency Agreement lays out that NWS is legally mandated to issue weather forecasts and warnings for the protection of life and property. Services provided by

NWS, per the Interagency Agreement, include basic meteorological services, non-routine services (including, but not limited to, on-site meteorological support consultations and technical advice), wildland fire suppression-related support activities, additional fire management services, and additional responsibilities shared jointly with other Wildland Fire Agencies.

#### **M. Marine Debris Act**

The Marine Debris Research, Prevention, and Reduction Act (Marine Debris Act) was signed into law in 2006 and amended in 2012 through the Coast Guard Maritime Transportation Act of 2012, Title VI. The purpose of the Marine Debris Act is to address the adverse impacts of marine debris on the United States economy, the marine environment, and navigational safety through the identification, determination of sources, assessment, prevention, reduction, and removal of marine debris. It provides for the establishment of a Marine Debris Prevention and Removal Program within NOAA to reduce and prevent the occurrence and adverse impacts of marine debris on the marine environment and navigation safety. The Marine Debris Act includes provisions for mapping, identification, impact assessment, removal, and prevention; reducing and preventing loss of gear; and outreach.

#### **N. The Weather Research and Forecasting Innovation Act of 2017**

The provisions outlined in the “Weather Act” touch upon many aspects of the diverse NOAA mission— promoting connections between the National Weather Service and the emergency management community, advancing the National Weather Service watch and warning program, authorizing a NOAA satellites’ pilot program to use commercial satellite data, and reauthorizing NOAA Research’s Weather Research Program, among other provisions.

### **3.2 Funding and Reimbursement**

Several mandates and protocols determine reimbursement for emergency response.

#### **A. Pollution Removal Funding Authorization (PRFA)**

A PRFA is a tool available to the FOSC to quickly obtain needed services and assistance from other government agencies when responding to the release of oil or other hazardous materials. It is also a guarantee of reimbursement to NOAA Line Offices and other responding agencies for certain activities, services, and equipment provision. Reimbursement comes from the Oil Spill Liability Trust Fund (OSLTF).

There are strict policies surrounding reimbursement of costs via the PRFA. With the exception of the Lead SSC’s deployment to a response, NOAA personnel, activities, and services must receive advance FOSC approval in order to be eligible to seek reimbursement. The FOSC determines if a Line Office or program is included on the

PRFA, and the FOSC has ultimate authority to accept or deny rates proposed by NOAA Line Offices or programs. At the FOSC's discretion, reimbursement can be provided for work on-scene or off-site (e.g., at the employee's home office). PRFA approval and cost tracking for NOAA spill response work is managed by NOS/ERD.

## **B. Natural Resource Damage Assessment (NRDA)**

Funding for response and restoration actions comes from the responsible party (the polluter), agency base funds, the Damage Assessment and Restoration Revolving Fund (DARRF), or, for oil spills, from the National Pollution Fund Center (NPFC, managed by the USCG). If needed, up-front funding for NRDA may come from a PRFA between the USCG and one or more NRDA trustees if under OPA or CERCLA. In an National Marine Sanctuaries Act (NMSA)-related incident, the funding comes from the agency Damage Assessment and Restoration Revolving Fund (DARRF). The USCG would later recover that money from the responsible party. Funds expended by trustees for damage assessment (whether from trustee funds or from the NPFC) are eligible for reimbursement by the responsible party. OPA directs trustees to work cooperatively with the responsible party to assess injuries and achieve restoration. The result of the NRDA process is a legal claim for damage to natural resources. This claim can be resolved through settlement or judicial process. The outcome of either process is a consent decree documenting the terms for resolving the claim. The potential for litigation in NRDA cases requires that trustees maintain detailed administrative records of data and analysis that explain and support trustee decisions. Legal chain of custody and thorough quality assurance documentation are also required. In addition, preparations for settlement or litigation may include confidential negotiations among trustees or between trustees and the responsible party. Consequently, NOAA staff involved in this work are required to maintain confidentiality.

OPA regulations provide that the responsible parties pay the "reasonable assessment costs" as defined in the regulations. Reasonable assessment costs must be directed at assessing the injury to natural resources (with a high regional emphasis on endangered Hawaiian monk seals and sea turtles) as a result of the spill, or else must fit the regulatory criteria for allowable administrative and legal costs. Other costs incurred by NOAA (for example, scientific studies in the vicinity of the oil spill that are not part of the NRDA) are not eligible for recovery from the responsible party under OPA NRDA regulations. NOS/ORR/ARD tracks NOAA's recoverable NRDA costs and presents cost documentation to the responsible party for reimbursement.

## **C. Reimbursement for NWS Services**

The NWS mission is to provide weather, water, and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy. In the execution of this mission, the NWS works with numerous federal, state, local, and industry partners in the fields of public safety, emergency management, and water resource management under the provisions of existing legislation, federal interagency operating plans, and agreements.



## Footnotes

1. Hazard Mitigation and Preparedness An Introductory Text for Emergency Management and Planning Professionals, Dylan Sandler and Anna K. Schwab, Routledge, New York, NY, 3rd Edition. 2022
2. NWS Regional and Field Leadership Contact List:  
<https://www.weather.gov/media/nws/wcm-soo.pdf>
3. More information on NIMS can be found at <https://www.fema.gov/emergency-managers/nims>
4. ICS trainings are available at beginning, intermediate, and advanced levels. See <http://training.fema.gov/IS/> for additional information
5. Complete details of the National Contingency Plan are available at:  
<https://www.epa.gov/emergency-response/national-oil-and-hazardous-substances-pollution-contingency-plan-ncp-overview>
6. <https://www.govinfo.gov/content/pkg/STATUTE-86/pdf/STATUTE-86-Pg1052.pdf#page=2>
7. For additional details about OPA and CERCLA, as well as other relevant laws regarding NOAA's legal authorities for restoring coastal resources, see <https://darrp.noaa.gov/legal-context>
8. Specific Natural Resource Trustee authorities under OPA are available at <https://www.epa.gov/superfund/natural-resource-damages-trustees>
9. Comprehensive details on Natural Resource Damage Assessments are in 990.10 within Title 15: Commerce and Foreign Trade for Oil Pollution Act regulations. Available at <https://www.govinfo.gov/content/pkg/CFR-2018-title15-vol3/xml/CFR-2018-title15-vol3-part990.xml#seqnum990.10>
10. See <https://darrp.noaa.gov/what-we-do/natural-resource-damage-assessment> for additional information about work conducted by DARRP as part of NRDA.
11. Executive Order 13089, <https://www.boem.gov/63-FR-32701/>
12. Coral Reef Conservation Act of 2000:  
[https://www.coris.noaa.gov/activities/actionstrategy/08\\_cons\\_act.pdf](https://www.coris.noaa.gov/activities/actionstrategy/08_cons_act.pdf)

## **APPENDIX A: EMERGENCY SUPPORT FUNCTIONS (ESFs)**

### **National Response Framework (NRF) Emergency Support Functions (ESFs)**

#### **Use of Emergency Support Functions (ESFs)**

- Coordinate planning and implementation of *continuity* programs across the Federal Executive Branch
- Lead national emergency *response* efforts during major disasters and emergencies
- Lead and coordinate national emergency *recovery* efforts following a disaster

#### **General ESF Descriptions**

**ESF #1** – Transportation ([PDF](#))

**ESF #2** – Communications ([PDF](#))

**ESF #3** – Public Works and Engineering ([PDF](#))

**ESF #4** – Firefighting ([PDF](#))

**ESF #5** – Information and Planning ([PDF](#))

**ESF #6** – Mass Care, Emergency Assistance, Housing, and Human Services ([PDF](#))

**ESF #7** – Logistics Management and Resource Support ([PDF](#))

**ESF #8** – Public Health and Medical Services ([PDF](#))

**ESF #9** – Search and Rescue ([PDF](#))

**ESF #10** – Oil and Hazardous Materials Response ([PDF](#))

**ESF #11** – Agriculture and Natural Resources ([PDF](#))

**ESF #12** – Energy ([PDF](#))

**ESF #13** – Public Safety and Security ([PDF](#))

**ESF #14** – Cross-Sector Business and Infrastructure ([PDF](#))

**ESF #15** – External Affairs ([PDF](#))

#### **ESFs that have NOAA Involvement**

NOAA acts as a supporting agency for the following ESFs. Upon FEMA's request, NOAA offices supporting these ESFs must be prepared to provide a broad range of expertise and services to support the response and inform recovery.

#### **ESF #1 – Transportation**

- Forecasts, watches, and warnings, including weather, storm surge, and dispersion forecasts.
- Surface and marine forecasts and nowcasts including ice and debris tracking.
- Emergency hydrographic surveys, search and recovery, obstruction location, and vessel traffic rerouting in ports and waterways.
- Remote Aerial and orbital imagery through the DOC/NOAA desk at the National Operations Center (NOC).

#### **ESF #3 – Public Works & Engineering**

- If requested from a State after a disaster, ESF 3 brings together federal resources to assist with the assessment of public works and infrastructure, execute emergency contract support for life-saving and life-sustaining services, provide technical assistance on engineering and construction projects, contracting and related services, provide emergency repair of damaged public infrastructure and critical facilities, and support debris removal activities. The Coordinating and primary agencies are the Department of Defense and U.S. Army Corps of Engineers. NOAA is considered a support agency that provides hydrographic survey assets and expertise for critical waterways, channels, and ports and scientific support in assessing the impact to the coastal zone. Assessments include evaluating marine debris impacts using NGS post-disaster imagery; marine debris mapping of ADVs, construction debris, containers, and more; and identifying debris hotspots or creating trajectory models.

#### **ESF #4 – Firefighting**

- Support for wildland, rural, and urban firefighting operations.
- Provides on-scene forecasts, watches, warnings, and dispersion information.

#### **ESF #5 – Information & Planning**

- Provides accurate and timely information related to an actual or potential incident.
- Develops and executes plans related to an actual or potential incident.
- Develops operational plans and procedures to inform internal coordination and execution of objectives and tasks set forth in the NRF and Federal Interagency Operational Plans.

#### **ESF #9 – Search and Rescue**

- Provides lifesaving assistance to Federal, State, tribal, and local authorities.
- Continuous operation of the Search and Rescue Satellite Aided Tracking (SARSAT).

#### **ESF #10 – Oil & Hazardous Materials**

- Provides operational weather data and prepares forecasts tailored to support the response.

- Provides expertise on natural resources and coastal habitat; the environmental effects of oil and hazardous materials; emergency consultations for protected resources; best management practices; and appropriate cleanup and stabilization alternatives.
- Provides a Scientific Support Coordinator (SCC) to the On Scene Coordinator (OSC) for responses in coastal and marine areas. The SCC serves as the principal advisor for addressing scientific issues and communicating with the scientific community. When requested, this scientific coordination support for responses in the inland Zone may be provided.
- Predicts pollutant fate, effects, and transport as a function of time. For atmospheric releases, coordinates through the Interagency Modeling and Atmospheric Assessment Center (IMAAC), when activated.
- Provides information on meteorological, hydrological, ice, and oceanographic conditions for marine, coastal, and inland waters. This includes satellite surveillance, remote sensing, and aerial photogrammetry.
- Provides charts and maps for coastal and territorial waters and the Great Lakes.
- Conducts emergency hydrographic surveys, search and recover, and obstruction location to assist safe vessel movement.
- Manages fisheries in Federal Waters. Develops and conducts seafood safety sampling and fisheries reopening protocols in conjunction with the Food and Drug Administration and local authorities.
- NOS Emergency Response Division (ERD) performs the role of Natural Resource Advisor under ESF-10.

#### **ESF #11 – Agriculture & Natural Resources**

- Makes available an environmental data archive for determining baseline conditions.
- Provides contaminant analysis expertise and facilities.
- Provides aerial mapping and satellite remote sensing for damage assessment.
- Provides detailed site-specific weather forecasts and forecasts of travel time for river contaminants.
- Provides expertise and consultation on marine mammals, endangered species, and essential fish habitat issues.
- Provides seafood inspection capabilities to assess safety, wholesomeness, proper labeling, and quality of fish and fishery products through process and product verification, product evaluations and certifications, and laboratory analysis.
- Implements the activities determined appropriate to reestablish fisheries and any other natural resources or prevent a failure in the future in accordance with the Magnuson-Stevens Act (Section 312, 16 U.S.C. 1801, et seq.)
- Provides technical expertise pertaining to marine fisheries and marine wildlife.

#### **ESF #14 –Long-Term Community Recovery (superseded by NDRF)**

- Provides natural hazard vulnerability analysis.
- Provides assistance on coastal zone management and building community resilience.
- Supplies geospatial technology (e.g. Geographic Information System, or GIS) assistance and coastal inundation information, performs ecosystem and damage assessments.
- Provides technical assistance in recovering fisheries, restoring habitat, and rebuilding coastal communities.

## **APPENDIX B: RECOVERY SUPPORT FUNCTIONS (RSFs)**

### **Recovery Support Functions (RSFs)**

The Recovery Support Functions (RSFs) comprise the coordinating structure for key functional areas of assistance in the [National Disaster Recovery Framework](#) (NDRF). Their purpose is to support local governments by facilitating problem solving, improving access to resources and by fostering coordination among State and Federal agencies, nongovernmental partners and stakeholders.

The list of Recovery Support Functions and the leading coordinating agency is seen below.

### **General RSF Descriptions**

**RSF #1** – Community Planning and Capacity Building (CPCB) ([PDF](#))

**RSF #2** – Economic ([PDF](#))

**RSF #3** – Health and Social Services ([PDF](#))

**RSF #4** – Housing ([PDF](#))

**RSF #5** – Infrastructure Systems ([PDF](#))

**RSF #6** – Natural and Cultural Resources ([PDF](#))

### **RSFs that have NOAA Involvement**

NOAA acts as a supporting agency for the following RSFs.

#### **RSF #1 – Community Planning and Capacity Building (CPCB) Recovery Support Function**

- Provides aid to local and tribal governments in building their local capabilities to effectively plan for recovery and engage the whole community in the recovery planning process.

#### **RSF #2 – Economic Recovery Support Function**

- The ability to return economic and business activities to a state of health and develop new economic opportunities that result in a sustainable and economically viable community.

#### **RSF #6 – Natural and Cultural Resources Recovery Support Function**

- The integration of capabilities of the Federal Government to support the protection of natural and cultural resources and historic properties through appropriate response and recovery actions to preserve, conserve, rehabilitate, and restore them consistent with post-disaster community priorities and in compliance with applicable environmental and historical preservation law.

## APPENDIX C: COMMUNICATIONS MECHANISMS

### **Communication Mechanisms**

#### **Standard Formats for Communication: Situation Reports (SitReps) and Status Updates**

NWS Situation Reports (SitReps) and SSC status updates are key mechanisms to inform Line Offices and senior NOAA leadership about emergency response activities. They are for internal use. Existing protocols call for NWS to issue SitReps during emergency responses in which it is involved. The SSC coordinates the status updates most often for spill events or maritime accidents. The SSC status updates cover scientific issues, ecosystem conditions, operation updates, planned activities, weather consideration, on-scene mapping, photo-documentation, site assessments, and more. The NWS SitRep has a broader purview, which often covers external event impacts, internal operational functions, and agency performance. If multiple Line Offices are involved, the SSC may seek input from each discipline (including, but not limited to, weather, modeling, and life sciences) to compile into a report. If requested, the responding Line Office personnel may consolidate information from all Line Offices into a single report for senior NOAA leadership.

#### **Technology for communication within NOAA and between NOAA and responding agencies**

Conference calls, e-mails, and text messaging can be effective communication mechanisms. An internal assessment of the 2011 Missouri and Souris River flood response found that mass e-mail was an excellent way to share information among partners, and some NWS Decision Support Services employees found that text messaging was the most effective technology for communicating quickly.

These technologies can have varying limitations, however. Dissemination of information using e-mail has been found to be cumbersome in past responses, as necessary recipients change regularly. Responders have also criticized the need to constantly monitor e-mail in an operational setting, as well as the large volume of e-mail sent to persons who do not have an immediate need to know the information. It also cannot be assumed that all NOAA employees have text messaging capabilities on their phones.

Given these aforementioned limitations, NOAA/NWS Service Assessments have recommended that while conference calls and e-mail lists can be effective collaboration tools, all NOAA entities involved in a disaster response effort should use a shared data repository for internal information and real-time shared communication tools (per NWS Service Assessment).

### **ResponseLINK**

ResponseLINK is an online emergency response communication system that can facilitate communication and coordination within NOAA. It was developed and is maintained by NOAA ORR ERD. ResponseLINK is designed and typically used for oil and chemical spill response.

#### *Capabilities and strengths:*

- Designed to inform NOAA emergency response personnel about oil and chemical incident status and response.
- Does not require special software (it is web-browser based).

- Upon establishing an incident in ResponseLINK, short email notification messages are sent to a list of NOAA employees. Any NOAA employee can be added to this notification list upon request.
- Accessible only to authorized users (password-protected); however, it is possible to access using a shared password.
- All NOAA employees can access ResponseLINK using NOAA email user name and pin.
- Access for a particular incident can be tailored via the SSC to include non-NOAA persons deemed necessary to the particular response.
- Can store and archive response-related materials and documents (e.g., reports, photos, and maps), thus creating a central location for storing information for operational and legal documentation purposes
- Able to input information into and obtain information from the repository, which is more efficient than using email.
- Can be used to help keep track of who is on site responding to emergency events.

*Limitations:*

- ResponseLINK is not designed to be a broad notifications tool, because it goes to those designated as NOAA leadership, persons within the immediate NOAA response community, and persons who have opted to receive messages. This potential limitation can be overcome if the SSC adds recipients to the notification list for a particular response.
- Designed for events in which OR&R has a role; it is not designed for agency-wide use.

**NWSChat**

NWSChat is an instant messaging program that facilitates communication and coordination within NWS and among NWS, its partners, the media, and the emergency response community.

*Capabilities and strengths:*

- Designed to facilitate collaboration both within and outside NWS; permits real-time exchange of information with the media and emergency responders.
- Can establish chat room-specific levels of security and accessibility.
- Has been used in multiple responses to facilitate collaboration within NWS (e.g., between WFOs and RFCs to review forecasts prior to release), and between NWS and partner Line Offices and agencies.

*Limitations:*

- Does not permit documents to be uploaded (but does allow links to external documents).
- Limited benefit for persons without consistent Internet access.
- NWSChat is only effective when personnel with whom you are collaborating are logged into and monitoring NWSChat. This is not always possible during an emergency response.



- Each NWS office has its own NWSChat room. NWSChat can be ineffective when multiple NWSChat rooms are used to communicate with a single partner during an event.
- Not very mobile friendly.
- No video chat capabilities.

### **Google Groups**

Google Groups is a free service from Google, Inc.

#### *Capabilities and strengths:*

- Secure online communication system.
- Can limit participants to invited persons.
- Can be used for online discussions and archival of information, including attachments.
- Can be customized.
- Easy integration of video
- Members can organize with favorites and folders, choose to follow discussion via e-mail or through the Google Groups site, and quickly find unread posts.
- Members can select the frequency with which they want to receive Group updates (e.g., no e-mail, individual e-mails, abridged e-mails, or daily digests).
- Can be accessed on Android or AppleiOS devices.

#### *Limitations:*

- Requires some spin-up time to create the Google Group and invite people to join.
- Cannot vary levels of access/security by discussion or topic within a given Google Group. Increasing or decreasing access would require creating a new group.
- Use of Google Groups requires an @noaa.gov or @gmail.com e-mail.

### **A note about social media**

Social media, namely Facebook and Twitter, has been a highly effective tool for communication during some emergency response events. Following the Missouri/Souris River floods of 2011, many responding offices praised Facebook for its role in both internal and external communications. They felt that Facebook had significant value in terms of public outreach and information sharing; public feedback helped NWS gain a more complete understanding of the scope and magnitude of the event, particularly in data-sparse areas, thereby allowing the Emergency Management community to maintain situational awareness of the event. Twitter has been praised for aiding responders during several emergency events, as it is a fast way to share information with large networks of people and can reduce the burden on emergency responders. Twitter has also been known to function even when cell phone service does not. Common sense must be used when employing social media to ensure that confidential information is not released. However, in certain circumstances and for certain purposes, it is a tool worth considering.

## **APPENDIX D: WEBSITE LISTING**

## NOAA Website Listing

### **NOAA Organizations**

<https://www.noaa.gov/about/organization>

### **NOAA Homeland Security Program Office (HSPO)**

<https://www.noaa.gov/information-technology/homeland-security-program-office>

### **NOS Disaster Coordination Dashboard (Library and Tools sections are extremely helpful)**

<https://sites.google.com/a/noaa.gov/disaster-coordination-dashboard>

### **NOAA Extreme Weather Information Sheets (NEWIS), parts of East Coast and Gulf area**

<https://www.ncei.noaa.gov/resources/newis>

### **NOAA Response Asset Directory (NRAD), currently only assets for Gulf of Mexico area**

<https://ResponseDirectory.orr.noaa.gov>

### **NRAD User Guide**

[https://responsedirectory.orr.noaa.gov/static/nrad\\_ui/docs/nradUserGuide.pdf](https://responsedirectory.orr.noaa.gov/static/nrad_ui/docs/nradUserGuide.pdf)

### **Caribbean Tsunami Warning Program**

<https://www.weather.gov/ctwp/>

### **NOAA Fisheries Disaster Response Services, Southeast Region**

<https://www.fisheries.noaa.gov/southeast/disaster-response-services>

### **NOAA Emergency Response Imagery**

<https://storms.ngs.noaa.gov/>

## APPENDIX E: STRESS MANAGEMENT RESOURCES AND INFORMATION

**Additional resources include programs and information meant to assist NOAA employees to cope with the additional impact and stress related to disasters and major events.**

- **NOAA Office of Human Capital Services (OHCS - formerly Workforce Management - WFM)** is the focal point for NOAA personnel, policy, and documentation. During disasters and major events, they may provide additional policy and procedure information related to work hours, relocation, and benefits.  
<https://www.noaa.gov/about-humancapital>
- **Employee Assistance Program (EAP)** is a program available to NOAA employees that provides a professional counseling and referral resource to help employees resolve life challenges. The 24/7 EAP hotline is **1-800-222-0364**. Information on the EAP program is available at the following site:  
[https://www.wrc.noaa.gov/wrso/security\\_guide/intro.htm#Employee%20Assistance](https://www.wrc.noaa.gov/wrso/security_guide/intro.htm#Employee%20Assistance)
- **Substance Abuse and Mental Health Services Administration (SAMHSA)** provides a hotline and referral service for issues related to mental health. Employees experiencing stress or other issues are encouraged to use the SAMHSA resources, including the 24/7 Disaster Distress helpline at **1-800-985-5990**.  
<https://www.samhsa.gov/find-help/disaster-distress-helpline>
- **Critical Incident Stress Management (CISM)** is a collection of information and tools to help employees prepare for, and recover from disasters or major events. Stress Management assistance is available under the NOAA EAP program. The National Interagency Fire Center (NIFC) provides a website with some very helpful CISM information on agencies and hotlines that can assist in the time of need.  
<https://gacc.nifc.gov/cism/cism.html>

### **NOAA CISM Information sheets currently available:**

[Preparing for Office Events](#)

[Returning Home / To Normal](#)

[Families of Workers \(Office\)](#)

[Managers Handout](#)

[Preparing for a Deployment](#)

[Self Care during events](#)

[Families of Workers \(Deployment\)](#)

## APPENDIX F: NOAA EMERGENCY WEATHER INFORMATION SHEETS (NEWIS)

### NOAA Extreme Weather Information Sheets (NEWIS)

(<https://www.ncei.noaa.gov/resources/newis>)

NOAA Extreme Weather Information Sheets help citizens increase their weather readiness as part of NOAA's Weather-Ready Nation initiative. NCEI created these sheets to help coastal residents of states and the two US territories that are particularly at risk from tropical storms and hurricanes. Use the county, state, and national databases below to search for phone numbers and websites.



#### **Print the NOAA Extreme Weather Information Sheets**

[PDF versions](#) of the 22 NOAA Extreme Weather Information Sheets are available for coastal sections of Alabama, Florida, Georgia, Hawaii, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Puerto Rico, and the U.S. Virgin Islands.

#### **Free iOS App**

[Download NEWIS: NOAA Extreme Weather Information](#) through the App Store and use it on your iPhone, iPad, and iPod touch.

**Contact:** [NCEI.info@noaa.gov](mailto:NCEI.info@noaa.gov)

#### **Be Weather Ready**

NCEI encourages citizens to make a plan for extreme weather, to stay informed by listening to the official weather forecast from NOAA's National Hurricane Center ([hurricanes.gov](http://hurricanes.gov)) or local

NOAA Weather Forecast Office ([weather.gov](http://weather.gov)), and to follow the direction of local emergency managers and law enforcement in the event of a life threatening situation.

NCEI annually verifies all contacts, phone numbers, and websites listed on NOAA Extreme Weather Information Sheets. NCEI continues to monitor the information throughout the hurricane season and posts updates.

***NOTE: Due to the format of the NEWIS Data Sheets, they could not be inserted into this document. You will need to go to the website and select the Data Sheets that you want. This will ensure the Data Sheets contain the latest updates. the following Data Sheets are available for the Southeast and Caribbean area:***

- **Florida**
  - [Central](#)
  - [East-Central](#)
  - [North-Central](#)
  - [Northwest](#)
  - [South](#)
  - [Southwest](#)
  - [West-Central](#)
- **Georgia**
- **North Carolina**
  - [East-Central](#)
  - [Northeast](#)
  - [Southeast](#)
- **South Carolina**
  - [East-Central](#)
  - [Northeast](#)
  - [Southeast](#)
- **Puerto Rico**
- **U.S. Virgin Island**

## **APPENDIX G: ACRONYMS**

AA	Assistant Administrator
ARD	Assessment and Restoration Division (within OR&R in NOS Line Office)
ARL	NOAA Air Resource Lab
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CIMSS	Cooperative Institute for Meteorological Satellite Studies
CIO	Chief Information Officer
CMAQ	Congestion Mitigation and Air Quality
CONOPS	Concept of Operations
COO	Chief Operations Officer
CO-OPS	NOS Center for Operational Oceanographic Products and Services
COOP	Continuity of Operations
CORMS	Continuous Operational Real-Time Monitoring Systems (CO-OPS)
CRCA	Coral Reef Conservation Act of 2000
CTWP	Caribbean Tsunami Warning Program
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DAA	Deputy Assistant Administrator
DARRP	Damage, Assessment, Remediation, and Restoration Program
DCO	Data Collection Office
DHS	Department of Homeland Security
DOC	Department of Commerce
DOD	Department of Defense
DPP	Disaster Preparedness Program
DRC	Disaster Response Center (Mobile, AL)
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ERD	Emergency Response Division (within OR&R in NOS Line Office)
ERMA	Emergency Response Management Application
ERS	Emergency Response Specialist

ERM	Emergency Response Meteorologist
ESA	Endangered Species Act
ESF	Emergency Support Function
ESRL	NOAA Earth System Research Laboratory
FEMA	Federal Emergency Management Administration
FKNMS	Florida Keys National Marine Sanctuary
FOSC	Federal On-Scene Coordinator
FRMAC	Federal Radiological Monitoring and Assessment Center
GCNRS	General Counsel for National Resources Section
GMD	OAR Global Monitoring Division
GNMS	Gray's Reef National Marine Sanctuary
GOES	Geostationary Operational Environmental Satellite (Imager)
HSPD-5	Homeland Security Presidential Directive – 5
HSPO	NOAA Homeland Security Program Office
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory (model)
ICP	Incident Command Post
ICS	Incident Command System
IMAAC	Interagency Modeling and Atmospheric Assessment Center
IMET	Incident Meteorologist
IMO	Information Management Office
IOOS	U.S. Integrated Ocean Observing System Program
ITIC	International Tsunami Information Center
JIC	Joint Information Center
MBO	Management and Budget Office
MDA	Marine Debris Research, Prevention and Reduction Act
MDD	NOAA Marine Debris Division
MEF	Mission Essential Function
MIC	Meteorologist in Charge
MMHSRP	Marine Mammal Health and Stranding Response Program
MMPA	Marine Mammal Protection Act

MMRN	Marine Mammal Response Network
NAQFC	National Air Quality Forecast Capability
NCCOS	National Centers for Coastal Ocean Science
NCEI	National Centers for Environmental Information
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDBC	National Data Buoy Center
NDFD	NWS National Digital Forecast Database
NESDIS	National Environmental Satellite, Data, and Information Service
NFWOC	National Fire Weather Operations Coordinator
NGS	National Geodetic Survey
NIFC	National Interagency Fire Center
NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NMSA	National Marine Sanctuaries Act
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NPFC	National Pollution Fund Center
NRAD	NOAA Response Asset Directory
NRC	Nuclear Regulatory Commission
NRC	National Response Center
NRDA	Natural Resource Damage Assessment
NRF	National Response Framework
NRT	National Response Team
NRT	Navigation Response Team
NSSL	National Severe Storms Laboratory
NTSB	National Transportation Safety Board
NWLON	National Water Level Observation Network
NWS	National Weather Service
NWS ER	NWS Eastern Region
NWS ER HQ	NWS Eastern Region Headquarters



NWS ER ROC	NWS Eastern Region Operations Center
NWS SR	NWS Southern Region
NWS SR HQ	NWS Southern Region Headquarters
NWS SR ROC	NWS Southern Region Operations Center
OAR	Office of Oceanic and Atmospheric Research
OCM	Office for Coastal Management
OCS	Office for Coast Survey
OHC	Office of Habitat Conservation
OLE/SED	Office of Law Enforcement / Southeast Division, NMFS
ONMS	Office of National Marine Sanctuaries
OPA	Oil Pollution Act of 1990
OPC	Ocean Prediction Center
OR&R	Office of Response & Restoration (within NOS Line Office)
OSLTF	Oil Spill Liability Trust Fund
PIO	Public Information Officer
PMEF	Primary Mission Essential Function
PMI	Personnel, Mission, Infrastructure
PRFA	Pollution Removal Funding Authorization
QPF	Quantitative Precipitation Forecast
RISA	Regional Integrated Sciences and Assessments Program
RRC	Regional Resource Coordinator
RRT	Regional Response Team
RC	Restoration Center, NMFS
SA	Stranding Agreement
SCAT	Shoreline Cleanup and Assessment Technique
SECART	Southeast and Caribbean Regional Collaboration Team
SERO	NMFS Southeast Regional Office
SSC	Scientific Support Coordinator
SST	Scientific Support Team
SOP	Standard Operating Procedure

TAFB	Tropical Analysis & Forecast Branch
TED	Turtle Excluder Device
UME	Unusual Mortality Event
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USCG	United States Coast Guard D5 – District 5 Mid-Atlantic D7 – District 7 Southeast and Puerto Rico /Virgin Islands
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WFO	Weather Forecast Office
WSO	Weather Service Office