South Carolina Incident Waterway Debris Response Guide: Comprehensive Guidance Document

NOAA Marine Debris Program
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
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Photo: Andy Stein, WeatherNation, Denver, CO

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List of Acronyms

ACE	Ashepoo Combahee Edisto
ACP	Area Contingency Plan
ADV	Abandoned and Derelict Vessel
APHIS	Animal and Plant Health Inspection Service
BMP	Best Management Practice
BSEE	Bureau of Safety and Environmental Enforcement
CBRA	Coastal Barrier Resources Act
CBRN	Chemical, Biological, Radiological, and Nuclear-Contaminated Debris
CBRS	John H. Chafee Coastal Barrier Resources System
C&D	Construction and Demolition Debris
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
COTP	Captain of the Port (of USCG)
DHEC	South Carolina Department of Health and Environmental Control
DHS	Department of Homeland Security
DNR	South Carolina Department of Natural Resources
DoD	U.S. Department of Defense
ECP	Emergency Conservation Program (of FSA)
EFH	Essential Fish Habitat
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
ERS	Emergency Response Section (of DHEC)
ESA	Endangered Species Act
ESF	Emergency Support Function
ESI	Environmental Sensitivity Index
ESO	Ecological Services Office (of USFWS)
EWP	Emergency Watershed Protection
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FSA	Farm Service Agency
GIS	Geographic Information Systems
HHM	Household Hazardous Material
HHW	Household Hazardous Waste
JFO	Joint Field Office
LIDAR	Light Detection and Ranging
MRD	Maritime Research Division (of SCIAA)
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NERR	National Estuarine Research Reserve
NGO	Non-Governmental Organization
NMFS	NOAA's National Marine Fisheries Service (also known as NOAA Fisheries)
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRC	National Response Center
NRCS	Natural Resources Conservation Service

NRT	Navigation Response Team (of NOAA)
NWR	National Wildlife Refuge (of USFWS)
OCRM	Office of Ocean and Coastal Resource Management (of DHEC)
OCS	Outer Continental Shelf
ORR	Office of Response and Restoration (of NOAA)
PDA	Preliminary Damage Assessment
RCRA	Resource Conservation and Recovery Act
ROV	Remotely Operated Vehicle
RP	Responsible Party
SC	South Carolina
SCCZMA	South Carolina Coastal Zone Management Act
SCCZMP	South Carolina Coastal Zone Management Plan
SCDOT	South Carolina Department of Transportation
SCEMD	South Carolina Emergency Management Division
SCIAA	South Carolina Institute of Archaeology and Anthropology
SERT	State Emergency Response Team
SFAA	South Carolina State Fiscal Accountability Authority
SHPO	State Historic Preservation Office
SOSC	State On-Scene Coordinator
SSC	Scientific Support Coordinator
SUPSALV	U.S. Navy Supervisor of Salvage and Diving
USACE	U.S. Army Corps of Engineers
USC	University of South Carolina
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WMA	Wildlife Management Area

Definitions

Abandoned Vessel – Any watercraft that has been moored, stranded, wrecked, sinking, or sunk, and has been left unattended for longer than forty-five days. A watercraft is not abandoned if it is legally moored or is on private property (S.C. Code Ann. § 50-21-10(1)).

Area Contingency Plan (ACP) – Reference document prepared by an Area Committee for the use of all agencies engaged in responding to environmental emergencies in a defined geographic area. The purpose of the ACP is to define the roles, responsibilities, resources, and procedures necessary to address oil and hazardous substance incidents. For South Carolina, the ACP is developed by U.S. Coast Guard District 7, Sector Charleston (U.S. Coast Guard [USCG], 2011).

Chemical, Biological, Radiological, and Nuclear-Contaminated Debris (CBRN) – Debris contaminated by chemical, biological, radiological, or nuclear materials (Federal Emergency Management Agency [FEMA], 2016).

Coastal county – See definition for Coastal zone.

Coastal waters –The navigable waters of the United States subject to the ebb and flood of the tide and which are saline waters, shoreward to their mean high-water mark (S.C. Code Ann. § 48-39-10(f)).

Coastal wetlands – Includes marshes, mudflats, and shallows and means those areas periodically inundated by saline waters whether or not the saline waters reach the area naturally or through artificial water courses and those areas that are normally characterized by the prevalence of saline water vegetation capable of growth and reproduction (S.C. Code Ann. § 48-39-10(g)).

Coastal zone (ACP coastal zone) – U.S. Coast Guard area of responsibility for response under the National Contingency Plan, with geographic boundaries defined in the U.S. Coast Guard Sector Charleston Area Contingency Plan (USCG, 2011).

Coastal zone (under South Carolina Coastal Management Program) – South Carolina's coastal zone includes all coastal waters and submerged lands seaward to the state's jurisdictional limits and all lands and waters in the counties of the state which contain any one or more of the critical areas. These counties are Beaufort, Berkeley, Charleston, Colleton, Dorchester, Horry, Jasper, and Georgetown (S.C. Code Ann. § 48-39-10(b)).

Construction and Demolition debris (C&D) – Components of buildings and structures, such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and other floor coverings, window coverings, pipe, concrete, asphalt, equipment, furnishings, and fixtures (FEMA, 2016).

Critical Area – Coastal waters, tidelands, beaches, and/or beach/dune system which is the area from the mean high-water mark to the setback line as determined. South Carolina Department of Health and Environmental Control (DHEC) has direct permitting authority over critical areas (S.C. Code Ann. § 48-39-10(j)).

Electronic waste (e-waste) – Electronics that contain hazardous materials, such as computer monitors, televisions, cell phones, and batteries. These products may contain minerals and chemicals that require specific disposal methods (FEMA, 2016).

Eligible applicant (FEMA definition) – Entities who may receive public assistance reimbursement funding from the Federal Emergency Management Agency under the Stafford Act. Eligible applicants include state and local governments, federally recognized Indian tribal governments, and certain private non-profits that serve a public function and have the legal responsibility to remove the debris (FEMA, 2016).

Eligible debris (FEMA definition) – Debris that is a direct result of a Presidential major disaster declaration, in the designated disaster area, and whose removal is in the public interest (i.e., eliminating the immediate threat of significant damage to improved public or private property or ensuring economic recovery of the affected community to the benefit of the community at large). Debris includes, but is not limited to, vegetative debris, construction and demolition debris, sand, mud, silt, gravel, rocks, boulders, and vehicle and vessel wreckage. Debris removal from waterways that is necessary to eliminate the immediate threat to life, public health and safety, or improved property is considered eligible (FEMA, 2016).

Emergency (state definition) – Any unusual incident resulting from natural or unnatural causes which endanger the health, safety, or resources of the residents of the state, including damages or erosion to any beach or shore resulting from a hurricane, storm, or other such violent disturbance. (S.C. Code Ann. § 48-39-10(u)).

Emergency (FEMA definition) – Any occasion or instance for which, in the determination of the President, federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States (42 U.S.C. § 5122(1)).

Emergency (NOAA Fisheries definition) – A situation involving an act of God, disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property (National Oceanic and Atmospheric Administration [NOAA], n.d.-a).

Emergency (USACE definition) – A situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures (33 C.F.R. § 325.2(e)(4)).

Emergency Support Function (ESF) – Mechanism for grouping functions most frequently used to provide federal support to states and federal-to-federal support, both for declared disasters and emergencies under the Stafford Act and for non-Stafford Act incidents. The state of South Carolina also adopts the federal ESFs and assigns corresponding state agencies to each ESF in the South Carolina Emergency Operations Plan as prepared by South Carolina Emergency Management Division (South Carolina Emergency Management Division [SCEMD], 2016). Incident waterway debris removal operations typically fall within ESF-3, Public Works and Engineering and ESF-10, Oil and Hazardous Materials Response.

Environmental Sensitivity Index (ESI) Map – Maps produced by the National Oceanic and Atmospheric Administration that are a compilation of information about coastal shoreline sensitivity, biological resources, and human use resources. This information is used in planning to create cleanup strategies before an accident occurs so that authorities are prepared to act in the event of such a spill (National Oceanic and Atmospheric Administration [NOAA], 2016a).

Federally maintained waterways and channels – A waterway that has been authorized by Congress and which U.S. Army Corps of Engineers operates and maintains for general (including commercial and recreational) navigation (FEMA, 2016).

Hazard to navigation (USCG definition) – An obstruction, usually sunken, that presents sufficient danger to navigation so as to require expeditious, affirmative action such as marking, removal, or re-definition of a designated waterway to provide for navigational safety (33 C.F.R. § 64.06).

Hazardous waste – Regulated under the Resource Conservation and Recovery Act (RCRA) and contains properties that make it potentially harmful to human health or the environment. A RCRA hazardous waste is a waste that appears on one of the four hazardous waste lists or exhibits at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity (FEMA, 2016).

Household Hazardous Waste/Material (HHW/HHM) – Hazardous products and materials that are used and disposed of by residential consumers, including some paints, stains, varnishes, solvents, pesticides, and other products containing volatile chemicals that catch fire, react, or explode under certain circumstances or that are corrosive or toxic (FEMA, 2016).

Improved property (FEMA definition) – Any structure, facility, or equipment that was built, constructed, or manufactured. Examples include buildings, levees, roads, and vehicles. Land used for agricultural purposes is not improved property, nor are vacant lots, forests, heavily wooded areas, and unused areas (44 C.F.R. § 206.221(d)).

Incident waterway debris – See definition for Waterway debris.

Infectious waste – Waste capable of causing infections in humans and can include animal waste, human blood and blood products, medical waste, pathological waste, and discarded sharps (needles, scalpels, or broken medical instruments) (FEMA, 2016).

Inland zone (ACP inland zone) – U.S. Environmental Protection Agency area of responsibility for response under the National Contingency Plan, with geographic boundaries defined in the U.S. Coast Guard Sector Charleston Area Contingency Plan (USCG, 2011).

Litter Law – A person, from a vehicle or otherwise, may not dump, throw, drop, deposit, discard, or otherwise dispose of litter or other solid waste, as defined by Section 44-96-40(46) of the South Carolina Code of Law, upon public or private property or waters in the state including, but not limited to, a highway, park, beach, campground, forest land, recreational area, trailer park, road, street, or alley (S.C. Code Ann. § 16-11-700).

Major disaster (FEMA definition) – Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part

of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of states, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby (42 U.S.C. § 5122(2)).

Marine debris (NOAA definition) – Any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes (33 U.S.C. § 1956(3)).

Marine district – The waters of the Atlantic Ocean within three nautical miles from the coast line of the state (S.C. Code Ann. § 48-1-10(3)).

Mean high water – The average of all the high water heights observed over the National Tidal Datum Epoch (National Oceanic and Atmospheric Administration [NOAA], 2000). The mean high water line is also used to designate the shoreline in coastal South Carolina (S.C. Code Ann. § 50-5-10(51)).

National Contingency Plan (NCP) – Federal regulation (National Oil and Hazardous Substances Pollution Contingency Plan) that defines the authorities and responsibilities of designated federal agencies for responding to releases of oil, pollutants, and hazardous substances (U.S. Environmental Protection Agency [EPA], 2016).

Navigable waters (state definition) – All waters belonging to the state which are navigable in fact or were navigable in the past. The term includes rivers and streams in which the tide ebbs and flows (S.C. Code Ann. § 54-7-620(26)).

Navigable waterways (federal definitions) – Navigable waterways include both those waterways which are federally maintained and those waterways which are not federally maintained. U.S. Army Corps of Engineers defines navigable waters of the United States as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity (33 C.F.R. § 329.4; 33 C.F.R. § 2.36). Because the Federal Emergency Management Agency only funds waterway debris removal when another federal agency does not have authority to fund the activity, their definition for navigable waterways (non-federally maintained) includes public waterways that are currently used for commercial and recreational navigation traffic and are not federally maintained or under the authority of a federal agency (FEMA, 2016).

Outer Continental Shelf (OCS) – The submerged lands, subsoil, and seabed, lying between the seaward extent of the states' jurisdiction and the seaward extent of federal jurisdiction. The OCS is subject to the jurisdiction and control of the federal government (Bureau of Ocean Energy Management, n.d.).

Pollution – (1) The presence in the environment of any substance, including, but not limited to, sewage, industrial waste, other waste, air contaminant, or any combination thereof in such quantity and of such characteristics and duration as may cause, or tend to cause the environment of the state to be contaminated, unclean, noxious, odorous, impure or degraded, or which is, or tends to be injurious to human health or welfare; or which damages property, plant, animal or marine life or

use of property; or (2) the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water (S.C. Code Ann. § 48-1-10(7)).

Putrescent debris – Debris that will decompose or rot, such as animal carcasses and other fleshy organic matter (FEMA, 2016).

Recoverable waterway debris – Generally any documented vessel, vehicle, recreational vehicle, or shipping container traceable to an owner (U.S. Army Corps of Engineers [USACE], 2010).

Severe marine debris event (NOAA definition) – An atypically large amount of marine debris caused by a natural disaster, including a tsunami, flood, landslide, or hurricane, or other source (33 U.S.C. § 1956(6)).

Soil, Mud, and Sand – Soil, mud, and sand can be deposited after floods, landslides, winds, and storm surges on improved public property and rights-of-way (FEMA, 2016).

Stafford Act – The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, provides the authorities and funding for federal support to state and local entities in responding to Presidential major disaster and emergency declarations (U.S. Department of Homeland Security [DHS], 2013).

State Emergency Operations Center (EOC) – A facility located in West Columbia, in which all members of the State Emergency Response Team coordinate the response to major disasters in South Carolina (SCEMD, n.d.).

State-owned submerged lands – See definition for Submerged lands.

State seaward boundary – See definition for Marine district.

Submerged lands – Lands beneath or substantially beneath the territorial waters of the state or which are submerged at mean low tide (S.C. Code Ann. § 54-7-620(44)). See definition for Territorial waters.

Territorial waters – The navigable waters of the state, namely, all tidal waters within the boundaries of the state up to, but not above, the line of mean low tide and seaward to a line three geographical miles distant from the coastline of the state measured by reference to mean low tide elevation as defined in the Geneva Convention, Article 11, and such other waters of the state as may be included within the term "lands beneath navigable waters" as defined in the Federal Abandoned Shipwreck Act of 1987 (S.C. Code Ann. § 54-7-620(47)).

Tidally influenced waters (Tidal waters) – waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun (33 C.F.R. § 328.3).

Tidelands – All areas which are at or below mean high tide and coastal wetlands, mudflats, and similar areas that are contiguous or adjacent to coastal waters and are an integral part of the estuarine systems involved (S.C. Code Ann. § 48-39-10(g)).

Vegetative debris – Whole trees, tree stumps, tree branches, tree trunks, and other leafy material. May be recyclable or have salvage value (FEMA, 2016).

Vehicles and Vessels (FEMA definition) – Vehicles and vessels damaged, destroyed, displaced, or lost as a result of a disaster. These vehicles and vessels may eventually be abandoned because of the damage incurred or because the original owners have relocated. Vehicles and vessels may be classified as debris if they block public access and critical facilities (FEMA, 2016).

Vessel – Every description of watercraft, other than a seaplane regulated by the federal government, used or capable of being used as a means of transportation on water (S.C. Code Ann. § 50-21-10(25)).

Waterway debris (Incident waterway debris) – Any solid material, including but not limited to vegetative debris and debris exposed to oil, hazardous substances, pollutants or contaminants, that enters a waterway following an acute release incident and poses a threat to the natural or man-made environment. This may include shoreline debris and debris in some inland, non-tidal waterways.

White goods – Discarded household appliances such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters. May contain ozone-depleting refrigerants, mercury, or compressor oils that must be removed before disposal. May be recyclable or have salvage value (FEMA, 2016).

1. Introduction

1.1 Purpose

The purpose of this document is to improve preparedness for response and recovery operations following an acute waterway debris incident in coastal South Carolina. The term acute waterway debris incident is used to generally describe an incident – either natural or anthropogenic – that results in the release of large amounts of waterway debris. This document outlines existing response structures at the local, state, and federal levels to facilitate a coordinated, well-managed, and immediate response to waterway debris incidents impacting the state of South Carolina.

Individual organization roles and responsibilities are presented in text form as well as in a consolidated one-page flowchart which functions as a decision tree for waterway debris response. The document also includes an overview of permitting and compliance requirements that must be met before waterway debris removal work begins. This information is also synthesized in a one-page reference handout.

Because all incidents are different, in reality some aspects of waterway debris response are subjective and not solely dependent on prevailing roles and authorities. This is especially true following a major, catastrophic, or unprecedented incident. This guide seeks to capture the most likely response structure and actions with the understanding that flexibility is an inherent component of an effective response.

The *South Carolina Incident Waterway Debris Response Guide: Comprehensive Guidance Document* (*Guide*) serves as a complete reference for South Carolina incident waterway debris response. The accompanying *Field Reference Guide* only includes the most pertinent information for quick reference in the field and during emergency response operations.

1.2 Scope of *Guide*

The *Guide* addresses potential acute waterway debris incidents affecting South Carolina's coastline. For purposes of this document, the term waterway debris (or incident waterway debris) is used in lieu of the term marine debris. In 33 U.S.C. § 1956(3), marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes. Although vegetative debris is not included in the legal definition for marine debris, South Carolina stakeholders have identified it as a common debris stream of concern following disasters in the state. To account for both marine debris and vegetative debris in this document, the term waterway debris is used and includes any solid material, including but not limited to vegetative debris and debris exposed to or that has the potential to release oil, hazardous substances, pollutants or contaminants, that enters a waterway following an acute incident and poses a threat to the natural or man-made environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways. This *Guide* specifically addresses waterway debris resulting from acute episodic incidents, such as disaster debris, and may not apply to chronic waterway debris issues.

1.3 *Guide* Maintenance

This *Guide* is a living document and is subject to change as additional information becomes available and updates are needed. The *Guide* will be maintained by the National Oceanic and Atmospheric Administration's (NOAA) Marine Debris Division in coordination with federal, state, and local stakeholders. Contact information will be verified annually, and the *Guide* will undergo a formal review every three years. The *Comprehensive Guidance Document* and subsequent versions will be posted on NOAA's Marine Debris Division website at https://marinedebris.noaa.gov/ (National Oceanic and Atmospheric Administration [NOAA], 2016b).

2. Incident Waterway Debris in South Carolina

2.1 Foreseeable Waterway Debris Incidents in South Carolina

South Carolina is ranked the 10th fastest growing state in the nation, with especially rapid growth along the coast. With jurisdiction over 1,080 square miles of coastal and inland water, the state is particularly vulnerable to the impacts of incident waterway debris (South Carolina Emergency Management Division [SCEMD], 2013).

Eight of the 46 counties in South Carolina make up the coastal zone. This area is home to over 27% of the state's population (SCEMD, 2016) and serves as the destination for over 18 million annual visitors (South Carolina Department of Parks, Recreation and Tourism, 2014). In Horry and Georgetown counties, tourism is the largest driver of economic growth, supporting 75,000 jobs (SCEMD, 2013). The coastal zone also supports several environmentally-sensitive natural areas including National Forests, National Wildlife Refuges, National Estuarine Research Reserves, and Wildlife Management Areas.

South Carolina's geographic location and low elevation along the coast make it susceptible to many weather-related hazards. Since 1954, the state has experienced 25 federally declared disasters including 17 major disaster declarations (Federal Emergency Management Agency [FEMA], n.d.). The most recent major disaster was a severe flooding event on October 2015 which resulted in 1.5 billion dollars in damage and a large amount of debris clogging streams and endangering human health (National Oceanic and Atmospheric Administration [NOAA], 2016d). Severe storms account for the most financial losses in South Carolina, and though less frequent, hurricanes and earthquakes have the potential to be the most financially disastrous (SCEMD, 2013).

Figure 1 shows the relationship between probability (likelihood) and consequence (potential social, economic, and infrastructural loss or damage) for natural and anthropogenic hazards in South Carolina (SCEMD, 2016). The yellow highlighted hazards are those with the potential to release debris into waterways, wetlands, and/or shorelines. In South Carolina, hazards that occur frequently and cause significant damage (top right quadrant of Figure 1) are those which the state spends the most time planning for. Most hazards that generate waterway debris fall within this category.

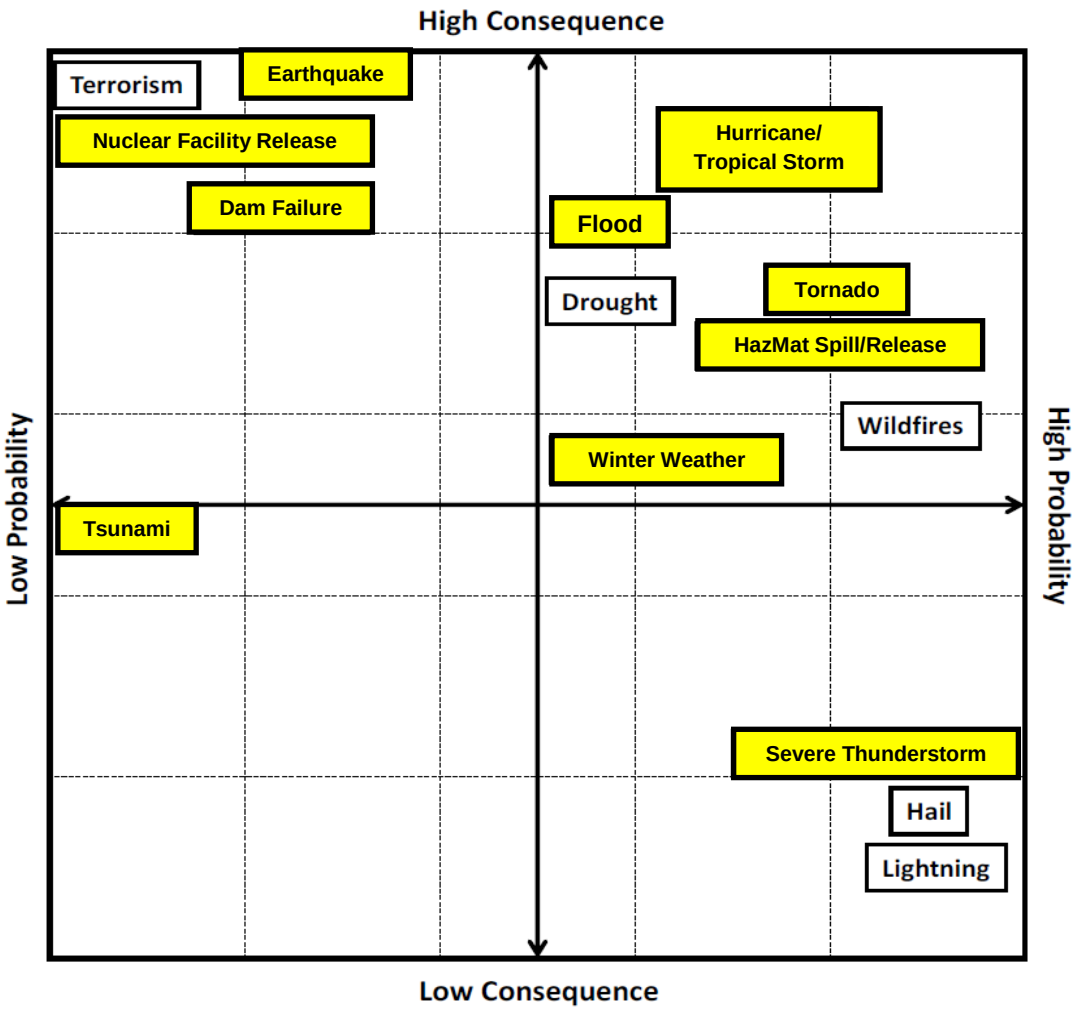


Figure 1. Relationship between probability and consequence (potential loss) for natural and anthropogenic hazards in South Carolina. Hazards highlighted in yellow are those with potential to generate waterway debris. Image obtained from the South Carolina Emergency Operations Plan (SCEMD, 2016).

As part of the *South Carolina Hazard Mitigation Plan* (SCEMD, 2013), both probability and consequence of hazards are analyzed quantitatively and combined to provide a total "All-Hazard Score" for each county. The All-Hazard Score is then added to a social vulnerability score to determine "Place Vulnerability" (Figure 2). Counties that have an elevated Place Vulnerability have a high hazard risk and pose a greater challenge for emergency managers. Charleston County has the highest Place Vulnerability score overall. Charleston County is vulnerable to all hazards and is also located in the highest earthquake hazard area on the East Coast. Detailed hazard risk analyses and impacts at the local level can be found in the *South Carolina Hazard Mitigation Plan* and in county mitigation strategies (SCEMD, 2013).

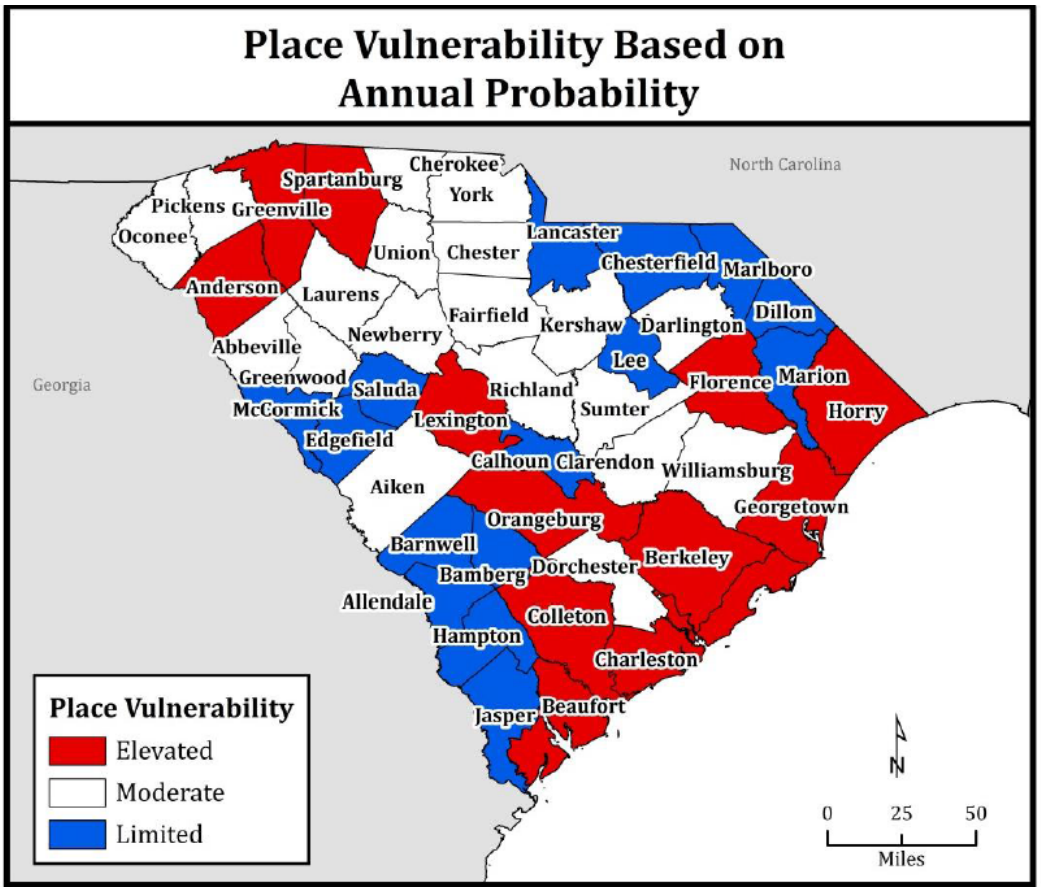


Figure 2. Place Vulnerability based on annual probability of hazards. Place Vulnerability is determined by adding the total Hazard Score to a calculated social vulnerability score. Image obtained from the South Carolina Hazard Mitigation Plan (SCEMD, 2013).

2.2 Prominent Debris Types

Some agency authorities are dependent on both the location and type of debris. Therefore, response to debris in South Carolina waterways may vary depending on the debris type to be removed. Primary debris types generated after a disaster as defined by the Federal Emergency Management Agency (FEMA, 2016) include the following:

- Chemical, Biological, Radiological, and Nuclear-Contaminated (CBRN)
- Construction and Demolition (C&D)
- Electronic waste (e-waste)
- Hazardous Waste
- Household Hazardous Waste/Material (HHW/HHM)
- Infectious Waste
- Putrescent Debris
- Soil, Mud, and Sand
- Vegetative Debris
- Vehicles and Vessels
- White Goods

A description of each debris type is included in the Definitions section of this document. It is difficult to predict the exact mix of waterway debris that will be generated after a disaster since different types of hazard incidents generally result in different debris types. Table 1 includes an overview of typical debris streams for several natural hazards. Although Table 1 only covers natural hazards, man-made hazards such as an accident during waterway commerce are also concerns. Anthropogenic hazards are highly variable in both quantity and type of waterway debris released.

Table 1. Typical debris streams for different types of hazard incidents. Data adapted from Federal Emergency Management Agency (2007).

		Typical Debris Streams								
		Vegetative	Construction and Demolition (C&D)				Soil, Mud, and Sand			Personal Property, Household Items
Natural Hazards	Floods	X	X	X	X	X	X	X	X	X
	Hurricanes/Tropical Storms	X	X	X	X	X	X	X	X	X
	Tornadoes/Wind Storms	X	X	X	X	X		X	X	X
	Winter/Ice Storms	X			X					
	Earthquakes		X	X	X	X	X			X
	Tsunamis	X	X	X	X	X	X	X	X	X

The type and quantity of waterway debris generated after a disaster is highly dependent on land use and existing infrastructure along South Carolina waterways. For example, protected undeveloped areas near Ashepoo Combahee Edisto (ACE) Basin National Wildlife Refuge are likely to generate vegetative debris, while developed properties in Charleston are likely to generate C&D debris. A land cover map for South Carolina is depicted in Figure 3 and illustrates the distribution of land use types in the state, including developed lands. Increased development in the floodplain will increase the likelihood of waterway debris following a natural hazard event.

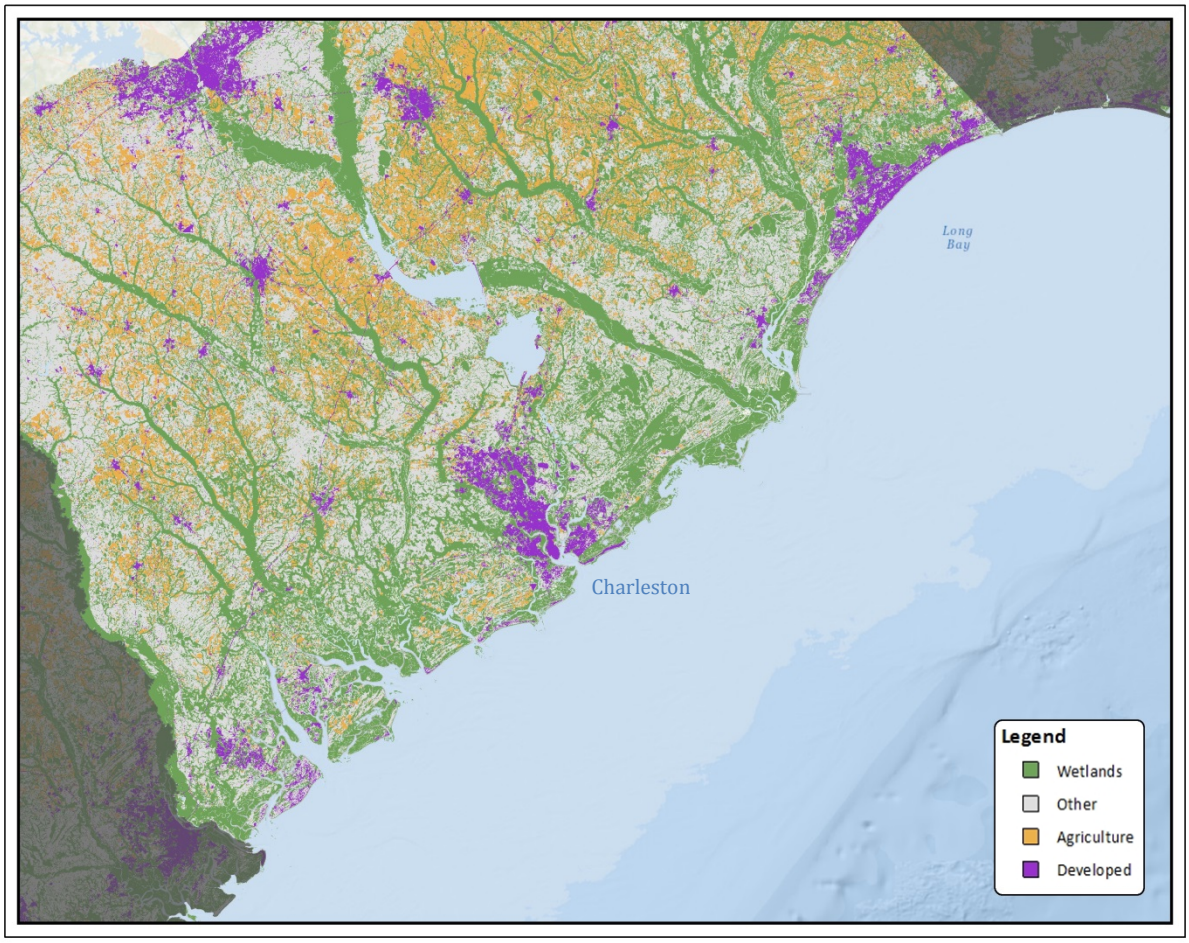


Figure 3. Land cover map for the coastal region of South Carolina (National Oceanic and Atmospheric Administration [NOAA], 2016e).

3. South Carolina Incident Waterway Debris Response Flowchart

The "South Carolina Incident Waterway Debris Response Flowchart" included in this section provides a visual one-page representation of agency roles and responsibilities. The flowchart functions as a decision tree for waterway debris response with color-coded endpoints. Yellow endpoints represent response to waterway debris that is exposed to or has the potential to release oil, hazardous substances, pollutants or contaminants. Blue endpoints represent response to waterway debris that is not exposed to and does not have the potential to release oil, hazardous substances, pollutants or contaminants. Endpoints within the green shaded area indicate that response may occur under Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) authorities and/or funding.

For detailed information regarding individual organization roles, responsibilities, and authorities, see Section 4.

SC Incident Waterway Debris Response Flowchart

START →

Is waterway debris in a USACE federally maintained waterway or channel, or immediately adjacent thereto?

- *Yes* → Is waterway debris exposed to or does it have the potential to release oil or hazardous substances?
  - *Yes* → **Debris in federally maintained waterway (pollution threat)**
    - Report to NRC 1-800-424-8802
    - Removal authorized under NCP.

    USCG oversees response by RP. If vessel with no RP, USCG removes pollution threat (battery, oil) and generally leaves vessel in place. USACE may remove vessel.
  - *No* → **Debris in federally maintained waterway**

    USACE may remove debris or oversee removal by RP. If a hazard to navigation, USCG will mark debris or remove in some cases.
- *No* → Is waterway debris on private property?
  - *No* → Is waterway debris in federal waters (beyond 3 n. mi.) or on federal lands?
    - *No* → Is waterway debris a direct result of a major disaster declared by the President?
      - *Yes* → Is waterway debris located in non-tidal waters, and does removal meet all NRCS EWP eligibility criteria? *See criteria at bottom right of page.*
        - *No* → Is waterway debris located in the designated disaster area?
        - *Yes* → Is debris a direct result of an NRCS State Conservationist declared disaster, located in non-tidal waters, and does removal meet all NRCS EWP eligibility criteria? *See criteria at bottom right of page.*
          - *Yes* → **Debris eligible for NRCS EWP funding**

            NRCS funds removal by eligible sponsor under EWP program. Cost share is typically 75% NRCS, 25% sponsor.
          - *No* → Is waterway debris located in the designated disaster area?
      - *No* → Is waterway debris located in the designated disaster area?
    - *Yes* → Is waterway debris exposed to or does it have the potential to release oil or hazardous substances?
      - *No* → **Debris in federal waters or on federal lands**
        - Federal lands: Federal lands on South Carolina's coast are owned by NPS, USFWS, and DoD who are responsible for debris removal on their lands. These agencies may coordinate with local or state governments to remove debris.
        - Federal waters: No federal agency actively removes waterway debris in federal waters unless it is a pollution threat or in a USACE federally maintained waterway or channel
      - *Yes* → Is waterway debris exposed to or does it have the potential to release oil or hazardous substances?
        - *Yes* → **Pollution threat, no Stafford Act declaration**
          - Report to NRC 1-800-424-8802 and DHEC ERS 1-888-481-0125
          - Response managed at lowest jurisdictional level capable of handling the removal: Local → State → Federal
          - If state-led response, DHEC leads response
          - If federal assistance required, USCG or EPA oversees response by RP. Generally, response led by USCG in ACP Coastal Zone and by EPA in ACP Inland Zone.
          - Under NCP, USCG/EPA may respond without a request from local, state, or tribal governments
        - *No* → **Debris in South Carolina waters, no Stafford Act declaration, no pollution threat**
          - Response managed at lowest jurisdictional level capable of handling the removal: Local → State
            - Some counties may have contracts in place for debris removal
          - Local and/or DNR Law Enforcement agencies may lead investigation to identify RP for ADVs
          - ADVs can be reported through DHEC's MyCoast app
          - If a state declared disaster, SC SFAA Office of State Engineer leads coordination under ESF-3
          - NGOs and private organizations may have volunteer groups able to assist with debris removal
          - SCDOT will remove debris obstructing bridges or associated SCDOT maintained infrastructure
          - Note: Most submerged lands waterward of the mean high water line beneath navigable fresh water or tidally-influenced waters are property of the state. DNR and DHEC regulate many of the activities that utilize these lands.
  - *Yes* → **Debris on private property**

    Refer to homeowner insurance policy and check for EWP eligibility at bottom right of page. *After a Stafford Act declaration, FEMA typically does not provide funding unless removal is necessary to mitigate a health and safety hazard and it is in the public interest.*

Eligibility Determination by FEMA: Made on case-by-case discretionary basis in coordination with eligible applicant, state, and other federal agencies. Is removal **necessary to** eliminate the immediate threat to human lives, public health and safety, or improved property?

- For navigable waterways, debris removal is limited to a max depth of 2 feet below the low tide draft of the largest vessel that utilized the waterway prior to the incident. Any debris below this zone is not eligible unless it is necessary in order to remove debris extending upward into an eligible zone.
- For non-navigable waterways, including natural waterways, debris removal is only eligible to the extent that it is necessary to eliminate an immediate threat including the following: if the debris obstructs, or could obstruct, intake structures; if the debris could cause damage to structures; or if the debris is causing, or could cause, flooding to property during the occurrence of a 5-year flood *(See FEMA Recovery Policy FP 104-009-2)*

Yes → Is waterway debris exposed to or does it have the potential to release oil or hazardous substances?

Stafford Act Declaration

- *Yes* → Is waterway debris exposed to or does it have the potential to release oil or hazardous substances?
  - *Yes* →
    - Report to NRC 1-800-424-8802 and DHEC 1-888-481-0125
    - FEMA funds may be used if not at pre-existing site under NCP. If RP is known, must apply insurance proceeds first.

    If FEMA funds are not used, removal authorized under NCP
    - Response managed at lowest jurisdictional level capable of handling the removal: Local → State → Federal
    - If state-led response, DHEC leads response
    - If federal assistance required, USCG or EPA oversees response by RP. Generally, response led by USCG in ACP Coastal Zone and by EPA in ACP Inland Zone.
    - During Stafford Act declarations, USCG/EPA retain authority to respond under the NCP without a request from local, state, or tribal governments
  - *No* → Is the waterway debris recoverable (traceable to an owner), i.e. a vessel with a Hull Identification Number?
    - *No* → Has the state/local government or organization demonstrated to FEMA that they lack the capability to perform or contract the debris removal work?
      - *Yes* → Has the state/local government or organization demonstrated to FEMA that they lack the capability to perform or contract the debris removal work? (*If FEMA funds used*)
        - *Yes* → **FEMA Direct Federal Assistance**

          FEMA mission assignment to another federal agency to perform or contract the debris removal work
          - USACE typically disposes of building debris hazmat, such as household hazardous materials, orphaned hazardous materials, and electronic goods under ESF3
          - EPA or USCG typically lead hazardous waste disposal under ESF10
        - *No* → **FEMA Public Assistance Funding**

          Reimbursement to eligible applicant to remove and dispose of hazardous waterway debris using their own forces or contract labor
          - Funding from FEMA to SCEMD then to eligible applicant
          - If state is eligible applicant, DHEC leads response and provides scientific support
      - *No* → **FEMA Public Assistance Funding**

        Reimbursement to eligible applicant to remove and dispose of waterway debris using their own forces or contract labor
        - Funding from FEMA to SCEMD then to eligible applicant
    - *Yes* → **FEMA Direct Federal Assistance**

      FEMA mission assignment to another federal agency to perform or contract the debris removal work
      - USACE typically leads eligible debris removal under ESF3
    - *Yes* → **Recoverable debris in South Carolina waters, Stafford Act declaration, no pollution threat**
      - South Carolina does not have dedicated funding for the removal or disposal of ADVs
      - DNR Law Enforcement may assist eligible applicant with identifying and contacting owner of an ADV
      - If owner is found, apply insurance and owner takes vessel or they may receive a ticket/charge by DNR Law Enforcement
      - If no owner is found or if the owner is found but there is no insurance on the property and the owner surrenders rights, FEMA may reimburse applicant for removal

- *FEMA provides funding but does not conduct debris removal work*
- *FEMA Eligible Applicants must have legal responsibility to remove the debris and include state and local governments, Indian tribes, and certain non-profits*
- *Public Assistance cost share is typically 75% FEMA, 12.5% state, 12.5% applicant*

EWP Eligibility Determination by NRCS

- Result of Presidential or NRCS State Conservationist declared disaster
- Waterway debris is result of natural disaster
- Recovery measures are for runoff retardation or erosion prevention
- Waterway debris is a threat to life and/or property
- Event caused a sudden impairment in the watershed
- Imminent threat was created by this event
- Have economic, environmental, and social documentation adequate to warrant removal action
- Proposed removal action is technically viable
- Public and private landowners may be eligible if represented by a project sponsor that is a political subdivision of the state or a Tribal council

Acronyms

- ADV – Abandoned and Derelict Vessel
- ACP – Area Contingency Plan
- DHEC – SC Department of Health and Environmental Control
- DoD – U.S. Department of Defense
- DNR – SC Department of Natural Resources
- EPA – U.S. Environmental Protection Agency
- ERS – DHEC's Emergency Response Section
- ESF – Emergency Support Function
- EWP – Emergency Watershed Protection
- FEMA – Federal Emergency Management Agency
- NCP – National Oil & Hazardous Substance Contingency Plan
- NGO – Non-Governmental Organization
- NPS – National Park Service
- NRC – National Response Center
- NRCS – Natural Resources Conservation Service
- RP – Responsible Party (Owner, Operator, Lessee)
- SCDOT – SC Department of Transportation
- SCEMD – SC Emergency Management Division
- SFAA – SC State Fiscal Accountability Authority
- USACE – U.S. Army Corps of Engineers
- USCG – U.S. Coast Guard
- USFWS – U.S. Fish and Wildlife Service

Flowchart Key

- Response to waterway debris that is exposed to or has the potential to release oil, hazardous substances, pollutants, or contaminants
- Response to waterway debris that is not exposed to and does not have the potential to release oil, hazardous substances, pollutants, or contaminants
- Indicates response may occur under Stafford Act authorities and/or funds

Waterway Debris/Incident Waterway Debris: Any solid material, including but not limited to vegetative debris and debris exposed to or that has the potential to release oil, hazardous substances, pollutants, or contaminants, that enters a waterway following an acute incident and poses a threat to the natural or man-made environment. This may include shoreline and wetland debris and debris in some inland, non-tidal waterways.

4. Roles and Responsibilities

In South Carolina response to an acute waterway debris incident is generally managed at the lowest jurisdictional level capable of handling the response and removal (SCEMD, 2016). Each county in South Carolina is responsible for emergency management within its jurisdictional boundaries and will conduct emergency operations according to established plans and procedures. Should a disaster or emergency be beyond the capabilities of local government, requests for state and/or federal assistance are made to the State Emergency Operations Center (EOC).
Local, state, and federal agency roles and responsibilities as they relate to waterway debris response are outlined in the following sections followed by responsibilities of private landowners, volunteer, and non-governmental organizations (NGOs).

For a visual one-page representation of agency roles and responsibilities, see "South Carolina Incident Waterway Debris Response Flowchart" in Section 3. For a map defining agency jurisdictional authorities, see Section 4.6. Additionally, response capabilities and corresponding agency contact information can be found in Appendix D and E, respectively.

4.1 Local Agency Responsibilities

- May act as first responders to reports of waterway debris incidents which impact South Carolina's eight coastal counties and their municipalities
- County emergency management agencies are the lead local agencies for emergency planning, preparedness, mitigation, response, and recovery
    - Following a Stafford Act declaration, local emergency management agency offices serve as the first point for contact with the South Carolina Emergency Management Division (SCEMD)
    - Develops a county emergency operations plan (EOP) as required by South Carolina regulation (S.C. Code Ann. § 25-1-420(a)), which outlines the roles and responsibilities of the county emergency management organization
    - Provides resource coordination and support to on-scene incident commanders during response and recovery, including the ability to request external resources from SCEMD
    - Establishes and conducts emergency preparedness exercises and training programs
- Following a Stafford Act declaration, may serve as eligible applicant and receive public assistance reimbursement funding from the Federal Emergency Management Agency (FEMA) to perform or contract waterway debris removal
    - As an applicant, responsible for determining ownership of recoverable waterway debris, providing a staging area for temporary storage of recoverable waterway debris, and demonstrating the pre-disaster condition and capacity of waterways
- Following any disaster that causes a sudden watershed impairment that threatens lives or property, may apply to the Natural Resources Conservation Service (NRCS) State Conservationist for Emergency Watershed Protection (EWP) program assistance to perform or contract waterway debris removal. See "South Carolina Incident Waterway Debris Response Flowchart" in Section 3 for EWP eligibility criteria.
- Required to have a comprehensive beach management plan that contains a post-disaster plan including plans for cleanup (S.C. Code Ann. § 48-39-350)

- Local law enforcement officers may lead investigation to identify the owner of a vessel that appears to be abandoned. Officers may issue citations or tickets for vessels that appear to be abandoned and in some cases may remove abandoned or derelict vessels.

Select local authorities:

- South Carolina Emergency Operations Plan (SCEMD, 2016), which includes a list of enabling legislation
- Custody and notice of unclaimed stranded goods (S.C. Code Ann. § 54-7-10)
- Duties of state, county, and municipal governments for mutual assistance in emergencies (S.C. Code Ann. § 25-1-450(2))
- Local comprehensive beach management plan (S.C. Code Ann. § 48-39-350)
- Plan developed in cooperation with local governments (S.C. Code Ann. § 48-39-100)

4.2 State Agency Responsibilities

Select state authorities:

- Duties of state, county, and municipal governments for mutual assistance in emergencies (S.C. Code Ann. § 25-1-450(1))
- South Carolina Emergency Operations Plan (SCEMD, 2016), which includes a list of references and authorities
- South Carolina Solid Waste Policy and Management Act (S.C. Code Ann. § 44-96)

South Carolina Department of Archives and History

State Historic Preservation Office (SHPO)

- Ensures compliance with Section 106 of the National Historic Preservation Act
- Reviews proposed debris removal activities to evaluate potential impacts to historic properties
- Advises South Carolina Department of Health and Environmental Control (DHEC) Office of Ocean and Coastal Resource Management (OCRM) regarding potential impacts of permitted activities on historical and archaeological sites within the eight-county coastal zone per the State's Coastal Zone Management Plan (SCCZMP)
- For additional information on SHPO compliance requirements, see Section 5

Select SHPO authorities:

- National Historic Preservation Act, 16 U.S.C § 470 et seq.

South Carolina Department of Health and Environmental Control (DHEC)

- Serves as a support agency for ESF-3 Public Works and Engineering and lead agency for ESF-10 Oil and Hazardous Materials Response as outlined in the state's Emergency Operations Plan (SCEMD, 2016)
- Designates a State On-Scene Coordinator (SOSC) who is responsible for determining DHEC's level and method of response (USCG, 2011)
- Coordinates with local municipalities for water and sewer service restoration, debris management, potable water supply, and engineering requirements as soon as possible after a disaster (SCEMD, 2016)

Emergency Response Section (ERS)

- Serves as lead agency for the coordination of ESF-10 administrative, management, planning, preparedness, mitigation, response, and recovery activities to include developing, coordinating, and maintaining the ESF-10 Standard Operating Procedures which detail both radiological and non-radiological responsibilities
- Maintains a toll-free 24-hour emergency response line for reporting chemical spills, oil spills, or fish kills
    - For contact information, see Appendix E

Office of Environmental Quality Control

- Provides overall guidance concerning water supply matters and provides guidance for solid waste disposal
- Provides technical assistance concerning the disposal of waste materials, including household hazardous waste, agricultural waste, and debris containing or consisting of animal carcasses
- Provides and/or coordinates technical assistance on hazards known to be present in the disaster area including decontamination and long-term remediation
- Provides technical assistance for hazardous material recognition, identification, and decontamination
- Provides expertise on environmental effects of oil discharges, or releases of hazardous substances, pollutants, or contaminants and environmental pollution control techniques
- Coordinates decontamination activities with appropriate local, state, and federal agencies

Office of Ocean and Coastal Resource Management (OCRM)

- Serves as the state coastal management agency and is responsible for implementing the state's Coastal Management Program, including the direct regulation of impacts to coastal resources within the critical areas of the state including coastal waters, tidelands, beaches and beach dune systems and indirect certification authority over federal actions and state permit decisions within the eight coastal counties
- Reviews all state and federal permit applications for activities within the eight-county coastal zone for consistency with the State's Coastal Zone Management Plan (SCCZMP). For additional information on SCCZMP permits and compliance requirements, see Section 5.
- Established an abandoned and derelict vessel (ADV) working group with federal, state, and local partners to leverage the removal of ADVs from coastal waterways
    - May require removal of vessels deemed abandoned by OCRM that are located within the critical area
    - Upon notification by OCRM, the owner of the abandoned vessel or structure will have 30 days from date of notification to remove it from the critical area at his or her expense
    - Abandoned boats, barges, or other watercraft whose ownership cannot be established may be removed from the critical area by any person, at their expense, and in accordance with S.C. Code Ann. § 50-23-290
- Works with communities and partners across the state to support recycling and waste management, reduce debris in coastal and marine environments, and lead outreach and education initiatives targeting marine debris
- Manages MyCoast (South Carolina Department of Health and Environmental Control [DHEC], n.d.): South Carolina web application for citizens to easily report ADVs and coastal hazard events within South Carolina

Select DHEC authorities:

- Coastal Tidelands and Wetlands Act (S.C. Code Ann. § 48-39-10 et seq.)
- Pollution Control Act (S.C. Code Ann. § 48-1 et seq.)
- South Carolina Hazardous Waste Management Act (S.C. Code Ann. § 44-56 et seq.)
- Stormwater Management and Sediment Reduction Act (S.C. Code Ann. § 48-14-10 et seq.)

South Carolina Department of Natural Resources (DNR)

- Has jurisdiction over all marine resources within the salt waters of the state, including the territorial waters
- Regulates certain activities that may utilize lands submerged under navigable waters. While DNR regulates the activity itself, it does not regulate the use of submerged lands.
- Serves as a support agency for ESF-10 Oil and Hazardous Materials Response
    - Provides technical advice and assistance on wildlife and environmentally sensitive areas of the state
    - Provides all-terrain vehicles, boats, and four-wheel drive vehicles to aid in the investigation of spills and releases
    - Provides aircraft for air surveillance and transportation of essential personnel and environmental samples

Land, Water and Conservation Division

- Serves as a support agency for both ESF-3 Public Works and Engineering and ESF-10 Oil and Hazardous Materials Response
- Provides engineering inspectors and water testing capability
- Provides funding and guidance to South Carolina's 46 soil and water conservation districts to facilitate the protection and enhancement of the state's soil and water resources
- Coordinates habitat protection efforts such as the State Scenic Rivers Program, which manages and conserves designated river systems through individual management plans

Law Enforcement Division

- Responsible for the enforcement of state and federal laws that govern recreational and commercial fishing, recreational boating, and other natural resources conservation concerns
- Jurisdiction covers the coastal marine shoreline and waters out to 200 miles (SC DNR, n.d.)
- Maintains a 24-hour toll-free number for reports of a conservation law violation
    - For contact information, see Appendix E
- Identifies and tags vessels that are or may become abandoned or derelict
- Issues citations or tickets for vessels that are deemed abandoned or illegally moored
- May lead or assist in investigation to identify the owner of a vessel that appears to be abandoned
- Conducts pre- and post-storm river sweeps along the coast of South Carolina. During pre-storm sweeps, focus is on vessels that are anchored.

Marine Resources Division

- Conducts monitoring and research on the state's marine resources and makes recommendations for the management of those resources through the Marine Resources Research Institute

- Manages the Ashepoo Combahee Edisto (ACE) Basin National Estuarine Research Reserve (NERR) through a partnership with NOAA. May remove waterway debris located within the Reserve. For a map of NERRs in South Carolina, see Section 4.6

Wildlife and Freshwater Fisheries Division

- Responsible for the development, operation, and maintenance of the state's Wildlife Management Area (WMA) Program, which provides managed habitat for the protection, enhancement, and utilization of a wide variety of wildlife species
    - Manages approximately 1.5 million acres of DNR owned or leased WMAs
    - May remove waterway debris located within the WMAs
    - For a map of WMAs in South Carolina, see Section 4.6

Select DNR authorities:

- Department of Natural Resources to provide additional personnel (S.C. Code Ann. § 48-39-60)
- South Carolina Boating and Safety Act of 1999t (S.C. Code Ann. § 50-21et seq.)
- General duties and powers (S.C. Code Ann. § 48-9-290)
- Jurisdiction of Department of Natural Resources (S.C. Code Ann. § 50-5-20)
- Penalties (S.C. Code Ann. § 48-39-170)
- Statewide authority of enforcement officers (S.C. Code Ann. § 50-3-340)
- Tom Yawkey Wildlife Center Trust Fund (S.C. Code Ann. § 50-3-1010)

South Carolina Department of Transportation (SCDOT)

- Serves as support agency for ESF-3 Public Works and Engineering and ESF-10 Oil and Hazardous Materials Response
- Provides communication, heavy equipment, personnel, and transportation support during ESF-10 activation
- Responds to statewide emergencies and provides assistance to emergency response teams
- Responsible for the maintenance and repair of bridges and other coastal transportation infrastructure. Will remove or coordinate the removal of waterway debris that is obstructing a bridge or other SCDOT maintained infrastructure.

Select SCDOT authorities:

- Department of Transportation (S.C. Code Ann. § 57-3 et seq.)

South Carolina Emergency Management Division (SCEMD)

- Coordinates statewide emergency management program as lead state agency for emergency preparedness, mitigation, response, and recovery
- Prepares and implements the state EOP and assists political subdivisions in preparing and maintaining local emergency operations plans
- Maintains state Hazard Mitigation Plan (SCEMD, 2013)
- Organizes the State Emergency Response Team (SERT) to provide a viable response and manage recovery resources and assets
- Prepares to assist counties based on identified needs through the use of state assets and by intra- and inter-state mutual aid agreements
- Conducts comprehensive assessments of threats to the state and updates existing emergency operations and hazard mitigation plans
- Facilitates the process for requesting a Presidential major disaster declaration

- After a Presidential major disaster declaration, integrates efforts with FEMA's Joint Field Office (JFO)
    - Facilitates recovery from the impact of a hurricane by requesting FEMA perform a joint Preliminary Damage Assessment (PDA) as soon as practical after impact.
    - Plans and conducts applicants' briefings in all affected counties to inform potential applicants of available federal funding and how to apply for and use federal funds for recovery
    - Acts as the conduit for federal funds
    - Coordinates with regulatory agencies to expedite acquisition of environmental compliance documents needed by applicants
    - Deploys to field offices to lend technical assistance and meet with regulatory agencies, contractors and/or applicants to correct debris problems that may affect funding
    - Provides guidelines for debris operations under programs such as FEMA's public assistance program
- Provides debris management technical assistance to local governments including pre-event planning, debris operations assistance, and aiding in closure of public assistance grants
- Reviews debris management plans for compliance with FEMA pilot program guidelines, debris removal contracts, and private property ordinances prior to or after an event

Select SCEMD authorities:

- South Carolina Emergency Management Division (S.C. Code Ann. § 25-1-420)
- South Carolina Emergency Operations Plan (SCEMD, 2016) which includes a list of enabling legislation

South Carolina State Fiscal Accountability Authority (SFAA)

Division of Procurement Services

Office of State Engineer

- Serves as the lead state agency for ESF-3 Public Works and Engineering
- Identifies, trains, and assigns personnel to staff ESF-3 in the state EOC
- Coordinates with ESF-3 support agencies and local municipalities to identify water and sewer service restoration, debris management, clearance, removal including disposal of contaminated and uncontaminated debris from public property, potable water supply, and engineering requirements
- Coordinates assistance (to include vessel removal, significant marine debris removal, and hydrographic survey) to affect the rapid recovery and reconstitution of critical waterways, channels, and ports (SCEMD, 2016)
- Develops and maintains list of design professionals and construction contractors associated with public works and engineering functions

Select SFAA authorities:

- Creation of the Office of State Engineer (S.C. Code Ann. § 11-35-830)

South Carolina State Ports Authority

- Owns and operates public marine terminals at two port facilities in South Carolina including the Port of Charleston and the Port of Georgetown
- Serves as a support agency for ESF-10 Oil and Hazardous Materials Response (SCEMD, 2016)

- Coordinates resources, provides storage space, and supports large oil and hazardous material release response in the port area
- May request assistance from NOAA's Navigation Response Team (NRT) to survey ports and near-shore waterways to identify dangerous objects or changes in water depth following a disaster
- Jurisdiction within the state extends over the waters and shores of authorized harbors or seaports and over that part of all tributary streams flowing into such harbors or seaports in which the tide ebbs and flows and extends to the outer edge of the outer bar

Select State Ports Authority authorities:

- Jurisdiction and powers of Authority over harbor and bay of Charleston (S.C. Code Ann. § 54-3-810)
- Ports Authority management (S.C. Code Ann. § 54-3-101 et seq.)
- Powers of Authority as to erection or removal of wharves, docks and other structures (S.C. Code Ann. § 54-3-610)
- Purposes and powers generally (S.C. Code Ann. § 54-3-110 et seq.)
- Submission of plan by State Ports Authority (S.C. Code Ann. § 48-39-110)

University of South Carolina (USC)

Belle W. Baruch Institute for Marine and Coastal Sciences

- Manages the North Inlet-Winyah Bay National Estuarine Research Reserve (NERR) through a partnership with NOAA
- Coordinates clean-up efforts within the North Inlet-Winyah Bay NERR
- May work in coordination with federal and local partners to remove debris and/or abandoned vessels from North Inlet-Winyah Bay NERR
- Implements the System-Wide Monitoring Program which provides standardized, quantitative data on how Reserve conditions change in both the short and long term
- For a map of NERRs sites in South Carolina, see Section 4.6

South Carolina Institute of Archaeology and Anthropology (SCIAA)

Maritime Research Division

- Advises the State Historic Preservation Office, other state, federal and public agencies, and private individuals on archaeological site protection, preservation, conservation, and compliance related activities. For additional information on compliance requirements, see Section 5.
- Maintains a research database of state underwater archaeology sites
- Oversees and implements the Underwater Antiquities Act

Select USC authorities:

- South Carolina Institute of Archeology and Anthropology (S.C. Code Ann. § 60-13-210 et seq.)
- Underwater Antiquities Act of 1991 (S.C. Code Ann. § 54-7-610 et seq.)

4.3 Federal Agency Responsibilities

Animal and Plant Health Inspection Service (APHIS)

- Veterinary Services program provides for removal and burial of diseased animal carcasses
- Manages Plant Protection and Quarantine program to reduce the risk of introduction and spread of invasive species through planning, surveillance, quick detection, and containment

Select APHIS authorities:

- Animal Health Protection Act (7 U.S.C § 8301 et seq.)
- Plant Protection Act (7 U.S.C § 7701 et seq.)

Bureau of Safety and Environmental Enforcement (BSEE)

- Manages a Marine Trash and Debris Program to eliminate debris associated with oil and gas operations on the Outer Continental Shelf (OCS)
- Regulates marine trash and debris for oil and gas operations and renewable energy development on the OCS
- Enforces requirement that items be clearly marked to identify the owner and items lost overboard be recorded, reported, and retrieved if possible
- Requires annual training of offshore oil and gas workers to reduce marine debris

Farm Service Agency (FSA)

- Emergency Conservation Program (ECP) helps farmers repair damage to farmland caused by natural disasters, such as:
    - Debris removal from farmland
    - Grading, shaping, or leveling damaged land
- Up to 75% of the cost to implement emergency conservation practices can be provided to farmers. Qualified limited resource producers may earn up to 90% cost-share.
- Locally-elected FSA County Committee is authorized to implement ECP and determine if land is eligible for ECP
- Farmers should inquire with their local FSA county office regarding ECP enrollment periods, which are established by FSA county committees

Select FSA authorities:

- Agricultural Credit Act of l978 (92 Stat. 420-434), as amended by the Disaster Assistance Act of l989, Section 502 and 7CFR, 701, Subpart B

Federal Emergency Management Agency (FEMA), Region IV

- Under the Stafford Act, provides reimbursement funding for eligible debris removal from navigable waterways (non-federally maintained) or wetlands during Presidential major disaster declarations when another federal agency does not have authority to fund the activity
    - Provides funding to eligible applicants at a typical cost share of 75% FEMA, 12.5% state, and 12.5% eligible applicant
    - Issues mission assignments to other federal agencies for technical assistance, federal operations support, or to perform or contract debris removal when local and state capabilities are exceeded
- Makes eligibility determinations for debris removal on a case-by-case discretionary basis in coordination with the eligible applicant, state, and other federal agencies

    - Debris removal must be necessary to eliminate the immediate threat to life, public health and safety, or improved property (FEMA, 2016)
    - For navigable waterways, debris removal is limited to a max depth of 2 feet below the low tide draft of the largest vessel that utilized the waterway prior to the incident. Any debris below this zone is not eligible unless it is necessary in order to remove debris extending upward into an eligible zone (FEMA, 2016).
    - For non-navigable waterways, including natural waterways, debris removal is only eligible to the extent that it is necessary to eliminate an immediate threat including the following: if the debris obstructs, or could obstruct, intake structures; if the debris could cause damage to structures; or if the debris is causing, or could cause, flooding to property during the occurrence of a 5-year flood (a flood that has a 20% chance of occurring in any given year) (FEMA, 2016)
- Employs debris specialists that can be mobilized to assist eligible applicants with debris management
- May reimburse costs for use of side scan sonar that identifies eligible submerged debris and sunken vessels
- Provides geospatial support as well as hosts data, paper maps, and live data collection with interactive mapping through a shared group on ArcGIS Online

Select FEMA authorities:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C § 5121 et seq.)
    - Debris Removal (42 U.S.C. § 5173)
    - Essential Assistance (42 U.S.C. § 5170b)
    - Federal Emergency Assistance (42 U.S.C. § 5192)

National Oceanic and Atmospheric Administration (NOAA)

National Marine Fisheries Service (NMFS or NOAA Fisheries)

Office of Habitat Conservation and Office of Protected Resources

- Reviews proposed debris removal activities that involve a federal agency (directly or through funding and/or issuance of a federal permit) for compliance with Magnuson-Stevens Fisheries Conservation and Management Act and Endangered Species Act (ESA)
- For additional information on NOAA Fisheries compliance requirements, see Section 5

National Ocean Service

Office of Coast Survey

- Mobilizes Navigation Response Teams (NRT) to survey ports and near-shore waterways for sunken debris, changes in water depth, and hazards to navigation following a disaster

Office of National Geodetic Survey

- Acquires and rapidly disseminates a variety of spatially-referenced remote-sensing datasets to support national emergency response. Imagery is obtained using high resolution digital cameras, film-based aerial camera systems, LIDAR, and thermal and hyperspectral imagers.

Office of Response and Restoration, Emergency Response Division

- Serves as Scientific Support Coordinator (SSC) to coordinate application of NOAA assets and services during emergencies to help the Federal On-Scene Coordinator (FOSC) make timely operational decisions

- In the event of an oil spill, the SSC will provide technical support, chemical hazard analyses, assessments of the sensitivity of biological and human-use resources, and recommend best actions moving forward.

Office of Response and Restoration, Marine Debris Division

- Funds marine debris assessment and removal projects, through grants or congressional supplemental funding
- May prepare for and respond to severe marine debris events
- Facilitates inter-agency coordination of planning and execution of responses to marine debris events
- Provides scientific support for debris response planning and operations, including baseline information, debris behavior, debris impact, debris survey and detection protocols, removal best management practices (BMPs), disposal guidance, and information management
- Develops external communications such as talking points appropriate for the public, informational graphics, intuitive interactive web content, and educational videos to ensure the public and partner agencies understand and act on sound science and information critical to response and recovery operations

Select NOAA authorities:

- Coastal Zone Management Act of 1972 (16 U.S.C § 1451 et seq.)
- Endangered Species Act (16 U.S.C. § 1531 et seq.)
- Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)
- Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. § 1951 et seq.)
- Marine Mammal Protection Act of 1972 (16 U.S.C § 1361 et seq.)

National Park Service (NPS)

- Manages nine national areas in the state of South Carolina, including two coastal sites: Charles Pinckney National Historic Site and Fort Sumter National Monument
- May conduct incident waterway debris assessment and cleanup within their jurisdiction in coordination with county, state, and other federal partners
- For a map of areas managed by NPS in South Carolina, see Section 4.6

Select NPS authorities:

- National Park Service and Related Programs (54 U.S.C § 100101)

Natural Resource Conservation Service (NRCS)

- When funding is available, provides emergency financial and technical assistance for debris removal from eligible waters through its Emergency Watershed Protection (EWP) program
    - Help communities address watershed impairments that pose imminent threats to lives and property as a result of natural disasters
    - Typical cost share of 75% NRCS and 25% project sponsor in the form of cash or in-kind services used to implement the EWP recovery measures
    - Public and private landowners are eligible for assistance, but they must be represented by a project sponsor that is a political subdivision of the state or a Tribal Council
- See "South Carolina Incident Waterway Debris Response Flowchart" in Section 3 for EWP eligibility criteria

Select NRCS authorities:

- Emergency Watershed Protection Program (7 C.F.R. § 624)

U.S. Army Corps of Engineers (USACE), Charleston District

- Maintains pre-event contracts for activities within the Charleston District area of responsibility and has the ability to access contract vehicles maintained by other USACE districts
- May request assistance from NOAA's NRT to survey ports and near-shore waterways

Emergency Operations

- Serves as lead federal agency under ESF-3 Public Works and Engineering
- Following a Stafford Act declaration, may lead eligible debris removal from navigable waterways (non-federally maintained) and wetlands if FEMA mission assigns another federal agency to perform or contract debris removal and surveying

Navigation

- Serves as lead federal agency for conducting surveys within the federally authorized channel for changes in water depth and hazards to navigation for commercial, recreational, and military use.
- Responsible for operation, maintenance, and debris removal from federally maintained waterways and channels within Charleston District. For a map of USACE federally authorized and maintained waterways and channels in South Carolina, see Section 4.6.
- May use side-scan, multi, or single beam sonar to identify sunken debris
- May remove abandoned vessels that obstruct federally maintained navigable channels if an owner or responsible party (RP) cannot be identified

Regulatory Program

- Charleston District issues permits for debris removal within waterways and wetlands throughout the state. For additional information on USACE permitting and compliance requirements, see Section 5.
- Charleston District has three regulatory service areas in South Carolina (Figure 4) with Conway Office and Charleston Office serving the coastal area

Select USACE authorities:

- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990 (33 U.S.C. § 1251 et seq.)
    - Permits for dredged or fill material (Section 404, 33 U.S.C. § 1344)
- Permits for Structures or Work in or Affecting Navigable Waters of the United States (33 C.F.R. § 322)
- Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 401 et seq.)
    - Prohibits the unauthorized obstruction or alteration of any navigable water of the United States (Section 10, 33 U.S.C. § 403)
    - Authorize USACE to remove sunken vessels or other obstructions from navigable waterways under emergency conditions (Sections 15, 19 and 20, 33 U.S.C. § 409, 414, 415) in coordination with USCG Sector Charleston
- Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C § 5121 et seq.)
- Water Resources Development Act (33 U.S.C § 426m)

U.S. Coast Guard (USCG), District 7 Sector Charleston

- In most cases, removal of incident waterway debris by USCG is not authorized unless contaminated debris is causing a health or environmental threat
- Responds to oil and hazardous material releases or threats of release in waterways within the coastal zone as defined in the USCG Sector Charleston Area Contingency Plan (ACP; USCG, 2011)
    - Removal actions generally limited to removing oil and other hazardous substances while leaving vessels in place. If a vessel appears abandoned, an attempt will be made to contact the owner. Oil will be extracted and the vessel will remain in place unless it is so contaminated that it is declared a hazard to the environment, in which case, the USCG will seek approval from the Commandant to take temporary custodianship of the vessel and fund removal with cooperation from local and state counterparts (USCG, 1996).
    - Responds to pollution threats in federally maintained waterways in coordination with USACE
- Serves as lead federal agency (FOSC) under ESF-10 Oil and Hazardous Materials Response in the ACP coastal zone
    - Directs response in accordance with the National Contingency Plan (NCP)
    - Coordinates with state, tribal, and territorial governments and oversees response by a responsible party (RP)
    - Unlike response under a Stafford Act declaration, USCG may respond without a request from local, state, or tribal governments under the NCP. During Stafford Act declarations, USCG retains the authority to take action under the NCP.
- Maintains a year-round, 24-hour telephone watch through the National Response Center (NRC) for reporting of oil and hazardous material releases
    - For contact information, see Appendix E
- Establishes a safety zone around hazards to navigation and broadcasts maritime safety warnings including the Broadcast Notice to Mariners and the Local Notice to Mariners to warn of debris obstructing watercourse or creating hazards to navigation within federally maintained waterways. USCG also notifies USACE of any hazards to navigation within federally maintained waterways.
- Following a Stafford Act declaration, may lead removal of contaminated waterway debris under a FEMA mission assignment to perform or contract the work
- May request assistance from NOAA's NRT to survey ports and near-shore waterways
- The Captain of the Port (COTP) sets conditions used to alert the maritime community and affects changes in port operations necessary to prepare for tropical cyclone activity. This may include restricting or closing all port traffic.
- For a map of USCG sector boundaries and the ACP coastal-inland zone boundary in South Carolina, see Section 4.6

Select USCG authorities:

- Abandoned Barge Act of 1992 (46 U.S.C. § 4701-4705)
- Abandoned Vessels, Commandant Instruction (M16465.43)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601 et seq.)
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990 (33 U.S.C. § 1251 et seq.)
- Marking of structures, sunken vessels and other obstructions (33 C.F.R. § 64)

- National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. § 300)
- Ports and Waterways Safety Act (33 U.S.C. §1221 et seq.)
- Saving life and property (14 C.F.R. § 88)

U.S. Environmental Protection Agency (EPA), Region IV

- Responds to oil and hazardous substance releases or threats of release in waterways within the inland zone as defined in the USCG Sector Charleston ACP. For a map of the ACP coastal-inland zone boundary, see Section 4.6.
- Serves as lead federal agency (FOSC) under ESF-10 Oil and Hazardous Materials Response in the ACP inland zone and in incidents affecting both inland and coastal zones
    - Directs response in accordance with the NCP
    - Coordinates with state, tribal, and territorial governments and oversees response by RP
    - Unlike response under a Stafford Act declaration, EPA may respond without a request from local, state, or tribal governments under the NCP. During Stafford Act declarations, EPA retains the authority to take action under the NCP.
- Following a Stafford Act declaration, may lead removal of contaminated waterway debris under a FEMA mission assignment to perform or contract the work

Select EPA authorities:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601 et seq.)
- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990 (33 U.S.C. § 1251 et seq.)
- National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. § 300)

U.S. Fish and Wildlife Service (USFWS)

Ecological Services Program

- Reviews proposed debris removal activities that involve a federal agency (directly or through funding and/or issuance of a federal permit) for compliance with Endangered Species Act (ESA) and Coastal Barrier Resources Act (CBRA)
- For additional information on USFWS compliance requirements, see Section 5

National Wildlife Refuges (NWR)

- Manages seven National Wildlife Refuges in South Carolina
- Coordinates and manages waterway debris assessment and cleanup in NWRs
- Coordinates with federal, state, and local partners to remove incident waterway debris within their jurisdiction
- Provides BMPs to protect listed threatened or endangered land and freshwater species, certain marine species, and their critical habitat
- For a map of NWRs in South Carolina, see Section 4.6

Select USFWS authorities:

- Coastal Barrier Resources Act (16 U.S.C. § 3501 et seq.)
- Endangered Species Act (16 U.S.C. § 1531 et seq.)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

U.S. Navy

Supervisor of Salvage and Diving (SUPSALV)

- Manages and provides technical assistance for salvage, deep search and recovery, towing, and oil spill response operations
- Accesses and coordinates the U.S. Navy's hydrographic survey assets and capabilities
- Maintains an array of remotely operated vehicles (ROVs), oil spill response, and salvage equipment
- Exercises and manages regional standing emergency salvage contracts to quickly draw upon the required resources of the commercial salvage industry (U.S. National Response Team, 2014)

4.4 Private Landowners

- After a Stafford Act declaration, debris removal from private property or privately-owned waterways and banks is generally the responsibility of the property owner and not eligible for FEMA funding unless its removal is necessary to mitigate a health and safety hazard and is in the public interest (FEMA, 2016; SCEMD, 2013)
- May report acute waterway release incidents to local emergency management office to begin a coordinated, proper response
- State agencies will not remove debris from private property without a properly executed "Right-of-Entry" agreement

4.5 Volunteer and Non-Governmental Organizations

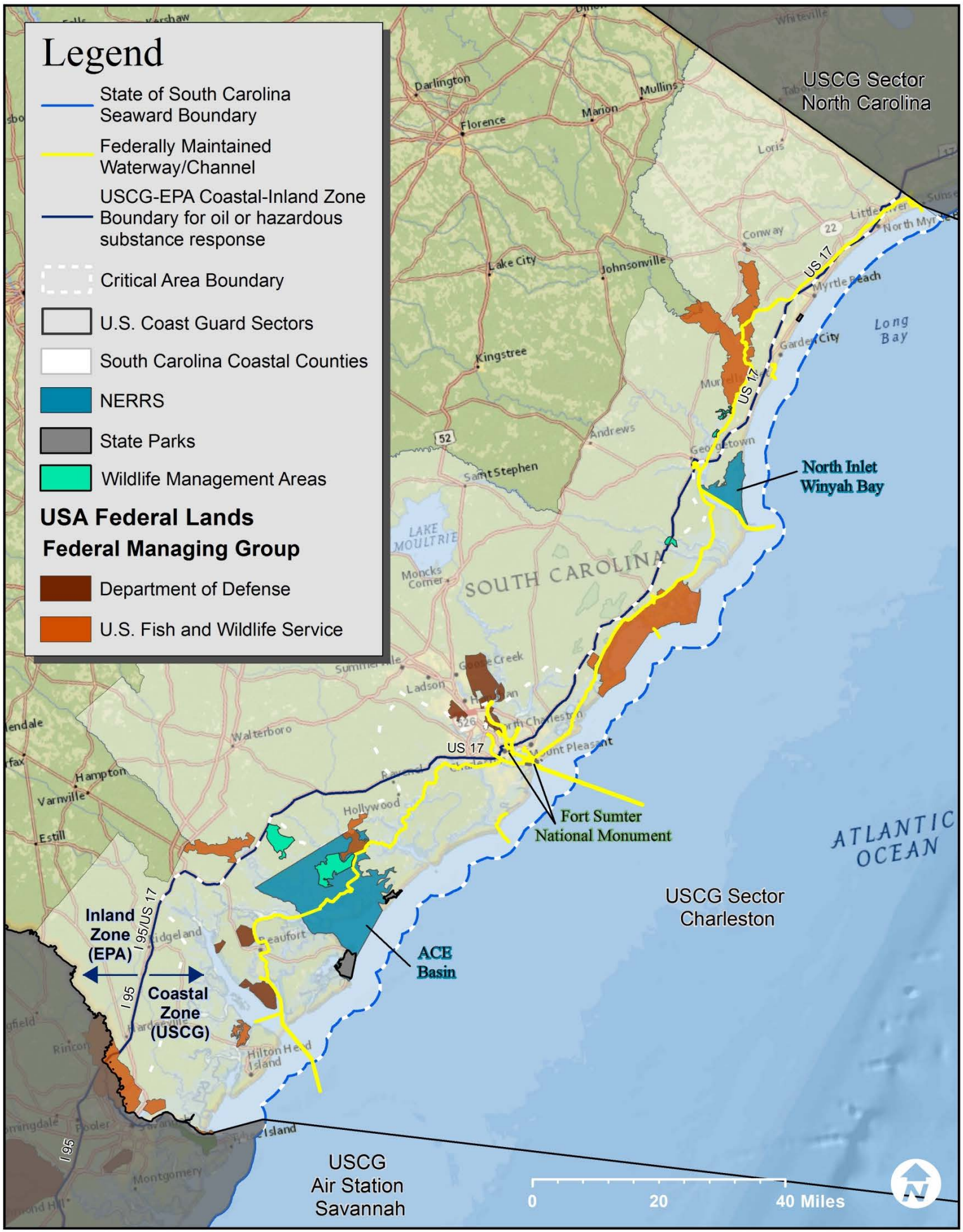
- Certain private, non-profit organizations are eligible for public assistance reimbursement through the Stafford Act Public Assistance Program (SCEMD, 2013)
- Volunteers may provide cleanup and debris removal services as part of state ESF-18 Donated Goods and Volunteer Services (SCEMD, 2013)
- Non-governmental organizations may provide debris removal assistance through funded projects and programs
- In the past, the South Carolina Sea Grant Consortium has received funding through the NOAA Marine Debris Program competitive grant process to remove ADVs from coastal waters in South Carolina in coordination with DHEC OCRM and local counterparts

4.6 Agency Jurisdiction Map

The "Agency Jurisdiction Map" on the following page displays coastal South Carolina's relevant state and federal agency jurisdictions and boundaries. After an acute waterway debris incident, the agency responsible for removing debris will vary depending on where the debris is located. This map includes information that stakeholders identified as important in determining how incident waterway debris response is handled in the state.

For a visual one-page representation of agency roles and responsibilities, see Section 3.

South Carolina Incident Waterway Debris Response Map



5. Permitting and Compliance Requirements in South Carolina

Before waterway debris removal can begin, organizations leading removal activities must meet certain permitting and compliance requirements. While the agency or individual conducting the debris removal work is responsible for obtaining necessary permits – such as a USACE permit – it is the responsibility of the lead federal agency to ensure compliance with the National Environmental Policy Act (NEPA) and to consult with tribal and resource agencies including South Carolina Department of Archives and History's State Historic Preservation Office (SHPO), the South Carolina Department of Health and Environmental Control (DHEC)'s Office of Ocean and Coastal Resource Management (OCRM), USFWS, and NOAA National Marine Fisheries Service (NMFS).

During response under a Stafford Act declaration, FEMA provides funding to applicants for debris removal and is therefore considered the lead federal agency responsible for tribal and resource agency coordination. SCEMD serves as a liaison between FEMA and local governments during declared events. If waterway debris removal is conducted without a Presidential major disaster declaration and there are no federal agencies involved in removal activities, USACE is considered the lead federal agency as the permitting agency (if a permit is required).

A brief description of individual agency requirements and authorities is outlined below and is summarized in the "Permitting and Compliance for Waterway Debris Removal in South Carolina" handout in Section 5.3. Organization contact information can be found in Appendix E.

5.1 State Agency Requirements

South Carolina Department of Archives and History

State Historic Preservation Office (SHPO)

- Section 106 of the National Historic Preservation Act requires federal agencies to consider an undertaking's potential to affect any district, site, building, structure, or object included in or eligible for the National Register of Historic Places ("historic properties").
- If a waterway debris removal project in South Carolina involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with the SHPO prior to beginning debris removal work to determine whether activities will affect historic properties
- If debris removal involves an underwater archaeological site or water quality issue, will defer to SCIAA for guidance, however all requests for consultation must still go through SHPO
- Advises DHEC OCRM regarding potential impacts of permitted activities on historical and archaeological sites within the eight-county coastal zone per the State's Coastal Zone Management Plan (SCCZMP)

Select SHPO authorities:

- National Historic Preservation Act, 16 U.S.C § 470 et seq.
- Protection of historic properties (36 CFR Part 800)

South Carolina Department of Health and Environmental Control (DHEC)

Office of Ocean and Coastal Resource Management (OCRM)

- An OCRM permit may be required for debris removal projects that have the potential to alter the critical area

- If a project also requires a permit through USACE, the applicant can apply through the state and federal review will be concurrent with the state review to expedite the process
- Reviews all state and federal permit applications for activities within the eight-county coastal zone for consistency with the State's Coastal Zone Management Plan (SCCZMP) as required by the South Carolina Coastal Zone Management Act (SCCZMA)
- Reviews federal funding assistance applications submitted by state and local government entities for consistency with the SCCZMP
- If a waterway debris removal project in South Carolina involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with OCRM prior to beginning debris removal work to determine whether activities are fully consistent with the enforceable policies of the SCCZMA

Select DHEC authorities:

- Coastal Tidelands and Wetlands Act (S.C. Code Ann. §48-39-10 et seq.)

University of South Carolina (USC)

South Carolina Institute of Archaeology and Anthropology (SCIAA)

Maritime Research Division

- If a debris removal project requires compliance with the Underwater Antiquities Act, submissions must be submitted through SHPO and SCIAA will be contacted internally
- Advises the SHPO on compliance-related debris removal activities

Select USC authorities:

- South Carolina Institute of Archaeology and Anthropology (S.C. Code Ann. § 60-13-210 et seq.)
- Underwater Antiquities Act of 1991 (S.C. Code Ann. § 54-7-610 et seq.)

5.2 Federal Agency Requirements

National Environmental Policy Act (NEPA)

- Requires federal agencies to follow a specific planning process to ensure environmental consequences of a federally funded action have been considered (42 U.S.C. § 4321-4370f)
- If a waterway debris removal project involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to ensure NEPA compliance
    - FEMA is provided with statutory exclusions under Section 316 of the Stafford Act, which exempts debris removal from NEPA review process
    - Therefore, the NEPA review process is not required when FEMA is providing funding for waterway debris removal under a Stafford Act declaration. However, compliance with all other federal, state, and local environmental laws and regulations is still required even when a project is statutorily excluded from NEPA review.
- For waterway debris removal operations, the impact of removal must be evaluated to minimize environmental and ecological damage to the maximum practical extent. In some cases, debris removal may be more environmentally damaging than leaving the debris in place.

National Oceanic and Atmospheric Administration (NOAA)

National Marine Fisheries Service (NMFS or NOAA Fisheries)

- If a waterway debris removal project in South Carolina involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with NOAA Fisheries Southeast Regional Office prior to beginning debris removal work to ensure compliance with the Endangered Species Act (ESA) and Magnuson-Stevens Fisheries Conservation and Management Act
    - ESA directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not adversely affect listed threatened or endangered species or critical habitat. Generally, NOAA Fisheries manages marine and anadromous species while USFWS manages land and freshwater species. If a federal agency determines their activities or actions will affect listed species or designated critical habitat—even if the effects are expected to be beneficial—they must consult with NOAA Fisheries or USFWS. See NOAA Fisheries Southeast Regional Office's endangered species web page for an up to date South Carolina ESA-listed marine species list (National Oceanic and Atmospheric Administration [NOAA], 2016c). See USFWS's endangered species web page for an up to date South Carolina ESA-listed land and freshwater species list (U.S. Fish and Wildlife Service [USFWS], 2016b).
    - Magnuson-Stevens Fisheries Conservation and Management Act directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not adversely affect Essential Fish Habitat (EFH). If a federal agency determines their activities or actions may adversely affect EFH, they must consult with NOAA Fisheries. The South Atlantic Fishery Management Council is responsible for identifying EFH for federally managed species in South Carolina (South Atlantic Fishery Management Council, 2016).
- NOAA Fisheries defines an emergency as a situation involving an act of God, disasters, casualties, national defense or security emergencies, etc., and includes response activities that must be taken to prevent imminent loss of human life or property (NOAA, n.d.-a).
    - Consultation during emergencies can be expedited so federal agencies can complete their critical missions in a timely manner while still providing protections to listed species and EFH
    - During emergency waterway debris removal operations, NOAA Fisheries Southeast Regional Office utilizes the same process for initiating contact for both ESA and EFH consultations. Steps to complete the emergency response consultation process are outlined in NOAA (n.d.-a).
- Additional information on ESA and EFH consultation during non-emergencies can be found in National Oceanic and Atmospheric Administration [NOAA] (n.d.-b) and National Oceanic and Atmospheric Administration [NOAA] (n.d.-c), respectively

Select NOAA authorities:

- Coastal Zone Management Act of 1972 (16 U.S.C § 1451 et seq.)
- Endangered Species Act (16 U.S.C. § 1531 et seq.)
- Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)
- Marine Debris Research, Prevention, and Reduction Act (33 U.S.C. § 1951 et seq.)
- Marine Mammal Protection Act of 1972 (16 U.S.C § 1361 et seq.)

U.S. Army Corps of Engineers (USACE), Charleston District

Regulatory Program

- USACE permit is required for debris removal within or over all Section 10 navigable waterways and wetlands (33 U.S.C. 403) or for debris removal within waterways and wetlands if the activity involves dredging, the discharge of dredge or fill material, or involves structures or work impacting the navigability of a waterway. One or multiple permits may be needed depending on the scope of work to be conducted.
- Charleston District Regulatory Program has jurisdiction over the entire state and is geographically aligned into three service offices that cover each region of the state, with Conway and Charleston areas covering the coastal zone (Figure 4)
- Permits that may be required include:
    - **Nationwide Permit 3: Maintenance.** Authorizes repair, rehabilitation, or replacement structures or fills destroyed or damaged by storms, floods, fires, or other discrete events. This permit may be issued for removal or maintenance of culverts, sediments, or debris accumulated around outfalls, bridges, etc. in wetland areas.
    - **Nationwide Permit 22: Removal of Vessels**. Authorizes temporary structures or minor discharges of dredged or fill material required for the removal of wrecked, abandoned, or disabled vessels or the removal of man-made obstructions to navigation
    - **Nationwide Permit 37: Emergency Watershed Protection and Rehabilitation.** Issued for work conducted under NRCS's EWP program
    - **Nationwide Permit 38: Cleanup of Hazardous and Toxic Waste**. Issued for the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with legal or regulatory authority. Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site are not required to obtain permits.
- If a project requires a permit through DHEC OCRM, the applicant can apply through DHEC and federal review will be concurrent with the state review to expedite the process
- In emergency situations, permitting procedures may be expedited and resource agency coordination (or completion of coordination/consultation) occurs "after the fact" as opposed to before a permit is issued. This may result in additional work by the applicant once the emergency and immediate threat has been mitigated.
    - USACE defines an emergency as a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures (33 C.F.R. § 325.2(e)(4))
    - Under 33 C.F.R. § 325.2 (e)(4), emergency permitting procedures may be authorized for activities not qualifying for a nationwide permit

Select USACE authorities:

- Federal Water Pollution Control Act (commonly known as Clean Water Act) as amended by the Oil Pollution Act of 1990 (33 U.S.C. § 1251 et seq.)
    - Permits for dredged or fill material (Section 404, 33 U.S.C. § 1344)
- Permits for Structures or Work in or Affecting Navigable Waters of the United States (33 C.F.R. § 322)

- Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 401 et seq.)
    - Prohibits the unauthorized obstruction or alteration of any navigable water of the United States (Section 10, 33 U.S.C. § 403)
    - Authorize USACE to remove sunken vessels or other obstructions from navigable waterways under emergency conditions (Sections 15, 19 and 20, 33 U.S.C. § 409, 414, 415) in coordination with USCG Sector Charleston
- Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C § 5121 et seq.)
- Water Resources Development Act (33 U.S.C § 426m)

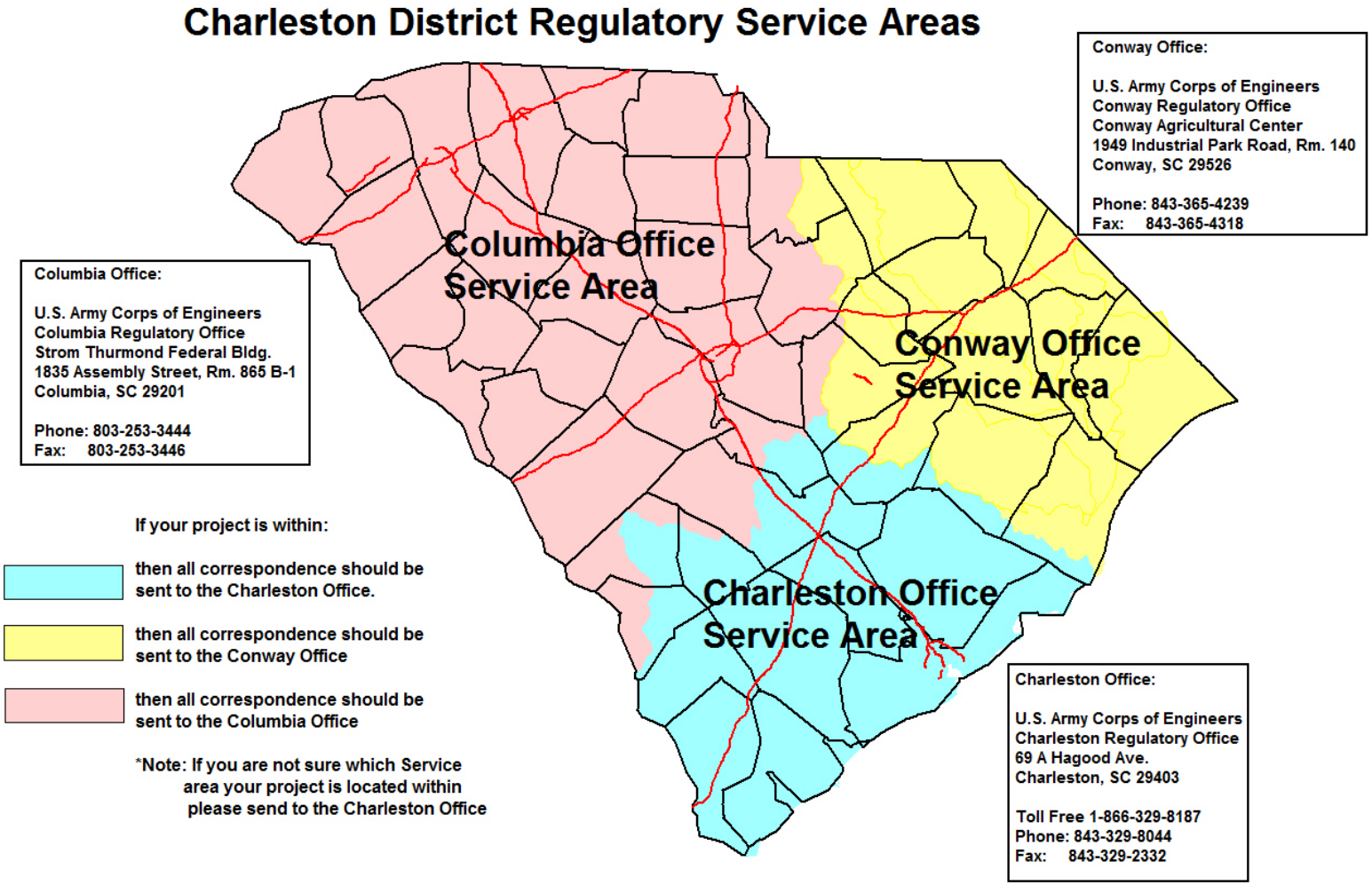


Figure 4. Map of USACE Charleston District regulatory service areas in South Carolina (USACE, n.d.).

U.S. Fish and Wildlife Service (USFWS)

Ecological Services Program

- If a waterway debris removal project in South Carolina involves a federal agency (directly or through funding and/or issuance of a federal permit), it is the responsibility of the lead federal agency to coordinate with the USFWS Ecological Services Office (ESO) in Charleston prior to beginning debris removal work to ensure compliance with ESA and the Coastal Barrier Resources Act (CBRA).
    - ESA directs all federal agencies to ensure the actions they take, including those they fund or authorize, do not adversely affect listed threatened or endangered species or critical habitat. Generally, USFWS manages land and freshwater species and certain marine species such as manatee, while NOAA Fisheries manages marine and anadromous species. If a federal agency determines their activities or actions may affect listed species or designated critical habitat—even if the effects are expected to be beneficial—they must consult with USFWS or NOAA Fisheries. See USFWS's endangered species web page for an up to date South Carolina ESA-listed land and freshwater species list (USFWS, 2016b). See NOAA Fisheries Southeast Regional Office's endangered species web page for an up to date South Carolina ESA-listed marine species list (NOAA, 2016c)
    - CBRA makes designated coastal barriers ineligible for most federal expenditures and financial assistance and was developed as a way to minimize development of coastal barriers and damage to property, fish, wildlife, and other natural resources. The John H. Chafee Coastal Barrier Resources System (CBRS) is a collection of specific units of land and associated aquatic habitats that serve as barriers protecting the Atlantic, Gulf, and Great Lakes coasts. After a Stafford Act declaration, costs for debris removal and emergency protective measures in designated CBRS units may be eligible for reimbursement under FEMA's Public Assistance Program provided the actions eliminate an immediate threat to lives, public health and safety, or protect improved property. A map of CBRS units in South Carolina can be accessed from U.S. Fish and Wildlife Service (2016a)
- For projects that do not involve federal permits or funding, USFWS consultation is not required, but is recommended. Harassing or harming ("taking") an endangered or threatened species or significantly modifying their habitat is still prohibited under ESA regardless of federal nexus involvement.
- Reviews may be expedited in emergencies, and USFWS staff may embed in response teams
- Each debris removal project is reviewed individually unless USFWS prepares a programmatic consultation. Under a programmatic consultation, all parties agree on certain conservation measures that must be implemented. If a waterway debris removal project arises that does not fit the programmatic measures, then it must be reviewed individually.
- Generally, USFWS will provide BMPs that provide necessary protections while allowing projects to go forward
- If the proposed waterway debris removal project will not impact listed threatened or endangered species, or if the federal consulting agency agrees to implement USFWS's recommendations, the consultation process is completed at the "informal" stage. However, if debris removal operations will adversely affect a listed species or critical habitat, the federal consulting agency must initiate a "formal" consultation, a process which typically ends with the issuance of a biological opinion by USFWS (or NOAA Fisheries, if the ESA-listed species affected is under NOAA Fisheries' purview).

Select USFWS authorities:

- Coastal Barrier Resources Act (16 U.S.C. § 3501 et seq.)
- Endangered Species Act (16 U.S.C. § 1531 et seq.)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

5.3 Permitting and Compliance for Waterway Debris Removal in South Carolina One-Pager

The "Permitting and Compliance for Waterway Debris Removal in South Carolina" one-pager on the following page synthesizes permitting and compliance requirements that must be met before waterway debris removal operations begin. The top portion of the one-pager outlines the process to follow to stay in compliance, while the bottom portion highlights specific state and federal agency requirements with general contact information.

For detailed information regarding individual state and federal agency requirements, see Sections 5.1 and 5.2, respectively.

Permitting and Compliance for Waterway Debris Removal in South Carolina

- U.S. Army Corps of Engineers (USACE) permit may be required for debris removal within waterways and wetlands. One or multiple permits may be needed.
- If a project requires both a federal permit and a permit through the Department of Health and Environmental Control's (DHEC) Office of Ocean and Coastal Resource Management (OCRM), the applicant can apply directly to DHEC OCRM, who will forward the application to USACE and state and federal review will occur concurrently to expedite the process.
- It is the responsibility of the **lead federal agency** to ensure compliance with National Environmental Policy Act (NEPA), federal coastal consistency, and consult with resource agencies including South Carolina State Historic Preservation Office (SHPO), U.S. Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration (NOAA) as required.

Compliance Process when Permit is Required

Federally Funded Response
(for example, FEMA funding under Stafford Act declaration)

State/Local Response
No Federal Funding (state, local, or privately funded removal)

Federal Agency Coordination
Coordinate with federal funding agency regarding environmental compliance requirements before applying for DHEC OCRM and/or USACE permit

Permit Application
Complete and submit permit application to DHEC-OCRM. DHEC-OCRM distributes application to USACE and both agencies review.

Permit Issued
Review all permit conditions including DHEC OCRM and resource agency requirements

Debris Removal Begins
All permit conditions and DHEC OCRM and resource agency requirements must be followed during debris removal activities

- Lead federal agency is responsible for NEPA compliance, federal consistency with South Carolina's Coastal Zone Management Program, and consultations with SHPO, USFWS, and NOAA as required.
- FEMA is the lead federal agency under Stafford Act declaration.
- Debris removal under Stafford Act declaration may trigger emergency permitting process

As the lead federal agency, USACE will ensure NEPA compliance, federal consistency with South Carolina's Coastal Zone Management Program, and consult with SHPO, USFWS, and NOAA as required.

Agency Requirements and Legislation Details

U.S. Army Corps of Engineers (USACE)
Charleston District Regulatory Program
843-329-8044

- Permit(s) that may be required for debris removal work within waterways and wetlands:
  - **NWP-3 Maintenance** for removal/maintenance of culverts, sediments, or debris accumulated around outfalls, bridges, etc. in wetland areas
  - **NWP-22 Removal of Vessels** for removal of wrecked, abandoned, or disabled vessels or other man-made obstructions to navigation
  - **NWP-37 Emergency Watershed Protection & Rehabilitation** for work done under NRCS's Emergency Watershed Protection program
  - **NWP-38 Cleanup Hazardous/Toxic Waste** for containment, stabilization, or removal of hazardous or toxic waste not under CERCLA/NCP

National Oceanic and Atmospheric Administration (NOAA)
National Marine Fisheries Service (NMFS)
ESA: 727-824-5312
EFH: 727-570-5317

- Consultation required if waterway debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) to comply with:
  - Endangered Species Act (ESA) to ensure actions do not adversely affect listed threatened or endangered species or critical habitat for marine species
  - Magnuson-Stevens Fisheries Conservation and Management Act to ensure actions do not adversely affect Essential Fish Habitat (EFH)

U.S. Fish and Wildlife Service (USFWS)
Charleston Ecological Services Office (ESO)
843-727-4707

- Consultation with Ecological Services Office (ESO) required if waterway debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) to comply with:
  - Endangered Species Act (ESA) to ensure actions do not adversely affect listed threatened or endangered species or critical habitat for land and freshwater species and certain marine species such as manatee
  - Coastal Barrier Resources Act (CBRA) to ensure actions do not encourage development on coastal barriers along the Atlantic coast

National Environmental Policy Act (NEPA)

- Requires federal agencies to follow a specific planning process to ensure environmental consequences of federally funded actions are considered
- FEMA is provided with statutory exclusions under the Stafford Act which exempts debris removal from NEPA review when FEMA is providing funding

SC Department of Health and Environmental Control (DHEC)
Ocean and Coastal Resource Management (OCRM)
843-953-0200

- A critical area permit might be required for debris removal projects that have the potential to alter a critical area
  - Critical areas in South Carolina are defined as: Counties that are adjacent to, adjoining, intersected by or bounded by the Atlantic Ocean or any coastal sound
- Reviews project applications for consistency with the South Carolina Coastal Zone Management Program

SC Department of Archives and History
State Historic Preservation Office (SHPO)
803-896-6129

- Serves as the State Historic Preservation Office (SHPO) and ensures compliance with Section 106 of the National Historic Preservation Act
- Consultation with SHPO required if waterway debris response involves federal permits and/or funding (USACE permit, FEMA funding, etc.) or has the potential to affect historic or cultural sites included in or eligible for the National Register of Historic Places
- Coordinates with SCIAA for projects involving archaeological sites

SC Institute of Archaeology and Anthropology (SCIAA)
State Underwater Archaeologist
803-576-6566

- Advises SHPO on projects involving archaeological sites in coordination with the Underwater Antiquities Act
- If a debris removal project requires compliance with any archaeological or Section 106 sites, submissions must be made through SHPO, and SCIAA will be contacted internally regarding Underwater Antiquities Act compliance

6. South Carolina Waterway Debris Response Needs

Waterway debris response gaps identified by stakeholders are outlined below, along with associated recommendations. These identified gaps will serve as future points of discussion and action for the South Carolina waterway debris response community. Potential opportunities for addressing response needs include table-top activities to exercise this *Guide*, response exercises that incorporate debris scenarios, and coordination meetings associated with this document's formal review.

6.1 Response Gaps in South Carolina

The following gaps in response have been reported by stakeholder organizations engaged in waterway debris response in South Carolina.

6.1.1 Communication and Planning

- Generally, federal, state, and/or local debris plans do not specifically address waterway debris.

- Adjacent municipalities do not have consistent ordinances, coordinated tracking of debris, or consistent communications regarding waterway debris response.
    - For a map of municipalities and counties with abandoned vessel ordinances, see Appendix A.

- Some counties and local industries are not included in state or federally hosted exercises and planning meetings.

- It is unclear where the state versus local responsibility lies for removal of debris on shorelines.

- There is a need to for information about surrounding areas (i.e. what neighboring communities have) for awareness regarding what could become waterway debris after a disaster.

- There is a need for timely communication to the appropriate response agency regarding debris location and need for removal.

- There is a need to incorporate lessons learned into future actions and plans.

- There is currently no centralized, integrated ADV identification and tracking system for South Carolina.

- Staff and/or equipment may not be available after a disaster if previously displaced or evacuated.

- There is no statewide program in place for the removal of debris prior to an event to prevent it from becoming disaster debris.

6.1.2 Policy

- There is a need to ensure that debris removal contractors are only working in permitted areas.
- The U.S. Coast Guard abandoned vessel destruction process is lengthy.
- The steps to obtain a clear title for the removal or salvage of vessels are complicated.
- When working under a FEMA mission assignment, federal agencies may only remove debris from designated areas.
- Agencies may not be allowed to enter private property and/or remove debris from private property without proper permission/right to entry agreements in place.
- After an acute waterway debris incident that does not result in a Presidential major disaster declaration, there are limited funding sources for debris removal in state waters.
- There is no state agency in South Carolina responsible for removing debris from state waters during an acute waterway debris incident if it does not directly cause a threat to human health or safety.
- Requirements for an incident to qualify as an "emergency" differ among federal agencies responsible for permitting and environmental compliance, which can lead to confusion and delayed response.
- The amount of seasonal, transient boaters and the lack of clarity regarding mooring/anchoring restrictions makes it difficult to track vessels from potentially derelict to abandoned.

6.1.3 Funding

- Because federal projects are funded annually, funds may already be depleted at the time of an acute waterway debris incident.
- U.S. Coast Guard funding sources are limited to removing pollution threats and thus generally not able to be used for removing debris.
- Vessel removals are not eligible for pre-disaster mitigation funding through SCEMD. There is also a lack of clarity as to what types of debris are eligible.
- Generally, agencies lack resources for identification, investigation, administrative enforcement, and removal of debris.
- There is a lack of recurring funding for abandoned vessel removal.
- There is a lag time between submitting an application and dispersal of funds during the administrative process of seeking funding for debris removal in non-emergency situations.

- The NRCS Emergency Watershed Protection program is limited in scope and has a waiting list, so funding for waterway debris is not guaranteed even if eligible.

- There is a lack of information regarding non-federal sources of funding for debris removal.

6.2 Recommended Actions

The following recommendations have been compiled based on stakeholder input to improve preparedness for response and recovery operations following an acute waterway debris incident in South Carolina. Recommended actions include planning, policy, and funding actions to address gaps in response as well as communication and outreach actions to meet pre-event planning needs.

6.2.1 Communication and Planning

- Encourage communication between SCEMD, counties, and municipalities to incorporate local entities into incident waterway debris response planning

- Reach out to NGOs and private organizations who do beach sweeps or have established volunteer resources

- Encourage collaboration between state and local entities to survey and map debris location and type in the coastal zone

- Encourage the state to host waterway debris-centric exercises in coordination with counties and municipalities

- Discuss the possibility of linking DHEC's MyCoast app (DHEC, n.d.) with South Carolina's WebEOC, a web-based information management system for incident command staff to access emergency or event-related information

- Revisit lessons learned and experiences from Hurricane Hugo to incorporate into current debris management guides

- Coordinate with Council of Governments for outreach and integration into meetings and discussions

- Increase collaboration between state and local governments to determine areas of responsibility and create a responsibility map

- When capabilities exceed local resources, agencies such as USACE and USFWS may pull staff from other locations for support

- Support the integration and implementation of this *Guide* into existing exercises, plans, and emergency operations documents

- Work with counties to incorporate waterway debris response and removal information into local debris management plans

- Encourage local governments to establish pre-event standing emergency waterway debris removal contracts

- Establish an agreed upon consistent set of terminology and definitions among federal, state, and local government waterway debris response agencies. This includes inter-agency discussions regarding what constitutes an emergency among federal agencies responsible for permitting and environmental compliance.

6.2.2 Policy

- Expand mooring areas with enforced regulations

- Consider offering incentives (i.e. tax deductions) for vessel donations to prevent future abandonment

- Consider hiring staff to monitor debris removal contractors and ensure compliance in designated work areas

- Support consistent enforcement of boating regulations to prevent abandonment of vessels

- Encourage state and local emergency managers to perform outreach and education to boat owners and local marinas to help prevent incident waterway debris

- Establish a procedure for reporting acute waterway debris incidents in South Carolina and a mechanism for disseminating this information to local authorities and the public. Formats discussed include a phone tree or web-based application.

6.2.3 Funding

- Encourage coordination between county representatives and Council of Governments to advocate for increased funding for incident waterway debris removal

- Demonstrate the negative impacts of ADVs to legislators to advocate for removal funding

- Establish partnerships with private organizations and NGOs to assist with fund raising and contracting for debris removal in emergency situations

- Identify and establish a standing source(s) of funds for operation and maintenance of public waterways in South Carolina to supplement existing programs and limited funding sources

6.3 Additional Resources

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8. Appendices

APPENDIX A
South Carolina Coastal Municipalities and Counties with Abandoned Vessel Ordinances

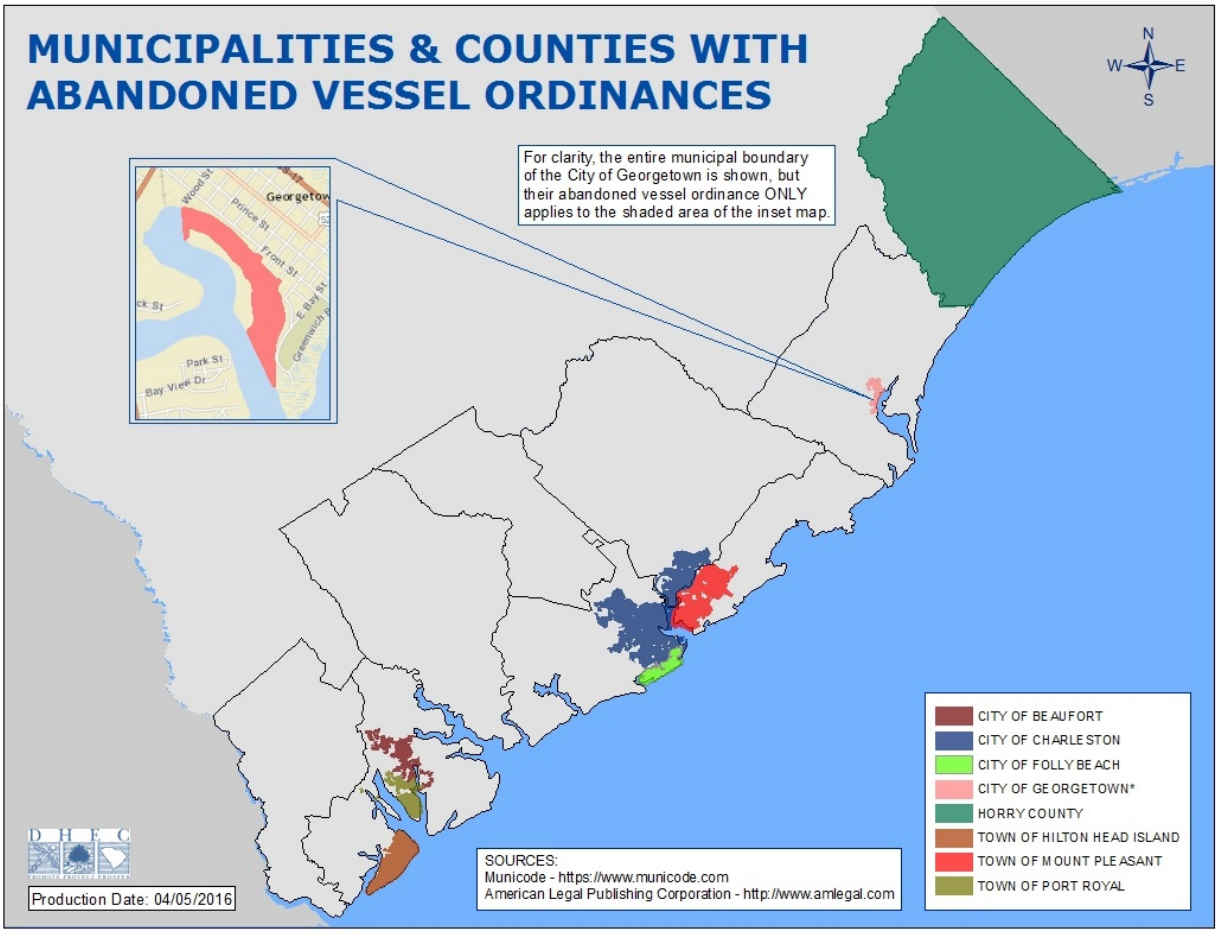

Figure A1. Municipalities and counties in coastal South Carolina with abandoned vessel ordinances (South Carolina Department of Health and Environmental Control [DHEC], 2016a).

APPENDIX B
South Carolina Federal and State Agency Jurisdictions
Abandoned Vessels and Marine Debris

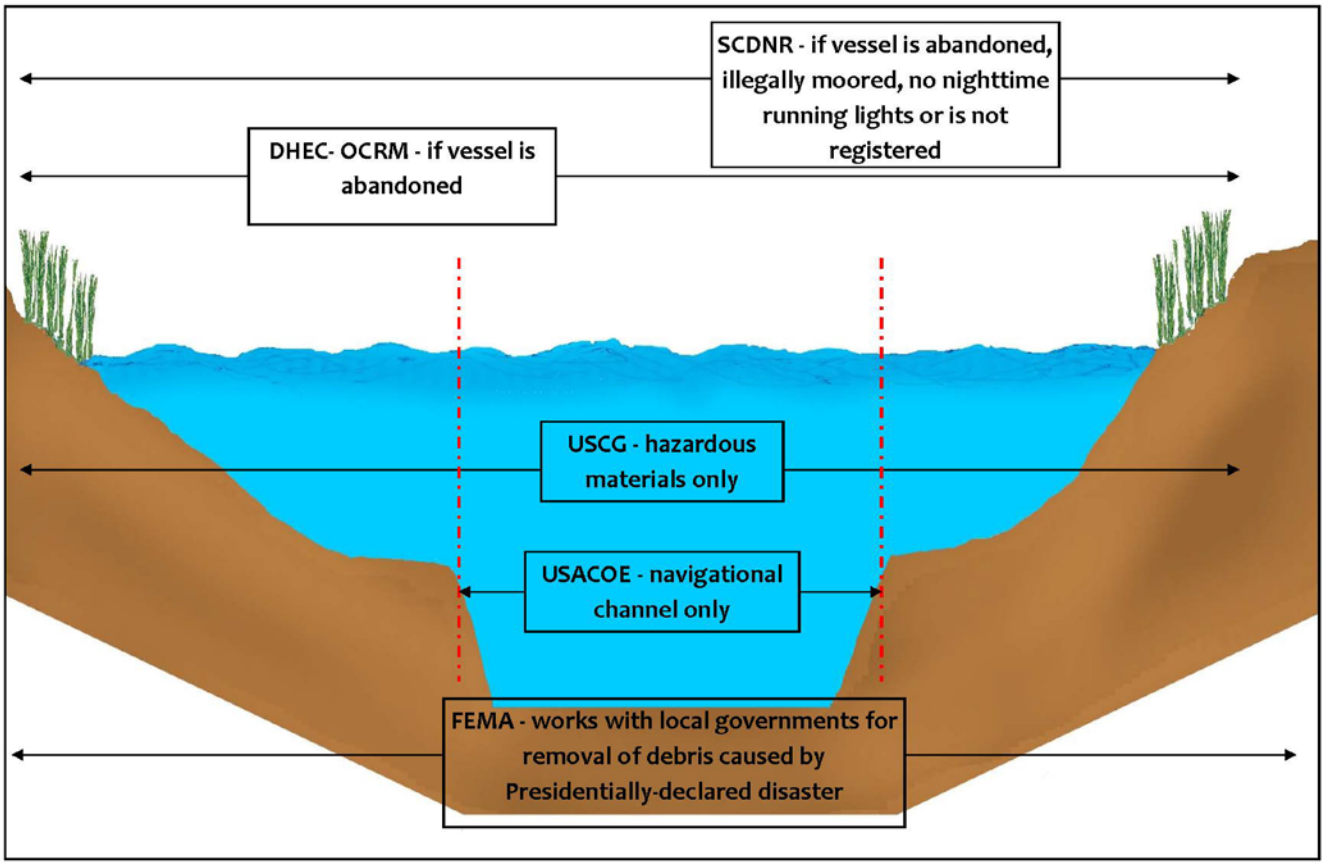

Figure B1. South Carolina federal and state agency jurisdictions for abandoned vessels and marine debris (South Carolina Department of Health and Environmental Control [DHEC], 2016b).

APPENDIX C
South Carolina Legislation Applicable to Waterway Debris Response

- Coastal Tidelands and Wetlands Act (S.C. Code Ann. § 48-39-10 et seq.)
- Custody and notice of unclaimed stranded goods (S.C. Code Ann. § 54-7-10)
- Duties of state, county, and municipal governments for mutual assistance in emergencies (S.C. Code Ann. § 25-1-450(1))
- Equipment and operation of watercraft (S.C. Code Ann. § 50-21-1 et seq.)
- Pollution Control Act (S.C. Code Ann. § 48-1 et seq.)
- Powers of Authority as to erection or removal of wharves, docks and other structures (S.C. Code Ann. § 54-3-610)
- South Carolina Hazardous Waste Management Act (S.C. Code Ann. § 44-56)
- South Carolina Solid Waste Policy and Management Act (SC Code Ann. § 44-96)
- Stormwater Management and Sediment Reduction Act (S.C. Code Ann. §48-14-10 et seq.)

APPENDIX D
Agency Response Capabilities

	Yes In house Capability Contract - Contracted capability	FEMA Region IV[1]	NOAA[2]	USACE Charleston District	USCG Sector Charleston	NRCS	EPA Region IV	USFWS	SC DHEC OCRM	SCIAA - MRD	SC DNR Law Enforcement Division	Beaufort County Public Works
Technology	Aerial photography and video		Yes				Contract		Contract		Yes	
	IT support during response (server/storage space for data and information sharing)		Yes				Yes					
	Magnetometers			Yes[7]			Contract			Yes		
	Remote Sensing		Yes	Contract						Yes		
	Sediment Profilers		Yes									
	Multi-beam sonar		Yes	Yes[7]							Yes	
	Side-scan sonar		Yes	Yes[7]						Yes		
	Single-beam sonar		Yes	Yes[7]							Yes	
Manpower/Expertise	Communication/public information expertise (dedicated spokesperson/Public Information Officer)		Yes	Yes	Yes		Yes		Yes		Yes	
	Compliance and permitting expertise	Yes	Yes	Yes			Yes	Yes	Yes	Yes		
	Data/information management capabilities		Yes				Yes	Yes		Yes		
	Debris modeling expertise (volume, transport, hindcasting, etc.)		Yes				Contract					
	Dedicated waterway/marine debris staff (responders, response team, regional coordination, etc.)		Yes									
	Dive support (scientific, technical, commercial etc.)		Yes[3]	Yes	Contract		Contract			Yes	Yes	
	Environmental expertise (location of sensitive areas, endangered species present, etc.)	Yes	Yes[4]	Yes	Yes	Yes	Yes	Yes	Yes		Yes	
	Field GPS units						Contract	Yes	Yes	Yes	Yes	
	Geographic Information System (GIS) mapping and plotting of imagery	Yes	Yes	Yes[8]			Contract		Yes	Yes	Yes	
	Hazardous substance and/or oiled debris expertise		Yes				Yes					
	Incident Command System (ICS) trained staff	Yes	Yes				Yes		Yes		Yes	
	Maritime Transportation Recovery Unit (MTSRU) expertise											
	Post-storm damage assessment teams						Yes		Yes		Yes	
	Protected species/Environmental Sensitivity Index (ESI) expert in the field		Yes					Yes			Yes	
	Technical expertise for removal operations (techniques, best management practices, etc.)	Yes	Yes	Yes[9]	Yes	Yes	Yes		Yes		Yes	
	Vector Control											
	Volunteer manpower					Yes		Yes		Yes	Yes	
	Volunteer coordinator									Yes	Yes	
	Waterway management authority (law enforcement officers)										Yes	

	Yes In house Capability Contract - Contracted capability	FEMA Region IV[1]	NOAA[2]	USACE Charleston District	USCG Sector Charleston	NRCS	EPA Region IV	USFWS	SC DHEC OCRM	SCIAA - MRD	SC DNR Law Enforcement Division	Beaufort County Public Works
Equipment	Aircraft		Yes		Yes		Contract				Yes	
	Barge/Self-loading barge			Contract			Contract					
	Boom			Contract	Contract[10]		Contract					
	Crane/Knuckleboom crane			Contract			Contract					
	Environmental clamshell dredge						Contract					
	Excavator			Contract			Contract					
	General transportation/vehicles						Contract		Yes	Yes	Yes	Yes
	Heavy/Earth-moving machinery						Contract					Yes
	Remotely Operated Vehicle (ROV)		Yes	Yes[7]								Yes
	Sampling Equipment		Yes		Yes		Contract					
	Unmanned Aerial Vehicle (UAV)/Surveillance drones		Yes	Yes								
	Vessels		Yes	Yes[7]	Yes		Contract	Yes	Yes	Yes	Yes	Yes
	Other specialized equipment that cannot be readily procured immediately following a debris incident			Contract	Yes		Contract					
Logistics	Contract authority and oversight capabilities		Yes	Yes	Yes[11]	Yes[16]	Yes				Yes	
	Communication equipment (i.e. two-way radio)						Yes			Yes	Yes	Yes
	Docks for wet storage of vessels				Yes[12]						Yes	
	Facility suitable for establishing an Emergency Operations Center (EOC)		Yes	Yes	Yes							
	Funding for waterway debris removal		Yes[5]	Yes[7]	Yes[13]	Yes[17]	Yes					
	Laboratory space		Yes				Yes					
	Medical emergency response											
	Pre-approved removal contractors											Yes
	Pre-designated landfill/disposal sites (to include vegetative and animal carcasses)											
	Pre-event contracts and staged agreements in place			Yes	Yes[14]		Yes					
	Research program established to analyze long-term trends, impacts, etc.		Yes									Yes
	Staging/Off-Loading: Land with water access to stage, offload debris (has not been evaluated for suitability or officially pre-designated)											
	Staging/Off-Loading: Pre-designated staging, off-loading and special handling areas (already evaluated for suitability)				Yes							
	Staging area for dry storage of vessels		Yes	Yes	Yes[15]					Yes		
	Other logistical support, including fuel, housing, food, etc.		Yes[6]				Contract					

Each agency self-reported capabilities which could be of use during waterway debris response. Agencies were asked to indicate whether capabilities were in-house or were contracted through a third party. Footnotes refer to additional information provided for a particular capability.

[1]FEMA – Capabilities contingent upon a Presidential major disaster declaration. FEMA capable of mission-assigning other federal support to increase capabilities. FEMA has interactive live collection and mapping capabilities and a template wet debris collector map for Region IV.

[2]NOAA - Some capabilities require contract support for staffing

[3]NOAA - Dive capabilities do not include sites with oil or hazardous pollutants

[4]NOAA – Coordinates marine mammal and sea turtle stranding response and reviews proposed debris removal activities for compliance with ESA and Magnuson-Stevens Fisheries Conservation and Management Act

[5]NOAA – Funding through grant program and possible Congressional supplemental funding

[6]NOAA – Weather and marine forecasts through National Weather Service in Newport, NC

[7]USACE – Funding in place for federal projects only

[8]USACE – Has a GIS cadre for response

[9]USACE – Has planning response teams

[10]USCG – Small amounts of boom on hand but capable of using pre-event contracts for larger pollution events

[11]USCG – Contract authority and oversight capabilities for USCG contracts only

[12]USCG – Docks for wet storage of vessels has limited space and suitable for larger vessels only

[13]USCG – Funding for pollution incidents only

[14]USCG – Pre-event contracts and staged agreements in place for pollution incidents only

[15]USCG – Staging area for dry storage of vessels has limited space

[16]NRCS – Contact authority for EWP contracts only

[17]NRCS – Funding for authorized EWP contracts only

APPENDIX E
Organization Contact Information

Table E1. Local Agencies/Organizations

Agency	Division	Topic	Point of Contact	Phone	Email
Coastal Counties (SC Coastal Zone Management Act definition)	Beaufort County	Emergency Management	-	843-255-4000	-
		Public Works	David Wilhelm, Public Works Director	-	dwilhelm@bcgov.net
			James S. Minor Jr, Solid Waste Director	843-255-2735	jminor@bcgov.net
	Berkeley County	Emergency Preparedness	-	843-719-4817	-
	Charleston County	Emergency Preparedness	-	843-746-3800	-
		County Sheriff's Office	Lt. Dan Maddock	843-412-7173	dmaddock@charlestoncounty.org
		Mount Pleasant Police Department	Ssgt. Sean Hethington	-	shethington@tompsc.com
	Colleton County	Emergency Preparedness	-	843-549-5632	-
	Dorchester County	Emergency Services	-	843-832-0341	-
	Georgetown County	Emergency Management	-	843-545-3273	-
	Horry County	Emergency Management	-	843-915-5150	-
	Jasper County	Emergency Services	-	843-726-7797	-
SC Aquarium	-	Conservation	Albert George, Director	843-720-1990	ageorge@scaquarium.org
SC Sea Grant Consortium	-	-	Susannah Sheldon, Program Manager	843-953-2078	susannah.sheldon@scseagrant.org

Table E2. State Agencies

Agency	Division	Topic	Point of Contact	Phone	Email
SC Department of Archives and History	State Historic Preservation Office	National Historic Preservation Act Compliance, Section 106	John Sylvest, Project Review Coordinator	803-896-6129	jsylvest@scdah.sc.gov
SC Department of Health and Environmental Control	Office of Environmental Quality Control	Emergency Response Section	To Report Chemical and Oil Spills	1-800-481-0125	-
	Office of Ocean and Coastal Resource Management	Compliance and Enforcement Section	Sean Briggs, Manager	843-953-0128	briggssm@dhec.dc.gov
		Coastal Services Division	Daniel Burger, Director	843-953-0251	burgerdj@dhec.sc.gov
			Will Salters, Project Manager, Planning	843-953-0258	salterwg@dhec.sc.gov
		Wetland Permitting and Certification	Blair Williams, Manager	843-953-0232	williabn@dhec.sc.gov
SC Department of Natural Resources	Land, Water and Conservation Division	Divisional Information	-	803-734-9100	-
	Law Enforcement Division	Conservation Law Violation	24-hour Hotline	1-800-922-5431	-
		Region IV, Charleston Office	Cpt. Gentry Thames	843-953-9320	thamesg@dnr.sc.gov
	Marine Resources Division	ACE Basin National Estuarine Research Reserve	Phil Maier, Director	843-953-9001	maierp@dnr.sc.gov
	Wildlife and Freshwater Fisheries Division	Divisional Information	-	803-734-3886	-
SC Department of Transportation	Engineering Section	State Bridge Maintenance	Lee Floyd, Engineer	-	floydrl@scdot.org
SC Emergency Management Division	Operations Section	Operations Support	Melissa Potter, Chief of Logistics	-	mpotter@emd.sc.gov
			Randy Jenkins, Logistics Coordinator	-	rjenkins@emd.sc.gov
	Recovery and Mitigation Section	Hazard Mitigation	Robert Burton, State Hazard Mitigation Officer	-	rburton@emd.sc.gov
			Andrew Phillips, Hazard Mitigation Planner	-	aphillips@emd.sc.gov
			Ryan Guerry, Hazard Mitigation Grand Program Manager	-	rguerry@emd.sc.gov
		Public Assistance	Allen Fountain, Public Assistance Officer	-	afountain@emd.sc.gov
			Amy Shorter, Public Assistance Coordinator	803-239-7897	ashorter@emd.sc.gov
		Recovery Programs	Dave Perry, Private Sector Coordinator	-	dperry@emd.sc.gov
			Scott Brown, Recovery Programs Manager	-	sbrown@emd.sc.gov

Table E2. State Agencies Continued

Agency	Division	Topic	Point of Contact	Phone	Email
SC State Fiscal Accountability Authority	Division of Procurement Services	Office of State Engineer	John White, State Engineer	803-737-0786	jswhite@mmo.sc.gov
			Stan Gailey, Architect	803-737-0774	sgailey@mmo.sc.gov
			Perry Derrick, Structural Engineer	803-737-0518	pderrick@mmo.sc.gov
			Lyth Clark, Mechanical/Fire Protection Engineer	803-737-0767	lclark@mmo.sc.gov
		ESF-3 Direct Line	-	803-737-8503	-
SC Ports Authority	-	Switchboard	-	843-723-8651	-
University of South Carolina	Belle W. Baruch Institute for Marine and Coastal Sciences	North Inlet-Winyah Bay National Estuarine Research Reserve	Wendy Allen, Reserve Manager	843-904-9026	wendy@belle.baruch.sc.edu
			Jennifer Plunket, Stewardship Coordinator	843-904-9033	jen@belle.baruch.sc.edu
	SC Institute of Archaeology and Anthropology	Maritime Research Division	Jessica Irwin, Archaeologist	843-763-6105	irwinja@sc.edu
		Technological, Logistical and Equipment Capabilities	Jim Spirek, State Underwater Archaeologist	803-576-6566	SpirekJ@mailbox.sc.edu

Table E3. Federal Agencies

Agency	Division	Topic	Point of Contact	Phone	Email
Bureau of Safety and Environmental Enforcement (BSEE)	Marine Trash and Debris Program	Planning and coordination	James Sinclair, Marine Ecologist	504-736-2789	james.sinclair@bsee.gov
Federal Emergency Management Agency (FEMA)	Region IV	Funding following Presidential disaster declaration	Contact local Emergency Management Agency	-	-
		GIS mapping and plotting of imagery	David Lawson, Region IV GIS Coordinator	770-220-5504	david.lawson@fema.dhs.gov
		Technical expertise for removal operations and environmental, compliance and permitting expertise	Valerie Rhoads, Public Assistance Branch Chief	770-220-5618	valerie.rhoads@fema.dhs.gov
			Stephanie Madson, Region IV Environmental Officer	770-220-5387	stephanie.madson@fema.dhs.gov
National Oceanic and Atmospheric Administration (NOAA)	National Marine Fisheries Service (NMFS) or NOAA Fisheries	Emergency EFH Consultation	Ken Riley	252-728-8750	ken.riley@noaa.gov
		Emergency ESA Consultation	General Contact	727-824-5312	nmfs.ser.emergency.consult@noaa.gov
	NOS, ORR, Emergency Response Division	Potential to release oil or hazardous material	Bradford Benggio, USCG District 7 Scientific Support Coordinator (SSC)	305-530-7931	bradford.benggio@noaa.gov
	NOS, ORR, Marine Debris Division	Response capabilities and coordination	Sarah Latshaw, Southeast Regional Coordinator, Marine Debris Program	843-7401154 (O), 843-697-7416 (C)	sarah.latshaw@noaa.gov
	NOS, Office of Coast Survey	Navigation Response Teams	Kyle Ward, Southeast Regional Navigation Manager	843-740-1153	kyle.ward@noaa.gov
National Park Service (NPS)	National Sites	Fort Sumter National Monument	-	843-881-5516	-
		Charles Pinckney National Historic Site	-	843-883-3123	-
	Southeast Region	Ocean Programs	Catherine (Anna) Toline, Marine Scientist - Oceans Program Coordinator	843-518-1939	catherine_toline@nps.gov
Natural Resource Conservation Service (NRCS)	-	Emergency Watershed Protection (EWP) Program Information	Stephen T. Henry, Assistant State Conservation Engineer	803-765-5350	stephen.henry@sc.usda.gov

Table E3. Federal Agencies Continued

Agency	Division	Topic	Point of Contact	Phone	Email
U.S. Army Corps of Engineers (USACE), Charleston District	Regulatory	Compliance and permitting expertise	Tommy Fennel, Chief Northeast Branch	843-365-1727	tommy.e.fennel@usace.army.mil
			Robin Socha	843-329-8167	robin.c.socha@usace.army.mil
			Courtney Stevens	843-329-8027	courtney.m.stevens@usace.army.mil
	Navigation	Federally maintained waterway or channel	Scott Glass	843-329-8144	scott.a.glass@usace.army.mil
	Emergency Management	Response capabilities	Michael Hind, Natural Disaster Program Manager	843-329-8106	michael.b.hind@usace.army.mil
		Emergency Management Division EOC	-	-	cesac-eoc2@usace.army.mil
U.S. Coast Guard (USCG)	District 7, Sector Charleston	Potential to release oil or hazardous material	National Response Center (NRC)	1-800-424-8802	-
		Response capabilities	Dan Ferrell, CWO	843-740-7087	daniel.c.ferrell@uscg.mil
			Trevor Moser, MSTC	-	trevor.c.moser@uscg.mil
			LT Jeffrey Prebeck, Chief Incident Management	843-740-3182	jeffrey.m.prebeck@uscg.mil
			LT John Downing, Chief Waterways Management	843-740-3184	john.z.downing@uscg.mil
U.S. Environmental Protection Agency (EPA)	Region IV	Potential to release oil or hazardous substance	National Response Center (NRC)	800-424-8802	-
		Planning and coordination	Terry Stilman, ESF-10 On Scene Coordinator	-	stillman.terry@epa.gov
			Gary Andrew, RRT IV and ESF-10 Coordinator	678-733-1621	andrew.gary@epa.gov
		Capability contact	EPA Region IV Duty Officer	404-562-8700	-
U.S. Fish and Wildlife Service (USFWS)	National Wildlife Refuges	SC Lowcountry Refuge Complex	-	843-928-3264	-
		Savannah Coastal Office	-	843-784-2468	-
	Ecological Services Program	Compliance and permitting expertise	Mark Caldwell, Deputy Field Supervisor	843-727-4707 x 215	mark_caldwell@fws.gov
		Public Affairs	Jennifer Koches, Public Affairs Specialist	843-727-4707 x 214	jennifer_koches@fws.gov

Penny Pritzker
United States Secretary of Commerce

Dr. Kathryn D. Sullivan
Under Secretary of Commerce for Oceans and Atmosphere

Dr. Russell Callender
Assistant Administrator, National Ocean Service