

# WRECK REMOVAL: A FEDERAL PERSPECTIVE

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## ABSTRACT:

Sunken, abandoned<sup>2</sup>, and derelict vessels are a significant problem along the waterways, shores, and submerged lands of United States. These vessels pose an array of threats, including the release of oil and other pollutants, dispersion of fishing gear and other debris, navigational obstructions, physical destruction of marine habitats, and an entanglement hazard for marine life. Wrecks may be an attractive nuisance, creating entrapment and fall hazards for divers and trespassers. Wrecks may also be an visual eyesore and aesthetic nuisance and may become sites for illegal dumping of waste oil, garbage, and other pollutants. At the same time, sunken vessels may have commercial, public, and historic values, provide habitat for marine organisms, and often create a recreational resource for divers and fishermen. Federal interests and concerns mirror these positive and negative values. This paper summarizes the potential scope of the problem, and the major federal concerns, authorities, and issues that may underlie decisions regarding wreck removal, focusing on NOAA's roles.

## INTRODUCTION:

The past century of commerce and warfare have left a legacy of thousands of sunken vessels along the US coastal zone. Many of these wrecks pose environmental threats, either because of the hazardous nature of their cargoes, presence of munitions, or because of the bunker fuel oils left on board. As these wrecks corrode and decay, they may release oil or hazardous materials. Some hazardous sites, such as the *USS Arizona* in Hawaii and the *New Carissa* in Oregon, are well publicized environmental threats. However, unless the wrecks pose an immediate pollution threat or impede navigation, the vessels are left alone and are largely forgotten until they begin to leak.

Shipwrecks are difficult to categorize, but for the purposes of this paper, it is useful to keep in mind several classes of vessels: 1) Historic Wrecks, 2) Contemporary Wrecks, and 3) Derelict Vessels. The legal, technical, engineering, and cost-recovery challenges vary significantly depending on the type of vessel and the circumstances that led to the sinking or abandonment.

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1 The opinions expressed by the author are not necessarily those of the National Oceanic and Atmospheric Administration or the federal Government. Furthermore, this paper summarizes federal interests, but is not a complete or exhaustive review of all of the federal laws, regulations, or concerns of the various federal agencies involved.

2 Derelict and abandoned vessels are those that are around, broken apart, sunken, show no sign of maintenance, use, or are otherwise dilapidated in their condition. Some of these vessels may still have a concerned owner. The use of the word "abandoned" in this paper is not intended to connote any legal conclusions about the status of the titles of the vessels.

**Historic Wrecks:** These would include both merchant and military vessels sunk during wartime, as well as older peacetime sinkings and groundings. The category of historic shipwrecks would broadly include all wrecks at least 50 years old, and go back several thousand years. However, for the purposes of wreck removal, salvage, and pollution response, most of the vessels in question would be post 1910 when Navy and commercial vessels began to shift from coal to oil bunkers (Dahl, 2001). It is likely that earlier wrecks would no longer be intact and would not have carried substantial quantities of hazardous cargoes, or fuel oil as cargo.

These vessels may be considered submerged cultural resources and some may be gravesites, memorials or national historic landmarks. Many of these vessels, notably WWII military ships, may pose environmental threats from residual fuel oils and munitions. Thousands of vessels sunken during the War are slowly deteriorating and pose significant threats, especially in remote and otherwise pristine Pacific reef environments. Response efforts on these vessels are complicated by the age and deterioration of the vessels, combined with extensive bomb, fire, and explosion damage. Furthermore, such efforts may require extensive coordination with foreign governments and survivor groups.

Several recent spill responses have illustrated the problem of historic wrecks. These incidents include the United States Navy oil supply tanker, *USS Mississinewa*, sunk during WWII at Ulithi Atoll in Yap, the *SS Jacob Luckenbach*, sunk near the entrance to San Francisco bay with a cargo of Korean War supplies, and the *Empire Knight* sunk off Boone Island, Maine during WWII, with a cargo that included elemental mercury.

**Contemporary Wrecks:** Contemporary wrecks are also a concern, and may become legacies for the next generation to address. Response and wreck removal for contemporary wrecks may share many of the technical challenges posed by historic wrecks, but there is a potentially a greater political urgency to take action and a higher likelihood that a solvent responsible party exists.

Tanker sinkings such as the *Prestige* off Spain, the *Erica* off France, and the *Nakhodka* off Japan often result in significant amounts of oil becoming entombed in a deepwater wreck. Although the U.S. has been fortunate in recent years in avoiding such high profile incidents, the potential is real. The sinking of the *M/V Puerto Rican* off San Francisco in 1984, and the *F/V Tenyo Maru* off Washington State in 1991, were small compared with the recent European incidents, but still resulted in substantial spill responses and environmental damage. More recently, the intentional scuttling of the *New Carissa* off Oregon, and the *Barge Morris J. Berman* in Puerto Rico, both involved large residual amounts of oil. These wrecks are largely unstudied and their condition and the fate of the oil onboard is unknown.

**Derelict and Abandoned Vessels:** In addition to ships lost at sea, thousands of abandoned and derelict vessels litter ports and estuaries, creating a threat to navigation, recreation, and the environment. Many vessels end up sinking at moorings, semi-submerged in the intertidal, or stranding on shorelines, on reefs or in marshes, and breaking apart. In protected harbors and bays

these vessels may persist for years, while in the open, exposed coastal environments the debris and contaminants from the disintegrating vessels may be widespread along shorelines and across benthic habitats. These vessels may also pose environmental threats from residual fuels, illegal dumping, and may also pose threats to navigation.

These vessels are typically smaller than the historic or contemporary wrecks, and generally carry only small amounts of fuel. While oil pollution may be an issue in certain situations, often the primary concern is with the vessel itself. While these vessels are less costly to remove than the large commercial vessels, they are numerous and the owners are difficult to identify and often insolvent.

### **SCOPE OF THE ISSUE:**

Currently, there is no single database that includes all shipwrecks in US Coastal waters. Several agencies and programs have developed databases focusing on specific needs and mandates, and attempts are currently underway to compile the various databases to understand the extent to which there are gaps or double counting of vessels. However, enough data exists to place some bounds on the issue. Although there are no precise numbers, there are clearly tens of thousands of wrecks and derelicts in coastal waters, ranging from yachts and fishing vessels to large freighters, tankers, and military vessels. The existing databases provide some tantalizing information on the number of wrecks, but there are also many informational needs that would be essential to fully evaluate risks. These include better understanding on wreck locations, conditions of the wrecks, types of bunkers and cargo, and integrity of fuel tanks. Some of these databases are summarized below<sup>3</sup>:

- **U.S. Naval Historical Center Database:** Lists over 3000 wrecks owned or managed by the U.S. Navy<sup>4</sup>. More specifically, naval vessels lost through war or peacetime operations in U.S. or foreign waters from the colonial-era to the present. World War II represents the largest number of wrecks (1,084), the second largest group, post WW-II present (740), and the third largest group of wrecks encompasses the Civil War-era (564).
- **US Department of the Interior:** The US Department of the Interior has several bureaus that track shipwrecks, primarily as submerged cultural and archaeological resources. These include the Mineral Management Service (MMS) and the National Park Service. Historical research conducted for MMS for oil and gas leases have identified over 400 ships sunk on the federal Outer Continental Shelf.
- **U.S Coast Guard:** The USCG maintains several databases with shipwreck information. Under the Abandoned Barge Act of 1992, the USCG has responsibility for identifying and cataloguing abandoned barges and other vessels in each Coast Guard District. Under the Abandoned Vessel Inventory System (AVIS), vessels are categorized as a threat to

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<sup>3</sup> A number of these databases contain proprietary or sensitive information (e.g., locations of historic wrecks), and access may be restricted.

<sup>4</sup> This does not include Naval Aviation wrecks, which are the subject of a separate database. It is estimated that this database will eventually hold more than 25,000 aircraft wrecks

pollution, navigation, or public health. The abandoned vessel database focuses on vessels over 100 gross tons and contains over 1300 vessels nationwide. The USCG also maintains a database and tracks all sorts of maritime incidents through the Marine Safety Management Database. Approximately 440 sinkings occur annually in U.S. waters, but many of these are small vessels that are refloated or removed.

- **NOAA:** NOAA maintains several databases with shipwreck information, for archaeological, pollution, coral damage, and charting purposes. These include:
  - **NOAA Office of Coast Survey:** The Automated Wreck and Obstruction Information System (AWOIS) contains information on approximately 10,000 submerged wrecks and obstructions in the coastal waters of the United States. Information includes latitude and longitude of each feature along with brief historic and descriptive details.
  - **NOAA Abandoned Vessel Program:** Focuses primarily upon wrecks that are a threat to coral reef habitats. Includes over 1000 vessels and efforts are underway to ground truth the database and prioritize potential wreck removal activities.
  - **Pacific Coast Maritime Archaeological Summary:** Lists over 10,000 vessels along the Pacific Coast and Alaska. The Santa Barbara Maritime Museum and NOAA, working with other federal and state agencies and academic institutions, have attempted to compile all of the region's database into one single dataset. Over 240 vessels are characterized as potential pollution threats.
  - **NOAA National Marine Sanctuaries.** The National Marine Sanctuary NOAA is currently updating "NOAA's ARCH," a database covering shipwrecks within National Marine Sanctuary. The Sanctuaries program is also developing "RUST", or Resources and Undersea Threats. This database will include all potential threats to Sanctuary resources, including pipelines, dredge disposal sites, ordinance dumping sites, as well as shipwrecks.
- **SPREP:** The South Pacific Regional Environment Programme (SPREP) has a database of over 1080 Military vessels sunk in the Pacific Region in WWII between 1941-1945. This includes vessels from all of the major combatants in the region. Currently, the SPREP database includes 23 large aircraft carriers, 213 destroyers, 22 battleships, and, of particular concern, over 50 tankers (Gilbert et al., 2003)
- **Private Databases:** A number of historians, salvage firms, recreational divers and fishermen have developed private databases. A number of these sites are available on-line for free or a small subscription fee. Some of these are quite extensive, including one database that has information on over 2800 vessels sunk by German U-boats during WWII.

### **WRECK REMOVAL, POLLUTION RESPONSE, AND HISTORIC PRESERVATION:**

As mentioned previously, shipwrecks include both older and contemporary vessels. Since many older wrecks are of WWII vintage, and likely fall under the scope of the National Historic Preservation Act (NHPA), salvage firms may be concerned that historic status may unduly complicate response efforts. Section 106 of the Act mandates that all proposed federal actions, or federally assisted undertakings, take into consideration the effect of the action on historic properties that are included in or eligible to be included in the National Register of Historic Properties<sup>5</sup>. Since large wreck removal and pollution abatement projects typically require federal funding, permits, or direct involvement, it is reasonable to expect that NHPA will be a consideration.

Section 106 requires that all federal agencies consider the impacts of their actions on historic properties. Compliance is the lead agency's responsibility, not the commercial salvage firm's. Additionally, the requirement is for consideration. This means that historic preservation does not necessarily trump pollution or navigation concerns. Removal or disturbance of a vessel is allowed if there are no feasible alternatives to in-place preservation. The US Army Corps of Engineers has removed several historic vessels as part of harbor and channel improvement projects.

The National Response Team (NRT) has drafted guidance to Federal On-Scene Coordinators to clarify Section 106 requirements during pollution responses (<http://www.achp.gov/NCP-PA.html>). The guidance addresses scenarios whereby historic resources may be affected by pollution and cleanup efforts (e.g., oiling of a historic structure), but unfortunately does not directly address scenarios when the historic resource is itself the source of the pollution (e.g., a submerged vessel).

If a vessel is determined to be historic, the lead agency will need to consider preservation and mitigation alternatives. If the only necessary action is to tap into a hull and pump out oil, little additional work would likely be required to comply with the NHPA. However, if the salvage action requires significant disturbance or demolition of a vessel, the agency may be required to conduct historical research on the vessel, perform an archaeological investigation of the site, document any unique aspects of the wreck, and curate artifacts recovered from the site. These compliance activities can involve a significant amount of time and effort, but again are the responsibility of the lead agency, not the commercial salvage firm.

### **A FEDERAL GOVERNMENT PERSPECTIVE:**

No single federal agency has the authority and funding to remove wrecks and abandoned vessels

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<sup>5</sup> A historic property need not be listed in the National Register to receive NHPA protection; it need only meet the eligibility criteria for protection. A full description of guidelines for nomination of vessels can be found at <http://www.cr.nps.gov/nr/publications/bulletins/nrb20/INDEX.htm>. Briefly, however, historical significance is based on age of the vessel, historical associations and context, associations with historical persons, distinctiveness of construction, and likelihood to contribute important historical information.

in all instances, and, if needed, to restore the site<sup>6</sup>. While many agencies and programs have an interest in wreck removal, few have legal authority to take action on a wreck or abandoned vessel, and these authorities may be tied to emergency situations or narrowly defined scenarios (e.g., only limited types of incidents, geographic locations, types of vessels, tonnage requirements, etc.). Fewer still have dedicated sources of funding (other than reprogramming existing appropriations) that can be used to remove wrecks, and again these funds may be tied to narrowly defined scenarios or specific risks (e.g., a substantial threat of oil spill). Existing federal laws and regulations provide only limited authority and funding to remove wrecked or abandoned vessels that are solely causing harm to natural resources, or are an eyesore, but which are not otherwise obstructing or threatening to obstruct navigation, or threatening a pollution discharge.

Currently there are fifteen U.S. cabinet level agencies, several dozen independent agencies, and hundreds of boards, commissions, committees, and quasi-official agencies. A surprisingly large number of these have an interest in one or more aspects of shipwrecks and wreck removal. A complete analysis of all of the roles and issues are well beyond the scope of this paper. However, there are a few major “players”, themes, and federal concerns, and some of those issues are summarized below and in Appendix One.

Federal concerns regarding shipwrecks are diverse and include both threats from and threats to wrecks. These concerns may include direct oversight and operational capability, regulatory or enforcement responsibility, permitting, technical assistance, administration of coastal and submerged lands, or management of natural resources. Given the large number of agencies and interests, it should not be surprising that there is not a single federal perspective on this issue. It is also understandable that various agencies and programs within agencies may hold opposite viewpoints. Major federal concerns regarding shipwrecks and wreck removal include:

**Federal Vessels:** Navy shipwrecks whether lost within U.S., foreign, or international boundaries, are government property in the custody of the U.S. Navy. High profile wrecks may be designated as National Historic Landmarks or National Marine Sanctuaries. Public vessels, such as the deteriorating reserve fleet vessels, are also a concern.

**Federally Managed Lands:** A number of federal agencies own or manage coastal and submerged lands. These range from National Parks and National Marine Sanctuaries to Military bases. If no viable responsible party can be identified, the property owner may be left with the bill for vessel removal.

**Oil Pollution:** The pollution threats from recent shipwrecks such as the Prestige and Erica may be obvious, but there is increasing concern regarding pollution from older wrecks.

**Cargo Threats:** Hazardous materials and unexploded ordinance are often a concern. An example is the *Pac Baroness* that sank off Pt. Conception, CA, in 1987, loaded with 280,000

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<sup>6</sup> In most instances, environmental restoration after wreck removal is limited to restoration of staging areas, etc., but wreck removal in coral habitats or other sensitive areas may require extensive habitat restoration efforts.

gallons of fuel and 21,000 tons of powdered copper concentrate.

**Habitat Threat:** Sunken and grounded vessels may damage corals, seagrasses and other sensitive marine habitats. Salvage activities may inadvertently result in additional injury. Other threats include antifouling paints, introduced rodents or organisms in ballast waters, nutrient enrichment from rusting steel, and dispersion of fishing gear that may entangle marine life.

**Navigation Threat:** Shallow water wrecks may block or impede navigation. Smaller wrecks and derelicts may be mobilized during storm events and deposited in channels. Historical wrecks may be an issue in harbor and channel expansion projects.

**Historic Preservation:** Under the National Historic Preservation Act (NHPA), all federal agencies have an obligation to protect historic properties, including shipwrecks and other artifacts under their jurisdictions. Federal law generally defines historic site as those being at least fifty years old. As a result, wrecks associated with WWII now meet that criterion.

**Public Safety:** Wrecks may be an entrapment hazard for divers. Emergent wrecks and derelict vessels may be hazardous to boaters and could be an attractive nuisance and pose entrapment and slip and fall hazards to the public.

**Recreation:** Ships may be scuttled to create dive sites. The *USS Spiegel Grove* was recently scuttled in the Florida Keys National Marine Sanctuary as an artificial reef. Federal permits are necessary to create such dive sites.

**Habitat:** Wrecks provide habitat for a variety of marine organisms, and are often popular fishing sites. Some coastal states have active artificial reef programs. Federal permits are necessary to create such reefs.

**Ocean Disposal:** Wrecks may be intentionally scuttled as a method of disposal if the vessel meets certain requirements. Under emergency circumstances, vessels may be intentionally scuttled. The *New Carissa* and *Morris J. Berman* are examples.

## **FUNDING WRECK REMOVAL**

As with pollution response in the US, the primary responsibility for wreck removal lies with the vessel owner or insurer. While there are laws at every level of government<sup>7</sup> against abandoning vessels, many vessel owners lack insurance or the financial resources for proper disposal and leave their vessels for someone else to remove. Even if the last owner can be located, there are often no assets to fund the removal. Many state and federal laws have provisions whereby the government can seize the vessel and use the proceeds of the sale to offset the wreck removal

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<sup>7</sup> In addition to state and federal laws, a draft wreck removal convention (WRC) is currently being developed by the International Maritime Organization. The WRC is intended to provide international rules on the rights and obligations of governments and ship owners in dealing with wrecks that may pose a navigation or threat to the environment.

costs. However, in most instances the proceedings to seize the vessel take time, during which the vessel may break apart and cause further impacts- and increase the ultimate cost of the salvage operation. Furthermore, it is almost axiomatic that cost of the wreck removal greatly exceeds the value of the wreck or derelict vessel- otherwise the vessel wouldn't have been abandoned.

### **FEDERAL ROLES AND RESPONSIBILITIES:**

If the owner fails to take action to remove their wreck or derelict vessel, there are two main triggers for federal action<sup>8</sup>: 1) obstructing or threatening to obstruct navigation, or 2) threatening a pollution discharge. Additional authorities may be available in the event that the incident occurs in a National Park or National Marine Sanctuary<sup>9</sup>. The primary federal agencies with authority to remove wrecked and grounded vessels are the U.S. Army Corps of Engineers and the U.S. Coast Guard. Authority, however, is distinct from funding and with the exception of the Oil Pollution Act, and more narrowly the Superfund Act, no federal statute provides a source of funds other than appropriated agency monies for use in removing wrecked or abandoned vessels.

**U.S. Army Corps of Engineers:** The Rivers and Harbors Act provides for removal of abandoned vessels, defined in the act, which are actually or potentially obstructing navigational channels, but does not provide a fund to pay for these activities. The lead agency for removing a wrecked vessel from federal channels is the U.S. Army Corps of Engineers. The USACOE will attempt to get the owner to remove the wreck. If the owner can't be identified or is otherwise incapable of removing the vessel, and the vessel is a hazard to navigation, the USACOE will remove it or take steps to reduce the risk to navigation such as modification of a channel or by installing aids to navigation.

**U.S. Coast Guard:** The USCG will respond to sunken and derelict vessels and attempt to remove any fuel oils or hazardous substances. In emergency situations, the USCG has authority to aid distressed persons and vessels and may destroy or tow into port, sunken or floating dangers to navigation or take other actions necessary to rescue and aid persons and protect and save property. If there is a substantial pollution threat the USCG may use the Oil Spill Liability Trust Fund to respond, and if necessary remove wrecks and derelicts, However, if there is not a significant threat of pollution or hazard to navigation, the USCG usually leaves the wreck to be dealt with by the state, harbor district, or landowner.

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8 Action does not necessarily imply wreck removal. Given the high cost of wreck removal and limited budgets, agencies may take other actions to reduce the threat, with wreck removal as the last alternative. For example, the Government may respond to contain the oil in place or remove oil from a wreck, but leave the wreck intact. The initial response to the *USS Mississinewa* was to plug leaks with epoxy. After several rounds of response efforts, it became evident that future spills were imminent and inevitable, and the preferred response effort became tapping and draining the hull (Gilbert et al. 2003). Similarly, a wreck that poses a navigation threat may be charted, or marked with buoys, but left on-site.

9 The National Marine Sanctuaries Act authorizes seizure and forfeiture of vessels harming sanctuary resources, as opposed to summary removal authority, and imposes liability for physical injuries caused by vessel groundings. However, the act does not provide funds to pay for these activities, and the act is only applicable in designated national marine sanctuaries. The Park System Resource Protection Act is similarly geographically limited to designated areas under the management of the National Park Service, and does not provide a source of non-appropriated funds for vessel seizure or restoration of injured natural resources.

**U.S. Department of the Interior:** A number of the Bureaus in the Department of the Interior manage coastal lands that may be affected by grounded and abandoned vessels. The U.S. Fish and Wildlife Service manages a number of coastal wildlife refuges, including many of the offshore islands along the Pacific Coast and many remote U.S. atolls in the Pacific. The National Park Service manages National Parks and National Seashores, and frequently deals with shipwrecks. The Park System Resource Protection Act (PSRPA) allows DOI to seek injunctive relief to have grounded vessels removed and to bring actions for damages to restore park resources injured by grounded vessels. The Bureau of Land Management has relatively small coastal lands, but has had to deal with the infamous “New Carissa” along the Oregon Coast. Mineral Management Service tracks shipwrecks as part of the planning for oil and gas leasing along the continental shelf.

**U.S. Environmental Protection Agency:** The EPA's role in shipwrecks and abandoned vessels is primarily limited to ocean dumping and disposal of vessels. EPA also can become involved if the vessel or contents are a potential human health concern. EPA may also act as the Federal On-Scene Coordinator if the incident occurs in freshwater.

**U.S. Department of Defense:** The Department of Defense owns or manages natural resources at military facilities and these lands may be affected by shipwrecks. The DOD also has resources that could be used to help remove wrecked abandoned vessels. The Navy Salvage Operations Division maintains contracts for ship salvage, emergency towing, deep ocean search and salvage operations, and can provide salvage engineering and technical assistance to other federal agencies.

**National Ocean and Atmospheric Administration:** The interests the National Oceanic and Atmospheric Administration (NOAA) reflect the diversity of federal concerns. NOAA has many functions, including being the primary federal agency responsible for research and management of the Nation's coastal and marine resources. This mandate includes fisheries management, charting and navigation, stewardship of marine and coastal protected areas, protection of submerged cultural resources, and responding to and restoring natural resources affected by oil spills and releases of hazardous materials.

NOAA has a long and varied interest in shipwrecks and abandoned vessels, but action to address these threats has been limited and focused on specific threats. NOAA cartographers note the location of wrecks on nautical charts to facilitate safe navigation. NOAA Office of Response and Restoration works on pollution threats from vessels. NOAA Office of Ocean Exploration conducts undersea research, including locating and surveying historic wrecks. NOAA Fisheries works on entanglement hazards, debris removal from vessels, and tracks wrecks that are obstructions to trawling.

NOAA has specific responsibility for wrecks in National Marine Sanctuaries. Currently, there are thirteen National Marine Sanctuaries. Two of the sanctuaries focus on shipwrecks (The *USS Monitor* and Thunder Bay Sanctuaries) but all track sites within their boundaries. The National

Marine Sanctuary Act (NMSA) allows NOAA to seek injunctive relief to have grounded and sunken vessels removed, and to bring actions for damages caused by grounded or sunken vessels - but recovery of costs and damages requires an identified, and viable, vessel owner or operator. NOAA has also worked with USCG under the Oil Pollution Act to remove vessels that involved a pollution threat, and has recovered damages to restore resources injured as a result of ship groundings and releases of oil and other pollutants.

Several recent events have increased the Agency's interest in threats posed by shipwrecks. In 1999, the US Coast Guard, NOAA, U.S Department of the Interior, and the government of American Samoa began a collaborative effort to address nine abandoned fishing vessels on a reef in Pago Pago, American Samoa (Siffling et al. 2001). These vessels were a public nuisance and posed an array of threats, including pollution, public health, and physical crushing of coral habitats. Using the combined authorities of the agencies, the vessels were cleaned, cut apart, and removed from the reef. The grounding sites were also restored. Shortly afterwards, in 2001, NOAA participated in the efforts to remove oil from the wreck of the *SS Jacob Luckenbach*, which sank in 1953, but later proved to be the source of a chronic oil seep that killed thousands of seabirds off the central California coast (Symons and Parker-Hall, 2003). NOAA was also involved in the response to the *USS Mississinewa*, a sunken WWII US military oil tanker, in Ulithi Lagoon in the Federated States of Micronesia. Subsequent salvage efforts led by the US Navy removed over 3 million gallons of oil from the wreck. These experiences led NOAA to inquire whether shipwrecks and abandoned vessels may be causing significant harm to marine habitats elsewhere.

That interest has led NOAA to develop an Abandoned Vessel Program and investigate and document ship groundings and abandoned vessels affecting coral reef habitats (<http://www.response.restoration.noaa.gov/dac/vessels>). NOAA is also currently developing a national database, the Maritime Archaeological Resources Inventory for National Evaluation and Research (MARINER), which will include all NOAA data. This effort will provide NOAA and other agencies with a single, comprehensive, and accurate data source for all shipwrecks with the US coastal zone.

#### **DISCUSSION AND CONCLUSIONS:**

There is no single federal perspective on shipwrecks and wreck removal. Concerns vary among agencies and programs, ranging from archaeological protection to pollution response. However, once concern held by all federal agencies is that of cost. Sunken wrecks are an expensive problem that many agencies feel ill-equipped and under funded to address. No agency wants to take on the task of responding to and removing shipwrecks and abandoned vessels unless given a clear mandate, with funding and personnel, and strong legal tools.

The Federal Government has long been aware of the problem of wrecks as pollution sources, but incidents have typically been dealt with in an ad-hoc manner. Wrecks have been viewed as an inevitable, but not necessarily imminent problem. Given agency budgets and other, more urgent problems, it is understandable that wreck removal and pro-active pollution response have not been a priority. However, as indicated by the recent removal operations on the *Mississinewa* and

*Jacob Luckenback*, and increasing concerns over the *USS Arizona*, many of these older wrecks are deteriorating and starting to pose imminent environment threats. Given the rising cost of spill response in the US, responding to wrecks while the oil is still contained makes both environmental and economic sense. Furthermore, the technologies and capabilities developed in responding to these historic wrecks may be a good investment if and when an incident such as the *Prestige* occurs in US waters

Of the thousands of vessels in US waters, it is difficult to determine which vessels are still intact, contain significant amounts of oil, and warrant investment of scarce public funds. Sound planning requires that wreck removal and/or proactive pollution response be prioritized based on environment risk, feasibility, and costs. Existing database efforts will help clarify the magnitude of the problem in terms of number of vessels and locations, but other questions will still need to be answered to accurately evaluate risks. These efforts may include historical research, site investigations, and employment of remote sensing and other tools to effectively assess the integrity and contents of the vessels. Priority sites would need to be monitored to determine if and when they pose a threat. Additional research and modeling of how oil behaves at depth and how ships degrade over time would help responders predict the fate of shipwrecks. New and alternative technologies may need to be developed to cost-effectively address the threats. This research would give responders the skills and tools to prioritize and respond to vessels when the magnitude of the risks warrants pre-emptive responses.

#### **References:**

Aubry, Michele C, and M. Stright. 1999. Beneath the Waters of Time: Interior's Submerged Cultural Resource Programs. Cultural Resource Management Vol. 22, No. 4, pp. 54-56

Campbell, Brad; Kern, Ed; and Dean Horn. 1977. Impact of Oil Spillage from WWII Tanker Sinkings. Massachusetts Institute of Technology, Cambridge, MA.

Dahl, Erik J. 2001. Naval Innovation: From Coal to Oil. Joint Forces Quarterly Volume 27, pp. 50-56. Institute for National Strategic Studies, Nation Defense University, Washington, D.C. [http://www.dtic.mil/doctrine/jel/jfq\\_pubs/1327.pdf](http://www.dtic.mil/doctrine/jel/jfq_pubs/1327.pdf)

Delgado, James. 1992. Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places. U.S. Department of the Interior, National Park Service, National Register Bulletin. <http://www.cr.nps.gov/nr/publications/bulletins/nrb20/INDEX.htm>

Gilbert, Trevor; Nawadra, Sefanaia; Tafiichig, Andy; and Leonard Yinug. 2003. Response To an Oil Spill From a Sunken WWII Oil Tanker in Yap State, Micronesia. Proceedings of the 2003 International Oil Spill Conference, Vancouver, Canada. American Petroleum Institute,. Washington, D.C.

NOAA 2002. Automated Wrecks and Obstructions Information System (AWOIS) User's Guide.

Office of Coast Survey, Hydrographic Survey Division, National Oceanic and Atmospheric Administration, Silver Spring, MD. <http://chartmaker.ncd.noaa.gov/hsd/hsd-3.html>

NOAA Sea Grant: Wreck Diving in North Carolina: A Directory of Shipwrecks Along the North Carolina Coast, Dennis C. Regan and Virginia Worthington, Sea Grant Publication UNC-SG-78-13, Univ. of North Carolina.

Sifling, John; Nall, Roger; Busch, Todd; Igaz, Frank; Stettler, Jeff; Hoff, James; and Sheila Wiegman, 2001. American Samoa Longliner Response, Wreck Removal, and Restoration Project. Proceedings of the 2001 International Oil Spill Conference, Tampa, Florida, pp. 451-456, American Petroleum Institute, Washington, D.C.

Symons, L. and H. Parker-Hall. 2003. The SS Jacob Luckenbach: Integration of NOAA (National Oceanic and Atmospheric Administration) Trust Issues into the Response. Proceedings of the 2003 International Oil Spill Conference, Vancouver, Canada. American Petroleum Institute,. Washington, D.C.

Voulgaris, Barbara. 2001. The Navy's Computerized Shipwreck Database Inventory: Unique Concerns and Issues in its Development and Use. Department of the Navy -- Naval Historical Center, Washington Navy Yard, Washington DC. <http://www.history.navy.mil/branches/org12-7c.htm>

**ATTACHMENT ONE: Summary of Existing Federal Laws**

ACT	Agency	Removal Authority		Restoration Provisions		Funding Source
		Yes	Limitations	Yes	Limitations	
Oil Pollution Act, Clean Water Act	USCG, Trustees	Yes	vessels discharging or posing substantial threat of discharge; no seizure or abandonment required	Yes	for injuries caused by discharge or threat	Yes - Oil Spill Liability Trust Fund or litigation for claims for response costs and restoration
Superfund Act	EPA, USCG, Trustees	Yes, through CWA § 1321	vessels releasing or threatening a release of a hazardous substance	Yes	for injuries caused by discharge or threat	Yes, for response only, not for claims; natural resource damages only available through litigation
National Marine Sanctuaries Act	NOAA	Yes	seizure required, vessels violating act subject to forfeiture to U.S.	Yes	for injuries to sanctuary resources	No, but authorizes claims to recover response costs and damages, against owner or vessel
Rivers & Harbors Act	ACOE, USCG	Yes	of “abandoned” vessels, posing actual or potential threat to navigation, not removed by owner w/30 days; abandoned vessels not a hazard to navigation not covered	No	But Act does provide for suits for damage for harm to navigational channels	No. Act does allow recovery of costs of vessel removal, and penalties, from owner, operator, lessee or vessel itself, but recoveries deposited into U.S. Treasury
Abandoned Barge Act	USCG	Yes	Vessels larger than 100 gross tons, abandoned for more than 45 days, in navigable waters	No		No. Suits may be brought to recover removal costs, and penalties - deposited into U.S. Treasury
Abandoned Shipwreck Act	DOI, States	Not Really	title to “abandoned and embedded” vessels passes to states, vessels to be managed as historic resources	No		No

ACT	Agency	Removal Authority		Restoration Provisions		Funding Source
		Limitations		Limitations		
Intervention on the High Seas Act	USCG	Yes	vessels posing grave and imminent danger to coastal or related interests of U.S.; consultation with foreign flag states required	No		No
Park System Resource Protection Act	DOI	Not really	Makes vessels harming Park resources subject to forfeiture, but doesn't define abandonment, doesn't authorize seizure, and doesn't authorize removal.	Yes	Injury to Park System resources.	No
Endangered Species Act	NOAA, DOI	Yes	vessels violating or threatening to violate act may be seized, subject to forfeiture to U.S.	No		No
Common Law Claims - tort, trespass, nuisance	Any plaintiff with interest that has been harmed	Not likely	vessel removal would likely only be possible with a judgment after trial and a court order; claims subject to admiralty principles of limited liability, requirement for negligence, etc.	Yes	damage to property interests can involve an award for costs of restoration	No

**BIOGRAPHY:**

Douglas Helton is the Rapid Assessment Program Manager for the NOAA Damage Assessment Center. For the past 10 years he has worked on oil spills and superfund site assessments around the US coastal zone. In 2000 he began the NOAA Abandoned Vessel Inventory Project and has surveyed hundreds of shipwrecks and derelict vessels in the Pacific and Caribbean. He is located in Seattle, WA and holds a MS in Fisheries from the University of Washington.