

September 2007

MARITIME TRANSPORTATION

Major Oil Spills Occur Infrequently, but Risks to the Federal Oil Spill Fund Remain



GAO
Accountability · Integrity · Reliability

Highlights

Highlights of [GAO-07-1085](#), a report to congressional committees

Why GAO Did This Study

When oil spills occur in U.S. waters, federal law places primary liability on the vessel owner or operator—that is, the responsible party—up to a statutory limit. As a supplement to this “polluter pays” approach, a federal Oil Spill Liability Trust Fund administered by the Coast Guard pays for costs when a responsible party does not or cannot pay.

The Coast Guard and Maritime Transportation Act of 2006 directed GAO to examine spills that cost the responsible party and the Fund at least \$1 million. This report answers three questions: (1) How many major spills (i.e., \$1 million or more) have occurred since 1990, and what is their total cost? (2) What factors affect the cost of spills? and (3) What are the implications of major oil spills for the Oil Spill Liability Trust Fund? GAO’s work to address these objectives included analyzing oil spill costs data, interviewing federal, state, and private-sector officials, and reviewing Coast Guard files from selected spills.

What GAO Recommends

GAO recommends that the Coast Guard (1) determine whether and how liability limits should be changed, by vessel type, and make recommendations about these changes to the Congress and (2) adjust the limits of liability for vessels every 3 years to reflect changes in inflation, as appropriate.

DHS officials generally agreed with the contents and agreed with the recommendations in this report.

www.gao.gov/cgi-bin/getrpt?GAO-07-1085.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Susan Fleming at (202) 512-4431 or flemings@gao.gov.

MARITIME TRANSPORTATION

Major Oil Spills Occur Infrequently, but Risks to the Federal Oil Spill Fund Remain

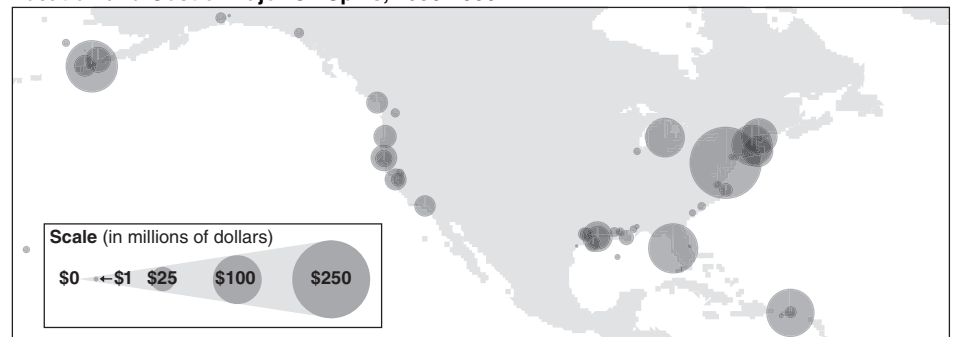
What GAO Found

On the basis of cost information collected from a variety of sources, GAO estimates that 51 spills with costs above \$1 million have occurred since 1990 and that responsible parties and the federal Oil Spill Liability Trust Fund (Fund) have spent between about \$860 million and \$1.1 billion for oil spill removal costs and compensation for damages (e.g., lost profits and natural resource damages). Responsible parties paid between about 72 percent and 78 percent of these costs; the Fund has paid the remainder. Since removal costs and damage claims may stretch out over many years, the costs of the spills could rise. The 51 spills, which constitute about 2 percent of all vessel spills since 1990, varied greatly from year to year in number and cost.

Three main factors affect the cost of spills: a spill’s location, the time of year, and the type of oil spilled. Spills that occur in remote areas, for example, can increase costs involved in mobilizing responders and equipment. Similarly, a spill occurring during tourist or fishing season might produce substantial compensation claims, while a spill occurring during another time of year may not be as costly. The type of oil affects costs in various ways: fuels like gasoline or diesel fuel may dissipate quickly but are extremely toxic to fish and plants, while crude oil is less toxic but harder to clean up. Each spill’s cost reflects a unique mix of these factors.

To date, the Fund has been able to cover costs from major spills that responsible parties have not paid, but risks remain. Specifically, the Coast Guard and Maritime Transportation Act of 2006 increased liability limits, but GAO’s analysis shows the new limit for tank barges remains low relative to the average cost of such spills. Since 1990, the Oil Pollution Act required that liability limits be adjusted above the limits set forth in statute for significant increases in inflation, but such changes have never been made. Not making such adjustments between 1990 and 2006 potentially shifted an estimated \$39 million in costs from responsible parties to the Fund.

Location and Cost of Major Oil Spills, 1990-2006



Source: GAO.

Contents

Letter		1
	Results in Brief	4
	Background	6
	Oil Spills Costing More than \$1 Million Occurred Infrequently Since 1990, but Estimated Costs Total \$860 Million to \$1.1 Billion	15
	Key Factors Affect Oil Spill Costs in Unique Ways	20
	Fund Has Been Able to Cover Costs Not Paid by Responsible Parties, but Risks Remain	28
	Conclusions	34
	Recommendations for Executive Action	35
	Agency Comments and Our Evaluation	35
Appendix I	Scope and Methodology	38
	Overview	38
	Our Categorization of Oil Spill Costs	38
	Available Data	39
	Universe of Major Oil Spills	41
	Data Analysis and Case Studies	42
Appendix II	Comments from the Department of Homeland Security	44
Appendix III	GAO Contact and Staff Acknowledgments	46
Tables		
	Table 1: Types of OPA-Compensable Removal Costs and Damages	12
	Table 2: Description of Different Oil Types	25
	Table 3: Comparison of Limits of Liability as Established in OPA (1990) and the Coast Guard and Maritime Transportation Act (2006)	30
Figures		
	Figure 1: Description of Vessel Types and Current Limits of Liability	8

Figure 2: Oil Spill Liability Trust Fund Expenditures, Fiscal Years, 1990-2006	9
Figure 3: Oil Spill Liability Trust Fund Balance, Fiscal Years 1993-2006	10
Figure 4: Number of Major Oil Spills, by Year, 1990-2006	17
Figure 5: Location and Cost of Major Oil Spills, 1990-2006	18
Figure 6: Average per Spill Costs of Major Oil Spills, by Year, 1990-2006	20
Figure 7: Average per Spill Cost of Major Oil Spills, by Location, 1990-2006	23
Figure 8: Average per Spill Costs of Major Oil Spills, by Time of Year, 1990-2006	24
Figure 9: Average per Spill Costs of Major Oil Spills by Type of Oil, 1990-2006	26
Figure 10: Average Spill Costs and Limits of Liability for Major Oil Spill Vessels, 1990-2006	31

Abbreviations

Commerce	Department of Commerce
DOI	Department of the Interior
EPA	Environmental Protection Agency
Fund	Oil Spill Liability Trust Fund
FWS	U.S. Fish and Wildlife Service
NPFC	National Pollution Funds Center
NOAA	National Oceanographic and Atmospheric Administration
OPA	Oil Pollution Act of 1990

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, DC 20548

September 7, 2007

The Honorable Daniel K. Inouye
Chairman
The Honorable Ted Stevens
Vice Chairman
Committee on Commerce, Science,
and Transportation
United States Senate

The Honorable James L. Oberstar
Chairman
The Honorable John L. Mica
Ranking Republican Member
Committee on Transportation and Infrastructure
House of Representatives

The potential for an oil spill exists daily across coastal and inland waters of the United States. In 2005, for example, oil tankers transported over half of the crude oil that entered the country, and often, barges move petroleum products to the markets where they are used. The potential for spills also extends well beyond vessels involved in the petroleum industry. Cargo, fishing, and other types of vessels also carry substantial fuel reserves. Accidents, groundings, or collisions can release this fuel and create substantial damage. Spills can be expensive, with considerable costs to the federal government and the private sector. The most expensive spill in U.S. waters, the 1989 *Exxon Valdez* spill in Alaska, cost \$2.2 billion to clean up, according to ExxonMobil.¹ Less expensive but still significant spills have occurred since then. For example, in 2004, the tanker *Athos I* spilled over 260,000 gallons of crude oil into the Delaware River; and, according to the Coast Guard, removal costs and damage claims from this spill have cost more than \$120 million to date.

The framework for addressing and paying for maritime oil spills is identified in the Oil Pollution Act of 1990 (OPA), which was enacted after the *Exxon Valdez* spill. OPA created a “polluter pays” system that places

¹The *Exxon Valdez* spill ranks as the 35th largest spill by spill volume for all spills since 1967 on the list of international tanker spills.

the primary burden of liability and the costs of oil spills on the vessel owner or operator who was responsible for the spill—that is, the responsible party—in return for financial limitations on that liability. Under this system, the responsible party assumes, up to a specified limit, the burden of paying for spill costs—which can include both *removal costs* (cleaning up the spill) and *damage claims* (restoring the environment and payment of compensation to parties that were economically harmed by the spill). Above the specified limit, the responsible party is no longer financially liable.² To pay costs above the limit of liability, as well as to pay costs when a responsible party does not pay or cannot be identified, OPA authorized the Oil Spill Liability Trust Fund (Fund), which is financed primarily from a per-barrel tax on petroleum products either produced in the United States or imported from other countries. The Fund is administered by the National Pollution Funds Center (NPFC) within the U.S. Coast Guard. The balance in the Fund—about \$600 million at the end of fiscal year 2006—is well below its yearly peak of \$1.2 billion in 2000. The decline in the Fund’s balance reflects an expiration of the barrel tax on petroleum in 1994. The tax was not reinstated until 2005.

While this system is well understood, the costs involved in responding to oil spills are less clear. Costs paid from the Fund are well documented, but the party responsible for the spill is not required to report the costs it incurs. As a result, private-sector and total costs for cleaning up spills and paying damages are largely unknown to the public. The lack of information about the cost of spills, the declining Fund balance, and significant claims made on the Fund—for spills in which the removal costs and damage claims have exceeded established OPA liability limits—have all raised concerns about the Fund’s long-term viability.

The Coast Guard and Maritime Transportation Act of 2006 directed us to conduct an assessment of the cost of response activities and claims related to oil spills from vessels that have occurred since January 1, 1990, for which the total costs and claims paid was at least \$1 million per spill. The mandate required that the report summarize the costs and claims for oil spills that have occurred since January 1, 1990, that total at least \$1 million per spill, and the source, if known, of each spill for each year. To fulfill this requirement, we examined—after consultation with committee staff—the following questions: (1) How many major oil spills have

²Responsible parties are liable without limit, however, if the oil discharge is the result of gross negligence, or a violation of federal operation, safety, and construction regulations.

occurred since 1990 and what have been the total costs of these spills? (2) What are the factors that affect major oil spill costs? and (3) What are the implications of major oil spill costs for the Oil Spill Liability Trust Fund?

To address these questions, we analyzed oil spill removal cost and claims data from NPFC, the National Oceanic and Atmospheric Administration's (NOAA) Damage Assessment, Remediation, and Restoration Program, and the Department of the Interior's (DOI) Natural Resource Damage Assessment and Restoration Program and the U.S. Fish and Wildlife Service (FWS). We also analyzed cost data obtained from vessel insurers and in contract with Environmental Research Consulting.³ We interviewed NPFC, NOAA, and state officials responsible for oil spill response, as well as industry experts and representatives from key industry associations and a vessel owner. In addition, we selected five oil spills on the basis of the spill's location, oil type, and spill volume for an in-depth review. During this review, we interviewed NPFC officials involved in spill response for all five spills, as well as representatives of private sector companies involved in the spill and spill response; and we conducted a file review of NPFC records of the federal oil spill removal activities and costs associated with spill cleanup. We also reviewed documentation from the NPFC regarding the Fund balance and vessels' limits of liability. This report focuses on oil spills that have occurred since the enactment of OPA—August 18, 1990—for which removal costs and damage claims exceeded \$1 million, and we refer to such spills as major oil spills.⁴ Because private-sector and total costs for cleaning up spills and paying damages are not centrally tracked and maintained, we obtained the best available cost data from a variety of sources, as previously described. We then combined the information that we collected from these various sources to develop cost estimates for the oil spills. However, because the cost data are somewhat imprecise and the data we collected vary somewhat by source, we present the cost estimates in ranges. The lower and higher bounds of the range represent the low and high end of cost

³Environmental Research Consulting is a private consulting firm that specializes in data analysis, environmental risk assessment, cost analyses, expert witness research and testimony, and development of comprehensive databases on oil and chemical spills in service to regulatory agencies, nongovernmental organizations, and industry.

⁴The National Oil and Hazardous Substances Pollution Contingency Plan states that any oil discharge that poses a substantial threat to public health or welfare of the United States or the environment or results in significant public concern shall be classified as a major spill. For the purposes of this report, however, major spills are defined as spills with total removal costs and damage claims that exceed \$1 million.

information we obtained. Based on reviews of data documentation, interviews with relevant officials, and tests for reasonableness, we determined that the data were sufficiently reliable for the purposes of our study. We conducted our review from July 2006 through August 2007 in accordance with generally accepted government auditing standards. More details regarding our scope and methodology can be found in appendix I.

Results in Brief

We estimate that since 1990, 51 oil spills have involved removal costs and damage claims totaling more than \$1 million. Collectively, we estimate that responsible parties and the Fund have paid between approximately \$860 million and \$1.1 billion to clean up these spills and compensate affected parties. Responsible parties paid between about 72 to 78 percent of these costs; the Fund has paid the remainder, or \$240 million. The overall cost for the 51 spills we identified could also increase over time because the claims adjudication processes can take many years to resolve. The 51 spills we identified, which constitute about 2 percent of all vessel spills since 1990, varied greatly from year to year in number and cost and showed no discernible trends in frequency or size.

Three main factors affect the costs of a spill, according to industry experts and agency officials and the studies we reviewed: the spill's location, the time of year it occurs, and the type of oil spilled.⁵ A remote location, for example, can increase the cost of a spill because of the additional expense involved in mounting a remote response. Similarly, a spill that occurs close to shore rather than further out at sea can become more expensive because it may involve the use of manual labor to remove oil from sensitive shoreline habitat. Time also has situation-specific effects, in that a spill that occurs at a particular time of year might involve a much greater cost than a spill occurring in the same place, but at a different time of year. For example, a spill occurring during fishing or tourist season might carry additional economic damage, or a spill occurring during a typically stormy season might prove more expensive because it is more difficult to clean up than one occurring during a season with generally calmer weather. The specific type of oil affects costs because the type of oil can affect the amount of cleanup needed and the amount of natural resource damage incurred. Light oils naturally dissipate and evaporate quickly—requiring

⁵Another potential factor is the size of the spill. Although a larger spill will require an extensive and expensive cleanup effort, officials reported that compared with the factors presented here, spill volume is less important to the costs of oil spill response.

minimal cleanup—but are highly toxic and create severe environmental impacts. Heavy oils do not evaporate, and therefore may require intensive structural and shoreline cleanup; and while they are less toxic than light oils, heavy oils can harm waterfowl and fur-bearing mammals through coating and ingestion. Each spill’s cost reflects the particular mix of these factors, and no factor is clearly predictive of the outcome. The 51 major spills we identified, for example, occurred on all U.S. coasts, across all seasons, and with all major types of oil; but each spill’s particular location, time, or product contributed to making it expensive.

To date, the Fund has been able to cover costs that responsible parties have not paid, but risks remain. In particular, the Fund is at risk from claims resulting from spills that significantly exceed responsible parties’ liability limits. The effect of such spills can be seen among the 51 major oil spills we identified: 10 of them exceeded the limit of liability, resulting in claims of about \$252 million on the Fund. In the Coast Guard and Maritime Transportation Act of 2006, the Congress increased these liability limits, but additional attention to the limits appears warranted. First, the liability limits for certain vessel types may be disproportionately low compared with their historic spill cost. For example, of the 51 major spills since 1990, 15 resulted from tank barges. The average cost for these 15 tank barge spills was about \$23 million—more than double the average new liability limit (\$10.3 million) for these vessels. The Coast Guard is responsible for adjusting limits of liability at least every 3 years for significant increases in inflation and for making recommendations to the Congress on whether adjustments to limits are necessary to help protect the Fund.⁶ In its January 2007 report examining oil spills that exceeded the limits of liability, the Coast Guard had similar findings on the adequacy of some of the new limits. However, the Coast Guard did not make explicit recommendations to the Congress on how the limits should be adjusted. Second, although OPA has required since 1990 that liability limits be adjusted every 3 years to account for significant increases in inflation, such adjustments have never been made. If such adjustments had been made between 1990 and 2006, claims against the Fund for the 51 major spills would have been reduced by 16 percent, which could have saved the Fund \$39 million.

⁶OPA has required since 1990 that the President—and through several delegations to the Secretaries of Transportation and Homeland Security and a redelegation to the Coast Guard in 2005—adjust liability limits at least every 3 years to account for significant increases in inflation. However, the executive branch has never made such adjustments.

We are recommending that the Commandant of the Coast Guard (1) determine whether and how liability limits should be changed, by vessel type, and make recommendations about these changes to the Congress and (2) adjust the limits of liability for vessels every 3 years to reflect changes in inflation, as appropriate. We provided a copy of this draft for review and comment to the Departments of Homeland Security (DHS), including the Coast Guard; Commerce; the Interior (DOI); and Transportation and the Environmental Protection Agency (EPA). In commenting on a draft of this report, DHS generally agreed with its contents and agreed with the recommendations. The written comments from DHS can be found in appendix II. The Departments of Commerce, Transportation, DOI, and EPA also provided technical clarifications, which we have incorporated in this report, as appropriate.

Background

The United States is the world's largest net importer of oil. In 2006, the United States had net imports of 12.2 million gallons of oil per day, more than twice as much as Japan and over three times as much as China, the world's next largest importers. The transport of oil into the United States occurs primarily by sea with ports throughout the United States receiving over 40,000 shipments of oil in 2005. In addition, vessels not transporting oil, such as cargo and freight vessels, fishing vessels, and passenger ships, often carry tens of thousands of gallons of fuel oil to power their engines. With over 100,000 commercial vessels navigating U.S. waters, oil spills are inevitable. Fortunately, however, they are relatively infrequent and are decreasing. While oil transport and maritime traffic have continued to increase, the total number of reported spills has generally declined each year since 1990.

OPA forms the foundation of U.S. maritime policy as it pertains to oil pollution. OPA was passed in 1990, following the 1989 *Exxon Valdez* spill in Alaska, which highlighted the need for greater federal oversight of maritime oil transport. OPA places the primary burden of liability and the costs of oil spills on the vessel owner and operator who was responsible for the spill.⁷ This "polluter pays" system provides a deterrent for vessel owners and operators who spill oil by requiring that they assume the burden of spill response, natural resource restoration, and compensation

⁷OPA applies to oil discharged from vessels or facilities into navigable waters of the United States and adjoining shorelines. OPA also covers substantial threats of discharge, even if an actual discharge does not occur.

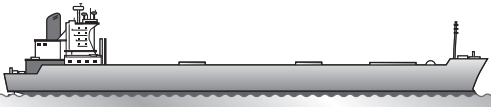

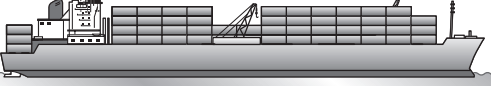

to those damaged by the spill, up to a specified limit of liability—which is the amount above which responsible parties are no longer financially liable under certain conditions. For example, if a vessel’s limit of liability is \$10 million and a spill resulted in \$12 million in costs, the responsible party only has to pay up to \$10 million—the Fund will pay for the remaining \$2 million.⁸ Current limits of liability, which vary by type of vessel and are determined by a vessel’s gross tonnage, were set by the Congress in 2006. The Coast Guard is responsible for adjusting limits for significant increases in inflation and for making recommendations to the Congress on whether adjustments are necessary to help protect the Fund.⁹ OPA also requires that vessel owners and operators must demonstrate their ability to pay for oil spill response up to their limit of liability. Specifically, by regulation, with few exceptions, owners and operators of vessels over 300 gross tons and any vessels that transship or transfer oil in the Exclusive Economic Zone are required to have a certificate of financial responsibility that demonstrates their ability to pay for oil spill response up to their limit of liability.¹⁰

⁸When responsible parties’ costs exceed their limit of liability and the limit is upheld—because there was no gross negligence or violations of federal regulations by the vessel owner or operator—the responsible party is entitled to file a claim on the Fund to be reimbursed for costs in excess of the limit. NPFC reviews the claim to determine which costs are OPA-compensable and the responsible party is reimbursed from the Fund.

⁹Title VI of the Coast Guard and Maritime Transportation Act of 2006. Public Law 109-241, § 603 (c)(3).

¹⁰33 C.F.R. §138. The U.S. Exclusive Economic Zone extends 200 nautical miles offshore.

Figure 1: Description of Vessel Types and Current Limits of Liability

Vessel type	Description	Limit of liability
 Oil tanker	An <i>oil tanker</i> is a ship designed to carry oil in large tanks.	<i>Single hull:</i> <ul style="list-style-type: none"> Vessels greater than 3,000 gross tons the greater of \$3,000 per gross ton or \$22 million. Vessels less than or equal to 3,000 gross tons the greater of \$3,000 per gross ton or \$6 million.
 Tank barge	A <i>tank barge</i> is a non-self propelled vessel that carries liquid, solid, or gaseous cargos in bulk in tanks primarily through rivers and inland waterways.	<i>Double hull:</i> <ul style="list-style-type: none"> Vessels greater than 3,000 gross tons the greater of \$1,900 per gross ton or \$16 million. Vessels less than or equal to 3,000 gross tons the greater of \$1,900 per gross ton or \$4 million.
 Cargo ship or freighter	A <i>cargo ship or freighter</i> is a vessel that transports non-oil goods and materials.	The greater of \$950 per gross ton or \$800,000.
 Fishing vessel	A <i>fishing vessel</i> is a ship that is used to catch fish for commercial use.	

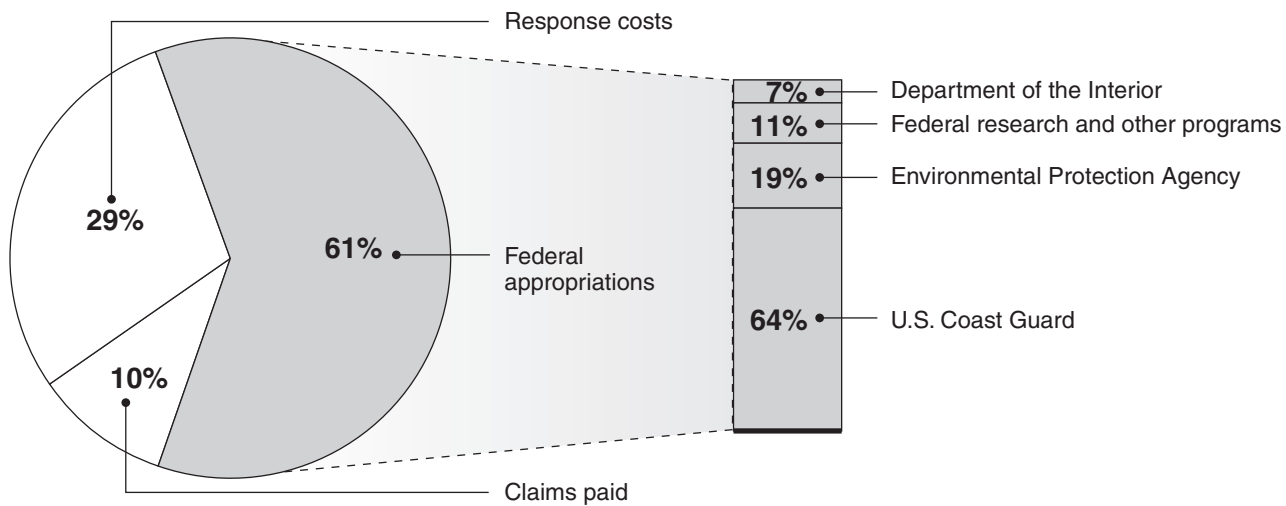
Source: GAO.

OPA consolidated the liability and compensation provisions of four prior federal oil pollution initiatives and their respective trust funds into the Oil Spill Liability Trust Fund and authorized the collection of revenue and the use of the money, with certain limitations, with regards to expenditures.¹¹ The Fund has two major components—the Principal Fund and the Emergency Fund. The Emergency Fund consists of \$50 million apportioned each year to fund spill response and the initiation of natural resource damage assessments, which provide the basis for determining the natural resource restoration needs that address the public’s loss and use of natural resources as a result of a spill. The Principal Fund provides the funds for third-party and natural resource damage claims, limit of liability claims, reimbursement of government agencies’ removal costs, and provides for oil spill related appropriations. A number of agencies—including the Coast Guard, EPA, and DOI—receive an annual appropriation from the Fund to cover administrative, operational,

¹¹The prior federal laws regarding oil pollution included the Federal Water Pollution Control Act, the Deepwater Port Act, the Trans-Alaska Pipeline System Authorization Act, and the Outer Continental Shelf Lands Act Amendments of 1978. The Congress created the Fund in 1986 but did not authorize collection of revenue or use of the money until it passed OPA in 1990.

personnel, and enforcement costs. From 1990 to 2006, these appropriations amounted to the Fund's largest expense (see fig. 2).

Figure 2: Oil Spill Liability Trust Fund Expenditures, Fiscal Years, 1990-2006



Source: GAO analysis of NPFC data.

Notes:

Federal research and other programs include appropriations to Department of Transportation, the Denali Commission, and the Oil Spill Recovery Institute. The Department of Treasury and the Army Corps of Engineers have received appropriations, but these account for about 0.10 percent of Fund expenditures.

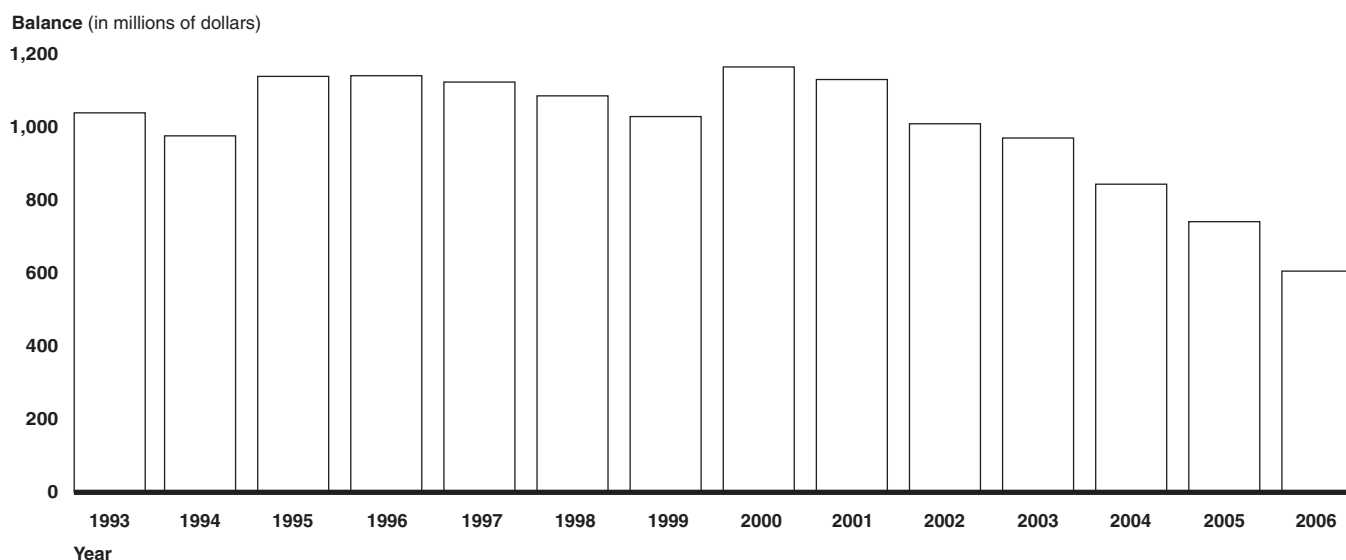
Percentages do not sum to 100 percent due to rounding.

The Fund's balance has generally declined from 1995 through 2006, and since fiscal year 2003, its balance has been less than the authorized limit on federal expenditures for the response to a single spill, which is currently set at \$1 billion (see fig. 3). The balance has declined, in part, because the Fund's main source of revenue—a \$0.05 per barrel tax on U.S. produced and imported oil—was not collected for most of the time between 1993 and 2006.¹² As a result, the Fund balance was \$604.4 million

¹²The tax expired in December 1994. Besides the barrel tax, the Fund also receives revenue in the form of interest on the Fund's principal and fines and penalties.

at the end of fiscal year 2006.¹³ The Energy Policy Act of 2005 reinstated the barrel tax beginning in April 2006.¹⁴ With the barrel tax once again in place, NPFC anticipates that the Fund will be able to cover its projected noncatastrophic liabilities.

Figure 3: Oil Spill Liability Trust Fund Balance, Fiscal Years 1993-2006



Source: GAO analysis of NPFC data.

Note: The Fund balance increase in 2000 was largely due to a transfer of \$181.8 million from the Trans-Alaska Pipeline Liability Fund.

OPA also defines the costs for which responsible parties are liable and for the costs for which the Fund is made available for compensation in the event that the responsible party does not pay or is not identified. These costs, or “OPA compensable” costs, are of two main types:

¹³Recent related GAO products include GAO, *U.S. Coast Guard National Pollution Funds Center: Improvements Are Needed in Internal Control Over Disbursements*, [GAO-04-340R](#) (Washington, D.C.: Jan. 13, 2004) and GAO, *U.S. Coast Guard National Pollution Funds Center: Claims Payment Process Was Functioning Effectively, but Additional Controls Are Needed to Reduce the Risk of Improper Payments*, [GAO-04-114R](#) (Washington, D.C.: Oct. 3, 2003).

¹⁴The Energy Policy Act of 2005. Public Law 109-58 §1361. The barrel tax is scheduled to be in place until 2014.

-
- *Removal costs:* Removal costs are incurred by the federal government or any other entity taking approved action to respond to, contain, and clean up the spill. For example, removal costs include the equipment used in the response—skimmers to pull oil from the water, booms to contain the oil, planes for aerial observation—as well as salaries and travel and lodging costs for responders.
 - *Damages caused by the oil spill:* OPA-compensable damages cover a wide range of both actual and potential adverse impacts from an oil spill, for which a claim may be made to either the responsible party or the Fund. (Table 1 provides a brief definition of OPA-compensable removal costs and damages.) Claims include natural resource damage claims filed by trustees, claims for uncompensated removal costs and third-party damage claims for lost or damaged property and lost profits, among other things.¹⁵

¹⁵OPA authorizes the United States, states, and Indian tribes to act on behalf of the public as natural resource trustees for natural resources under their respective trusteeship. Trustees often have information and technical expertise about the biological effects of pollution, as well as the location of sensitive species and habitats that can assist the federal on-scene coordinator in characterizing the nature and extent of site-related contamination and impacts. Federal Trustees include Commerce, DOI, the Departments of Agriculture, Defense, Energy, and other agencies authorized to manage or protect natural resources.

Table 1: Types of OPA-Compensable Removal Costs and Damages

Removal costs	
Removal of oil	Costs for the containment and removal of oil from water and shorelines including contract services (such as cleanup contractors and incident management support) and the equipment used for removal.
Disposal	Costs for the proper disposal of recovered oil and oily debris.
Personnel	Costs for government personnel and temporary government employees hired for the duration of the spill response, including costs for monitoring the activities of the responsible parties.
Prevention	Costs for the prevention or minimization of a substantial threat of an oil spill.
Damages	
Natural resources	Federal, state, foreign, or Indian tribe trustees can claim damages for injury to, or destruction of, and loss of, or loss of use of, natural resources, including the reasonable costs of assessing the damage.
Real or personal property	Damages for injury to, or economic losses resulting from destruction of, real or personal property, such as boats or docks.
Subsistence use	Damages for loss of subsistence use of natural resources, without regard to the ownership or management of the resources.
Government revenues, profits, and earning capacity	The federal, state, or local government can claim damages for the loss of taxes, royalties, rents, fees, or profits. Companies can claim damages for loss of profits or impairment of earning capacity.
Public services	States and local governments can recover costs for providing increased public services during or after an oil spill response, including protection from fire, safety, or health hazards.

Source: GAO summary of the Oil Pollution Act of 1990 (33 U.S.C. § 2702 (b)).

The Fund also covers costs when responsible parties cannot be located or do not pay their liabilities. NPFC encounters cases where the source of the spill, and therefore the responsible party is unknown, or where the responsible party does not have the ability to pay. In other cases, since the cost recovery can take a period of years, the responsible party may be bankrupt or dissolved. Based on our analysis of NPFC records, excluding spills with limit of liability claims, the recovery rate for costs from the 51 major oil spills since 1990 is 65 percent, which means that responsible parties have paid 65 percent of costs. The 35 percent of nonreimbursed costs to the Fund for these major spills have amounted to \$53.9 million.

Response to large oil spills is typically a cooperative effort between the public and private sector, and there are numerous players who participate in responding to and paying for oil spills. To manage the response effort, the responsible party, the Coast Guard, EPA, and the pertinent state and local agencies form the unified command, which implements and manages

the spill response.¹⁶ Beyond the response operations, there are other stakeholders, such as accountants who are involved in documenting and accounting for costs, and receiving and processing claims. In addition, insurers and underwriters provide financial backing to the responsible party. The players involved in responding to and/or paying for major spill response are as follows:¹⁷

- *Government agencies:* The lead federal authority, or Federal On-Scene Coordinator, in conducting a spill response is usually the nearest Coast Guard Sector and is headed by the Coast Guard Captain of the Port.¹⁸ The Federal On-Scene Coordinator directs response efforts and coordinates all other efforts at the scene of an oil spill. Additionally, the on-scene coordinator issues pollution removal funding authorizations—guarantees that the agency will receive reimbursement for performing response activities—to obtain services and assistance from other government agencies. Other federal agencies may also be involved. NOAA provides scientific support, monitoring and predicting the movement of oil, and conducting environmental assessments of the impacted area. The federal, state, and tribal trustees join together to perform a natural resource damage assessment, if necessary. Within the Coast Guard, the NPFC is responsible for disbursing funds to the Federal On-Scene Coordinator for oil spill removal activities and seeking reimbursement from responsible parties for federal costs. Additionally, regional governmental entities that are affected by the spill—both state and local—as well as tribal government officials or representatives may participate in the unified command and contribute to the response effort, which is paid for by the

¹⁶The Incident Command System (ICS) is a standardized response management system that is part of the National Interagency Incident Management System. The ICS is organizationally flexible so that it can expand and contract to accommodate spill responses of various sizes. The ICS typically consists of four sections: operations, planning, logistics, and finance/administration.

¹⁷For a full description of the organizational structure and procedures for preparing for and responding to discharges of oil, see The National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. § 300.

¹⁸Although this report focuses on vessels, and most vessel spills are in the Coast Guard zone of jurisdiction, EPA is the lead on-scene coordinator in the inland zone, and the Coast Guard is lead on-scene coordinator in the coastal zone.

responsible party or are reimbursed by the responsible party or the Fund.¹⁹

- *Responsible parties*: OPA stipulates that both the vessel owner and operator are ultimately liable for the costs of the spill and the cleanup effort. The Coast Guard has final determination on what actions must be taken in a spill response, and the responsible party may form part of the unified command—along with the Federal On-Scene Coordinator and pertinent state and local agencies—to manage the spill response. The responsible parties rely on other entities to evaluate the spill effects and the resulting compensation. Responsible parties hire environmental and scientific support staff, specialized claims adjustors to adjudicate third-party claims, public relations firms, and legal representation to file and defend limit of liability claims on the Fund, as well as serve as counsel throughout the spill response.
- *Qualified individuals*: Federal regulations require that vessels carrying oil as cargo have an incident response plan and, as part of the plan, they appoint a qualified individual who acts with full authority to obligate funds required to carry out response activities. The qualified individual acts as a liaison with the Federal On-Scene Coordinator and is responsible for activating the incident response plan.
- *Oil spill response organizations*: These organizations are private companies that perform oil spill cleanup, such as skimming and disposal of oil. Many of the companies have contractual agreements with responsible parties and the Coast Guard. The agreements, called basic ordering agreements, provide for prearranged pricing, response personnel, and equipment in the event of an oil spill.
- *Insurers*: Responsible parties often have multiple layers of primary and excess insurance coverage, which pays oil spill costs and claims. Pollution liability coverage for large vessels is often underwritten by not-for-profit mutual insurance organizations. The organizations act as a collective of ship owners, who insure themselves, at-cost. The primary insurers of commercial vessels in U.S. waters are the Water Quality Insurance Syndicate, an organization providing pollution liability insurance to over 40,000 vessels, and the International Group of P & I Clubs, 13 protection

¹⁹State governments can seek reimbursement directly from responsible parties or from the Fund. State officials in Alaska, California, New York, Rhode Island, Texas, and Washington said that state agencies recover almost all of their costs, either directly from responsible parties or from the NPFC. Officials in Texas said that the reimbursement rate for oil spill costs may be as high as 98 percent.

and indemnity organizations that provide insurance primarily to foreign-flagged large vessels.²⁰

Oil Spills Costing More than \$1 Million Occurred Infrequently Since 1990, but Estimated Costs Total \$860 Million to \$1.1 Billion

On the basis of information we were able to assemble about responsible parties' expenditures and payments from the Fund, we estimate that 51 oil spills involving removal costs and damage claims totaling \$1 million or more have occurred since 1990. In all, the Fund spent \$240 million on these spills, and the responsible parties themselves spent about \$620 million to \$840 million, for a total of \$860 million to \$1.1 billion. The number of spills and their costs varied from year to year and showed no discernable trends in either frequency or cost.

Less Than 2 Percent of Oil Spills Occurring Since 1990 Were Major Spills

Less than 2 percent of oil spills from vessels, since 1990, had removal costs and damage claims of \$1 million or greater. Each year, there are thousands of incident reports called into the National Response Center that claim oil or oil-like substances have been spilled from vessels sailing in coastal or inland waters in the United States²¹—but only a small percentage of these reported incidents are oil spills from vessels that received federal reimbursement for response efforts. Specifically, there have been 3,389 oil spills from vessels that sought reimbursement from the Fund for response

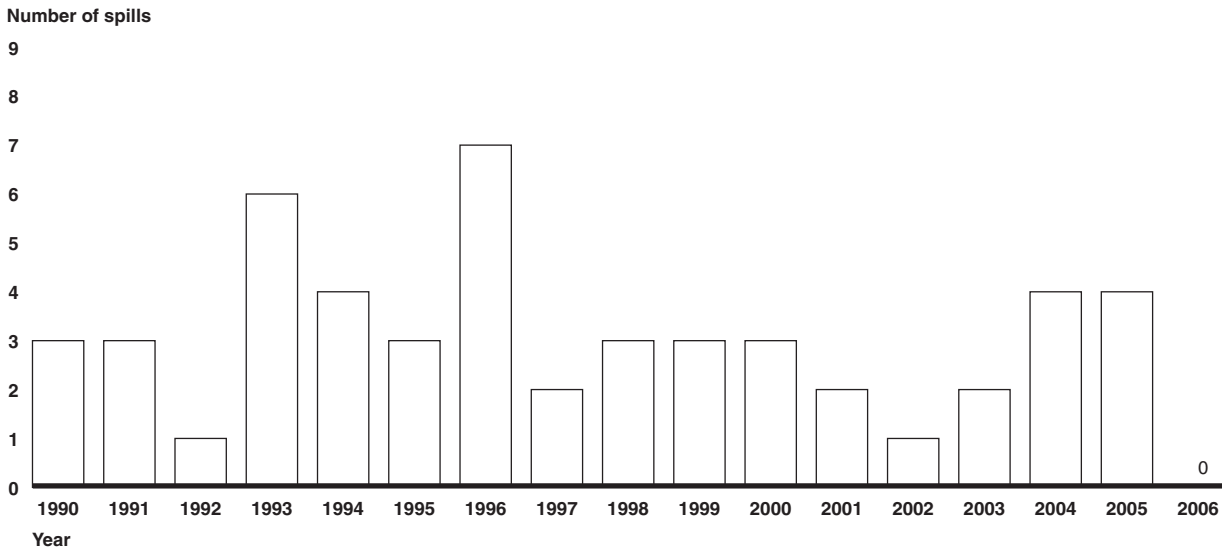
²⁰These 13 organizations are American Steamship Owners Mutual Protection and Indemnity Association, Inc.; Assuranceforeningen Gard; Assuranceforeningen Skuld; the Britannia Steam Ship Insurance Association Limited; the Japan Ship Owners' Mutual Protection & Indemnity Association; the London Steam-Ship Owners' Mutual Insurance Association Limited; the North of England Protection and Indemnity Association, Limited; the Shipowners' Mutual Protection and Indemnity Association (Luxembourg); the Standard Steamship Owners' Protection and Indemnity Association (Bermuda), Limited; the Steamship Mutual Underwriting Association (Bermuda), Limited; the Swedish Club; United Kingdom Mutual Steam Ship Assurance Association (Bermuda), Limited; and the West of England Ship Owners Mutual Insurance Association (Luxembourg).

²¹The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

efforts. Of these spills, we estimate that 51 were major oil spills.²² As figure 4 shows, there are no discernable trends in the number of major oil spills that occur each year. The highest number of spills was seven in 1996; the lowest number was zero in 2006.

²²We established the universe of major oil spills since 1990, based on available public and private sector data in consultation with NPFC, Environmental Research Consulting, and other industry experts. Additionally, we gathered removal costs and damage claims data from federal agencies involved in spill response, claims payments, and conducting natural resource damage assessments (Coast Guard, NOAA, DOI, and FWS); and to the best of our ability, we gathered private-sector cost data from vessel insurers, and in contract with Environmental Research Consulting. For more information on our scope and methodology, see appendix I.

Figure 4: Number of Major Oil Spills, by Year, 1990-2006

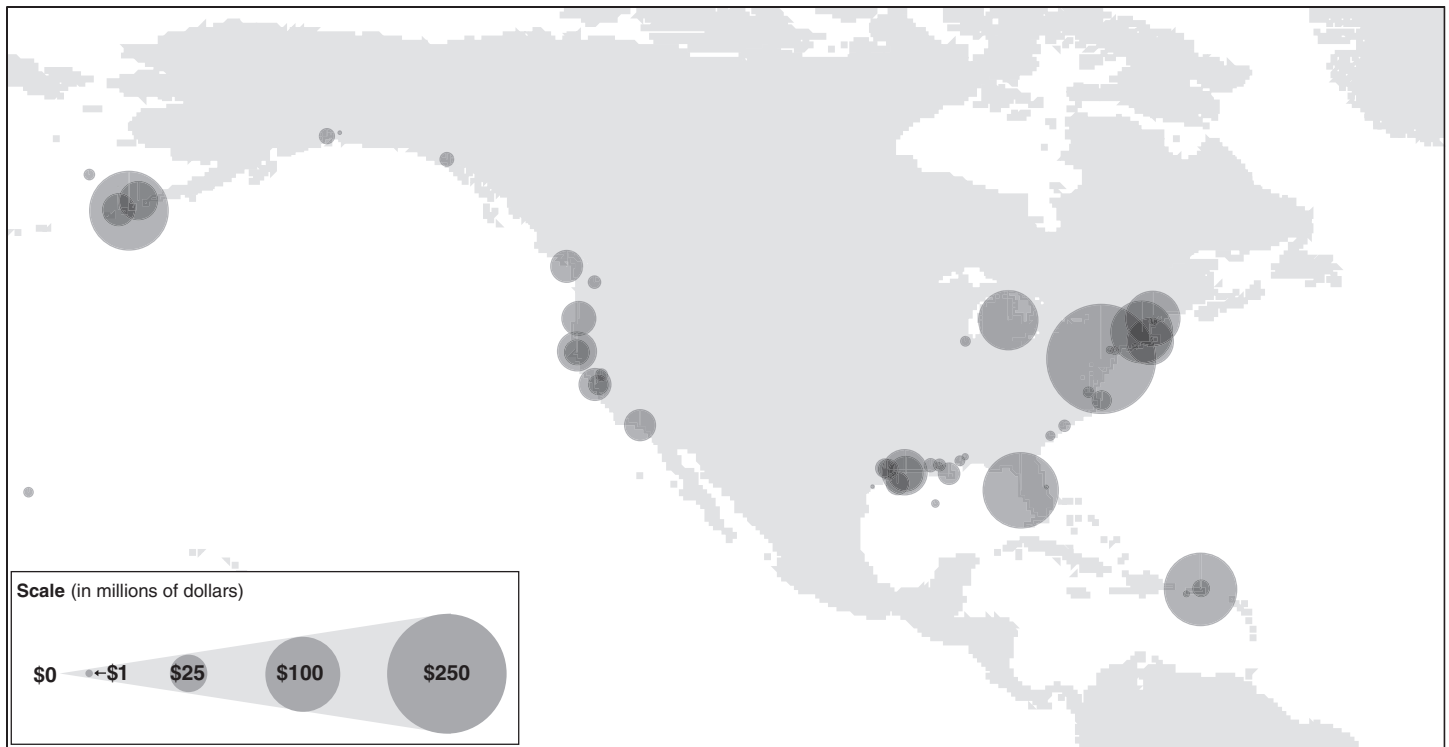


Source: GAO analysis of NPFC data.

Note: Because spill costs accrue over time, there may have been vessel spills in 2006 for which costs will exceed \$1 million in the future.

These 51 spills occurred in a variety of locations. As figure 5 shows, the spills occurred on the Atlantic, Gulf, and Pacific coasts and include spills both in open coastal waters and more confined waterways.

Figure 5: Location and Cost of Major Oil Spills, 1990-2006



Source: GAO.

Note: Due to space constraints, two major oil spills that occurred in the Pacific are not pictured on this map.

Total Cost of Major Spills Ranges from \$860 Million to \$1.1 Billion, and Responsible Parties Pay the Majority of Costs

The total cost of the 51 spills cannot be precisely determined, for several reasons:

- *Private-sector expenditures are not tracked:* The NPFC tracks federal removal costs expended by the Fund for Coast Guard and other federal agencies' spill response efforts, but it does not oversee costs incurred by the private sector. There is also no legal requirement in place that requires responsible parties to disclose costs incurred for responding to a spill.²³

²³Under regulation S-K, 17 C.F.R. 229, companies that are publicly traded must disclose any outstanding liabilities, including liabilities such as oil spill removal costs or claims made against the company for natural resource or third-party damages incurred. However, many vessel owners or operators are not publicly traded companies.

-
- *The various parties involved in covering these costs do not categorize them uniformly:* For example, one vessel insurer we spoke with separates total spill costs by removal costs (for immediate spill cleanup) and loss adjustment expenses, which contain all other expenses, including legal fees. In contrast, the NPFC tracks removal costs and damage claims in terms of the statutory definitions delineated in OPA.
 - *Spill costs are somewhat fluid and accrue over time:* In particular, the natural resource and third-party damage claims adjudication processes can take many years to complete. Moreover, it can take many months or years to determine the full effect of a spill to natural resources and to determine the costs and extent of the natural resource injury and the appropriate restoration needed to repair the damage. For example, natural resource damage claims were recently paid for a spill that occurred near Puerto Rico in 1991, over 16 years ago.

Because spill cost data are somewhat imprecise and the data we collected vary somewhat by source, the results described below will be reported in ranges, in which various data sources are combined together. The lower and higher bounds of the range represent the low and high end of cost information we obtained.

Our analysis of these 51 spills shows their total cost was approximately \$1 billion—ranging from \$860 million to \$1.1 billion. This amount breaks down by source as follows:

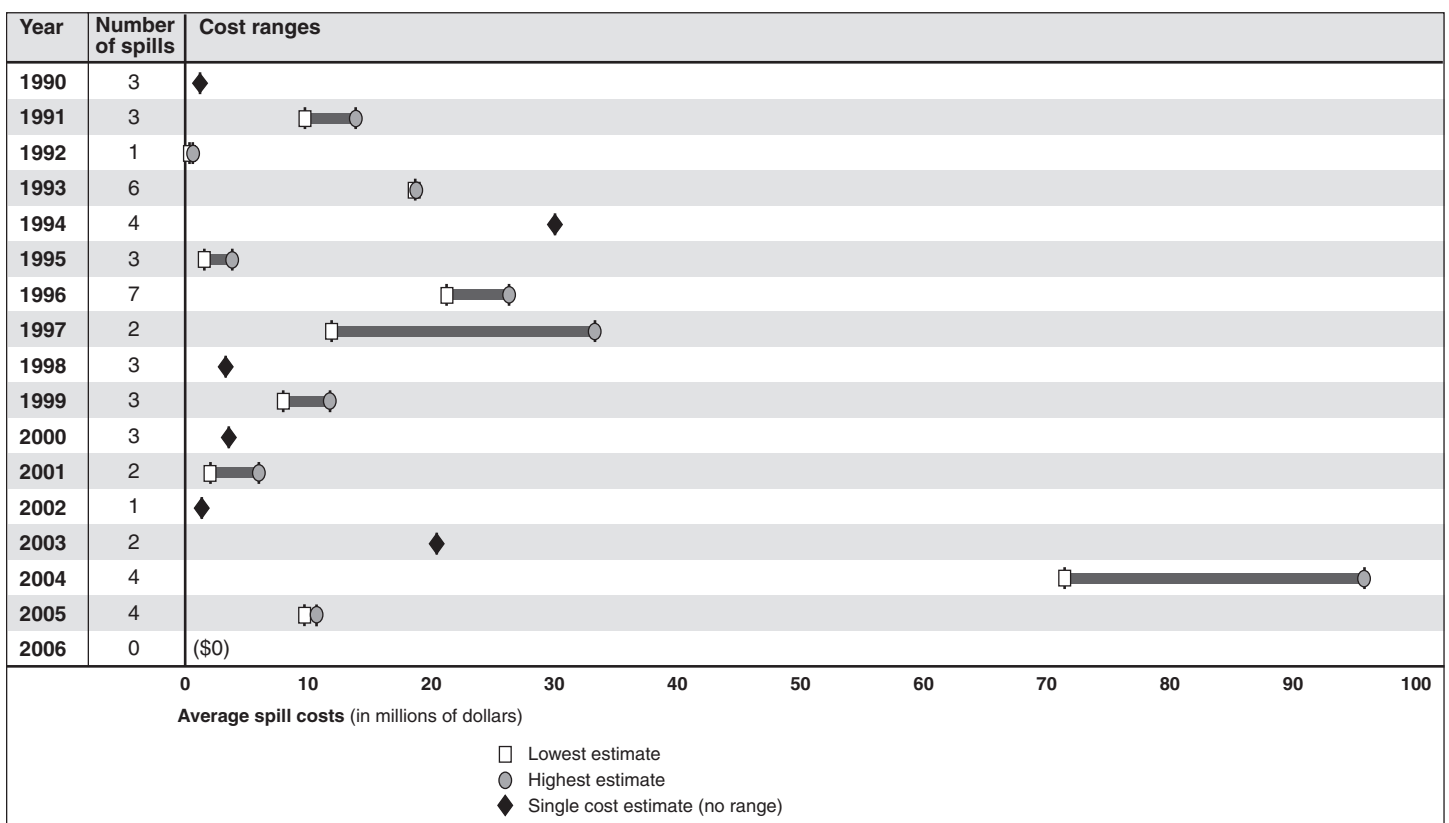
- *Amount paid out of the Fund:* Because the NPFC tracks and reports all Fund expenditures, the amount paid from the Fund can be reported as an actual amount, not an estimate. For these 51 spills, the Fund paid a total of \$239.5 million.
- *Amount paid by responsible parties:* Because of the lack of precise information about amounts paid by responsible parties and the differences in how they categorize their costs, this portion of the expenditures must be presented as an estimate. Based on the data we were able to obtain and analyze, responsible parties spent between \$620 million and \$840 million. Even at the low end of the range, this amount is nearly triple the expenditure from the Fund.

Costs Vary Widely by Spill and Year

Costs of these 51 spills varied widely by spill, and therefore, by year (see fig. 6). For example, 1994 and 2004 both had four spills during the year, but the average cost per spill in 1994 was about \$30 million, while the average cost per spill in 2004 was between \$71 million and \$96 million. Just as

there was no discernible trend in the frequency of these major spills, there is no discernible trend in their cost. Although the substantial increase in 2004 may look like an upward trend, 2004 may be an anomaly that reflects the unique character of two of the four spills that occurred that year. These two spills accounted for 98 percent of the year's costs.

Figure 6: Average per Spill Costs of Major Oil Spills, by Year, 1990-2006



Source: GAO.

Note: Because we are reporting costs from multiple sources of data, the data were combined and grouped into cost ranges. In some cases, however, there was only one cost estimate. In those cases, we present the amount as a single cost estimate.

Key Factors Affect Oil Spill Costs in Unique Ways

Location, time of year, and type of oil are key factors affecting oil spill costs, according to industry experts, agency officials, and our analysis of spills. Data on the 51 major spills show that spills occurred on all U.S. coasts, across all seasons, and for all oil types. In ways that are unique to each spill, however, each of these factors can affect the breadth and

difficulty of the response effort or the extent of damage that requires mitigation. For example, spills that occur in remote areas can make response difficult in terms of mobilizing responders and equipment, as well as complicating the logistics of removing oil—all of which can increase the costs. Officials also identified two other factors that may influence oil spill costs to a lesser extent—the effectiveness of the spill response and the level of public interest in a spill.

Location Impacts Costs in Different Ways

The location of a spill can have a large bearing on spill costs because it will determine the extent of response needed, as well as the degree of damage to the environment and local economies. According to state officials with whom we spoke and industry experts, there are three primary characteristics of location that affect costs:

- *Remoteness*: For spills that occur in remote areas, spill response can be particularly difficult in terms of mobilizing responders and equipment, and they can complicate the logistics of removing oil from the water—all of which can increase the costs of a spill. For example, a 2001 spill in Alaska’s Prince William Sound—which occurred approximately 40 miles from Valdez, AK—resulted in considerable removal costs after a fishing vessel hit a rock and sank to a depth of approximately 1,000 feet. Response took many days and several million dollars to contain the oil that was still in the vessel, but the effort was eventually abandoned because it was too difficult from that depth.²⁴
- *Proximity to shore*: There are also significant costs associated with spills that occur close to shore. Contamination of shoreline areas has a considerable bearing on the costs of spills as such spills can require manual labor to remove oil from the shoreline and sensitive habitats. The extent of damage is also affected by the specific shoreline location. For example, spills that occur in marshes and swamps with little water movement are likely to incur more severe impacts than flowing water. A September 2002 spill from a cargo vessel in the Cooper River near the harbor in Charleston, SC, spread oil across 30 miles of a variety of shoreline types. The spill resulted in the oiling of a number of shorebirds and a temporary disruption to recreational shrimp-baiting in area waters,

²⁴Officials from the state of Alaska told us that although costs to mobilize crews and equipment to respond to spills in Alaska are generally higher due to its remote nature, in this case, response crews were already nearby responding to a previous spill, which resulted in mobilization and equipment costs that were lower than would have been expected.

among other things. As of July 2007, a settlement for natural resource damages associated with the spill was still pending.

- *Proximity to economic centers:* Spills that occur in the proximity of economic centers can also result in increased costs when local services are disrupted. A spill near a port can interrupt the flow of goods, necessitating an expeditious response in order to resume business activities, which could increase removal costs. Additionally, spills that disrupt economic activities can result in expensive third-party damage claims. For example, after approximately 250,000 gallons of oil spilled from a tanker in the Delaware River in 2004, a large nuclear plant in the vicinity was forced to suspend activity for more than a week. The plant is seeking reimbursement for \$57 million in lost profits.²⁵

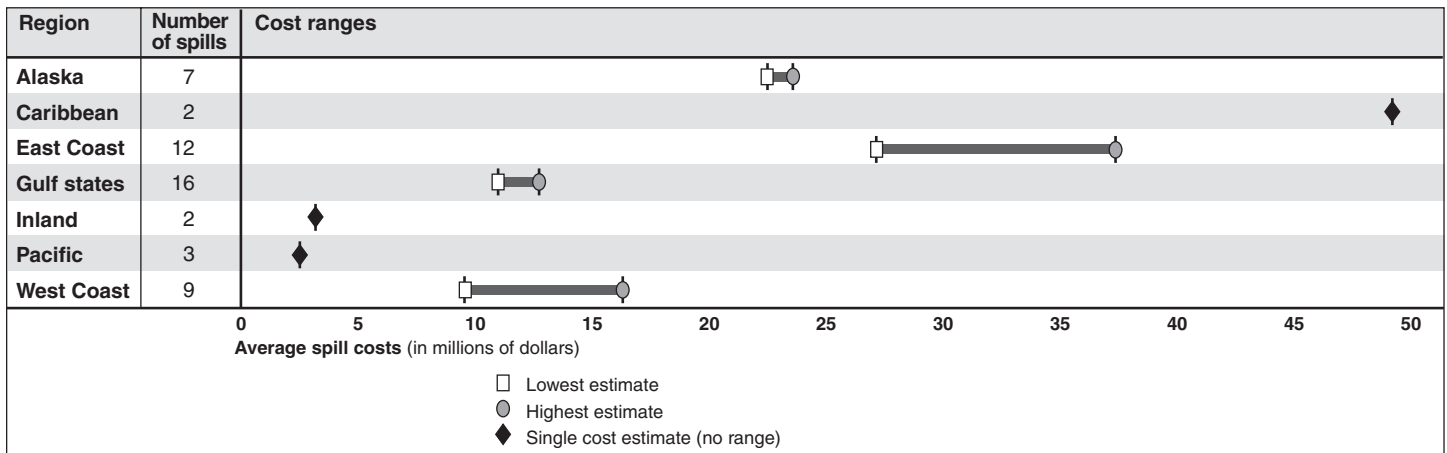
Overall, for the 51 major oil spills, location had the greatest effect on costs for spills that occurred in the waters of the Caribbean, followed by the East Coast, Alaska, and the Gulf states.²⁶ (See fig. 7). The range of average per spill costs for the spills that occurred in the East Coast locations ranged from about \$27 million to over \$37 million, higher than the average costs in any other region besides the two spills in Caribbean. The high spill costs in the East Coast locations were caused by several spills in that geographic area that had considerably higher costs. Specifically, four of the eight most expensive spills occurred on the waters off the East Coast.²⁷

²⁵CRS: *Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Congress*, (Apr. 24, 2007). Testimony of Rear Admiral Thomas Gilmour (U.S. Coast Guard), in U.S. Congress, House Committee on Transportation and Infrastructure, Subcommittee on Coast Guard and Maritime Transportation, *Implementation of the Oil Pollution Act*, hearings, 109th Cong., 2nd sess., (Apr. 27, 2006).

²⁶For the purposes of this report, we used the following geographic classifications to group the major oil spills. Inland refers to spills that occurred on U.S. navigable waters within the continental United States; Pacific refers to spills that occurred in or around Hawaii, American Samoa, and Saipan; West Coast refers to spills that occurred along the coasts of California, Oregon, and Washington; East Coast refers to spills that occurred along the east coast of the United States, including Florida's Atlantic Coast; Caribbean refers to spills in U.S. territorial waters of the Caribbean Sea; Gulf States refers to spills that occurred along the coasts of the states bordering the Gulf of Mexico, including the Gulf Coast of Florida; and Alaska refers to spills that occurred in Alaskan coastal waters.

²⁷This does not mean that spills that occur on the East Coast will necessarily be more expensive. Rather, only among these 51 spills, the particular location of East Coast spills had a sizeable effect.

Figure 7: Average per Spill Cost of Major Oil Spills, by Location, 1990-2006



Source: GAO.

Note: Because we are reporting costs from multiple sources of data, the data were combined and grouped into cost ranges. In some cases, however, there was only one cost estimate. In those cases, we present the amount as a single cost estimate.

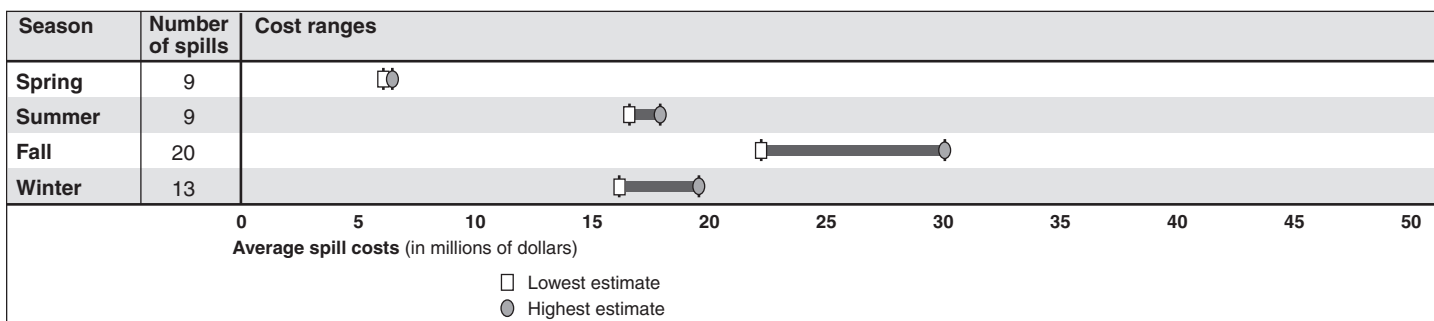
Time of Year Has Impact on Local Economies and Response Efforts

The time of year in which a spill occurs can also affect spill costs—in particular, impacting local economies and response efforts. According to several state and private-sector officials with whom we spoke, spills that disrupt seasonal events that are critical for local economies can result in considerable expenses. For example, spills in the spring months in areas of the country that rely on revenue from tourism may incur additional removal costs in order to expedite spill cleanup, or because there are stricter standards for cleanup, which increase the costs. This situation occurred in March of 1996 when a tank barge spilled approximately 176,000 gallons of fuel oil along the coast of Texas. Because the spill occurred during the annual spring break tourist season, the time frames for cleaning up the spill were truncated, and the standards of cleanliness were elevated. Both of these factors contributed to higher removal costs, according to state officials we interviewed.

The time of year in which a spill occurs also affects response efforts because of possible inclement weather conditions. For example, spills that occur during the winter months in areas of the country that experience harsh winter conditions can result in higher removal costs because of the increased difficulty in mobilizing equipment and personnel to respond to a spill in inclement weather. According to a state official knowledgeable about a January 1996 spill along the coast of Rhode Island, extremely cold and stormy weather made response efforts very difficult.

Although the 51 spills occurred during all seasons of the year, they were most prevalent in the fall and winter months, with 20 spills occurring in the fall and 13 spills during the winter, compared with 9 spills in the spring and 9 in the summer months.²⁸ On a per-spill basis, the cost range for the 51 spills was highest in the fall (see fig. 8).

Figure 8: Average per Spill Costs of Major Oil Spills, by Time of Year, 1990-2006



Source: GAO.

Note: Because we are reporting costs from multiple sources of data, the data were combined and grouped into cost ranges. In some cases, however, there was only one cost estimate. In those cases, we present the amount as a single cost estimate.

Type of Oil Spilled Impacts the Extent of the Response Effort and the Amount of Damage

The type of oil spilled affects the degree to which oil can be cleaned up and removed, as well as the nature of the natural resource damage caused by the spill—both of which can significantly impact the costs associated with an oil spill. The different types of oil can be grouped into four categories, each with its own set of impacts on spill response and the environment (see table 2). For example, lighter oils such as jet fuels, gasoline, and diesel dissipate quickly, but they are highly toxic, whereas heavier oils such as crude oils and other heavy petroleum products do not dissipate much and, while less toxic, can have severe environmental impacts.

²⁸We categorized the “times of year” as fall: September to November; winter: December to February; spring: March to May; and summer: June to August.

Table 2: Description of Different Oil Types

Oil type^a	Removal and response	Environmental impact
Very light oils (Jet fuels, gasoline)	Highly volatile (they will evaporate within 1-2 days). It is rarely possible to clean up the oil from such spills.	Highly toxic: Can cause severe impacts to shoreline resources.
Light oils (Diesel, No. 2 fuel oil, light crudes)	Moderately volatile, but will leave a residue after a few days. Cleanup can be very effective for these spills.	Moderately toxic: Has the potential to create long-term contamination of shoreline resources.
Medium oils (Most crude oils)	Some oil (about one-third) will evaporate in 24 hours. Cleanup most effective if conducted quickly.	Less toxic: Oil contamination of shoreline can be severe and long-term, and can have significant impacts to waterfowl and fur-bearing mammals.
Heavy oils (Heavy crude oils, No. 6 fuel oil, bunker C fuel)	Little or no oil will evaporate. Cleanup is difficult.	Less toxic: Heavy contamination of shoreline resources is likely, with severe impacts to waterfowl and fur-bearing mammals through coating and ingestion.

Source: NOAA.

^aIn general, oil types differ from each other in three ways: viscosity—oil’s resistance to flow, volatility—how quickly the oil evaporates in the air, and toxicity—how poisonous the oil is to people and other organisms.

Very light and light oils naturally dissipate and evaporate quickly, and as such, often require minimal cleanup. However, light oils that are highly toxic can result in severe impacts to the environment, particularly if conditions for evaporation are unfavorable. For instance, in 1996, a tank barge that was carrying home-heating oil grounded in the middle of a storm near Point Judith, Rhode Island, spilling approximately 828,000 gallons of heating oil (light oil). Although this oil might dissipate quickly under normal circumstances, heavy wave conditions caused an estimated 80 percent of the release to mix with water, with only about 12 percent evaporating and 10 percent staying on the surface of the water.²⁹ The natural resource damages alone were estimated at \$18 million, due to the death of approximately 9 million lobsters, 27 million clams and crabs, and over 4 million fish.

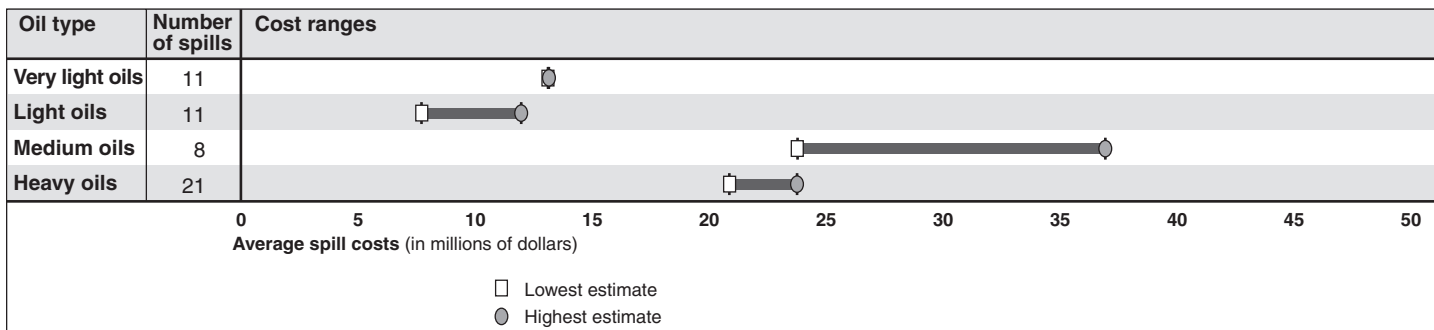
Medium and heavy oils do not evaporate much, even during favorable weather conditions, and thus, can result in significant contamination of shoreline areas. Medium and heavy oils have a high density and can blanket structures they come in contact with—boats and fishing gear, for

²⁹National Research Council of the National Academies, *Oil in the Sea III: Inputs, Fates, and Effects* (Washington, D.C.: 2003). Numbers do not add to 100 percent due to rounding.

example—as well as the shoreline, creating severe environmental impacts to these areas, and harming waterfowl and fur-bearing mammals through coating and ingestion. Additionally, heavy oils can sink, creating prolonged contamination of the sea bed and tar balls that sink to the ocean floor and scatter along beaches. These spills can require intensive shoreline and structural cleanup, which is time consuming and expensive. For example, in 1995, a tanker spilled approximately 38,000 gallons of heavy fuel oil into the Gulf of Mexico when it collided with another tanker as it prepared to lighten its oil to another ship.³⁰ Less than 1 percent (210 gallons) of the oil was recovered from the sea, and as a result, recovery efforts on the beaches of Matagorda and South Padre Islands were labor intensive, as hundreds of workers had to manually pick up tar balls with shovels. The total removal costs for the spill were estimated at \$7 million.

Spills involving heavy oil were the most prevalent among the 51 spills; 21 of the 51 major oil spills were from heavy oils. On a per-spill basis, costs among the 51 spills, varied by type of oil, but the cost ranges for medium and heavy oils were higher than light and very light oils (see fig. 9).

Figure 9: Average per Spill Costs of Major Oil Spills by Type of Oil, 1990-2006



Source: GAO.

Note: Because we are reporting costs from multiple sources of data, the data were combined and grouped into cost ranges. In some cases, however, there was only one cost estimate. In those cases, we present the amount as a single cost estimate.

Other Factors Also Affect Spill Costs

Although available evidence points to location, time of year, and type of oil spilled as key factors affecting spill costs, some industry experts reported

³⁰Lightering is the process of transferring oil at sea from a very large or ultra-large carrier to smaller tankers that are capable of entering the port.

that the effectiveness of the spill response and the level of the public interest can also impact the costs incurred during a spill.

- *Effectiveness of spill response:* Some private-sector officials stated that the effectiveness of spill response can impact the cost of cleanup. The longer it takes to assemble and conduct the spill response, the more likely it is that the oil will move with changing tides and currents and affect a greater area, which can increase costs. Some officials also stated that the level of experience of those involved in the incident command is critical to the effectiveness of spill response, and they can greatly affect spill costs. For example, poor decision making during a spill response could lead to the deployment of unnecessary response equipment, or worse, not enough equipment to respond to a spill. In particular, several private-sector officials with whom we spoke expressed concern that Coast Guard officials are increasingly inexperienced in handling spill response, in part because the Coast Guard's mission has been increased to include homeland security initiatives. Additionally, another noted that response companies, in general, have less experience in dealing with spill response and less familiarity with the local geography of the area affected by the spill, which can be critical to determining which spill response techniques are most effective in a given area. They attributed the limited experience to the overall decline in the number of spills in recent years. Further, one private-sector official noted that response companies can no longer afford to specialize in cleaning up spills alone, given the relatively low number of spills, and thus, the quality, effectiveness, and level of expertise and experience diminish over time.
- *Public interest:* Several officials with whom we spoke stated that level of public attention placed on a spill creates pressure on parties to take action and can increase costs. They also noted that the level of public interest can increase the standards of cleanliness expected, which may increase removal costs. For example, several officials noted that a spill along the Texas coast in February 1995 resulted in increased public attention because it occurred close to peak tourist season. In addition to raising the standards of cleanliness at the beaches to a much higher level than normal because of tourist season, certain response activities were completed for primarily aesthetic reasons, both of which increased the removal costs, according to state officials.

Fund Has Been Able to Cover Costs Not Paid by Responsible Parties, but Risks Remain

The Fund has been able to cover costs from major spills that responsible parties have not paid, but risks remain. Although liability limits were increased in 2006, the liability limits for certain vessel types, notably tank barges, may be disproportionately low relative to costs associated with such spills. There is also no assurance that vessel owners and operators are able to financially cover these new limits, because the Coast Guard has not yet issued regulations for satisfying financial responsibility requirements. In addition, although OPA calls for periodic increases in liability limits to account for significant increases in inflation, such increases have never been made. We estimate that not making such adjustments in the past potentially cost the Fund \$39 million between 1990 and 2006. Besides issues related to limits of liability, the Fund faces other potential drains on its resources, including ongoing claims from existing spills, claims related to already-sunken vessels that may begin to leak oil, and the threat of a catastrophic spill such as occurred with the *Exxon Valdez* in 1989.

Further Attention to Limits of Liability Is Needed

Major oil spills that exceed the vessel's limit of liability are infrequent, but their impact on the Fund could be significant. Limits of liability are the amount, under certain circumstances, above which responsible parties are no longer financially liable for spill removal costs and damage claims. If the responsible party's costs exceed the limit of liability, they can make a claim against the Fund for the amount above the limit. Of the 51 major oil spills that occurred since 1990, 10 spills resulted in limit of liability claims on the Fund.³¹ The limit of liability claims of these 10 spills ranged from less than \$1 million to over \$100 million, and totaled over \$252 million in claims on the Fund. Limit of liability claims will continue to have a pronounced effect on the Fund. NPFC estimates that 74 percent of claims under adjudication that were outstanding as of January 2007 were for spills in which the limit of liability had been exceeded. The amount of these claims under adjudication was \$217 million.³²

³¹Additional spills had costs in excess of the vessel's limit of liability, but either the limit was not upheld or no claim was filed by the responsible party.

³²This figure is based on all spills with claims on the Fund, currently under adjudication, not just the 51 major spills. U.S. Coast Guard, *Report on Oil Pollution Act Liability Limits*, (Jan. 5, 2007). Like our report, the Coast Guard's report was prepared in response to a provision in the Coast Guard and Maritime Transportation Act.

Some Recent Adjustments to Liability Limits Do Not Reflect the Cost of Major Spills

We identified three areas in which further attention to these liability limits appears warranted: the appropriateness of some current liability limits, the need to adjust limits periodically in the future to account for significant increases in inflation, and the need for updated regulations for ensuring vessel owners and operators are able to financially cover their new limits.

The Coast Guard and Maritime Transportation Act of 2006 significantly increased the limits of liability from the limits set by OPA in 1990. Both laws base the liability on a specified amount per gross ton of vessel volume, with different amounts for vessels that transport oil commodities (tankers and tank barges) than for vessels that carry oil as a fuel (such as cargo vessels, fishing vessels, and passenger ships). The 2006 act raised both the per-ton and the required minimum amounts, differentiating between vessels with a double hull, which helps prevent oil spills resulting from collision or grounding, and vessels without a double hull (see table 3 for a comparison of amounts by vessel category).³³ For example, the liability limit for single-hull vessels larger than 3,000 gross tons was increased from the greater of \$1,200 per gross ton or \$10 million to the greater of \$3,000 per gross ton or \$22 million.

³³OPA requires that all tank vessels (greater than 5,000 gross tons) constructed (or that undergo major conversions) under contracts awarded after June 30, 1990, operating in U.S. navigable waters must have double hulls. Of the 51 major oil spills, all 24 major spills from tank vessels (tankers and tank barges) involved single-hull vessels.

Table 3: Comparison of Limits of Liability as Established in OPA (1990) and the Coast Guard and Maritime Transportation Act (2006)

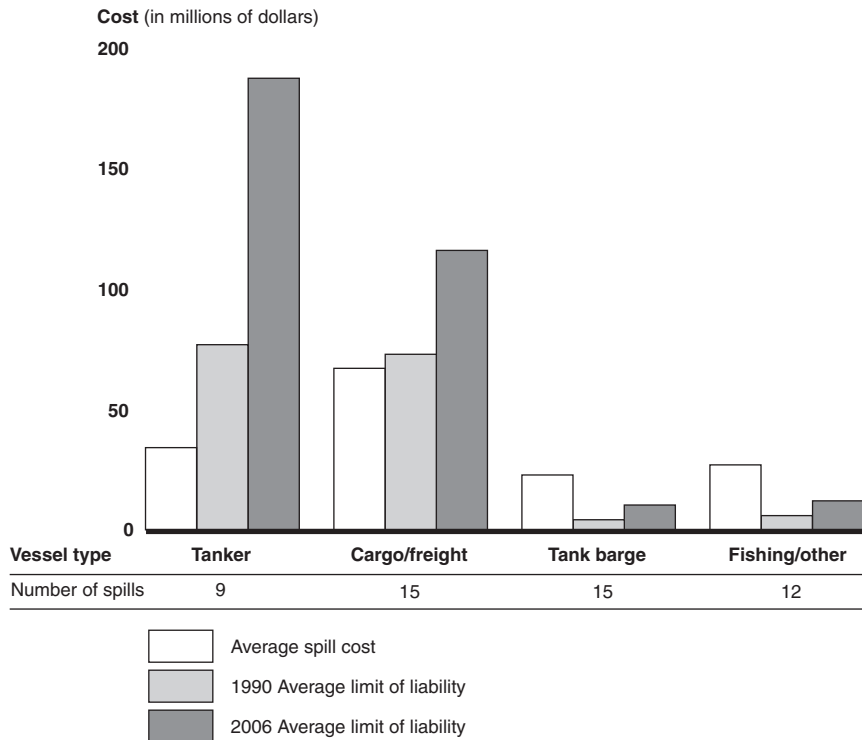
Vessel types	1990 Limit of liability	2006 Limit of liability
Single-hull tankers and tank barges	Vessels greater than 3,000 gross tons: the greater of \$1,200 per gross ton or \$10 million.	Vessels greater than 3,000 gross tons: the greater of \$3,000 per gross ton or \$22 million.
	Vessels less than or equal to 3,000 gross tons: the greater of \$1,200 per gross ton or \$2 million.	Vessels less than or equal to 3,000 gross tons: the greater of \$3,000 per gross ton or \$6 million.
	(Single and double-hull tankers and tank barges.)	
Double-hull tankers and tank barges	Vessels greater than 3,000 gross tons: the greater of \$1,200 per gross ton or \$10 million.	Vessels greater than 3,000 gross tons: the greater of \$1,900 per gross ton or \$16 million.
	Vessels less than or equal to 3,000 gross tons: the greater of \$1,200 per gross ton or \$2 million.	Vessels less than or equal to 3,000 gross tons: the greater of \$1,900 per gross ton or \$4 million.
	(Single and double-hull tankers and tank barges.)	
All other vessels: Cargo vessels, fishing vessels, passenger ships	The greater of \$600 per gross ton or \$500,000.	The greater of \$950 per gross ton or \$800,000.

Source: Coast Guard and Maritime Transportation Act of 2006.

Our analysis of the 51 spills showed that the average spill cost for some types of vessels, particularly tank barges, was higher than the limit of liability, including the new limits established in 2006. We separated the vessels involved in the 51 spills into four types (tankers, tank barges, cargo and freight ships, and other vessels such as fishing boats); determined the average spill costs for each type of vessel; and compared the costs with the average limit of liability for these same vessels under both the 1990 and 2006 limits. As figure 10 shows, the 15 tank barge spills and the 12 fishing/other vessel spills had average costs greater than both the 1990 and 2006 limits of liability. For example, for tank barges, the average cost of \$23 million was higher than the average limit of liability of \$4.1 million under the 1990 limits and \$10.3 million under the new 2006 limits. The nine spills involving tankers, by comparison, had average spill costs of \$34 million, which was considerably lower than the average limit of liability of \$77 million under the 1990 limits and \$187 million under the new 2006 limits.³⁴

³⁴The average limits of liability for the spills involving tankers are much greater than the average liability for tank barges because the liability is based on the volume of the vessel, and tankers generally have much higher volumes than tank barges.

Figure 10: Average Spill Costs and Limits of Liability for Major Oil Spill Vessels, 1990-2006



Source: GAO.

In a January 2007 report examining spills in which the limits of liability had been exceeded, the Coast Guard had similar findings on the adequacy of some of the new limits.³⁵ Based on an analysis of 40 spills in which costs had exceeded the responsible party's liability limit since 1991, the Coast Guard found that the Fund's responsibility would be greatest for spills involving tank barges, where the Fund would be responsible for paying 69 percent of costs. The Coast Guard concluded that increasing liability limits for tank barges and nontank vessels—cargo, freight, and fishing vessels—over 300 gross tons would positively impact the Fund balance. With regard to making specific adjustments, the Coast Guard said dividing costs equally between the responsible parties and the Fund was a reasonable

³⁵U.S. Coast Guard, *Report on Oil Pollution Act Liability Limits*, (Jan. 5, 2007).

standard to apply in determining the adequacy of liability limits.³⁶ However, the Coast Guard did not recommend explicit changes to achieve either that 50/50 standard or some other division of responsibility.

Liability Limits Have Not Been Adjusted for Inflation

Although OPA requires adjusting liability limits to account for significant increases in inflation, no adjustments to the limits were made between 1990 and 2006, when the Congress raised the limits in the Coast Guard and Maritime Transportation Act. During those years, the Consumer Price Index rose approximately 54 percent.³⁷ OPA requires the President, who has delegated responsibility to the Coast Guard, through the Secretary of Homeland Security, to issue regulations not less often than every 3 years to adjust the limits of liability to reflect significant increases in the Consumer Price Index.³⁸ We asked Coast Guard officials why no adjustments were made between 1990 and 2006. Coast Guard officials stated that they could not speculate on behalf of other agencies as to why no adjustments had been made prior to 2005 when the delegation to the Coast Guard was made.

The decision to leave limits unchanged had financial implications for the Fund. Raising the liability limits to account for inflation would have the effect of reducing payments from the Fund, because responsible parties would be responsible for paying costs up to the higher liability limit. Not making adjustments during this 16-year period thus had the effect of increasing the Fund's financial liability. Our analysis showed that if the 1990 liability limits had been adjusted for inflation during the 16-year period, claims against the Fund for the 51 major oil spills would have been reduced 16 percent, from \$252 million to \$213 million. This would have meant a savings of \$39 million for the Fund.

Certification of Compliance with the New Liability Limits Is Not in Place

Certificates of Financial Responsibility have not been adjusted to reflect the new liability limits. The Coast Guard requires Certificates of Financial Responsibility, with few exceptions, for vessels over 300 gross tons or any

³⁶We did not assess the reasonableness of adopting such a standard in determining liability limits.

³⁷The new limits, which increased an average of 125 percent for the 51 vessels involved in major oil spills, were substantially higher than the rise in inflation during the period.

³⁸Congress reiterated this requirement in the Coast Guard and Maritime Transportation Act by requiring that regulations be issued 3 years after the enactment of the act (July 11, 2006) and every 3 years afterward to adjust the limits of liability to reflect significant increases in the Consumer Price Index.

vessels that are lightering or transshipping oil in the Exclusive Economic Zone as a legal certification that vessel owners and operators have the financial resources to fund spill response up to the vessel's limit of liability. Currently, Certificate of Financial Responsibility requirements are consistent with the 1990 limits of liability and, therefore, there is no assurance that responsible parties have the financial resources to cover their increased liability.³⁹ The Coast Guard is currently making Certificates of Financial Responsibility consistent with current limits of liability. The Coast Guard plans to initiate a rule making to issue new Certificate of Financial Responsibility requirements. Coast Guard officials indicated their goal is to publish a Notice of Proposed Rulemaking by the end of 2007, but the officials said they could not be certain they would meet this goal.

Other Challenges Could Also Affect the Fund's Condition

The Fund also faces several other potential challenges that could affect its financial condition:

- *Additional claims could be made on spills that have already been cleaned up:* Natural resource damage claims can be made on the Fund for years after a spill has been cleaned up. The official natural resource damage assessment conducted by trustees can take years to complete, and once it is completed, claims can be submitted to the NPFCA for up to 3 years thereafter.⁴⁰ For example, the NPFCA recently received and paid a natural resource damage claim for a spill in U.S. waters in the Caribbean that occurred in 1991.
- *Costs and claims may occur on spills from previously sunken vessels that discharge oil in the future:* Previously sunken vessels that are submerged and in threat of discharging oil represent an ongoing liability to the Fund. There are over 1,000 sunken vessels that pose a threat of oil

³⁹According to the NPFCA, while liable parties are not required to establish an ability to pay at the higher amended limits until the certificate of financial responsibility rule is published as required by OPA, those parties are liable for the higher amounts.

⁴⁰Federal response costs for spills that resulted from hurricanes Katrina and Rita were paid from the Stafford Act Disaster Relief Funds. However, private parties can seek reimbursement from the Fund for cleanup costs and damages in the future. According to NPFCA, it is difficult to estimate future liabilities to the Fund as a result of hurricanes Katrina and Rita, but as of July 2007, there are no claims pending in connection with these hurricanes.

discharge.⁴¹ These potential spills are particularly problematic because, in many cases, there is no viable responsible party that would be liable for removal costs. Therefore, the full cost burden of oil spilled from these vessels would likely be paid by the Fund.

- *Spills may occur without an identifiable source and therefore, no responsible party:* Mystery spills also have a sustained impact on the Fund, because costs for spills without an identifiable source—and therefore no responsible party—may be paid out of the Fund. Although mystery spills are a concern, the total cost to the Fund from mystery spills was lower than the costs of known vessel spills in 2001 through 2004. Additionally, none of the 51 major oil spills was the result of a discharge from an unknown source.
- *A catastrophic spill could strain the Fund's resources:* Since the 1989 *Exxon Valdez* spill, which was the impetus for authorizing the Fund's usage, no oil spill has come close to matching its costs.⁴² Cleanup costs for the *Exxon Valdez* alone totaled about \$2.2 billion, according to the vessel's owner. By comparison, the 51 major oil spills since 1990 cost, in total, between \$860 million and \$1.1 billion. The Fund is currently authorized to pay out a maximum of \$1 billion on a single spill. Although the Fund has been successful thus far in covering costs that responsible parties did not pay, it may not be sufficient to pay such costs for a spill that has catastrophic consequences.

Conclusions

The “polluter pays” system established under OPA has been generally effective in ensuring that responsible parties pay the costs of responding to spills and compensating those affected. Given that responsible parties’ liability is not unlimited, the Fund remains an important source of funding for both response and damage compensation, and its viability is important. The Fund has been able to meet all of its obligations, helped in part by the absence of any spills of catastrophic size. This favorable result, however, is no guarantee of similar success in the future. Even moderate spills can

⁴¹Michel, J., D. Etkin, T. Gilbert, J. Waldron, C. Blocksidge, and R. Urban; 2005. *Potentially Polluting Wrecks in Marine Waters: An Issue Paper Prepared for the 2005 International Oil Spill Conference*.

⁴²The *ExxonValdez* only discharged about 20 percent of the oil it was carrying. A catastrophic spill from a vessel could result in costs that exceed those of the *Exxon Valdez*, particularly if the entire contents of a tanker were released in a ‘worst-case discharge’ scenario.

be very expensive, especially if they occur in sensitive locations or at certain times of the year.

Increases in some liability limits appear warranted to help ensure that the “polluter pays” principle is carried out in practice. For certain vessel types, such as tank barges, current liability limits appear disproportionately low relative to their historic spill costs. The Coast Guard has reached a similar conclusion but so far has stopped short of making explicit recommendations to the Congress about what the limits should be. Absent such recommendations, the Fund may continue to pay tens of millions of dollars for spills that exceed the responsible parties’ limits of liability. As the agency responsible for the Fund, it is important that the Coast Guard regularly assess whether and how the limits of liability for all vessel types should be adjusted—and recommends a course of action to the Congress on the adjustments that are warranted. Further, to date, liability limits have not been adjusted for significant changes in inflation. Consequently, the Fund was exposed to about \$39 million in liability claims for the 51 major spills between 1990 and 2006 that could have been saved if the limits had been adjusted for inflation. Authority to make such adjustments was specifically designated to the Coast Guard in 2005, and with this clear authority, it is important for the Coast Guard to periodically adjust the limits of liability for inflation, as well. Without such actions, oil spills with costs exceeding the responsible parties’ limits of liability will continue to place the Fund at risk.

Recommendations for Executive Action

To improve and sustain the balance of Oil Spill Liability Trust Fund, we recommend that the Commandant of the Coast Guard take the following two actions:

- Determine whether and how liability limits should be changed, by vessel type, and make specific recommendations about these changes to the Congress
- Adjust the limits of liability for vessels every 3 years to reflect significant changes in inflation, as appropriate.

Agency Comments and Our Evaluation

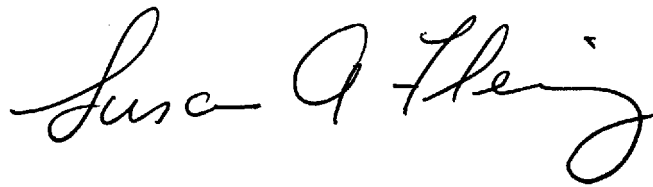
We provided a draft of this report to the Department of Homeland Security (DHS), including the Coast Guard and NPFC, for review and comment. DHS provided written comments, which are reprinted in appendix II. In its letter, DHS agreed with both recommendations. Regarding our recommendation that the Coast Guard review limits of liability by vessel type and make recommendations to the Congress, DHS stated that it has

met the intent of the recommendation by issuing the first of its annual reports, in January 2007, on limits of liability. As stated in our report, however, our concern is that the current annual report made no specific recommendations to the Congress regarding liability limit adjustments. Therefore, we continue to recommend that in its next annual report to the Congress on limits of liability, the Coast Guard make explicit recommendations, by vessel type, on how such limits should be adjusted. Regarding our recommendation that the Coast Guard adjust the limits of liability for vessels every 3 years to reflect significant changes in inflation, DHS stated that the Coast Guard will make adjustments to limits as appropriate. In response to other concerns that DHS expressed, we modified the report to clarify the Coast Guard's responsibility for adjusting liability limits in response to Consumer Price Index increases, and to deal with the Coast Guard's concern that the report not imply that responsible parties' liability is unlimited.

In addition, we provided a draft report to several other agencies—the Departments of Commerce, Transportation, DOI and EPA—for review and comment, because some of the information in the report was obtained from these agencies and related to their responsibilities. The agencies provided technical clarifications, which we have incorporated in this report, as appropriate.

We are sending copies of this report to the Departments of Homeland Security, including the Coast Guard; Transportation, Commerce, DOI, and EPA; and appropriate congressional committees. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you have any questions about this report, please contact me at flemings@gao.gov or (202) 512-4431. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.

A handwritten signature in black ink that reads "Susan A. Fleming". The signature is written in a cursive, flowing style.

Susan A. Fleming
Director, Physical Infrastructure Issues

Appendix I: Scope and Methodology

Overview

To address our objectives, we analyzed oil spill removal cost and claims data from the National Pollution Funds Center (NPFC); the National Oceanic and Atmospheric Administration's (NOAA) Damage Assessment, Remediation, and Restoration Program; and the Department of the Interior's (DOI) Natural Resource Damage Assessment and Restoration Program; and the U.S. Fish and Wildlife Service (FWS). We also analyzed data obtained from vessel insurers, and in contract with Environmental Research Consulting.¹ We interviewed NPFC and NOAA officials and state officials responsible for oil spill response, as well as industry experts and representatives from key industry associations and a vessel operator. In addition, we selected five oil spills that represented a variety of factors such as geography, oil type, and spill volume for an in-depth review. During this review, we interviewed NPFC officials involved in spill response for all five spills, as well as representatives of private-sector companies involved in the spill and spill response; we also conducted a file review of NPFC records of the federal response activities and costs associated with spill cleanup. We also reviewed documentation from the NPFC regarding the Fund balance and vessels' limits of liability. Based on reviews of data documentation, interviews with relevant officials, and tests for reasonableness, we determined that the data were sufficiently reliable for the purposes of our study. This report focuses on oil spills that have occurred since the enactment of OPA—August 18, 1990—for which removal costs and damage claims exceeded \$1 million, and we refer to such spills as major oil spills. We conducted our review from July 2006 through August 2007 in accordance with generally accepted government auditing standards.

Our Categorization of Oil Spill Costs

For the purposes of this review, we included removal (or response) costs and damage claims that are considered OPA compensable; that is, the OPA-stipulated reimbursable costs that are incurred for oil pollution removal activities when oil is discharged into the navigable waters, adjoining shorelines, and the Exclusive Economic Zone of the United States, as well as costs incurred to prevent or mitigate the substantial threat of such an oil discharge. OPA compensable removal costs include containment and removal oil from water and shorelines; prevention or minimization of a substantial threat of discharge; contract services (e.g.,

¹Environmental Research Consulting is a private consulting firm that specializes in data analysis, environmental risk assessment, cost analyses, expert witness research and testimony, and development of comprehensive databases on oil and chemical spills in service to regulatory agencies, nongovernmental organizations, and industry.

cleanup contractors, incident management support, and wildlife rehabilitation); equipment used in removals; chemical testing required to identify the type and source of oil; proper disposal of recovered oil and oily debris; costs for government personnel and temporary government employees hired for the duration of the spill response, including costs for monitoring the activities of responsible parties; completion of documentation; and identification of responsible parties. OPA compensable damage claims include uncompensated removal costs, damages to natural resources, damages to real or personal property, loss of subsistence use of natural resources, loss of profits or earning capacity, loss of government revenues, and increased cost of public services.²

Available Data

In order to present the best available data on spill costs, we gathered cost information from a number of sources, including federal agencies, vessel insurance companies and other private-sector companies involved in oil spill response, and Environmental Research Consulting—a private consultant.

- *Federal agencies:* We gathered federal data on OPA compensable oil spill removal costs from the NPFCC. Additionally, we gathered federal data on OPA compensable third-party damage claims from the NPFCC, and natural resource damage claims from NOAA’s Damage Assessment, Remediation, and Restoration Program, DOI’s Natural Resource Damage Assessment and Restoration Program, and FWS.
- *Insurers and other private-sector companies:* We collected the best available data for OPA-compensable removal costs and damage claims from private-sector sources, including vessel insurers such as the Water Quality Insurance Syndicate and the International Group of Protection and Indemnity Clubs; oil spill response organizations, including the Alaska Chadux Corporation and Moran Environmental Recovery; and a vessel operator. We made many attempts to contact and interview the responsible parties involved in the five spills we reviewed in-depth. One was willing to speak to GAO directly.
- *Environmental Research Consulting:* Environmental Research Consulting is a consulting firm that specializes in data analysis, environmental risk

²Additionally, a responsible party may also submit claims to the NPFCC if the total of all removal cost and damage claims is more than the responsible party’s statutory liability limit or if the spill was caused solely by a third party, an act of God, or an act of war.

assessment, cost analyses, and the development of comprehensive databases on oil/chemical spills and spill costs. Environmental Research Consulting supplied cost estimates based on reviews of court documents, published reports, interviews with responsible parties, and other parties involved with major oil spills. In addition, Environmental Research Consulting verified its data collection by relying exclusively on known documented costs, as opposed to estimated costs. Environmental Research Consulting, therefore, did not include general estimates of spill costs, which can be inaccurate.

A complete and accurate accounting of total oil spill costs for all oil spills is unknown, primarily because there is no uniform mechanism to track responsible party spill costs, and there are no requirements that private sector keep or maintain cost records. The NPFC tracks federal costs to the Coast Guard and other federal agencies, which are later reimbursed by the Fund, but does not oversee costs incurred by the private sector. There is also no legal requirement in place that requires responsible parties to disclose costs incurred for responding to a spill.³ We cannot be certain that all private-sector cost information we gathered included only OPA-compensable costs. However, we explicitly outline which costs are included in our review. Furthermore, private-sector data were obtained primarily from insurance companies, and one official told us that insurance coverage for pollution liability usually defines compensable losses in the same manner as OPA. For instance, while responsible parties incur costs ancillary to the spill response, such as public relations and legal fees, these costs are not generally paid by oil spill insurance policies. In addition, spill costs are somewhat fluid and accrue over time, making it sometimes difficult to account for the entire cost of a spill at a given time. In particular, the natural resource and third-party damage claims adjudication processes can take many years to complete.

Based on consultation with committee staff, we agreed to present the best available data for major oil spills between 1990 and 2006, and we determined that the data gathered were sufficiently reliable for the purposes of our study. Because of the imprecise nature of oil spill cost data, and the use of multiple sources of data, the data described in this report were combined and grouped into cost ranges. Using ranges of costs

³Under regulation S-K, 17 C.F.R. 229, companies that are publicly traded must disclose any outstanding liabilities, including liabilities such as oil spill removal costs or claims made against the company for natural resource or third-party damages incurred. However, many vessel owners or operators are not publicly traded companies.

to provide upper and lower estimates of total costs and damage claims allows us to report data on major oil spills from all reliable sources.

Universe of Major Oil Spills

To establish the universe of vessel spills that have exceeded \$1 million in total removal costs and damage claims since 1990, we used—in consultation with oil spill experts—a combination of readily available data and reasoned estimation. Since federal government cost data are available, we first established an estimate of the probable share of spill costs between the federal government and the private sector to determine what amount of federal costs might roughly indicate the total costs were over \$1 million. We interviewed Environmental Research Consulting, as well as agency officials from the NPFC and NOAA, to determine a reasonable estimated share of costs between the private and public sectors. The officials with whom we spoke estimated that in general, at least 90 percent of all spill costs are typically paid by the private sector. Based on that estimation, any spill with at least \$100,000 in federal oil spill removal costs and damage claims probably cost at least \$1 million in total—that is, 90 percent of the total costs being paid by the private sector, and the remaining 10 percent paid by the public sector. Therefore, we initially examined all spills with at least \$100,000 in federal oil spill removal costs and damage claims. We obtained these data on federal oil spill removal costs and damage claim payments from the NPFC.

Of 3,389 federally managed spills since 1990, there were approximately 184 spills where the federal costs exceeded \$100,000. From this group of spills, we limited our review to spills that occurred after the enactment of OPA on August 18, 1990. Additionally, we omitted (1) spill events in which costs were incurred by the federal government for measures to prevent a spill although no oil was actually spilled and (2) spills of fewer than 100 gallons, where, according to the NPFC, the likelihood of costs exceeding \$1 million was minimal.⁴ Lastly, in consultation with Environmental Research Consulting, we used estimated spill costs and additional research to determine spills that were unlikely to have had total costs and claims above \$1 million. Through this process, we concluded that since the enactment of OPA, 51 spills have had costs and claims that have exceeded \$1 million.

⁴The Coast Guard categorizes instances, in which no oil was actually spilled, as an oil spill when the Fund is used to pay for actions taken to prevent a spill from occurring.

Data Analysis and Case Studies

To assess the costs of oil spills based on various factors, we collected data from federal government, private sector, and a consultant, and combined the data into ranges. In addition to collecting data on removal costs and damage claims, we collected additional information on major oil spills. We categorized and grouped spill costs based on the vessel type, time of year, location, and oil type to look for discernable trends in costs based on these characteristics. We collected information on the limits of liability of the vessels at the time of the spill and the limits of liability for vessels after changes in liability limits in the Coast Guard and Maritime Transportation Act of 2006. In addition, to analyze the effects of inflation on the Fund and liability limits, using the Consumer Price Index, we calculated what the limits of liability would have been at the time of each spill if the OPA-stipulated limits had been adjusted for inflation. We used the Consumer Price Index as the basis for inflationary measures because OPA states that limits should be adjusted for “significant increases in the Consumer Price Index.”

In reporting spill cost data by year and by certain categories, we use ranges, including the best available data. For certain statistics, such as the public-sector/private-sector cost share, where costs are aggregated for all spills, we calculated percentages based on the mid-point of the cost ranges. To test the reliability of using the mid-point of the ranges, we performed a sensitivity test, analyzing the effects of using mid-point versus the top and bottom of the cost range. We determined that presenting the certain figures based on the mid-point of the ranges is reliable and provides the clearest representation of the data.

To supplement our data analysis and in order to determine the factors that affect the costs of major oil spills, we interviewed officials from the NPFCA, NOAA, and EPA regarding the factors that affect major oil spill costs. We also interviewed state officials responsible for oil spill response from Alaska, California, New York, Rhode Island, Texas, and Washington to determine the types of costs incurred by states when responding to oil spills and the factors that affect major oil spills costs. Additionally, we interviewed industry experts and a vessel insurer about the factors that affect major oil spill costs. To determine the implications of major oil spills on the Fund, we interviewed agency officials from the NPFCA and the Coast Guard as well as vessel insurers and industry experts to get the private sector’s perspective on the major oil spills’ impact on the Fund. In

addition, we reviewed recent Coast Guard reports to Congress on the status of the Fund and limits of liability.⁵

Lastly, we conducted in-depth reviews of five oil spills. The spills were selected to represent a variety of factors that potentially affect the costs of spills—geography, oil type, and spill volume. During this review, we interviewed the NPFC case officers who were involved with each spill, state agency officials; insurance companies; and private-sector companies, such as oil spill response organizations that were involved in the spill and the spill response. To the best of our ability, we attempted to interview the responsible parties involved in each spill. We were able to speak with one vessel operator. Our interviews were designed to gain perspectives on the response effort for each spill, the factors that contributed to the cost of the spill, and what actual costs were incurred by the responsible party. Finally, we also conducted a file review of NPFC records of federal response activities, removal costs, and damage claims made to the Fund for each of the five spills we reviewed in-depth.

We conducted our review from July 2006 through August 2007 in accordance with generally accepted government auditing standards, including standards for data reliability.

⁵U.S. Coast Guard, *Report on Oil Pollution Act Liability Limits*, (Jan. 5, 2007); U.S. Coast Guard, *Oil Spill Liability Trust Fund (OSLTF) Funding for Oil Spills*, (January 2006); U.S. Coast Guard, *Report on Implementation of the Oil Pollution Act of 1990*, (May 2005).

Appendix II: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528



**Homeland
Security**

August 20, 2007

Ms. Susan A. Fleming
Director, Physical Infrastructure Issues
441 G Street, NW
U.S. Government Accountability Office
Washington, DC 20548

Dear Ms. Fleming:

RE: Draft Report GAO-07-1085, Maritime Transportation: Major Oil Spills Occur Infrequently, but Risks to the Federal Oil Spill Fund Remain (GAO Job Code 544127)

The Department of Homeland Security and Coast Guard appreciate the opportunity to review and comment on the draft report referenced above. The Government Accountability Office (GAO) recommends that the Commandant of the Coast Guard take two actions to improve and sustain the balance of the Oil Spill Liability Trust Fund: (1) determine whether and how liability limits should be changed, by vessel type, and make specific recommendations about these changes to the Congress; and (2) adjust the limits of liability for vessels every 3 years to reflect changes in inflation, as appropriate.

Coast Guard agrees with the first recommendation and believes it has met the recommendation's intent to the extent that Coast Guard officials have already addressed liability limits in the January 2007 report to Congress titled U.S. Department of Homeland Security, United States Coast Guard, Report on Oil Pollution Act Liability Limits. Coast Guard personnel intend to update the report annually. In response to the second recommendation, Coast Guard will make adjustments in liability limits to reflect inflation as appropriate.

We have some general clarifying comments regarding GAO's conclusions. The "polluter pays" principle should be understood in the context of the broader Oil Pollution Act of 1990 (OPA) regime which provides for responsible party strict liability (regardless of fault). That liability is not unlimited. The Oil Spill Liability Trust Fund (Fund) is intended to pay where costs and damages exceed an applicable responsible party liability limit. Therefore any suggestion in the conclusions that limits of liability should be increased to ensure polluters always pay, rather than the Fund, would be a significant course change in the public policy purposes underlying OPA.

It should be understood that while any increase to liability limits would present a corresponding reduction to the exposure of the Fund, adjustments to liability limits alone cannot ensure the viability of the Fund given the broader picture of the Fund's expenses and revenues which were alluded to in GAO's draft report, but not addressed in any detail. The January 5, 2007 report to

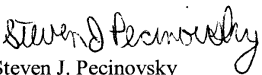
www.dhs.gov

Congress titled U.S. Department of Homeland Security, United States Coast Guard, Report on Oil Pollution Act Liability Limits provides a more complete picture of how limits of liability impact the Fund.

Coast Guard has specific concerns about statements in the draft report regarding adjustments in liability limits for inflation. The language [page 29, paragraph 1, final three sentences] suggests the Coast Guard views increases to limits for CPI increases as a policy decision for Congress. To clarify, the Coast Guard is proceeding to adjust certain OPA liability limits for CPI increases pursuant to OPA section 1004(d)(4) and is not delaying such adjustments pending further action by Congress. In addition, Coast Guard officials are not aware of any decision to leave limits unchanged as GAO implies.

Finally, GAO notes that the Coast Guard is in the process of making certificates of financial responsibility consistent with current limits of liability and plans to "initiate a rulemaking to issue new Certificate of Financial Responsibility requirements." While a regulatory project to adjust Certificate of Financial Responsibility limits is ongoing, at this time the Coast Guard cannot predict with any reasonable degree of certainty that the Notice of Proposed Rule Making will be published by the end of 2007. This remains a goal and Coast Guard and Department officials are working diligently to this end.

Sincerely,


Steven J. Pecinovsky
Director
Departmental GAO/OIG Liaison Office

MMcP

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Susan Fleming, (202) 512-4431 or flemings@gao.gov

Staff Acknowledgments

In addition to the contact named above, Nikki Clowers, Assistant Director; Michele Fejfar; Simon Galed; H. Brandon Haller; David Hooper; Anne Stevens; Stan Stenersen; and Susan Zimmerman made key contributions to this report.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Susan Becker, Acting Manager, Beckers@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548