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HEARING ON OIL SPILLS FROM NON-TANK VESSELS:
THREATS, RISKS, VULNERABILITIES

BEFORE THE
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
SUBCOMMITTEE ON OCEANS, ATMOSPHERE,
FISHERIES AND COAST GUARD
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Good Afternoon Chairman Cantwell, Ranking Member Snowe, and Members of the Committee. Thank you for the opportunity to join you today. I am Mary Glackin, Deputy Under Secretary of Commerce for Oceans and Atmosphere, within the National Oceanic and Atmospheric Administration (NOAA). I will be discussing NOAA's role in preventing oil spills, our role in spill response, and the importance of research and development for both. I will also highlight three examples of non-tanker vessel spills where NOAA assisted in the response efforts.

OVERVIEW

Our marine transportation system is an intrinsic part of the U.S. economy. According to a recent report from the Bureau of Transportation Statistics, our marine transportation system conveys as much as 78 percent of U.S. international merchandise trade by weight and 44 percent by value through our nation's ports each year, far more than the other transportation modes. On any given day, as part of this system, vessels that contain large quantities of fuel oil travel through our waterways to their destinations. These vessels include not only oil tankers but also container ships, fishing vessels, ferries, and other public and private vessels. Wherever these vessels travel, their daily transits pose a threat of oil spills. Over the past fifty years, ships have doubled in length, width, and draft, and seagoing commerce has tripled. The Department of Transportation projects that by 2020 the volume of marine trade will more than double, particularly in international container traffic..

Despite this increase in vessel traffic and size, the number of oil spills in U.S. coastal waters has declined in the two decades since the *Exxon Valdez* oil spill. However, the

Selendang Ayu, *Kuroshima*, and *SS Cape Mohican* vessel spills, along with the recent *Cosco Busan* incident, serve as reminders that oil spills still happen.

When oil spills into our coastal waters, it can harm people and the environment and cause widespread economic effects. The best remedy is to prevent oil spills by promoting safe marine transportation. Once a spill occurs, we must act quickly and effectively to mitigate any harmful effects and restore injured resources. To ensure a quick and effective response, we must continue to be prepared for spills by having adequate response capacity and capabilities on hand.

Response training and exercises are essential to maintaining capabilities. Together with the U.S. Coast Guard, the State of California, and the Department of the Interior, NOAA conducted a major field exercise called NOAA Safe Seas 2006 in the San Francisco Bay area in the summer of 2006. Safe Seas allowed us to train hundreds of regional staff and Beach Watch volunteers in various aspects of oil spill response, and to test the response protocols that would be used for a real spill. This exercise reinforces the value of our efforts to develop improved capabilities, maintain our capacity, and continue response-related research and development efforts for a timely and effective response. Due to this exercise, NOAA was able to integrate high frequency radar and other data from the Central and Northern California Integrated Ocean Observing System into pollution trajectory models. Local NOAA personnel and other responders received specific capability training that allowed them to function more efficiently within the Command Post and in the field during the response to the recent *Cosco Busan* oil spill.

NOAA'S ROLE IN PREVENTION

It is critical to both the nation's economy and the coastal environment that the marine transportation system continues to function safely and efficiently as its use grows. The most effective way to protect the marine environment is to prevent the maritime accident from ever occurring. NOAA plays a vital role in spill prevention by providing accurate and timely information to mariners.

Nautical charts, the mariner's most basic tool, are the 'road maps' that provide the mariner with the overall 'lay of the land' and delineate the fundamental information required for the vessel to safely navigate the coastline. NOAA is building and maintaining a suite of Electronic Navigational Charts (ENCs) to fuel electronic navigation systems that can also integrate a variety of environmental data. Funding to complete this suite, for full coverage of U.S. waters, is included in the FY 2008 President's Budget Request. NOAA is also updating the hydrographic data on its nautical charts by surveying with the latest full bottom coverage technologies. Much of the 3.4 million square nautical miles (nmi^2) depicted on these charts were collected prior to 1940 with obsolete methods. NOAA has prioritized 500,000 nmi^2 of this area as navigationally significant, and is able to survey approximately 3,000 nmi^2 a year using state-of-the-art technology. Not only do these updates show changes in coastal bathymetry, but more importantly, they can prevent maritime accidents by exposing previously undetected hazards to navigation. The data collected also support scientific

uses, spill response trajectory models, and other coastal and emergency management efforts.

Even the most accurate nautical chart cannot help the mariner if the vessel's location is not known with certainty. Determining a vessel's precise position has been a challenge to mariners for centuries. With the advent of the Global Positioning System (GPS), it has become possible for mariners to determine their position to within meters. NOAA's development and implementation of the Continuous Operating Reference System program enables even more precise applications of GPS.

Mariners have traditionally relied on astronomically predicted water level and current information to prevent groundings and anticipate where difficult maneuvers might be required. However, weather and other factors can cause actual conditions to deviate significantly from predictions, misleading the mariner, and increasing the risk of an accident. NOAA's Physical Oceanographic Real Time System (PORTS®) program provides real time oceanographic and meteorological data at key locations that provides mariners with a situational awareness of their operating environment that can help avoid accidents. The 14th PORTS® was just established in Mobile, Alabama and we are working with the USCG to integrate PORTS® data into its Automated Identification System. Two different NOAA-funded reports studying the economic impacts of PORTS® in Florida and Texas have documented that ports with established PORTS® have an over 50 percent reduction in groundings (both reports available at http://tidesandcurrents.noaa.gov/pub.html).

In addition to PORTS®, NOAA's National Marine Sanctuary Program has taken steps to address a number of vessel traffic measures with the International Maritime Organization, including offshore routing measures, reporting measures, Areas to be Avoided (ATBA's), Particularly Sensitive Sea Areas and No-Anchoring Areas. These areas, including the voluntary ATBA off the Olympic Coast of Washington State and the mandatory ATBA off the Florida Keys, have provided additional protection for the National Marine Sanctuaries. Off the Olympic Coast, NOAA is working with both the U.S. and Canadian Coast Guard to address vessels that have been identified as non-compliant; current compliance rates are greater than 97 percent over the last two years.

NOAA'S ROLE IN RESPONSE

Federal, state, and local agencies across the country call on NOAA's scientific support when an oil spill occurs. NOAA's suite of scientific products and services and the expertise of our personnel are critical in mitigating harm, providing critical information for allocation of response assets, restoring adversely affected natural resources, and making smarter response decisions through the application of science. Under the *Oil Pollution Act of 1990* (*OPA*), the *National Contingency Plan*, and the *National Marine Sanctuaries Act*, when an oil spill happens, NOAA is responsible for:

- Providing scientific support to the Federal On-Scene Coordinator, whether the FOSC is EPA or USCG;

- Representing the Department of Commerce on the National and Regional Response Teams;
- Working with our federal and state co-trustees to assess and restore injured natural resources and the services they provide;
- Fulfilling responsibilities to protect resources when a National Marine Sanctuary is affected; and
- Participating on the Interagency Coordinating Committee on Oil Pollution Research, which coordinates research and development efforts among industry, universities, and others.

During an oil spill, NOAA's Office of Response and Restoration provides scientific support services such as trajectory predictions, overflight observations, identification of sensitive environmental areas, shoreline surveys, toxicity assessment, and evaluation of cleanup alternatives. The Emergency Response Division is charged with developing all of NOAA's response models and tools, conducting planning in U.S. coastal areas and the Great Lakes, maintaining a 24/7 notification system, and responding to more than 100 hazardous material release notifications each year.

The NOAA Scientific Support Coordinator (SSC) is the key player in the NOAA effort to provide scientific support to an oil spill response. Nine SSCs are located around the country, in USCG Districts, to respond around the clock to any emergencies involving the release of oil or hazardous materials into the oceans or atmosphere. The SSC is supported by a diverse group of scientists in Seattle, WA, who are experienced in dealing with spill response. The SSC also coordinates access to all of NOAA's capabilities including: spot weather forecasts, emergency coastal survey and charting capabilities, aerial and satellite imagery, and real-time coastal ocean observation data to assist response efforts.

During the *Cosco Busan* oil spill, NOAA's Office of Response and Restoration deployed seven people to the spill site to carry out overflights, coordinate beach surveys, develop cleanup standards and protocols, evaluate risks and effects to natural resources, and otherwise support the Federal On-Scene Coordinator. In addition, NOAA provided four technical experts in trajectory modeling, toxicity assessment, and other specialties to support the response seven days a week from Seattle, WA. NOAA also provided over 30 personnel from the National Marine Sanctuary Program and coordinated 90 volunteers (Beach Watch) that were trained in the Safe Seas 2006 exercise. The Safe Seas exercise improved the capability of NOAA staff and volunteers to provide expertise to the Command Post in Liaison, the Environmental Unit, Wildlife Operations and the Joint Information Center as well as Natural Resource Damage Assessment Activities, in response to the recent *Cosco Busan* spill.

During a coastal oil spill event, NOAA is also responsible for providing real-time ocean and coastal observations to our Hazardous Materials (HAZMAT) teams and to the USCG to determine the location and trajectory of an oil spill. Currently, there is no easy or centralized access to the thousands of high frequency radar surface current measurements, which are critical for pollution tracking and response planning. NOAA

HAZMAT staff must contact individual radar operators for data. In addition, the data are not compatible from site to site and may have gaps in space and time. NOAA's Integrated Ocean Observing System program is working to increase availability and compatibility of these data, in partnership with regional data providers, through the development of common data standards and access points.

Effective spill response also depends on effective planning and preparation. NOAA promotes preparedness by working closely with regional response teams and local area committees to develop policies on dispersant use, best cleanup practices, communications, and ensuring access to science-related resources, data and expertise. In addition, NOAA enhances the state of readiness by conducting training for the response community to develop better response tools including trajectory models, fate models, and integrating improved weather and ocean observing systems data into spill trajectory forecasts.

NOAA'S ROLE IN DAMAGE ASSESSMENT AND RESTORATION

Oil spills may also diminish the services that natural resources provide us, such as fishing, boating, beach going, and wildlife viewing, as well as ecological services, such as providing habitat, nutrient cycling, and energy transfer through food webs.

As an agency with federal trustee responsibilities for many marine resources, NOAA seeks, pursuant to *OPA*, restoration of ocean and coastal resources that are harmed by an oil spill. NOAA's trust resources include: commercial and recreational fisheries, anadromous fish, selected endangered and threatened marine species, selected marine mammals, wetlands, mangroves, seagrass beds, coral reefs, and other coastal habitats, all resources associated with National Marine Sanctuaries and National Estuarine Research Reserves. Restoration is accomplished through the Natural Resource Damage Assessment (NRDA) process — by assessing injuries, developing a restoration plan that is subject to public review, and presenting a claim for restoration costs to the responsible party. If the responsible party does not pay the claim, the trustees may litigate or file a claim for restoration costs with the Oil Spill Liability Trust Fund.

For incidents occurring in, or creating a significant threat to, a National Marine Sanctuary, the *National Marine Sanctuaries Act* (*NMSA*) provides jurisdictional authority. The *NMSA* prohibits destroying, causing the loss of, or injuring any sanctuary resource managed under the statute or regulations for that sanctuary. Thus, during an oil spill or any other emergency response incident, NOAA's National Marine Sanctuary Program has responsibility under the *NMSA* and the *National Contingency Plan* for addressing threats and injuries to Sanctuary resources. Possible response roles for the Program include participating:

- As a jurisdictional authority providing resources in direct support of response operations;
- As a trustee agency assisting in response decisions in order to reduce the environmental consequences of the spill and response actions; and
- As a trustee participating in NRDA activities.

Natural resource trustees typically work together as a coordinated group, often with representatives of the responsible party in a cooperative process. NOAA scientists and economists work with other federal and state trustees and responsible parties to ensure that coastal and marine resources injured by oil spills are restored.

NOAA and other natural resource trustees are responsible for two types of restoration: primary and compensatory. To fulfill these responsibilities, they pursue restoration projects that satisfy the *OPA* goal of restoring natural resources and services to pre-incident conditions (primary restoration) and compensating the public for interim losses resulting from the injury (compensatory restoration).

NOAA scientists and economists provide the technical foundation for natural resource damage assessments and work with other trustees and responsible parties to restore resources injured by oil spills. To accomplish this effort NOAA experts collect data, conduct studies, and perform analyses needed to determine whether and to what degree coastal resources have sustained injury from oil spills. NOAA experts determine how best to restore injured resources and to ascertain the most appropriate restoration projects to compensate the public for associated lost services.

NOAA has long been interested in looking at alternative ways to expedite restoration and cut process costs for natural resource damage assessment. One alternative is a cooperative assessment in which the responsible party plays a major role with the natural resource trustees. Based on NOAA's successful experiences in cooperative assessments, NOAA is promoting this approach through national and regional dialogues. The intent is to expedite restoration, encourage innovative approaches, strengthen partnerships, and provide meaningful public involvement. Cooperative assessments offer industry the opportunity for a greater role and more control over the timing of restoration actions without undermining the natural resource trustee responsibilities. This approach also reduces damage assessment costs and the risk and costs associated with litigation.

NOAA'S OIL SPILL RESEARCH ROLE

Even though the number of large spills from vessels has decreased over the last decade, when a spill occurs, we still want to mount the best response that science and technology can provide. Oil spill research and development is critical to improving the effectiveness of oil spill preparedness, response, and restoration.

NOAA's oil spill research is conducted through NOAA's partnership with the Coastal Response Research Center (CRRC) at the University of New Hampshire, which was created in 2004. This partnership combines the strength of NOAA's spill response staff and the University of New Hampshire's research abilities and academic affiliations, and stimulates innovation in spill preparedness, response and damage assessment. In 2005, NOAA and CRRC supported a report published by the National Academy of Sciences entitled *Oil Spill Dispersants: Efficacy and Effects*. Since then NOAA, through CRRC, has funded studies to improve decision-making capabilities for dispersant use, and has

galvanized the national and international spill communities to collaborate on dispersant research to minimize duplication of efforts and maximize resources. NOAA and CRRC are working to improve predictive and response capabilities for oil spills in cold-water environments through national and international collaborations. Additionally, NOAA and CRRC continue to sponsor workshops to address pressing issues in oil spill response, including the use of dispersants, submerged oil, human dimensions of spills, habitat equivalency analysis metrics, and integrated modeling. NOAA and CRRC work with partner agencies and industry to examine the benefits/costs with i*n-situ* burning in coastal marshes, and communicate how to use the technology to minimize further injury to resources. NOAA also works with the U.S. Coast Guard and other members of the Regional Response Teams during Ecological Risk Assessments, where multiple stakeholders analyze environmental tradeoffs with the range of response options for spill events within a region. This information is then included into contingency plans, and informs research and technology agendas.

In the past several years NOAA's oil spill research has focused on improvements to spill modeling that are essential to predicting where oil will go in the environment; exposure and effects of the released oil on sensitive and economically-important species; methods to improve environmental recovery and restoration; and the human dimensions of spills (e.g., social issues, community effects, risk communication methods, valuation of natural resources, etc.) that affect decision-making.

EXAMPLES OF RESPONSE, RESTORATION, AND RESEARCH AT WORK

M/V Selendang Ayu

On December 7-8, 2004, the cargo vessel *M/V Selendang Ayu* lost power, ran aground and broke in half on the shore of Unalaska Island, Alaska, losing her 60,000 ton cargo of soybeans and spilling approximately 335,000 gallons of fuel oil. During the initial response, NOAA participated in aerial observations and mapping of floating and beached oil, as well as provided on-scene weather information, including the establishment of an emergency remote weather station and the provision of a dedicated on-scene meteorologist. To give an example of the difficult nature of the work involved, a heavy-lift helicopter was used to remove 140,000 gallons of fuel remaining on the wreck by transporting seventy, 2,000-gallon fuel canisters, one at a time, through the mountains, 25 miles to Dutch Harbor. Without accurate, up to date, spot-specific forecasts, it would not have been possible to safely conduct this complicated operation in such an extreme climate.

The SSC provided input on environmental issues to the Unified Command, including technical matters related to potential dispersant use. The SSC and Scientific Support Team reviewed satellite data and remote sensing information and assisted the USCG in prioritizing search areas for the flight recorder from a downed helicopter. NOAA participated in shoreline and aerial surveys and helped prepare a comprehensive map of shoreline contamination. NOAA also worked with the USCG, the Department of the Interior, and the State of Alaska to monitor cleanup operations and determine the potential trade-offs in using one cleanup technique versus another.

The Port of Dutch Harbor on Unalaska Island is the largest fishing port in the United States and the largest Alaskan native subsistence community in the Aleutians. NOAA, U.S. Fish and Wildlife Service, and the State of Alaska worked with the local community to address subsistence and seafood safety concerns. Any real or perceived contamination of fisheries products with oil had the potential to disrupt both the local community and worldwide markets. With a combination of trajectory analysis and experience from other large spills, NOAA was able to provide valuable assistance to the Seafood Safety Task Force.

NOAA continues to work with the other natural resource trustees (U.S. Fish and Wildlife Service and the State of Alaska) and the responsible party to conduct a natural resource damage assessment. The parties are assessing injury to natural resources and beginning to evaluate restoration alternatives. Public meetings already have been held to solicit local input on potential restoration alternatives, and NOAA is committed to providing the public with up to date information and meaningful opportunities for review and comment during the damage assessment and restoration planning process.

M/V Kuroshima

On November 26, 1997, the *M/V Kuroshima*, a 370-foot refrigerated cargo vessel owned by Kuroshima Shipping, S.A., broke away from its anchorage in Summer Bay on Unalaska Island, near Dutch Harbor, Alaska. While the vessel was attempting to move to a safer anchorage, winds reported to be in excess of 100 knots blew the freighter into Second Priest Rock, damaging several of the vessel's fuel tanks. The vessel subsequently ran aground on the shore of Summer Bay. Two crewmen were killed in the incident and approximately 39,000 gallons of heavy fuel oil were spilled.

The SSC provided input to the Unified Command as well as technical support in identifying the extent of the oiled areas. NOAA also provided shoreline mapping, trajectory and overflight information. NOAA led a multi-agency shoreline cleanup assessment team to survey the impacted areas and prepare detailed cleanup instructions. Although the response was curtailed several times due to poor weather conditions, the cleanup was officially completed in July 1998.

SS Cape Mohican

On October 28, 1996, the military reserve vessel *SS Cape Mohican* spilled an estimated 96,000 gallons of intermediate fuel oil (IFO 180) into a dry dock structure. Approximately 40,000 gallons of fuel escaped into the San Francisco Bay at Pier 70. The spill occurred during routine maintenance when an opened valve discharged stored fuel while oil was being transferred from a stabilization tank. The oil affected many sensitive and highly valued natural resources including the Gulf of the Farallones and Monterey Bay National Marine Sanctuaries, as well as historical parks and sites, beaches, and wetlands, and migratory birds under Department of the Interior trusteeship. The spill resulted in physical fouling of artificial structures (e.g., pier pilings, rip rap, and seawalls), sand and gravel beaches, rocky intertidal habitat, kelp beds, mudflats, and

wetlands. The spill also caused closures of recreation areas and oiling of marinas and vessels, including historic ships.

The SSC and NOAA Scientific Support Team provided technical support including trajectory and mapping information, resources at risk assessments, overflight observations and shoreline assessments. NOAA worked with the Department of the Interior and the State of California to develop a restoration plan addressing five resource categories impacted by the spill: birds, fisheries and water quality, wetland habitat, sandy shoreline and rocky intertidal habitats, and lost and diminished human use.

CONCLUSION

Thank you for the opportunity to discuss with you NOAA's important role in oil spill preparedness, response, and restoration. NOAA's expertise is critical to prevent further harm, restore adverse effects on natural resources, and aid planning and response decision-making associated with oil spills. I am happy to answer any questions that you may have.