

Oil Spill Prevention, Administration and Response (OSPAR) Fund

Annual Report FY 2012



Newport Bridge Barge Removal

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Introduction

The Oil Spill Prevention Administration and Response (OSPAR) Fund, RIGL Chapter 46-12.7, was created in 1996 (modifying a prior statute adopted in 1990) in the aftermath of the environmentally devastating North Cape oil spill. The fund was created, and is continually supported, by the assessment of a \$0.05 per barrel fee on petroleum products received at marine terminals in Rhode Island. The purpose of OSPAR is multi-faceted. It provides funds to promptly respond, contain and remediate oil spills. OSPAR funds are also utilized to maintain a state of emergency response readiness through responder training and equipment acquisition. The fund further provides, in the event of a significant release, funding for emergency loans to workers affected by a spill as well as damage compensation of legitimate claims that cannot otherwise be compensated by responsible parties or the federal government. The funds and the operations conducted in accordance with the statute are managed by the Rhode Island Department of Environmental Management (DEM).

Section 46-12.7-7 of the statute requires the DEM Director to submit an annual report to the legislature on the OSPAR Fund. This report summarizes the status and use of the fund for FY 2012.

Revenues & Expenditures – FY2012

The OSPAR account started FY 2012 with a balance forward of \$4,855,902. During FY 2012, the \$0.05 per barrel fee resulted in the collection of \$1,727,561 after the ten percent cost recovery fees. Personnel, operating and project expenditures for FY2012 totaled \$1,457,312 that included \$250,000 for PORTS Navigational System for Narragansett Bay as well as a transfer of \$161,111 to Coastal Resource Management Council (CRMC) for the Coastal and Estuarine Habitat Restoration Trust Fund. In addition, \$113,812 was transferred from the OSPAR account to the River, Bays and Watersheds Coordination Teams. A detailed review of expenditures is provided in the expenditure section of the report.

Figure 1 provides an overview of the OSPAR Fund revenues and expenditure activities since fiscal year 2002.

OSPAR FUND

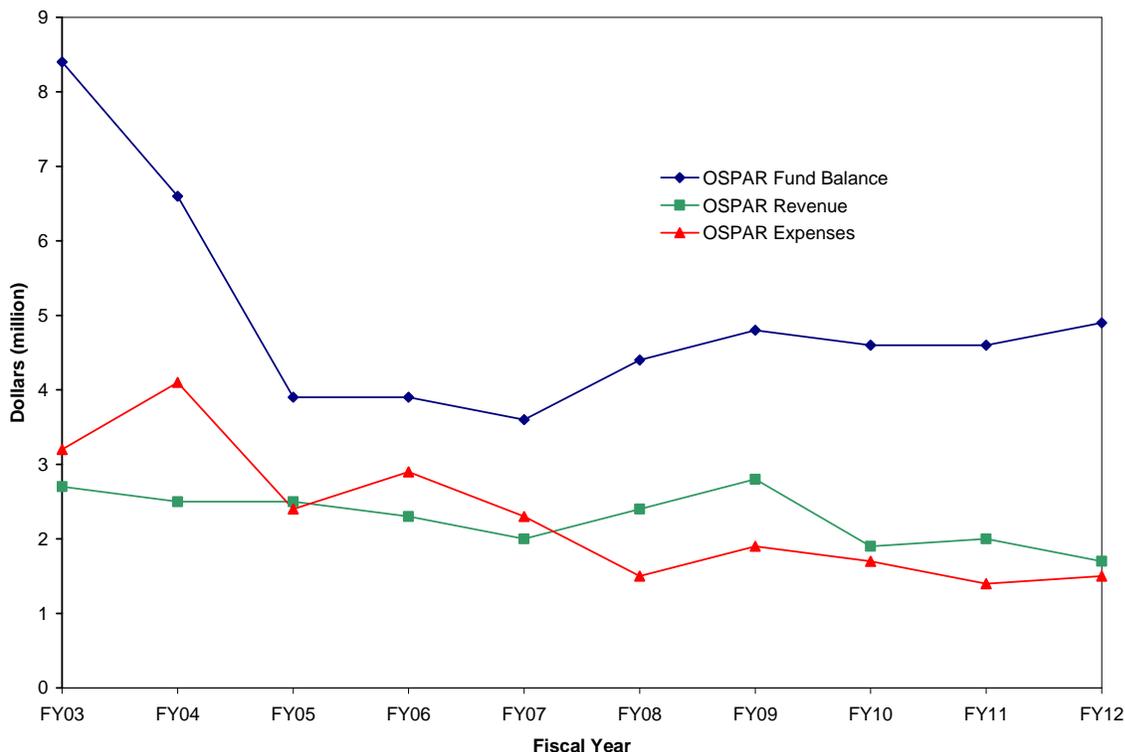


Figure 1. OSPAR Fund

The OSPAR fund reserve balance has not recovered since being utilized as state match for the Providence River dredging project in fiscal years 2003 and 2004. The project restored the shipping channel to the federally authorized dimensions of 40 foot depth and a channel width of 600 feet. Six million cubic yards of dredged material were removed during the project. The fiscal impact to OSPAR was 3.2 million dollars in FY2003 and 4.1 million dollars in FY2004.

Previously, net revenue, while relatively constant, had exhibited a declining trend until FY08. This is partially explained by an increase in cost recovery from 7 percent to 10 percent. In FY2012 the revenue and expenses have remained relatively constant.

ACTIVITIES– FY2012

Summary

With regard to pre-spill preparedness, the OSPAR Fund was used in FY2012 for personnel and operating expenses. Personnel costs assigned to the OSPAR Fund included the following: Office of Emergency Response (partial salary of Emergency Response Administrator and full salary of technical assistant) and partial salaries of four first responders; DEM GIS Supervisor (partial); staff from DEM Office of Waste Management.

These salary and benefit costs totaled \$738,945. Major operating expenses charged to the OSPAR Fund included: vehicle readiness and maintenance (\$171,063); emergency response equipment, cleanup services, maintenance and supplies (\$4,114); computer hardware, software, telecommunications and miscellaneous (\$23,766), Pilot Navigation System (\$250,000), Audubon Society Narragansett Bay National Estuarine Research Reserve Coastal Training Program (\$66,470) and Dawley Park building construction (\$206,592). These operating expenses totaled \$718,367.

In FY2012 the Office of Emergency Response, which operates as an all hazard response program and incorporates the oil spill prevention and response functions of DEM, continued to be extremely active responding to oil spills, hazardous material incidents and other state emergencies. There were 689 emergency response investigations undertaken by the Office during FY2012. The incidents comprised two primary categories, hazardous material responses and oil spills. Seventy-two percent of these responses, a total of 497 incidents, were related to oil spills.

Figure 2 tracks the number of emergency response activities for a ten year period. While there is some annual variation in the number of emergency responses, the trend of the data is now demonstrating a relatively constant average. Activities undertaken by the Department's emergency response team have, on average, been constant since 2001 with annual fluctuations. However, seaweed monitoring continues to be an issue placing ever increasing pressure on the limited available response resources. The downward slide in the last few fiscal years maybe due to the fact that seaweed* related responses have not been included in the tally since it became an issue in 2003.

* The seaweed also known as sea lettuce, or *Ulva Lactuca*, is green algae that grows near and below the low tide mark. Under normal conditions it is beneficial to the environment. However, under certain conditions that may include excessive nutrients and warmer water temperatures, the growth of sea lettuce explodes. When the seaweed dies, wind and ocean currents can push and keep the decaying seaweed to the shoreline where it becomes stranded in the shallow water and forms large green mats. As these mats decay they can produce hydrogen sulfide (H_2S), a gas with a foul or rotten egg odor. The decomposition of excessive sea lettuce in the Conimicut section of Warwick, the Still House Cove section of Cranston and the Riverside Terrace section of East Providence has resulted in the production of significant concentrations of H_2S gas. These episodic H_2S events create nuisance conditions and potential health concerns for those living in the area with compromised respiratory functions. Since the establishment of the program in 2003 several hundred cubic yards of sea lettuce have been removed from the environment and composted by the local cities impacted. From 2003 until 2006 the sea lettuce had been removed manually with OER personnel and prisoners. In 2006 the OER purchased a surf rake and John Deere tractor to more effectively remove the sea lettuce from the beaches, reducing the potential for the formation of H_2S gas. Under the auspices of the OER, two seasonal employees, an equipment operator and a technical support intern, work the beaches to remove the seaweed during the summer months. As a result, complaints have been addressed by the ongoing seaweed removal and continuous field monitoring but have not been included in the tally.

EMERGENCY RESPONSE ACTIVITIES

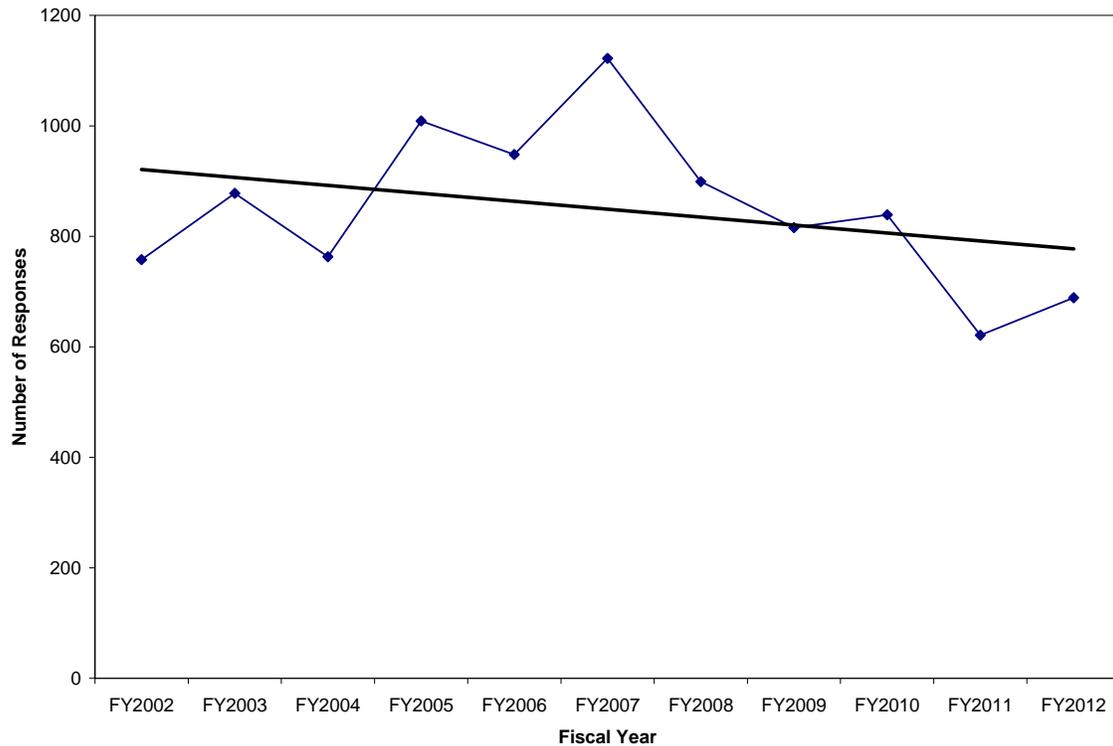


Figure 2 Response Activities

FY2012 EXPENDITURES

Personnel

- Partial salary and benefits of DEM Emergency Response Administrator
- Partial support for four other members of the DEM Emergency Response Team. All five personnel serve as first responders and are also responsible for administering the OSPAR Program both in terms of pre-spill readiness and post-spill response.
- A technical assistant is also part of the Emergency Response Office and the OSPAR program.
- Partial support of salary and benefits of DEM geographic information system (GIS) Supervisor.
This individual is responsible for maintaining a comprehensive internet mapping application for planning, assessment and response to oil spills or other environmental emergencies in RI marine waters. This individual is also responsible for developing and maintaining a complete data inventory on an internal network capable of supporting responders during an oil spill or other environmental emergency. In the event of a spill, the GIS Supervisor coordinates the collection and dissemination of spatial data documenting extent of spill, fish kills, etc. In the aftermath of a spill, support is also provided for natural resource damage assessments to aid in the collection of damages from responsible parties.
- Partial salaries and benefits for personnel from DEM Office of Waste Management.

Personnel Costs

	\$ 738,945
Major Operating Expenses	
Vehicle Maintenance & Readiness	\$ 171,063
Cell phones, pagers, IT Support	\$ 13,227
Supplies: Office, Scientific, Miscellaneous	\$ 10,539
Emergency Response Vehicle Purchase/Replacement	\$ 0.00
Equipment, Repairs & Cleanup Services	\$ 0.00
	<hr/> \$ 194,829
Capital Projects	
Narragansett Bay PORTS (Pilot Navigation System)	\$ 250,000
Design/Construction/Utilities Dawley Park ER/OSPAR	\$ 206,592
	<hr/> \$ 456,592
Other Projects supported by the OSPAR Fund	
Coastal and Estuarine Habitat Restoration Trust Fund	\$ 161,111
Rivers, Bays & Watershed Coordination Team	\$ 113,812
Audubon Society – Narragansett Bay Estuarine Program	\$ 66,470
	<hr/> \$ 341,393
Total OSPAR Expenditures	\$1,731,759

OIL SPILLCLEAN-UP ACTIVITIES

The DEM emergency response team responded to 497 oil spills during FY2012. The amount of oil products and oil spill debris remediated or removed from the environment during these response activities was estimated to be **19,233 gallons** of oil and **11 tons** of oil spill debris. The remediation work was completed by the OER, the OER contractors, the responsible party or their contractor. To ensure compliance with state and federal regulations, the work was conducted under the OER purview.

The circumstances causing these releases and the environmental impacts generated were varied. The categories of oil spills and the relative percentages of each spill type are illustrated in figure 3.

FY 2012

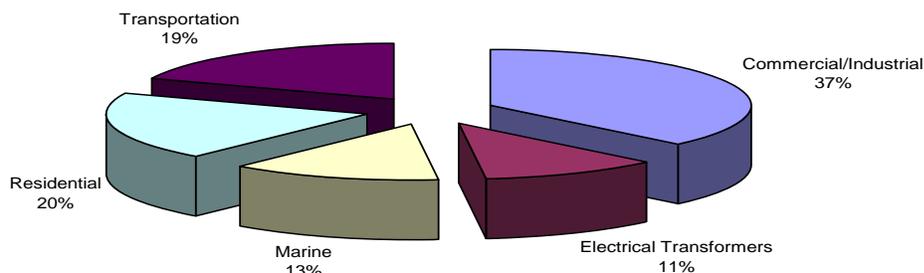


Figure 3. FY2012 Oil Spills by Category

The greatest percentage of spills, 37 percent, was related to commercial and industrial incidents. Residential oil spills comprised the next largest category accounting for nearly 20 percent of department responses. Fuel oil spills in residential areas can contaminate drinking water wells, ground water, and soil; foul septic systems, requiring their replacement; cause odor and health problems in the home; and contaminate storm water drains, sewers, drainage ditches and surface water tributaries that lead to the Atlantic Ocean. The department has posted information on the Emergency Response web page regarding how to minimize the risk of a spill or release from a residential oil tank at <http://www.dem.ri.gov/news/2010/pr/0215101.htm>. DEM continues to conduct public outreach through press releases, television special reports and presentations to oil companies via insurance seminars. DEM also cooperated with the Oil Heat Institute to provide pertinent information to the oil service industry. Transportation related spills accounted for 19 percent of the spill events in FY2012. Oil spills in Narragansett Bay and other marine areas comprised 13 percent of response activities. Spills from electrical transformers comprised 11 percent of the spill events. Personnel from the OER met with some of the electric companies to discuss electrical transformer issues and to assure the proper cleanup of mineral oil dielectric fluid (MODF) and PCB contaminated transformer oil. The category and percentage of spills has remained relatively constant accept with the commercial/industrial category, which had the largest jump in responses.

Figure 4 compares the categories and spill percentages for the last three fiscal years.

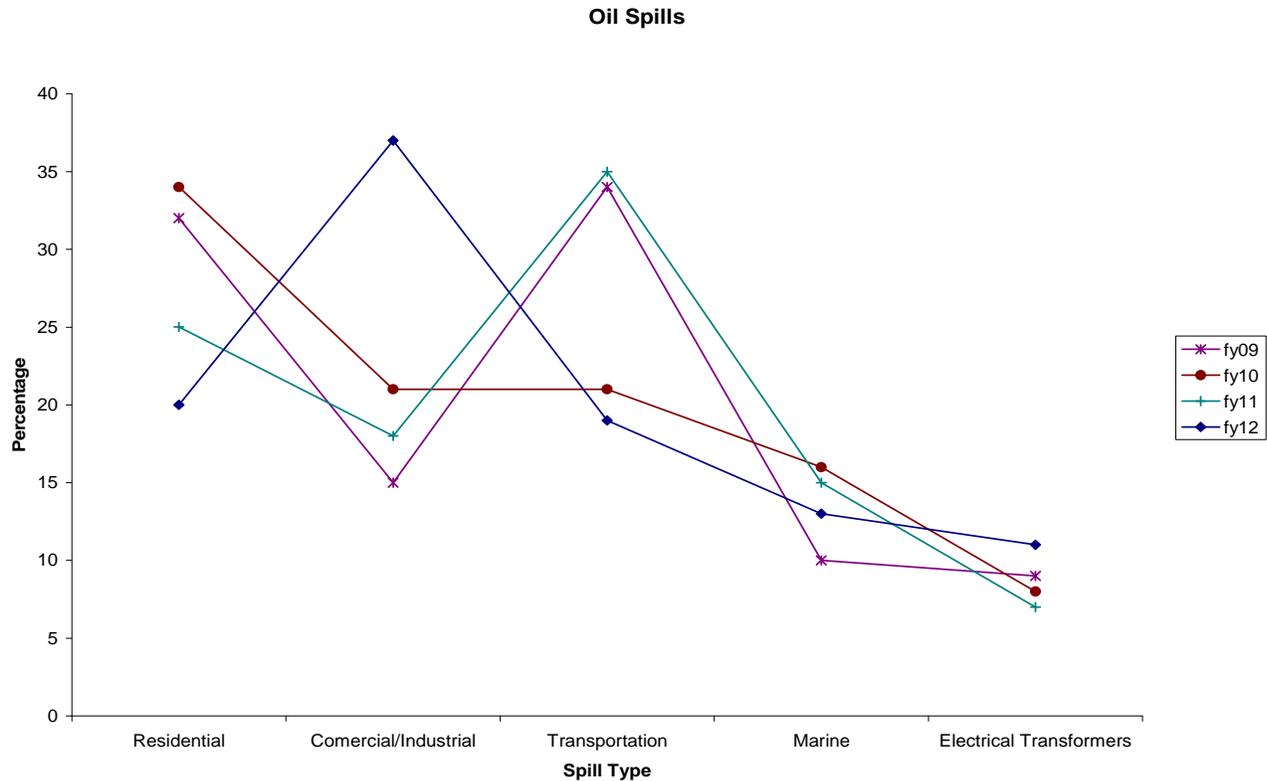


Figure 4 Comparisons of Oil Spills FY2010, FY2011 and FY2012

SeaFreeze TTX

On October 2, 2012 the DEM Office of Emergency Response participated in a Table Top Exercise (TTX) that was sponsored by the FEMA and the U.S Environmental Protection Agency (EPA) to strengthen preparedness in the incident of any accidental or deliberate release of a chemical from the company. The location is considered a waterfront facility and is regulated by the USCG, EPA and DEM. The other parties involved in this drill were RI LEPC 4, North Kingston Fire Department, Quonset FD, Exeter Emergency Management, COV Decon, Rhode Island EMA, 143rd Air National Guard Emergency Management, United States Coast Guard (USCG), National Oceanographic and Atmospheric Administration (NOAA), SeaFreeze Ltd, Northeast District Inc, Toray Plastics and Precision Planning and Simulations Inc. By having state, federal, local and industry stakeholders involved in this



Fig. 5 Shows the simulated plume rising behind building.

exercise it helped to emphasize cooperation by use of a Unified Command System (UCS). The Exercise Design Committee, which DEM was a member of, developed the objectives and the responders had to demonstrate the following capabilities during the exercise:

1. Incident Command System (ICS) / Unified Command System (UCS)
2. Communications
3. Public Safety and Security
4. Hazardous Materials Response and Decontamination
5. Evacuation/Shelter-in-Place

This TTX took place at the 143rd National Guard facilities; the scenario was based on an ammonia alarm that occurred at the SeaFreeze Ltd. facility at Quonset in North Kingston, RI. In the scenario a lightning strike caused what was thought to be the usual false ammonia alarm but when the North Kingston FD arrived they discovered the building and a transformer were on fire. The transformer was leaking mineral oil dielectric fluid and burning producing heavy smoke. The fire impingement on an ammonia tank caused the release of ammonia. As part of the scenario a tropical depression was causing some poor weather conditions with potential for more severe storms to follow. The neighbors were ordered to shelter-in-place until the ammonia plume passed. All participants assumed roles in the Incident Command Structure (ICS) that they would normally fill in if such an event were to actually occur. During the TTX, which lasted 5 hours, evaluators noted that participants worked well together as the scenario expanded and there were many strengths noticed. There were also areas of improvement to focus on like controlling the flow on information and ensuring that the span of control does not become unmanageable and resources are not utilized properly. The players of the TTX were also critical of their response, taking action to learn significant lessons from this and become better prepared.

Vigilant Guard Regional TTX & FSE

During FY 2012 the RIDEM Office of Emergency Response participated in *Vigilant Guard*, a Regional Table Top Exercise (TTX) and Full Scale Exercise (FSE) sponsored by the United States Northern Command (USNORTHCOM) and the National Guard Bureau. Also taking part in the drill were RIEMA, National Guard (RI, MA, VT, NH, CT), FEMA, local fire departments and HAZMAT crews, Homeland Response Force (HRF), CBRNE Enhanced Response Force Package (CERFP), and US Army North. The exercise took place in two stages: the Regional-TTX took place at the Sheraton Hotel in Warwick, RI on May 15th, and then the FSE took place from July 31st until August 2nd at the Firefighter Training School located in Exeter, RI. This exercise was intended to be used as a tool to evaluate response plans and capabilities of responders in order to improve upon any shortcomings while building relationships amongst personnel and share best practices for disaster management.

The exercise was based off a scenario of a category 3 hurricane, modeled after the Hurricane of 1938, making landfall in Rhode Island and causing massive power outages, flooding, and wind damage that has knocked down trees and power lines. During the storm the notional Exeter Chemical Company sustained massive damages resulting in spilling of many chemicals that migrated off site by the strong winds or flash flood waters. The facility

also housed petroleum and natural gas tanks that were damaged and swept up by the flood waters. These chemicals would be a major concern in a hurricane scenario due to the destructive nature of the storm as well as its ability to spread contaminants to a much greater area than would be possible under normal conditions. This exercise was very beneficial as it gave valuable training in managing large scale disaster situations that can occur over a very large area like a hurricane. Thousands of responders participated in the full scale exercise. The Office of Emergency Response personnel also worked with the RI 13th CST Unit and the New Hampshire 12th CST Unit to teach proper field sampling techniques. Water, soil and sediment samples were obtained from an impacted down stream water body utilizing the DEM sampling procedures.



Fig. 6 Shows DEM and CST personnel carrying field monitoring equipment, wearing respirators and assessing sampling locations.

As a result of this exercise the Office of Emergency Response as well as the other participants in this drill improved team working skills in managing environmental impact of toxins released during a hurricane.

Newport Bridge Barge Capsizing

On October 30, 2011 a Sterling Equipment barge capsized during rough conditions while acting as a platform for bridge maintenance operations for the Newport Bridge. The loss of the barge occurred at night, no one was aboard and there were no witnesses to the incident. The barge was located in the East Passage of Narragansett Bay, approximately 300 yds east of the eastern tower of the Newport Bridge in 108 ft of water, outside of the navigational channel. The barge contained approximately 2400 gallons



Fig. 7 Boom placement around raised barge to prevent spread of sheening.

of fuel in 3 fuel tanks; there were also 4 compressors, a vacuum system and a recycling system for a total oil capacity potential of 3900 gallons.

On November 1, 2011 the Rhode Island DEM (OER), USCG Sector Southeast New England (FOSCR), Newport Harbor Master and the responsible party quickly establish a unified incident command to coordinate and begin recovery efforts. Also assisting in the clean up efforts were local officials, two Atlantic Strike Team members, First Coast Guard District Environmental District Response Advisory Team (DRAT) supervisor, Clean Harbors Environmental, RI Bridge & Turnpike Authority and *Save The Bay*.

A Unified Command was setup between agencies; it was able to respond quickly, perform cleanup and recovery activities and do so with little environmental impact. All interested parties met at Jamestown Town Hall on November 5th to discuss the incident and set the timeline for the salvage of the barge. Divers were first dispatched to assess the situation and viewed the barge upside down at a 45° angle with all but one compressor still strapped down. Booms were placed around the incident site though no sheening had been observed at that time. *Save The Bay* also indicated that Rose Island was an area of concern because of the harbor seal population that uses the island to haul themselves from the water. To do this, 1300 feet of hard boom were set up in a 4 tier cascading pattern starting from the northern tip of the rocks. Visible sheening began to occur during salvage operations but due to the rough surf it was quickly dissipated from the source. The barge was repositioned to shallower waters where more booms were set up to contain sheening that occurred and from the new location two of the fuel tanks were siphoned of oil as well as some of the equipment. On December 9, 2011 the barge was lifted from the water and

placed onto another barge; the third fuel tank which had been feared lost was still attached. The barge was secured and taken to Senesco Marine LLC., where the tank was offloaded by Clean Harbors Inc.

All equipment was salvaged from the barge, though it did take some time to locate a final generator.

Approximately 4,500 gallons of oil were recovered from the barge while it was underwater and the remaining 635 gallons were recovered after the salvage. Over the several week period of this

incident there were several sheens observed. However due to the volatile nature of the diesel oil, the rough water conditions and successful mitigation and cleanup efforts no residue was observed along area coasts. This was made possible due to the great corporation of the on-scene personnel and the timely establishment of a Unified Incident Command that communicated and worked well together.



Fig. 8 Visible sheening resulting from barge and damaged equipment.

PORTS Program

OSPAR continues to support the Narragansett Bay Physical Oceanographic Real-Time System (PORTS) that began operation in June 2000. PORTS, which is operated by the National Oceanic and Atmospheric Administration (NOAA), is comprised of five monitoring stations located in Narragansett Bay that monitor stage of the tide, currents, and weather. This data is reported every six minutes to a central receiving computer, which processes the information. Real-time information regarding tides, current and weather can be accessed by telephone at 401-849-8236 and 1-888-301-9983 or on the internet at, <http://tidesandcurrents.noaa.gov/nbports/nbports.shtml?port=nb> . NOAA continuously monitors the in-water sensors and conducts data validation. This 24/7 quality control allows NOAA to guarantee the accuracy of the data. As a result, the state-licensed pilots who guide the largest vessels into port in Narragansett Bay are able to make decisions on vessel movements with real-time information. Over the last few years the host agencies for PORTS including RIDEM have formed a coalition to petition the Federal Government to include the maintenance of the PORTS system as part of the NOAA budget. NOAA has not taken over the maintenance expenditures but is still reviewing the possibility.

State-licensed pilots can directly access PORTS information while traversing Narragansett Bay using the Raven Portable Pilot Navigation System purchased with OSPAR funds. The systems have wireless/Bluetooth capability that allows the acquisition of real-time data from PORTS as well as real-time weather information from the National Weather Service. The navigation systems are extremely sophisticated, utilizing a Differential Global Positioning System that accurately and safely determines the position of a vessel being piloted through the bay. The system uses the U.S. Department of Defense Global Positioning System and the Canadian Coast Guard network of differential radio beacons to provide accurate navigation information in conjunction with accurately surveyed maritime charts provided by the U.S. Army Corps of Engineers. It is the only commercially available portable piloting navigation system incorporating U.S. Army Corps of Engineer channel data on customized vector electronic charts with sub-meter positional accuracy necessary for precision navigation in RI waters. The goal of the program is to provide the greatest degree of safety possible for commercial ship traffic in Narragansett Bay and the Ports of Providence and Quonset.

Emergency Response Preparedness

Dawley Park Improvements

In FY2012 the Office of Emergency Response continued the site work, which began in 2005, of the former Dawley Park headquarters building. The facility, located on Route 3 Exeter, is ideally suited for the needs of the program. It is centrally located and will provide needed storage for the department's emergency response equipment. In addition to the prior improvements that took place at the facility, steps have been taken to reduce its ecological footprint. An array of solar panels has been installed onto the garage roof to collect energy to provide electrical power to the facility. The project has been funded by a grant from the Office of Energy Resources. As a result of this action the OER has reduced its reliance on traditional energy sources and has reduced costs of maintaining this facility.

Training Activities

The Emergency Response team continued to improve its response capabilities through training. During FY2012 team members continued to build on the all hazard model. Members of the Emergency Response team participated in courses, training and exercises that included:

- 16-Hour Radiation Training North East Radiation Transportation Task Force (NERTTF)
- 4-Hour Clan Lab Training
- 8-Hour Functional Exercise Tri-State
- 8-Hour Air Monitoring Class
- 8-Hour Managers Class
- 8-Hour Scientific Support for Environmental Emergencies (SSEER) Training
- 24-Hour Competencies
- 24-Hour Public Safety Sampling Class

32-Hour National Incident Management System (NIMS) Incident Command System (ICS) All-Hazards Operations Section Chief
Radiation Fundamentals & Instrumentation Course
Radiation Transportation Course
RAMP System Biodetection Training
HazMat ID 360 Fourier Transform – Inferred Spectroscopy (FT-IR) Training
Regional Response Team (RRT) & Table Top Exercise (TTX)
Griswald Mill Full Scale Exercise (FSE)
24-Hour Emergency Operation Center (EOC) Training
8-Hour Emergency Management Agency (EMA) Training and Exercise Program Workshop (TEPW)
4-Hour Civil Support Team (CST) FSE
8-Hour Cyber Drill
8-Hour Hurricane Conference
8-Hour SSEER Training
8-Hour Operation Wash Down
America's Cup
4-Hour Mosquito TTX
8-Hour HAZWOPER Refresher
SeaFreeze TTX Design
16-Hour Northeast Mutual Aid Compact Training
24-Hour Plymouth Haz/Mat Training
4-hour SeaFreeze TTX Design
Nationwide Suspicious Reporting Initiative Line Officer

The DEM Emergency Response program also continued to provide training. The training provided included *Hazardous Materials & Criminal Investigation* for the State Police Training Academy, *WMD Hazardous Material Evidence Collection* with the Cranston Fire Department, *Homeowner Oil Spill Handling* for oil companies, *Chemical Safe Schools* for educators, *Hazardous Materials Recognition & Identification Refresher* for RI DOT, *Hazardous Materials Sampling* for the National Guard Civil Support Teams and *Environmental Health & Pesticide Safety Education* for the University of Rhode Island.

HABITAT RESTORATION PROGRAM

In June 2002, the RI General Assembly enacted legislation (RIGL 46-23.1) that established a coastal and estuarine habitat restoration program administered by CRMC. Subsidy from the OSPAR fund continues to be transferred to CRMC in accordance with RIGL § 46-23.1-3. The financial support is for the Rhode Island Coastal and Estuarine Habitat Restoration Trust Fund. Habitat restoration projects are selected from recommendations by the RI Habitat Restoration Team established by CRMC, Save The Bay and the Narragansett Bay Estuary Program. Each year the Trust Fund receives \$250,000 from the OSPAR account to fund habitat restoration projects in the state. Since the inception of the Trust Fund CRMC has awarded \$1.87 million for 67 projects, which has leveraged more than \$18 million in matching funds. The following short project descriptions are taken from the CRMC web site. Additional information can be found at <http://www.crmc.state.ri.us/>

Restoring Fish Passage on the Upper Pawcatuck River: Phase 3- Kenyon Mill Dam: Wood-Pawcatuck Watershed Association, Richmond and Charlestown

Award: \$50,000

Lead Organization: Wood-Pawcatuck Watershed Association

Partners: NOAA, RICRMC, USFWS

This project will remove the dam at Kenyon Mill on the Pawcatuck River in Richmond, and construct a rock ramp nature-like fishway in its place. This project represents the last vital step to restoring anadromous fish passage on the upper Pawcatuck River and providing access to valuable spawning and nursery habitat at Worden Pond. The project is expected to be constructed in summer of 2012.

Fish Passage Improvements at the Main Street Dam and Fishway, South Kingstown

Award: \$50,000

Lead Organization: RIDEM

Partners: NOAA, USFWS, Town of South Kingstown

The awarded funds will be used with an award made from the Trust Fund in FY2011 to complete modifications to the existing Denil Fishway located at the Main Street dam in Wakefield. It is expected that the rehabilitation and modification of the existing fishway will provide greatly improved upstream and downstream passage by river herring and American eel. In addition to the proposed fishway repairs, project activities include the installation of an eel ramp and a juvenile fish by-pass channel. The purpose of the project is to enhance river herring access to over 300 acres of spawning and nursery habitat, provide American eel with over 300 acres of habitat for maturation, and ensure safe passage for out-migrating juvenile river herring and eel.

Blackstone River Fish Passage, Pawtucket

Award: \$40,000

Lead Organization: Friends of the Blackstone

Partners: RIDEM, USDA-NRCS, USFWS

The purpose of the restoration project is to restore diadromous fish passage across the first four dams on the lower Blackstone River, re-establishing fish runs that have been obstructed for more than 200 years. This project will improve the riverine ecosystem, increase recreational opportunities for activities such as fishing canoeing, kayaking, and historic tours, and provide economic benefits for four towns in the project area. Full funding for the construction of the two fishways has been secured through DEM and NRCS programs. Construction is scheduled for 2012. The awarded funds will increase and continue contract engineering services provided by EA Engineering, Science, and Technology (EA) to oversee subsurface investigations, finalize the RI Coastal and Estuarine Habitat Restoration Trust Fund design using the geotechnical data, and oversee construction. EA will function as the Design Engineer on behalf of RIDEM.

Fish Passage Improvements to the Palisades Fishway, South Kingstown

Award: \$25,000

Lead Organization: RI DEM

Partners: NOAA, USFWS

The awarded funds along with funds awarded in FY2011 will support completion of modifications to the existing Denil fishway and dam flume located at the Palisades Mill off Kingstown Road in Peace Dale, RI. In addition to the fishway repairs, project activities include the installation of an eel ramp. The purpose of the project is to enhance river herring access to over 280 acres of spawning and nursery habitat and provide American eel with over 280 acres of habitat for maturation.

Enhanced eastern oyster (*Crassostrea virginica*) restoration: experimental reef construction using defined baselines and goals in coastal salt ponds, Charlestown and Westerly

Award: \$28,964

Lead Organization: The Nature Conservancy

Partners: NOAA, USDA NRCS

The funded project will build upon an ongoing effort by The Nature Conservancy to advance oyster restoration in coastal Rhode Island. CRMC funds will be used to conduct an oyster population inventory to establish baseline and reference values to guide future restoration practices and needs; develop an oyster spatfall monitoring program; and construct six 0.02 acre (1000 ft²) experimental oyster reefs. The survey and spatfall monitoring program will be completed in South County salt ponds (Westerly through Narragansett Bay) with focus on Winnapaug Pond, Quonochontaug Pond, Ninigret Pond, Greenhill Pond, Potter Pond, and Point Judith Pond. Reef construction and population enhancement will be completed in Ninigret Pond in 2012, and expanded to other salt ponds identified through field survey work.

Salt Marsh Rapid Assessment, Statewide

Award: \$12,500

Lead Organization: Save The Bay

Partners: NBNERR, USFWS

The awarded funds will be used to assess 35 salt marshes during 2012 in coordination with the RI Habitat Restoration Team's Salt Marsh Committee (SMC) and volunteers. The marshes will be assessed for what are believed to be indicators of response to increasing rates of sea level rise—particularly areas of die-off in the high marsh—as well as other indicators of stress. The data will be synthesized and included in an atlas of marsh sites including GPS locations of die-off areas and site photographs. The proposed salt marsh assessment is a natural follow up to the assessment conducted in 1996, termed the Narragansett Bay Method (NBM). NBM, created and coordinated by Save The Bay (Lipsky 1997). This method used trained volunteers to assess manmade impacts to Narragansett Bay salt marshes (ditches, tidal restrictions, fill, invasive species, stormwater discharges). The marshes identified by the NBM formed the core of the state's salt marsh restoration priority list. Since 1996, Save The Bay and other entities have been working to restore many of the largest marshes identified through the NBM assessment. The funded assessment will look at the condition of the marshes in Rhode Island including those that were not identified as impacted in the 1996 assessment and will identify adaptive management or restoration opportunities.

Caged Scallop Spawning Sanctuary, Narragansett**Award:** \$6,536**Lead Organization:** Save The Bay**Partners:** NOAA

With the awarded funds, Save The Bay will establish a caged scallop spawner sanctuary for a third year in Point Judith Pond in Narragansett, RI during the 2012 field season (May-November). The goal of the project is to protect a broodstock of adult scallops using predator exclusion cages and to enhance recruitment, with the long-term goal of creating a self-sustaining bay scallop population in Point Judith Pond. Approximately 10,000 bay scallops will be provided by Roger Williams University and Save The Bay will purchase additional scallops from a nearby hatchery.

Ten Mile River Reservation Dam Assessment, Pawtucket**Award:** \$5,000**Lead Organization:** RI DEM**Partners:** Save The Bay

RI DEM will study the Ten Mile River Reservation dam for fish passage alternatives, primarily removal of the dam and restoration of a free flowing river channel. The dam is located just upstream from Slater Park in Pawtucket, RI, 3.2 miles above the dam at Turner Reservoir. The Ten Mile River has been the focus of a large anadromous fish restoration project over the past 10 years which has resulted in the construction of fish ladders at Hunts Mill and Turner Reservoir, and with a ladder planned to be constructed at Omega Pond (all three projects received funding from the Trust Fund). The long term goal for this project is to provide upstream fish passage into the Ten Mile River in Massachusetts, and to provide downstream passage for juvenile fish from the US Fish and Wildlife fish hatchery in North Attleboro on the Bungay River, enhancing native fish populations. A secondary goal is to restore water quality and a natural river channel through this section of the Ten Mile River. This project will include a preliminary feasibility study and development of cost estimates that will allow a better understanding of restoration options at this site. This river system is a RIDEM target for American shad restoration, as well as for river herring.

Winnapaug Marsh Restoration, Westerly**Award:** \$4,000**Lead Organization:** Save The Bay**Partners:** RI DEM

The back barrier salt marsh along the southern side of Winnapaug Pond in the Town of Westerly is exhibiting signs of degradation including presence of standing water in the former high marsh area, unconsolidated peat in the upper marsh due to lack of drainage, subsidence, loss of the high marsh vegetation and algal mats covering marsh pools. The potential causes for the degraded condition of the marsh are manmade ditches dug in the 1930s and sea level rise. The funded project aims to facilitate drainage of the upper marsh by digging small creeks to connect large ditches with open pools and to clear out some

clogged ditches to further enhance drainage of impounded water, similar to work done previously on privately owned sections of the marsh by RIDEM's Mosquito Abatement Coordinator. The short-term goal of the creek digging will be to allow for the high marsh areas to drain during ebbing tide drying periods and to reduce further subsidence. The long-term goal is for the currently flooded former marsh areas to revegetate with low marsh vegetation and accrete sediments. This project is intended to serve as a pilot restoration to complement the rapid salt marsh assessment work being planned for similarly degraded marshes throughout the state.

**Avondale Farm & Colonel Willie Cove Preserves Phragmites Control Project,
Westerly**

Award: \$3,000

Lead Organization: Westerly Land Trust

Partners: RIDEM Mosquito Abatement Program, Town of Westerly Dept. of Public Works
As recently as the 1970's, the wetlands in and adjacent to Avondale Farm Preserve had been healthy salt marshes that provided quality habitat for waterfowl, wading birds and fisheries. Over the past few decades, *Phragmites australis* has overtaken a significant amount of habitat, choking out native species and closing open water areas that were once accessible to waterfowl as shown in the photos provided on the website. The short-term goal of the funded project is to remove existing *Phragmites* growth and restore tidal flow to the salt marsh area by redefining some of the old mosquito ditches in coordination with RIDEM's Mosquito Abatement program. Long-term, the project is intended to monitor and control any *Phragmites* regrowth so that native vegetation may re-establish and restore the salt marsh habitat.

RI BAYS, RIVERS and WATERSHEDS COORDINATION TEAM PROJECTS

In 2007 the general assemble provided OSPAR funding to the Rhode Island Bays, Rivers and Watersheds Coordination Team (CT). It is a state interagency commission dedicated to the protection, management, restoration, and sustainable development of Rhode Island's fresh and marine water and watersheds. Through strategic coordination of government programs, the CT ensure the well being and sustainable use of Rhode Island's water and watersheds, increases the vitality of our marine economy and water intensive industrial sectors, and prepares Rhode Island for future environmental and socioeconomic imperatives. Additional information can be found at <http://www.dem.ri.gov/bayteam/index.htm>. Listed below are the Strategic Investments by the RI Bays, Rivers and Watersheds Coordination Team to Support a Comprehensive Water Monitoring Strategy for FY2012.

Cooperative Agreement with United States Geological Survey

As authorized by the RI Bays, Rivers and Watersheds Coordination Team (BRWCT), DEM continued its cooperative agreement with the United State Geological Survey (USGS) to maintain long-term monitoring programs that collect data on streamflow, groundwater levels and water quality in the State's largest rivers. During FY13, pursuant to the

combined joint funding agreement, the OSPAR Fund supported the following three monitoring activities.

Streamflow Measurements: USGS operated and maintained 13 streamflow gage stations that provided continuous measurements of streamflow elevations. The streamflow data is made available on a real-time basis via the USGS website. The data are used by multiple agencies for a number of programs including flood forecasting, drought management, water quality restoration, water management and permitting.

Groundwater Elevation Measurements: USGS collected monthly groundwater elevation readings from 19 observation wells located throughout RI. The data can have applicability to drought management, permitting and water management programs.

Large River Water Quality: USGS continued monthly sampling at five stations located on RI's three largest rivers. Five stations were sampled monthly on the Blackstone River and its tributary the Branch River, the Pawtuxet River and the Pawcatuck River for a range of water quality parameters including nutrients and pathogens. Samples are analyzed for metals quarterly. Data undergoes federal quality assurance procedures and then is made available via USGS information system – NWIS. Data is important for evaluating long-term trends and tracking pollutant loadings into the upper bay from the rivers. Data is used in various state water programs. Three stations are located near the mouths of the Blackstone, Pawtuxet and Pawcatuck Rivers in order to be representative of the pollutant loadings from these tributaries into coastal waters.

2012 OSPAR Contribution: \$250,000 (Contractual for six months)
Other Funds: USGS match

OUTLOOK AND PROJECTIONS

OSPAR-related expenditures during FY2013 are expected to be similar to FY2012 absent any major spills and associated response needs. The functional capacity to respond will continue to be stressed by the continued reallocation of OSPAR funds. The constant fiscal pressure on the OSPAR fund will have a cumulative impact, compromising the ability of the program to perform the basic readiness and response tenants for which it was established.

CONTACT INFORMATION

For further information regarding this report, the activities of the emergency response team or OSPAR, contact James Ball, RIDEM Emergency Response Administrator, Chief Office of Emergency Response at 401-222-4700 extension 7129 or at james.ball@dem.ri.gov.