THE NRDA PROCESS CAN BE TIMELY AND PRODUCTIVE FOR ALL

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ABSTRACT: *On August 24, 1998, there was an accidental hose failure at Tesoro Hawaii Corporation's ("Tesoro Hawaii" or "Tesoro") single-point mooring (SPM) about a half mile off Barbers Point, near Honolulu, Oahu, Hawaii. The incident released approximately 117 barrels of bunker fuel. Immediate containment and clean up efforts were commenced, but on September 5, 1998, tarballs began to come ashore on Kauai. Shoreline impacts were observed between Kilauea Point to Makahuena Point on the eastern shore and between Makaha Point and Mana Point on the western shore of Kauai. To avoid the costs and delays associated with litigating resource damages that may have resulted from the release and any associated civil penalties, the Trustees and Tesoro Hawaii entered into a cooperative Natural Resource Damage Assessment (NRDA) protocol. The Trustees and Tesoro Hawaii conducted a phased approach focusing on injury determination and quantification using technical working groups (TWGs) composed of Trustee and Tesoro Hawaii representatives. Resource injuries considered were for seabirds, marine environment (opihi), marine mammals (Hawaiian monk seal), and human use. To expedite the process, it was agreed that time and money would best be spent identifying and scaling restoration projects. Coordination of effort was key to cost-effectiveness of the assessment and avoiding duplication of studies. The Final Restoration Plan and Environmental Assessment were accomplished within two years, including public participation. Restoration actions were undertaken promptly following execution of the Consent Decree. One of the initiatives developed by this collaborative effort was a derelict net removal project (the "Project"). The Project met the goals of the Trustees by compensating for interim losses to shoreline, intertidal and subtidal habitats and the biota in those habitats and by addressing potential injury to the endangered Hawaiian monk seal.*

Introduction

On August 24, 1998, there was an accidental hose failure at Tesoro Hawaii Corporation's ("Tesoro Hawaii" or "Tesoro") single-point mooring (SPM) about a half mile off Barbers Point, near Honolulu, Oahu, Hawaii. The incident released approximately 117 barrels of bunker fuel. Immediate containment and clean up efforts were commenced, but around September 5, 1998, tarballs began to come ashore on Kauai, over 100 miles from Tesoro Hawaii's single point mooring off Barbers Point, Oahu. Shoreline impacts were observed between Kilauea Point to Makahuena Point on the eastern shore and between Makaha Point and Mana Point on the western shore of Kauai.

Wildlife and environmental impacts were observed as a result of the August 28th release. For example, tarballs were removed from shoreline areas on Kauai, including from recreational beaches that were closed due to oil contamination; stranded oil was removed from rocky areas and sandy beaches were combed and sifted to gather smaller oil pellets. Oiled birds were cleaned and rehabilitated at facilities on Kauai, Maui and Oahu. In many cases, oiled birds were transported from Kauai to Maui for rehabilitation, and then, once rehabilitated, transported back to Kauai for release in their accustomed habitat. The release had potential environmental impacts that were more difficult to observe and quantify, such as, impacts to the endangered Hawaiian monk seal (*Monachus schuinslandi*) and its habitat and the impact to intertidal and subtidal habitats and biota in those habitats, especially opihi (*Cellana* sp.), which is a commercially and culturally important species.

The natural resources that were impacted and potentially impacted by the release are under the jurisdiction of the U. S. Department of the Interior (DOI), the U. S. Fish and Wildlife Service (USFWS), the U. S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); and the State of Hawaii, represented by the Department of Health (DOH) and the Department of Land and Natural Resources (DLNR). The agencies are collectively known as the "Natural Resource Trustees" or simply the "Trustees." Under state and/or federal law, the Trustees are authorized to act on behalf of the public to determine and recover natural resource damages and to plan and implement actions to restore resources that have been injured or lost due to an oil release.

The Trustees and Tesoro Hawaii entered into a "Joint Cooperative Natural Resources Damage Assessment Agreement for the Tesoro Hawaii SPM Oil Spill" (Cooperative Agreement), effective November 13, 1998. Recognizing the difficult challenges presented by the spill and its geography (not the least of which was that released product impacted an island 100 miles away from the spill source), the time delay between any scientific study and its practical recommendations and the uncertainty whether more science would positively result in clear data, the Trustees and Tesoro decided to expedite the Natural Resource Damage Assessment (NRDA) process. Trustee/Tesoro coordination resulted in the formation of technical working groups (TWGs) comprised of Trustee and Tesoro representatives. The TWGs arranged for appropriate short-term studies, gathered available information, analyzed the gathered data and quantified the injuries that may have occurred to the natural resources in four categories: seabirds, intertidal and subtidal biota (opihi), endangered and threatened marine mammals (Hawaiian monk seal), and human use activities.

Using the expedited cooperative agreement approach, one of the projects that came out of the NRDA process was a Net Removal Project (the "Project") on the island of Kauai. The goal of the net removal project was to retrieve abandoned fishing net and associated debris from the areas on Kauai where oil impacts were observed during the 1998 oil spill. Abandoned fishing nets cause injury to shoreline, intertidal and subtidal habitats by smothering or crushing organisms and by abrading the ocean bottom and shoreline areas, causing mortality to fish and invertebrates. Additionally, sea turtles and marine mammals may become entangled in them. The Project thus met a key restoration objective of the Trustees, which was to address potential injury to the endangered Hawaiian monk seal, and it was ultimately included in a negotiated Consent Decree between the Trustees and Tesoro Hawaii filed on October 17, 2001 in the United States District Court for the District of Hawaii.

The project

The Consent Decree outlined the scope of work to be undertaken by Tesoro in completion of the Project. The activities that comprised the scope of work required Tesoro to do the following:

- Conduct a community outreach effort to acquire information about abandoned fishing nets on Kauai;
- Develop a safety and health plan for all phases of the work;
- Develop a waste disposal plan for all retrieved nets and associated debris;
- Provide up to 15 work hours of flight surveillance time over the duration of the project;
- Obtain all necessary permits and permissions to complete the work;
- Mobilize the stipulated shore and boat teams and demobilize those teams when the project was complete;
- Provide a pre-determined "Level of Effort" (established minimum daily work hour and manpower requirements) over the fixed duration of the project; and
- Prepare a final report.

The Project work area included the adjacent Kauai shoreline out to a 10-meter depth in the general area where impacts from the SPM hose spill were observed between Kilauea Point to Makahuena Point on the eastern shore and between Makaha Point to Mana Point on the western shore.

The preplanning for the Project was considerable, given the fact that:

- Tesoro's offices on Oahu are separated by one hundred miles of ocean from the intended work site on Kauai;
- The bulk of the manpower to do the work would come from Oahu and need to be berthed and fed on Kauai;
- The specialized vessel, with trained dive crew, to be used for the offshore portions of the net retrieval work would need to be scheduled and at the appropriate time, repositioned from Oahu to Kauai;
- The aerial platform to be used for the net surveys (a seven passenger Bell 407) would need to be flown from Oahu to Kauai when needed, with provisions made for refueling on Kauai; and
- While Tesoro would act as Project Manager, all of the intended work procedures, supporting documentation and activity timing had to be coordinated with and approved by the Trustees.

Weather was also a major concern for the Project team, as much of the net retrieval work would be carried out in the intertidal areas, the "surf zone". The north and eastern shores of the Hawaiian Islands are subject to significant wind and wave action during the winter months, and the team wanted to mobilize and complete the Project before winter weather made working on the rocky shoreline of Kauai too dangerous.

With the considerable scope of the Project in mind, and to ensure compliance with the directives of the Consent Decree, Tesoro executed the Project under the general guidelines applicable to the Incident Command System (ICS). Tesoro, acting as Project Manager:

- Utilized the ICS structure, including the concept of Unified Command operating with a defined incident command organization chart;
- Conducted daily planning meetings and produced daily Incident Action Plans (IAPs);
- Mobilized and deployed the Boat and Shore Teams in conformance with the agreed upon IAPs;
- Produced a Site Safety and Health Plan and conducted daily safety briefings with all personnel;
- Developed the necessary Waste Disposal Plan; and
- Prioritized work locations using aerial surveillance and Ground Positioning System (GPS) coordinates to identify net removal actions in accordance with Trustee direction in order to maximize the amount of derelict net recovered.

Community outreach

Tesoro Hawaii initiated a vigorous 30-day community outreach program on September 1, 2001. On that day, contractor personnel were dispatched to locations on Kauai to post the notices required by the Consent Decree requesting derelict net location information. The notices were distributed to 52 dive shop, surf shop and fishing supply locations around the island.

Select dive shop operators were also contacted by letter, and in-person visits were made to the operators by Tesoro personnel. Tour helicopter operators were contacted by letter in an attempt to solicit net location information from that source.

The Consent Decree required the establishment of a net location call-in number, but Tesoro Hawaii felt the use of a pre-

existing and established net call-in number would enhance the opportunities of obtaining timely derelict fishing net information. Therefore, with the support of the Coastal Recreation & Tourism Extension Agent, University of Hawaii Sea Grant Program, and in cooperation with the University of Hawaii Sea Grant Program, Tesoro Hawaii utilized the Derelict Fishing Net Hotline telephone number previously established by Sea Grant. Sea Grant staff members monitored the derelict net call-in number for Tesoro and were prepared to pass any derelict net information to the Company. However, no derelict fishing net information was received from that source.

Aerial surveys

To accurately gauge the magnitude of the Net Removal Project, a preliminary net survey overflight was conducted on September 20, 2001. The preliminary overflight was not considered by Tesoro Hawaii nor the Trustees to be an "official" net survey within the context of the Consent Decree, nor would the hours spent conducting the flight (5.9 hours) be charged against the 15 work hours of flight time allowed the Trustees by the Consent Decree. The focus of this preliminary overflight was simply to more fully understand:

- The magnitude of the project (i.e., an approximation of the number of derelict nets in the Work Area);
- How much and what type of resources would be needed to accomplish the net removal project;
- What kind of access would be needed or was available to reach the derelict nets;
- How might the work effort be divided between the Boat and Shore Teams; and
- How were the nets distributed along the coastline of Kauai?

The value and quality of the information gathered during the preliminary overflight cannot be overstated. The preliminary overflight information formed the basis of two Project planning meetings conducted with the Trustees on September 28th and October 3rd. For example, the September 20th overflight found only two (2) small net clusters on the west coast of Kauai within the Work Area established by the Consent Decree, the area from Makaha Point to Mana Point. After discussing the preliminary overflight information with the Trustees, the Trustees decided to eliminate the west shore of Kauai from the scope of the Net Removal Project, and to concentrate future surveys and net removal efforts on the eastern shore, where a much higher concentration of derelict nets were observed.

The net survey overflight under the Consent Decree was conducted on October 9th. The helicopter utilized 6.7 hours of flight time for the survey. A second overflight was conducted to scout access routes into remote locations where nets were observed and to gather information relative to which nets might be best removed by the Shore Team and those nets best removed by the Boat Team.

Net removal

On October 8th, Tesoro Hawaii and its contractor deployed the necessary equipment and personnel to Kauai for the aerial surveys and net removal activities. Tesoro Hawaii facilitated the travel for the off-island Trustees to Kauai. All necessary and appropriate arrangements were made to house, feed, properly equip and otherwise provide for Project personnel during the complete term of the net removal project.

A field command post was established at the Aston Kaha Lani Hotel, in Lihue, Kauai. All off-island personnel, including Trustees, were housed at that location, which greatly facilitated the evening planning meetings and morning safety briefings.

The Shore and Boat Teams were dispatched each day for five consecutive days. The weather cooperated and there were no weather delays. Surf conditions in some of the net removal areas slowed progress and made nearshore work difficult for both teams. However, derelict nets were collected on all five working days.

Disposal

The approved Project description, as stated in the Consent Decree, anticipated that all recovered nets and associated debris would be handled by landfill disposal on Kauai. However, during a planning meeting with the Trustees, the Trustees asked Tesoro to review possible alternatives to landfill disposal, such as shipping the nets back to Oahu for recycling. Recycling the nets was above and beyond the limits considered by the Consent Decree, but, in wishing to continue a corporate policy of good environmental stewardship, Tesoro agreed to research alternatives to land filling. After researching the issue, it was determined that recycling the net debris on Oahu was feasible, although it would involve extra expense and logistics. The Waste Disposal Plan developed for the Project was modified to ensure that the collected net debris would be brought back to Oahu for recycling versus landfill disposal on Kauai.

Lessons learned

The Kauai Net Removal Project involved several actual and potential constraints:

- It was time-constrained by the Operating Period defined in the Consent Decree, five days from start to finish.
- It was logistically constrained by the fact that it required deployment of personnel and equipment to a neighbor island, Kauai, which required moving people and gear by aircraft or boat over 100 miles of the Pacific Ocean.
- The weather was a potential factor in being able to successfully complete the project within the time allowed.
- Coordinating Federal and State Trustees is a challenge not to be underestimated.

Firstly, for a project of this magnitude, the lesson learned was to gather as much information as possible in advance. The preliminary overflight of September 28 was very beneficial for pre-planning the project. The information gained on the flight allowed the Project Team to accurately determine equipment and manpower requirements. Also, observing the terrain where the work was to take place allowed for proper selection of vehicles, tools, equipment and net hauling gear.

Secondly, selection of an appropriate work platform for offshore work was very important. The 32' Radisson boat provided by Safety Boats Hawaii for the Boat Team was the best vessel for the net removal project. The Radisson is a catamaran design, which provided a stable work platform, and the boat afforded a large open working area on deck. The boat was also fitted with an A-frame lifting boom and winches. This boat provided a safe and stable platform for the divers, and the power

supplied by the hydraulic A-frame and winches allowed the Boat Team to safely handle and retrieve large nets from remote locations that were inaccessible to the Shore Team. The physical size of the boat provided a margin of safety for the crew when working in open ocean conditions, but its configuration allowed the boat to be brought to within working distance of the shore.

Thirdly, the Net Removal Project retrieved over 20 tons of derelict nets. This was made possible only by the use of suitable vehicles, including a heavy-duty boom truck. The Shore Team was able to find the derelict net, prepare it for removal and then hook it up to the boom truck. The boom truck, with its long cable and power capabilities, was able to pull and retrieve large clumps of net from relatively long distances in a very short time. If the boom truck had not been used, the Shore Team would have had to cut the net into manageable size pieces and carry the pieces up to the transport vehicles. This manual activity would have added considerable time to the process and detracted from the time available to retrieve nets.

The fact that large clumps of net, some weighing well over a ton, were being retrieved in one piece mandated that mechanical equipment able to handle that size net be available at the net storage and interim handling area. Therefore, it was necessary to rent and have available an extension-arm forklift at the location where the nets were being containerized for transport back to Oahu for recycling.

The lesson learned from this activity is that equipment capabilities must be balanced across the scope of the project. At one end of the net retrieval process, the boom truck allowed for much more efficient operation by enabling the pickup of massive nets at one time. These large clumps were then transported to the interim net handling area. Net handling equipment able to handle the one-ton clumps of net had to be available at the back end of the process in order not to squander the advantage gained on the front end.

Lastly, coordination in the "cooperative NRDA process" between the Trustees and Tesoro helped to reduce the number of assessment studies undertaken, increase the likelihood for a "good" result and minimize the opportunities for continued litigation. The "cooperative NRDA process" resulted in the use of simplified, cost-effective procedures that relied on site investigations, surveys, sampling, the use of relevant scientific and economic literature and consultations with subject matter experts to scale the potential natural resource injuries. Significantly, the coordination effort resulted in a shorter time period between the injury and the mitigation initiatives.

Biographies

Mike Latham is Tesoro Hawaii Corporation's Oil Spill Prevention Administrator. In this role, Latham is in charge of contingency planning, emergency response training and crisis management for Tesoro Hawaii's product distribution activities. Latham has been involved with marine and land based petroleum facility and distribution operations for over thirty years.

David Hoffman is manager of environmental affairs and emergency preparedness for Tesoro Hawaii Corporation. His prior experience includes an active and reserve duty career in the Coast Guard. He holds a BA from Denison University and a JD from University of Pittsburgh School of Law.