

The Refugio Oil Spill Response: Case Study and Lessons' Learned/Best Practices for the Future

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ABSTRACT

The Refugio Oil Spill occurred on May 19, 2015, due to the failure of an underground pipeline, owned and operated by a subsidiary of Plains All-American Pipeline near Highway 101 in Santa Barbara County. The Responsible Party initially estimated the amount of crude oil released at about 104,000 gallons, with 21,000 gallons reaching the ocean. A Unified Command (UC) was established consisting of Incident Commanders from the U.S. Coast Guard (USCG), California Department of Fish and Wildlife (CDFW) Office of Spill Prevention and Response (OSPR), Santa Barbara County, and Plains Pipeline with additional participation by the U.S. Environmental Protection Agency and California State Parks. Within hours, the CDFW closed fisheries and the following day Governor Brown declared a state of emergency for Santa Barbara County. The released oil caused heavy oiling of both on and offshore areas at Refugio State Beach and impacted other areas of Santa Barbara and Ventura.

A number of factors created unique challenges for the management of this response. In addition to direct natural resource impacts, the closure of beaches and fisheries occurred days

before the Memorial Day weekend resulting in losses for local businesses and lost opportunities for the public. The Santa Barbara community, with its history with oil spills and environmental activism, was extremely concerned and interested in involvement, including the use of volunteers on beaches. Also this area of the coast has significant tribal and archeologic resources that required sensitive handling and coordination. Finally, this area of California's coast is a known natural seep area which created the need to distinguish spilled from 'naturally occurring' oil.

Most emergency responses, including oil spills, follow a similar pattern of command establishment, response and cleanup phases, followed by non-response phase monitoring, cleanup and restoration. This paper will analyze the Refugio oil spill response in three primary focus areas: 1) identify the ways in which this spill response was unique and required innovative and novel solutions; 2) identify the ways in which this response benefited from the 'lessons' learned from both the Deepwater Horizon and *Cosco Busan* oil spills; and 3) provide a summary of OSPR's response evaluation report for Refugio, with specific focus on how the lessons learned and best practices will inform future planning efforts within California.

INTRODUCTION AND INCIDENT SUMMARY

In 1990 Congress enacted the *Oil Pollution Act* in response to the 1989 *Exxon Valdez* disaster in Alaska, designating the USCG as having the primary federal authority for oil spill preparedness and response for marine and navigable waters of the United States (citation). Also in 1990 California enacted the *Lempert-Keene-Seastrand Oil Spill Prevention & Response Act* (the *Act*) in response to the *American Trader* oil spill off Huntington Beach. The *Act* established the OSPR in the CDFW and vested the Administrator of OSPR with the primary State authority

for all aspects of oil spill prevention, preparedness, response and restoration for petroleum incidents impacting state waters and for serving as the States' Incident Commander (SOSC).

The Refugio Oil Spill occurred on May 19, 2015, due to the failure of an underground pipeline, owned and operated by a subsidiary of Plains All-American Pipeline near Highway 101 in Santa Barbara County. The Responsible Party initially estimated the amount of crude oil released at about 104,000 gallons, with 21,000 gallons reaching the ocean. The UC consisted of the USCG Federal On-Scene Coordinator (FOOSC), the US Environmental Protection Agency (US EPA) On-Scene Coordinator (OSC), CDFW-OSPR State On-Scene Coordinator (SOSC), Santa Barbara County Office of Emergency Management (SBOEM) Local On-Scene Coordinator (LOSC) and Plains Pipeline LLP (Responsible Party), with additional participation from California State Parks. The SBOEM provided their Emergency Operations Center (EOC) as the initial, formal Incident Command Post (ICP). As the first day progressed, agency personnel, tribal representatives, as well as responsible party personnel and cleanup contractors were deployed and began integrating into a fully staffed Unified Command Structure (UCS) and ICP. The Oiled Wildlife Care Network (OWCN) was activated and the need for a Fishery Closure evaluated (as required Fish and Game Code §5654 et seq).

By the morning of May 20, 2015, the EOC of the Santa Barbara Office of Emergency Management was established as the ICP. The ability of the UC to use and staff the ICP at Santa Barbara County's EOC was crucial to the early success of this response. However, within a week of working in this facility, the number of responders working within the ICP grew close to 350 personnel and the facility became over-crowded while still needing to serve as the County's EOC for any other emergency within the County's jurisdiction. Incident management was moved to an empty office space near the Santa Barbara Municipal Airport and setup as the new

ICP. This new facility served as the ICP for the remainder of the response until operations transitioned into the Phase II aspects of beach cleanups and UC functions were handled remotely. The ICP demobilized on June 30, 2015.

The geography and physical characteristics of the affected area consists of sand beaches that are tidally influenced with respect to access. Cobblestone and rip-rap above the surf line complement the sand and serve to protect the beaches against erosion. The beaches are part of the California State Parks system and in most locations easily accessed through day use areas or campgrounds. In other locations that are undeveloped, the beach transitions to steep cliff faces that are only accessible during ebb tide periods. Wildlife at risk included shorebirds, including Western Snowy Plover, seabirds, marine mammals and a variety of marine invertebrates and fish species, including California Grunion...

On-going monitoring criteria designed to evaluate stability of the cliff face and assess any beach re-oiling were established for post-storm events. The final criteria, 3.5 inches of rain in a 24 hour period, was met on February 17, 2017 and follow-up evaluation determined no further monitoring was warranted. All response monitoring criteria was met, and the UC was disassembled on March 2, 2017. The investigation into the cause and impacts associated with the Refugio Incident is ongoing, with close coordination with local, state and federal agencies to conduct a thorough investigation of the incident. Finally a cooperative Natural Resource Damage Assessment is underway that includes the RP and their consultants and the appropriate state and federal wildlife trustee agencies.

Three separate “After Action Reports” were generated for the Refugio oil spill response; The Federal On-Scene Coordinator’s After Action Report (May 3, 2016); OSPR’s Refugio Oil

Spill Response Evaluation Report (May 3, 2016) and the Santa Barbara County After Action Report and Improvement Plan (July 6, 2016). Although each report differed in tone and focus, they had in common a number of issues highlighted, including sampling coordination, public outreach and communications, formalization of the role of the LOSC, and tribal coordination and integration. These activities are discussed more fully below. Finally, the USCG established a Refugio Incident-Subcommittee, responsible for overseeing four separate working groups to address lessons learned/action items for the Area Committee, as identified in the three separate after action reports.

UNIQUE CHALLENGES OF THE REFUGIO OIL SPILL

Most emergency responses, including oil spills, follow a similar pattern of command establishment, source control, protection of public health, response and cleanup phases, followed by non-response phase monitoring, cleanup and restoration. Many lessons learned can be anticipated even before an event occurs. But each spill presents unique challenges as well, often depending on size, seasonality, proximity to human populations as well as the sensitivities of species and habitats affected. For Refugio, there were many aspects of response outside of the “California norm,” including a significant marine mammal component of wildlife operations, a large spill starting inland and migrating to marine waters, the largest fisheries closure to date, and the need to close two California State Parks during a busy holiday period. Although these response activities were significant and required enhanced resources to adequately address, they did not substantially alter the standardized operations and/or structure of the UC. The items listed below did alter the typical functioning of the UC and will be discussed in greater detail.

- Local On-Scene Coordinator Integration

- Significant cultural, tribal and archeological concerns
- Sampling and fingerprinting in a significant natural seep area
- Stakeholder and Non-Governmental Organization (NGO) Engagement
- The use of Convergent Volunteers for oil beach cleanup

Local On-Scene Coordinator (LOSC) Integration

One of the lessons learned from the *Cosco Busan* oil spill was the need for a formalized process for requesting and potentially integrating a LOSC. Currently, in the San Francisco ACP, a procedure is outlined for how local governments can request that a LOSC be evaluated by the FOSC for a specific incident and the process by which integration and approval is accomplished while maintaining the unity of command. This process allows only one LOSC and all requires local government jurisdictions affected by an event to decide amongst them who would best represent their interests. To date, this process has not been adopted in either the Los Angeles/Long Beach (LA/LB) or the San Diego Area Contingency Plans (ACP).

An existing Memorandum of Understanding between OSPR and the County of Santa Barbara allows the County to participate in the UC with decision-making responsibilities. For the Refugio Oil Spill the County of Santa Barbara rotated several representatives of the Office of Emergency Management (OEM) as LOSC. This transformed the UC from a traditional three-member body (State and Federal OSC's, and RP) per the National Contingency Plan, into a four-member body. This UC expansion, although beneficial in enhancing relationships with local governments, created challenges for the UC in other areas. Initially, the UC representatives from the County had decision-making authority. Over time, however, as political and public pressure increased, the LOSC authority began to erode. As a result, when a command decision was

required, often the County representatives in the UC would need to defer their decision or vote to their immediate supervisors, or brief the Board of Supervisors for approval. This is contrary to ICS, counter-productive for the response, and created both delays in tactical operations and frustrations within the UC when previously agreed-upon decisions were re-opened for discussion. Although tensions were high at times, the expanded UC, including the LOSC, remained intact throughout response and monitoring. The Command & Control workgroup, a part of the LA/LB Area Committee, is now tasked with providing recommendations on the role of the LOSC, qualifications, required training, responsibilities and authorities.

Extensive Tribal/Cultural Coordination

Many cultural resources important to the Tribal people are located in Santa Barbara and Ventura Counties. It became apparent early in the incident that initial response and oil recovery operations would have the potential to impact a large assemblage of known, and possibly yet undiscovered, sites of cultural and historical significance. To maximize protection of these resources, a Cultural/Historical Group (CH-Group) was created in the Environmental Unit (EU) for cultural and archeological monitoring.

A number of Federal and State laws, regulations, and policies govern the protection of cultural and historic resources during an emergency response in the State of California, including, but not limited to *the National Historic Preservation Act of 1966* (Section 106), *the Native American Graves and Repatriation Act of 1990* and Governor Brown's Executive Order B-10-11 encouraging all State government agencies to communicate and consult with California Indian Tribes. In the Order, the terms "Tribe," "California Indian Tribe", and "tribal" included all Federally Recognized Tribes and other California Native Americans. Per the programmatic agreement between the State of California and the Federal Government, OSPR assumed

responsibility for the coordination of the CH-Group lead by a Cultural/Historical Technical Specialist (CHT). The UC agreed that all California Tribes listed by the Native American Heritage Commission, would be invited to participate in the response regardless of their federal status.

For the duration of the response, the CHT coordinated with the Tribes to identify and document their concerns into the Incident Action Plan (IAP). Tribal entities included the Santa Ynez Band of Chumash Indians, the only federally recognized Tribe in the area, as well as non-federally recognized Tribes: the Coastal Band of Chumash Indians (including the Owl Clan) and the Barbareno Band of Chumash Indians. On June 6, when the response expanded into Ventura County, another non-federally recognized Tribe, the Barbareno Ventureno Band of Mission Indians, was also brought into the response.

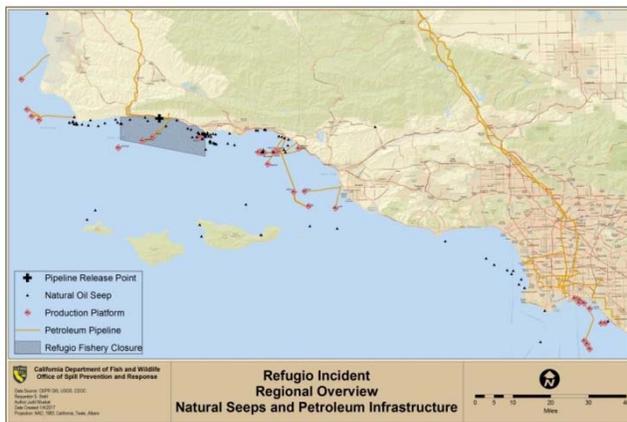
A primary focus of the CH-Group was coordinating Cultural Monitors (CMs), who would accompany multi-agency Forward Observer Teams to observe cleanup crews and identify areas of concern. These teams effectively allowed very basic cultural resource monitoring to occur early in the response. Archeologists were not included in the Forward Observer Teams, but were rather deployed to various locations based on excavations and site sensitivity. To meet the needs of the expanding response and adequately protect sites of concern, the CH-Group helped develop a long term plan for additional CMs; the UC approved 50 CMs and 15 archeologists. OSPR industrial hygienists conducted several 4 hour response- specific Hazardous Communications classes to provide required safety training to the CMs and archeologists. Through the course of the response, the CHT coordinated training for close to 100 Tribal CMs and duties included but were not limited to: coordination and agreement of shoreline treatment recommendation prior to inclusion in the following day's IAP; daily scheduling of supervisors

and CMs; cataloging numerous historic properties impacted by the spill and/or response; process for repatriation of artifacts; ceremonial requests; and coordination of Elders and Dignitary visits.

At the height of response, the CH-Group had 66 personnel responsible for evaluating and monitoring all on-shore/on-land field operations and staging area locations that could potentially impact resources. To date, this is the largest Tribal/Cultural/archeological coordination OSPR has undertaken during oil spill response. Several OSPR staff served on Shoreline Cleanup Assessment Technique (SCAT) during the Deepwater Horizon oil spill and experienced first-hand the need to quickly integrate tribal and archeological concerns if response operations are to be as efficient and as effective as possible. This awareness improved OSPR's subsequent coordination with tribal and cultural representatives, through on-going drills and exercises, as well as more focused outreach. The Command & Control workgroup of the LA/LB Area Committee is also tasked with evaluating lessons learned for tribal coordination and integration, and making recommendations for policy development.

Natural Seep and Long-Term Monitoring

The Refugio oil spill occurred in an active seep area characterized by prolific natural crude oil and gas releases from the ocean subfloor. The Coal Oil Point oil field is a geologically active oil field where crude oil “seeps” from the ocean sub floor and either remains on the bottom to create oil formations or has enough buoyancy to float to the ocean surface in the form of tar-balls or in less dense amounts typically seen as “rainbow



sheen.” There are numerous offshore oil production platforms currently operating in the area which normally piped to the affected pipeline on shore. Following the spill and shutdown of the pipeline, these platforms were “shut-in” or ceased operations and continue to be shut-in as of the date of this paper. The oil from the Plain’s pipeline entered the ocean just north of the active oil field but well within the greater area of the Monterey formation, the sub surface geologic formation that spans onshore and offshore central and southern California. The overlap of the spill area with this large natural seep area created a significant challenge during the response in distinguishing natural seep oil and oil coming from the pipeline discharge.

In an attempt to address the issue, the UC developed an extensive oil sampling and fingerprinting plan. The UC recognized a need to collaboratively collect oil samples in a joint team approach and agreed that this effort would meet the information needs of the UC as well as external stakeholders and the general public. Representatives from each agency – USCG, OSPR and the RP worked together to develop a sampling plan and identify appropriate analytical laboratories. The USCG Marine Safety Lab and California’s petroleum laboratory analyzed samples using a standard method (ASTM D-5739, Gas Chromatography–Mass Spectrometry).

The Oil Sampling Plan centralized the authority for sample collection to the USCG and OSPR representatives and any samples to be collected had to be mutually approved. The UC chose this approach to help ensure the integrity of the sampling process the samples themselves. SCAT teams were used for sample collection and in some of the sample collection efforts, NGOs participated on the teams. Essential to sampling plan was the collection and sharing of information in a mutually accessible database. The SCRIBE sample management software was utilized to provide a web based, secured server to house sample information collected and

entered by the USCG, OSPR and the RP. Each entity had access to all of the sample information.

Oil Sample Collection Timeline

May 19, 2015 to June 2, 2015	Spill site/Source of Discharge, Point of entry into the Pacific Ocean
July 7-9, 2015	Four County “sampling blitz” – Santa Barbara, Ventura, Los Angeles, Orange Counties. NGOs team participation requested.
December 4, 2015	Phase 2 monitoring requirement – Santa Barbara County
January 5-8, 2016	Phase 2 monitoring requirement –post storm/significant weather – Santa Barbara County
May 2016	Final sample collection required by Phase 3

Oil and tar-ball samples collected during May 19, 2015 - June 2, 2015 remain undisclosed for purposes of the ongoing investigation. Samples collected during subsequent joint sampling operations were disclosed publicly on the internet, and revealed that there was no relation between what was collected and source oil from the pipeline. An Operational Needs Workgroup was established as part of the LA/LB Area Committee to evaluate future needs for sampling collection protocols and guidelines.

Stakeholder and Non-Governmental Organization (NGOs) Engagement

The Refugio Oil Spill occurred within the historical context of the 1969 Union Oil Platform blow-out in the Santa Barbara Channel, the largest oil spill in waters off of California and the third largest in U.S. waters after the 2010 Deepwater Horizon and the 1989 *Exxon Valdez* spills. The national public outrage generated by the 1969 spill resulted in numerous pieces of

environmental legislation within the next several years. In addition, many of the NGOs and stakeholder groups affected by the Refugio Oil Spill were involved in the public debate over permitting of pipeline construction for on-shore oil movement from the platforms in the 1980s. A court ruling issued in the late 1980s allowed the affected pipeline to be used without an automatic shut-off valve after a county decision to require one. The pipeline was put into crude oil service in 1991 and subsequently purchased by Plains All American Pipeline in 1998. Typically, NGOs are not formally “incorporated” as a part of the UC structure or given roles and responsibilities within an ICP, as they have no formal authority or jurisdiction for oil spill response. However, NGOs may have a well-organized network of knowledgeable members that may be helpful for informing spill response operations.

The UC hosted a meeting to provide a forum early in the response for NGOs and other stakeholders; however NGOs felt that there was insufficient time in this meeting for communicating their concerns. As the response operations continued, many NGOs were frustrated by what they perceived as a lack of transparency, an inability to get timely information from the Joint Information Center, as well as insufficient opportunity to inform response operations priorities, cleanup endpoint criteria, volunteer operations or public safety concerns regarding beach closures.

In order to improve communications and working relations between the UC and NGOs, the CDFW Director hosted regular conference calls to update NGOs on spill activities and respond to questions. The goal of the calls was to provide a forum where all thoughts and concerns could be heard and discussed in a respectful manner. OSPR participated in these calls and briefed the NGOs on issues that were discussed and of ongoing concern, such as beach closures and safety signage, the release of sampling data, and process for ongoing shoreline

monitoring. These calls were instrumental in improving the dialogue between the UC and NGOs and fostering trust between the participants. A Community Open House was held on May 30, 2015 (based on the format developed during the Deepwater Horizon event) and helped to further engage the NGOs. By the end of the formal cleanup phase and into the monitoring phase, OSPR had established good working relationships with many NGOs.

As discussed in the previous section, the presence of natural seeps in the response area created challenges in identifying and meeting cleanup endpoints. NGOs expressed concerns that without on-going sampling data that could be made public; there would be no mechanism for them to verify that the shorelines were indeed clean. The UC implemented two protocols that helped assure the NGOs that such information would be available:

- A “Sampling Blitz” was conducted July 7-9, 2015, for Santa Barbara, Ventura, Los Angeles, and Orange County beaches. This protocol was designed to provide a “snapshot” of oil sampling data from the Refugio Oil Spill area as well as the second spill area further south that could be released to the public. NGOs were invited to participate as a part of this sampling process.
- Phase III Monitoring: Once most of the shorelines were cleaned to “Phase II” cleanup endpoints (beyond which no further cleanup can be done without doing more harm to the environment or without compromising worker safety), the UC developed a “Phase III” monitoring plan. This plan provided for ongoing assessment for residual and buried oil until May 2016, and included several sampling events, one of which occurred following the first significant storm event in January, 2016. All sample data to date have been released to the public and have come back negative for matching to oil from the Refugio oil spill.

A ‘lessons learned’ session with OSPR and NGO representatives was held on December 18, 2015. The day was very productive and OSPR and the NGOs agreed to establish a

workgroup to further the dialogue and begin developing a plan for implementation of identified needs. This workgroup was later incorporated into the “Liaison and Information Management” subcommittee of the LA/LB area committee, one of the four subcommittees established by the USCG to implement lesson’s learned from the response.

Volunteers

One of the lessons learned from the *Cosco Busan* Oil Spill was the need to have a coordinated, planned approach to evaluate and integrate volunteers as a part of spill response outside of Wildlife Operations. In that response, more than 12,000 volunteer hours were logged in support Wildlife Operations alone. However, the public still voiced the desire to “clean up oiled beaches,” and a beach was set aside for their efforts and coordinated by the County of San Francisco. As part of the post-Cosco Busan improvements, OSPR coordinated the development of a Non-Wildlife Volunteer Plan, outlining roles volunteers could serve in during response and working with local governments to assume the coordination role of these volunteers. This plan was adopted and incorporated into all three of USCG ACPs and drilled throughout California.

On the afternoon and May 19, 2015, a significant number of self-deploying, unsupervised community members made their way to Refugio and other beaches with the intent of recovering oil from the beaches. Community members perceived that there were neither enough trained response personnel on all of the affected beaches nor was on-shore response operations initiated timely enough. In what they perceived as a vacuum, they took their own action to recover oil. Certain retail stores without any type of consultation with health officials or any response authority, offered free buckets to individuals looking to clean up oil. It was difficult for law enforcement to convince the public of the hazards to their health and safety. Law enforcement

was obviously reluctant to detain or arrest self-deploying community members. In spite of public perception, the response had, even on the first day, a wealth of pre-trained volunteers working with the Santa Barbara City and county Community Emergency Response Team (CERT), the UC Santa Barbara CERT and OWCN volunteers; the UC had already been briefed by OSPR's Volunteer Coordinator (VC) on the use of affiliated, trained and vetted, volunteers and approved their use.

Early in the response state agencies proposed that the UC use spontaneous volunteers for oiled beach cleanup activities. Due to safety concerns, oiled beach cleanup is not a preferred activity for volunteers. In order to provide the public with information about volunteer efforts, OSPR launched a CalSpillWatch - Volunteer webpage and activated their Volunteer Hotline. This was in an effort to address the immediate concerns from the public and provide general volunteers.

With the continued and increased public interest to assist in cleanup operations the CDFW Director authorized OSPR to manage spontaneous volunteers for tar ball cleanup activities and the State of California assumed the liability for the use of spontaneous volunteers and the initial cost for operations. By day four of the response, the Volunteer Unit (VU) had established an on-line registration, the Joint Information Center (JIC) had sent out a press release with instructions for volunteer registration, and OSPR Executive had briefed the UC regarding the state's commitment to manage volunteers. The Refugio Oil Spill is the first incident in which OSPR led all efforts regarding spontaneous volunteers for activities outside of oiled wildlife care and processing. The VU managed all aspects of the program, including coordination with EUL to select 53 appropriate tar-ball cleanup sites for volunteer deployment. This coordination ensured that spontaneous volunteer deployments did not interfere with field operations, cultural and

historical sites, or snowy plover nesting sites. The VU executed four tar ball beach cleanup deployments during the month of May that utilized 159 volunteers. The volunteers were provided Personnel Protective Equipment (PPE) and all other necessary equipment to complete their tasks. OSPR ensured volunteer decontamination was conducted as per Cal OSHA requirements and oiled PPE and equipment was disposed of properly. OSPR Wildlife Officers provided for staff and volunteer safety. Volunteer debriefs were provided, thank you notes distributed and on August 30 2016, OSPR hosted a Volunteer Appreciation Day.

During one of the lesson's learned sessions with several of the key NGOs, it became apparent that NGOs did not know the process for becoming affiliated volunteers nor the health and safety concerns associated with oiled beach clean-up. The information was not communicated to them during response operations in a manner that could be easily assimilated by their members. Additionally, because volunteers were required to wear appropriate PPE while on beaches, some NGOs expressed concern that beaches would be perceived as "unsafe" by the general public. They suggested that the UC close the beaches or post safety signage, however such authority resides with local government and not the UC. Further, the local health jurisdiction did not feel the beaches posed a public health threat nor did it view closure signage as appropriate actions.

The Information Management Workgroup of the LA/LB Area Committee is tasked with addressing these issues. To date, several NGOs are participating in this workgroup.

ADDITIONAL IMPROVEMENTS FROM THE COSCO BUSAN OIL SPILL

Environmental Unit Leader (EUL): It is the policy of OSPR that the EUL position be filled with a representative from a state or federal natural resource trustee, and may be assisted by a Deputy

EUL provided by the RP. Concerns were identified during the *Cosco Busan* spill response regarding the appropriateness of a non-trustee agency or RP representative making response decisions regarding trustee resources. Additional concerns were identified regarding data management and accessibility of data for all members of the UC. For the Refugio response the EUL was staffed by OSPR and the Deputy EUL was staffed by an RP representative. This policy has worked well in California over the past decade and other States, including the State of Washington, have similar policies.

Fisheries Closure: Following the *Cosco Busan* incident, California legislation was enacted to provide for the closure of fisheries by the CDFW after an oil spill into marine waters (Assembly Bill 2935). This legislation established a partnership between CDFW (consulting with OSPR), and the Office of Environmental Health Hazard Assessment (OEHHA) whereby OEHHA, based on spill information provided by OSPR, recommends to CDFW whether a fisheries closure is warranted based on human health risks. If no determination is made within the first 24 hours following notification, CDFW must close fisheries. One of the primary successes identified for the Refugio response was the collaboration and cooperation between state and federal agencies, the RP, and the commercial fishermen who assisted with the sampling efforts needed for determining when the closure could be lifted.

Media Outreach: The *Cosco Busan* oil spill took place in the San Francisco Bay, a highly visible environment with significant media interest. During the spill it was identified that OSPR did not have a mechanism to provide regular updates to the public and media regarding the spill response activities. As part of the solution, OSPR developed the CalSpillWatch website, (<https://calspillwatch.dfg.ca.gov/>) which serves as an easily searchable, readily identifiable source for spill related news. During an active oil spill response this website is regularly updated

with information that may include: media releases, fact sheets, photographs of the spill, maps, statistical information, volunteer opportunities, how to report oiled wildlife, and other relevant topics. The website also provides critical information in Spanish language translation. The CalSpillWatch website is a supplement to the JIC.

SUCCESS AND RECOMMENDATIONS:

Below is a brief summary of the success and recommendations outlined in the OSPR Refugio Evaluation Report (May 2016). For more detailed information, the report can be found at <https://cdfgnews.wordpress.com/tag/after-action-report/>

Successful operations were highlighted in a number of areas, including:

- Interagency cooperation among the federal and state agencies participating in the UC;
- Effective and strategic on-location support from CDFW and OSPR executives;
- Training and incorporating spontaneous volunteers into response support activities;
- A Community Open House event during the response attended by more than 200 people;
- Ensuring tribal training and participation in monitoring of cleanup activities in areas of tribal or cultural concern;
- Prompt fisheries closure and successful sampling effort allowing timely lifting of the closure; and,
- Regular meetings to keep Non-Governmental Organizations informed and effectively distribute updated information related to cleanup and emergency response efforts.

OSPR recommendations for improvement include the following:

- Increase education efforts and information sharing with NGOs and local governments regarding spill response planning and roles;
- Train and otherwise ensure qualifications of Local Government On-Scene Coordinators;
- Train additional OSPR staff for Volunteer Unit positions and refine planning for managing spill volunteers;

- Develop materials for more effective and efficient tribal entity involvement during responses;
- Plan for earlier community engagement and improve public information protocols;
- Train additional OSPR staff for lead roles in wildlife operations; and,
- Develop an electronic shoreline assessment data management system.

CONCLUSION: LOOKING TO THE FUTURE

“Plans are nothing. Planning is everything.” Dwight D. Eisenhower was likely not talking specifically about oil spills, but the sentiment is appropriate in the context of improving how we respond. Upon completion of oil spill responses, hot washes are conducted, and after-action reports are generated with recommendations to improve upon how we do things the ‘next time’. This paper endeavored to show how lesson’s learned from two previous significant oil spill events, were helpful in addressing some of the unique challenges the UC faced during the Refugio oil spill response. Specifically, linking recommendations to specific working groups of the Area Committees provides a structured pathway to help ensure that the lessons learned during the Refugio oil spill response will inform not only the planning process, but drills and exercises based on those plans, and potentially future oil spill responses as well.

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