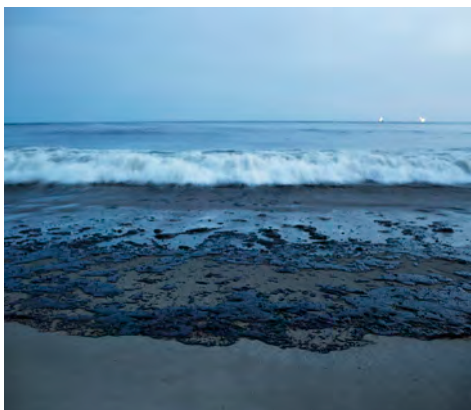


REFUGIO OIL SPILL

PUBLIC GUIDE TO NATURAL RESOURCE DAMAGE ASSESSMENT PROCESS



environmental
DEFENSE CENTER

**Co-Author
Linda Krop
Chief Counsel
Environmental Defense Center**

**Co-Author
Matt Haden
Intern, Environmental Defense Center
University of California Santa Barbara**

The Environmental Defense Center (“EDC”) is a public interest law firm that was founded in the aftermath of the 1969 Santa Barbara Oil Spill to protect and enhance the environment through education, advocacy and legal action. As the only non-profit public interest environmental law firm between Los Angeles and San Francisco, EDC has represented more than 115 clients since 1977. EDC’s current focus areas include protection of the Santa Barbara Channel, ensuring clean water, preserving open space and wildlife, and addressing climate and energy.

EDC has a long history of responding to oil and gas development threats along the California coast. In 1994, EDC helped craft and pass the California Coastal Sanctuary Act, which bans oil leasing in State waters. In 2001, EDC lead the legal fight to provide the State of California with a voice in the matter of federal oil leasing, which resulted in the termination of 40 undeveloped federal leases. EDC has represented several groups in successfully defeating oil and gas projects offshore Santa Barbara County, including ARCO’s Ellwood project, Mobil’s Clearview project, Torch’s Tranquillon Ridge project, Venoco’s Paredon project, and two proposed Liquefied Natural Gas projects. In addition, EDC helped stop the expansion of the Petrochem refinery in Ojai and secured the end to tankering of oil produced offshore California.

EDC’s expertise in oil issues was brought to bear on May 19, 2015, when an onshore pipeline carrying oil produced from offshore platforms in the Santa Barbara Channel ruptured, spilling more than 140,000 gallons of crude oil onto nearby beaches and into the Pacific Ocean. EDC responded immediately and has been working continuously since then to ensure full clean-up and restoration of the affected environment. Thus far we have successfully reinstated the protections of the California Coastal Act, secured the passage of new laws improving regulations governing intrastate pipelines, submitted recommendations for improving federal regulations and recommissioning of the ruptured Plains All American Pipeline, and mobilized and educated the public about the impacts of the spill and opportunities for engagement.

The Natural Resource Damage Assessment process is critical to achieving our long-term goal of requiring full restoration of harm caused to wildlife, habitats, and recreation by the Plains All American Pipeline Refugio oil spill. This guide was prepared to enable affected communities to engage in this important final phase of the oil spill response process.



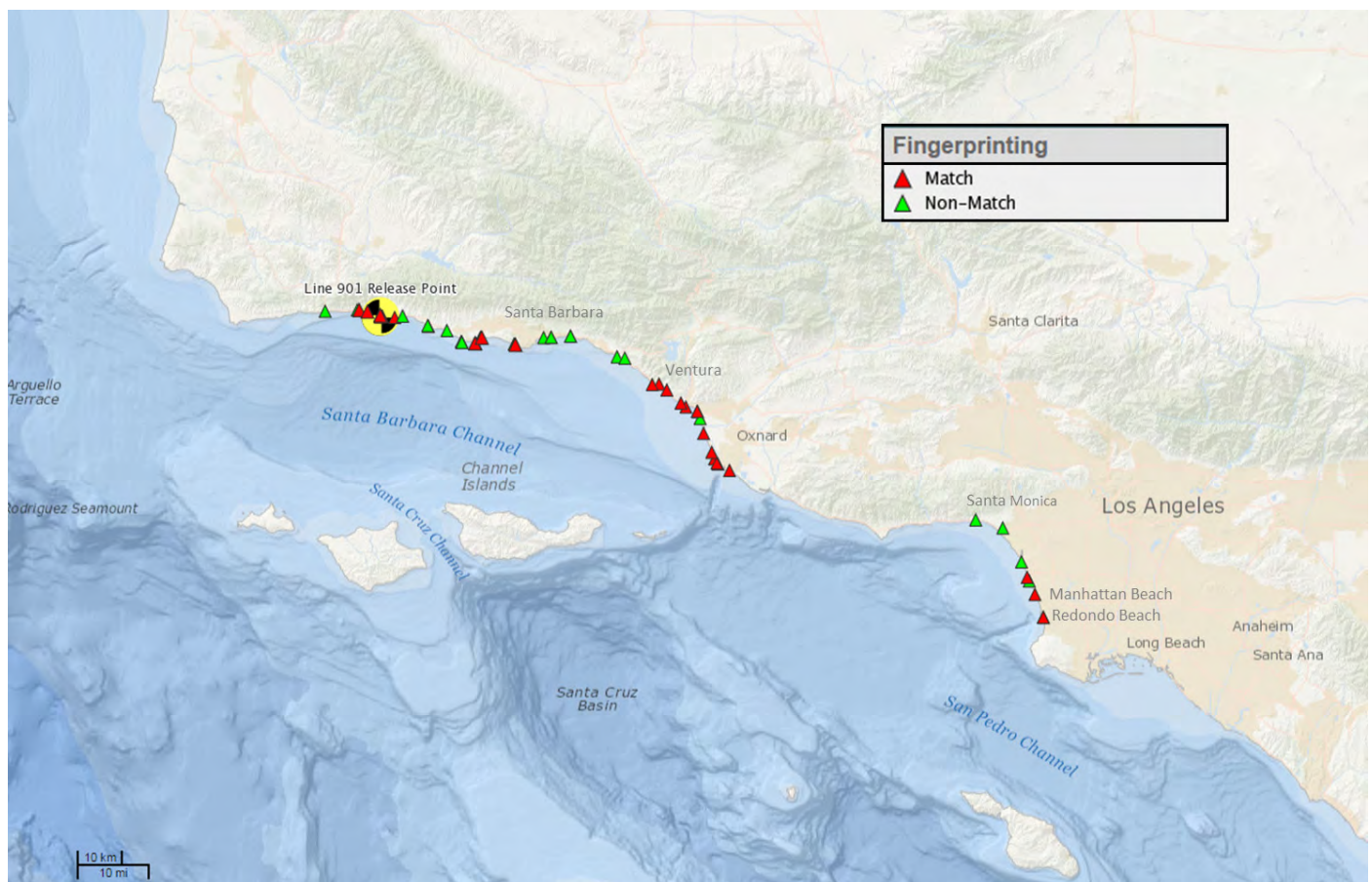
**© 2015 Environmental Defense Center
www.EnvironmentalDefenseCenter.org
805.963.1622**

**906 Garden Street
Santa Barbara, CA 93101**

**111 W. Topa Topa Street
Ojai, CA 93023**

This Guide is intended to help the public understand and participate in the federal Natural Resource Damage Assessment (“NRDA”) process that will be applied to the Refugio Oil Spill which took place in Santa Barbara County on May 19, 2015. On that date, more than 140,000 gallons of crude oil spilled from the Plains All American Pipeline, quickly damaging the sensitive environment of the coastline and the Santa Barbara Channel. The oil travelled a quarter mile to the ocean, and then spread approximately 150 miles along the California coast, reaching as far south as Crystal Cove State Park in Newport Beach. The spill caused the closure of two popular State Parks, many miles of public beaches, and over 130 square miles of fishing grounds. More than 300 marine mammals and birds were killed, and many more were injured. We will never know the full impact of the spill because most of the oil will never be recovered; nor will many dead and injured animals be found.

The oil spill occurred in one of the most environmentally important regions on the planet, in an area often referred to as the “Galapagos of North America.” The Santa Barbara Channel area is located in the transition zone between warm southern Pacific waters and cool northern waters, resulting in unparalleled biodiversity. Because of the importance of this region, the federal government established the Channel Islands National Marine Sanctuary and National Park in 1980, and the state and federal governments subsequently approved a network of marine protected areas around the Islands and along the mainland coast. This environmentally sensitive region was substantially harmed as a result of the Refugio Oil Spill.



Map showing oiled finger printing results after the Refugio Oil Spill. Map courtesy of NOAA-ERMA

Unfortunately, the response to the spill was deferred because Plains apparently delayed in reporting the problem to the proper authorities. Even after the report was made, full deployment of cleanup and response personnel, vessels and equipment were delayed until the second day, resulting in a substantial amount of oil spilling from the pipeline and making it to the ocean. The tides swept much of the oil out to sea during the first 24 hours.

As of December 2015, cleanup activities continue for the areas around the immediate site of the spill, and surveys and sampling will continue for portions of the affected coastline throughout the winter and spring.

The final phase of oil spill response will focus on an assessment of the total environmental damage caused by the spill, and development of a plan to mitigate, compensate and provide for restoration of the damaged natural resources. As with the other phases of oil spill response, this phase is governed by the Oil Pollution Act of 1990 (“OPA”), and is referred to as the NRDA process.

This Guide provides background information regarding the NRDA process and explains its application to the Refugio Oil Spill. The Guide also identifies opportunities for public input and participation. Examples of other NRDA processes in California are discussed in Appendix E.

To ensure adequate compensation, restoration and recovery, damages are assessed for the following:

- The cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources;
- The diminution in value of those natural resources pending restoration plans; and
- The reasonable cost of assessing those damages.⁵

NRDA PROCESS AND THE REFUGIO OIL SPILL

The goal of the NRDA process is to make the community and affected public whole by providing restoration and compensation for injuries to wildlife, habitat, and other natural resources¹ caused by an oil spill, also called an incident.² This is achieved by returning the natural resources and the services they provide back to their baseline conditions.³ The baseline conditions are the levels of services the resources would be providing had the discharge of oil not occurred.⁴

Under OPA, the National Oceanic and Atmospheric Administration (“NOAA”) is responsible for conducting the NRDA process after there has been an offshore oil spill.⁶ Damages are assessed against the Responsible Party (“RP”), in this case, Plains Pipeline LP. The RP is liable for removal costs and damages, including damages for injury to natural resources, real or personal property, subsistence use, revenues, profits and earning capacity, and public services.⁷

THE NRDA PROCESS IS COMPRISED OF THREE MAIN PHASES:

1. Preassessment Phase
2. Restoration Planning Phase
3. Restoration Implementation Phase⁸

PHASE 1: PREASSESSMENT

The Preassessment Phase begins as soon as the trustees are notified of an incident by response agencies or other persons. The Refugio NRDA process began within hours of the incident⁹ and will be continually used to mitigate negative effects of the spill.

The responsibilities of the trustees are to “assess natural resource damages” and “develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent, of the natural resources under their trusteeship.”¹⁰ The trustees involved in this NRDA process are: NOAA; Department of the Interior, acting through the Fish and Wildlife Service; National Park Service; Bureau of Land Management; California Department of Fish and Wildlife-Office of Spill Prevention and Response; California Department of Parks and Recreation; California State Lands Commission; and University of California.¹¹ Although Indian Tribes can be appointed as trustees, no Tribes have been appointed as trustees to the Refugio NRDA process as of the date of this Guide.

The goal of the Preassessment Phase is for the trustees to determine whether they have jurisdiction under OPA to pursue restoration. Once they determine they have jurisdiction, they must then decide whether it is appropriate to pursue the restoration.



To determine whether they have jurisdiction, the trustees must find that (1) a discharge of oil has already occurred, or there is a substantial threat of a discharge of oil into or upon navigable waters or adjoining shorelines;¹² (2) the discharge was not permitted;¹³ and (3) natural resources or the services they provide have been injured. "Injury" for purposes of the NRDA means "an observable or measurable adverse change in a natural resource or impairment of a natural resource service."¹⁴ The injury may result directly or indirectly from the incident.¹⁵



State elected officials received a tour of Refugio Beach by the Unified Command on May 23, 2015. Photos by EDC

Once the trustees determine they have the jurisdiction under OPA to continue, the next step is for them to decide whether restoration actions should be pursued.¹⁶ Again, three conditions must be met for this to be determined: (1) injuries have resulted, or are likely to result, from the incident; (2) response actions have not adequately addressed, or are not expected to adequately address, the injuries resulting from the incident; and (3) feasible primary and/or compensatory restoration actions exist to address the potential injuries.¹⁷

If all of these conditions are met, then the trustees may go forward

The Refugio NRDA process is in the data gathering phase. Teams called Technical Working Groups (TWG)²³ have been assembled to quantify injuries to the following resources:

- Birds (including pelicans and western snowy plovers)
- Marine mammals (including sea lions and dolphins)
- Fish (including grunion and surfperch)
- Crustaceans and Invertebrates
- Sandy Beach Habitat
- Rocky Intertidal Habitat
- Subtidal Habitat
- Recreation (including beaches, parks and campgrounds)²⁴

with the NRDA process by preparing and publishing a Notice of Intent to Conduct Restoration Planning.¹⁸ [All Notices referenced in this Guide are published in the Federal Register, which is accessible to the public at <https://www.federalregister.gov/>. As noted below, the public can also sign up for notices through the Refugio Oil Spill Response website.] This Notice must be made publicly available; however, it is up to the discretion of the trustees to determine the means by which it is made publicly available and whether public comments will be allowed.¹⁹ In general, the Notice will include: the facts of the incident; the basis for the trustees' authority to proceed with the assessment; a description of the natural resources and services that are, or are likely to be, injured as a result of the incident; and potential restoration activities.²⁰ If the information is available at the time, the Notice may also include the proposed strategy to assess the injury as well as the type and scale of restoration that the trustees agreed upon.²¹ Once the Notice has been created, the trustee will also provide a copy to the RP and ask for the RP's participation in the process of restoration planning.²²

According to the November 2015 Refugio Oil Spill NRDA Newsletter, field teams collected 202 dead birds (including Brown Pelicans, Common Murres, and Pacific Loons), and 99 dead marine mammals (including dolphins, sea lions and one elephant seal).²⁵ Many more injured birds and marine mammals were also collected.²⁶



An oiled pelican is rescued at Goleta Pier.
Photo by Jeffrey Lindgren

In addition to the evidence collected during the response to the spill, several field studies are being conducted to assess injuries to coastal habitats, including Sandy Beach Habitat (focusing on sand crabs, bloodworms, beach hoppers and kelp wrack); Rocky Intertidal Habitat (focusing on mussels, feather-boa kelp, barnacles, and limpets); and Subtidal Habitat (focusing on lobsters, abalone, surfgrass, and eelgrass).²⁷

The trustees will also assess impacts to recreational uses. These uses include camping, non-commercial fishing and other beach-related activities.²⁸

Finally, the teams will continue to monitor for the presence of oil, especially during the winter and spring when storms may bring oil back onshore and in tidal areas. Specifically, the teams will survey for buried oil, conduct periodic sampling throughout the Santa Barbara response area until at least May 2016, search for and sample oil after the first significant storm event, determine additional cleanup needs if oil is detected that

is a match to the Refugio Oil Spill, and monitor progress in areas where scientists determine that further cleanup would do greater harm to the environment versus natural recovery processes.²⁹ Information collected during these activities will be considered as part of the Preassessment Phase.

Appendix B (attached hereto) contains a flowchart illustrating the Preassessment Phase decision-making framework. Once the Preassessment Phase is completed, the trustees will proceed to the Restoration Planning Phase.

PHASE 2: RESTORATION PLANNING

The goal of this phase is to evaluate the potential injuries to natural resources and their services and to determine the need for and scale of restoration planning or actions.

The restoration actions allowed under OPA can either be primary or compensatory.³⁰ Primary restoration is action that is taken in order to return injured natural resources to their baseline levels.³¹ Compensatory

restoration is action taken to compensate for the interim losses of natural resources and their services.³²

Primary restoration actions range from simple things, such as closing off an area to humans, to much more intensive actions that would return the natural resources and services back to baseline much quicker.³³ In addition to the primary restoration actions, the trustees must also consider a natural recovery alternative.³⁴ Under this alternative the trustees take no action and they allow the environment to recover to baseline on its own.

When the trustees are trying to identify primary restoration actions, they should consider whether:

- Activities exist that would prevent or limit the effectiveness of restoration actions (e.g., residual sources of contamination);
- Any primary restoration actions are necessary to return the physical, chemical, and biological conditions necessary to allow recovery or restoration of the injured natural resources (e.g., replacement of sand or vegetation, or modifying hydrologic conditions); and
- Restoration actions focusing on certain natural resources and services would be an effective approach to achieving baseline conditions (e.g., replacing essential species, habitats, or public services that would facilitate the replacement of other, dependent, natural resource and service components).³⁵

Compensatory restoration is also important to address the loss of natural resources and the services they provide. Whenever possible, trustees should favor alternatives that provide services of the same type and quality in order to most closely replace the service damaged by the incident.³⁶



Santa Barbara County coastline on May 20, 2015 after the Refugio Oil Spill. Photo courtesy of South Coast Habitat Restoration

The Restoration Planning Phase is broken up into two components:

1. Injury Assessment
2. Restoration Selection.

INJURY ASSESSMENT

Injury Assessment is important because it determines the nature, degree, and extent of any injuries to natural resources and their services due to an incident.³⁷ Trustees use this information as a basis to evaluate the need for, type of, and scale of their restoration efforts. At this point, the trustees must determine whether there is an injury and either (1) exposure, a pathway, and an adverse change to a natural resource or service as a result of a discharge; or (2) an injury to a natural resource or impairment of a natural resource service as a result of response actions or a substantial threat of a discharge.³⁸



Photo courtesy of South Coast Habitat Restoration

The trustees must determine whether an injury has occurred as well as the type or nature of the injury. Examples of injuries include: "changes in survival, growth, and reproduction; health, physiology and biological condition; behavior; community composition; ecological processes and functions; physical and chemical habitat quality or structure; and public services."³⁹ In assessing injury, the trustees must be able to quantify the degree and extent of the injury relative to the baseline.⁴⁰ The trustee must also consider the potential for natural recovery.⁴¹



More than 300 marine mammals and birds were killed due to the Refugio Oil Spill.

Photo by Gail Osherekno

NOAA provides trustees with a framework that helps to outline the injury assessment component and determine whether an injury has occurred. The framework has five steps.⁴²

First, the trustees must review the information on potential injuries provided in the Preassessment Phase. The trustees review all of the information and their preliminary conclusions that were found in this phase.



Boom placed to protect the wetlands at Haskell's Beach. Photo by Gail Osherenko

The second step is to construct an inventory of potential injuries. During this step, the trustees organize and structure what they know about the potential injuries that resulted from the incident. In order to organize the information, the trustees should answer the following questions:

- What are the natural resources and services of concern?
- What are the procedures available to evaluate and quantify injury and the associated cost and time requirements?
- What is the evidence indicating exposure?
- What is the pathway from the incident to the natural resource and/or service of concern?
- What is the adverse change or impairment that constitutes injury?
- What is the evidence indicating injury?
- What is the mechanism by which injury occurred?
- What is the potential degree and spatial and temporal extent of the injury?
- What is the potential natural recovery period?
- What are the kinds of primary and/or compensatory restoration actions that are feasible?⁴³

Next, the trustees must evaluate injuries for the strength of evidence. The following questions are all useful in attempting to evaluate the strength of evidence:

- Can the injury be stated in terms that comply with the definition of injury in the OPA regulations?
- Can the injury be reliably documented under appropriate quality assurance procedures?
- Can the pathway of exposure be established through empirical observations, modeling, or a

- combination of observations and models?
- Is it reasonable to conclude that the injury was caused by the incident in question or do other plausible explanations exist?⁴⁴

The next two steps occur during the Restoration Selection Phase of the NRDA process.

RESTORATION SELECTION

After the trustees have completed the first three steps of NOAA's five-step process, they move into the Restoration Selection component.⁴⁵ The purpose of this process is to develop a Restoration Plan to restore the injured natural resources and services. It is in this stage where the trustees complete the last two steps of the five-step process.

The fourth step is to establish preliminary restoration objectives. In this step, the trustees set forth a list of restoration goals. These goals could be based on a number of factors, some of which include "knowledge of the incident gained during the preassessment phase, additional information developed as part of the injury assessment design process, and the knowledge of experts."⁴⁶



Workers cleaning up oil at Refugio Beach, May 20, 2015. Photo by EDC

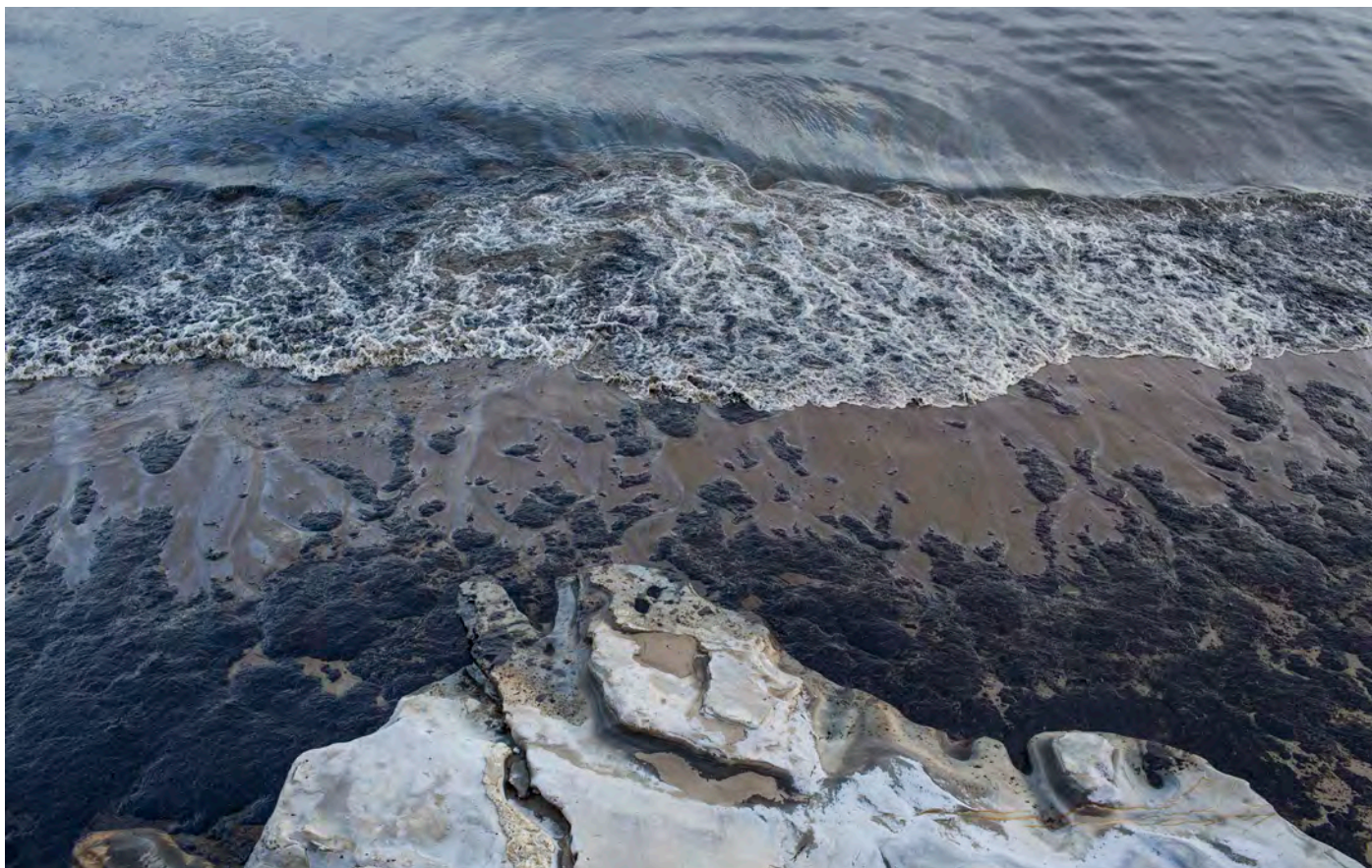
For the last step of the process, the trustees must evaluate the injuries for their relevance to restoration. This means that they must evaluate the potential injuries and how easily the problem could be fixed through restoration actions. These evaluations can be further sorted into the categories of relevance to primary restoration and relevance to compensatory restoration. The following questions are helpful when determining the relevance to restoration:

1. RELEVANCE TO PRIMARY RESTORATION

- Can the injury be remedied by direct restoration of chemical, physical, or biological attributes of the environment?
- Do the trustees conclude, on a tentative basis, that active primary restoration is preferable to natural recovery?

The Refugio trustees have identified the following criteria which will guide their consideration of restoration projects:

- Relationship to injured resources and/or services
- Likelihood of success
- Time to provide benefits
- Duration of benefits
- Multiple resource and service benefits
- Comprehensive range of projects
- Opportunities for collaboration
- Educational/Research value
- Cost-effectiveness.⁵¹



Refugio Beach immediately after the May 19, 2015 oil spill. Photo by Erin Feinblatt.

After reviewing the various options, the trustees will select the preferred alternative. If the trustees conclude that two or more alternatives are equally preferable, they must select the most cost-effective alternative.⁵²

After the preferred alternative(s) are selected, the trustees must then develop a Draft Restoration Plan.⁵³ The Draft Plan must include:

- A summary of the injury assessment;
- Goals and objectives of restoration;
- The range of restoration alternatives and results of the evaluation;
- Identification of the trustees' preferred alternative(s);
- A description of the role of the RP(s); and
- Performance criteria and a proposal for monitoring and determining restoration effectiveness.⁵⁴

The Draft Restoration Plan must be made available for public review and comment.⁵⁵ Based on the Draft Plan and public comments, the trustees will then create the Final Restoration Plan.⁵⁶ The Final Plan must include responses to the public comments and indicate any changes that were made to the Draft Plan.⁵⁷

ENVIRONMENTAL REVIEW

The National Environmental Policy Act ("NEPA")⁵⁸ applies to the Draft Restoration Plan.⁵⁹ The purpose of NEPA is to encourage harmony between humans and the environment, promote efforts to prevent environmental damage, and enrich the understanding of the ecological systems and natural resources important to the nation.⁶⁰ NEPA achieves these goals by requiring federal agencies to consider the environmental impact of proposed actions, alternatives that are available to avoid or minimize such impacts, and any irreversible and irretrievable commitment of resources that would result if the project is implemented.⁶¹

If it is uncertain whether the trustees' proposed action will have a significant effect on the human environment, the NEPA process begins with an Environmental Assessment ("EA").⁶² The EA serves to indicate and document whether the agency's proposed action (referred to as the "preferred alternative") is likely to have a significant effect.

To begin the EA process, the trustees may issue a Notice of Intent to Prepare a Draft Restoration Plan/EA, or simply prepare a Draft Restoration Plan/EA.⁶³ Once the Draft Restoration Plan/EA is prepared, the trustees must publish a Notice of Availability of Draft Restoration Plan/EA ("NOA"). The NOA shall provide a minimum thirty-day period for the public to review and comment on the Draft Restoration Plan/EA.⁶⁴

After the trustees review the public comments they received, they must determine whether it is likely that there will be a significant effect on the human environment from their preferred alternative(s). If not, a Finding Of No Significant Impact ("FONSI") determination

is made, and a Final Restoration Plan/EA will be issued.⁶⁵ On the other hand, if it is determined that there will be significant effects an Environmental Impact Statement ("EIS") is required.⁶⁶

The EIS process begins with the trustees issuing a Notice of Intent to Prepare a Draft Restoration Plan/EIS.⁶⁷ After receiving comments on the scope of issues to address in the EIS, a Draft Restoration Plan/EIS will be prepared. A Notice of Availability of Draft Restoration Plan/EIS must be published in the Federal



Plains All American Pipeline's Line 901 being excavated after the Refugio Oil Spill.
Photos by Bruce Reitherman, obtained through a Public Records Act request.

Register, and must be made available to the public for review and comment for a minimum of forty-five calendar days.⁶⁸ The trustees will then prepare the Final EIS, which must include all public comments and incorporate changes to the Draft EIS where necessary.⁶⁹

A Notice of Availability must be published in the Federal Register for the Final Restoration Plan/EIS.⁷⁰ No decisions can be made regarding the proposed action until thirty days after the Notice of Availability of the Final EIS.⁷¹ Once the Final EIS has been approved, the trustees must prepare a Record of Decision ("ROD") to be included in the Administrative Record.⁷² The ROD must be made publicly available and must summarize the trustees' decision-making process.⁷³

The process of Restoration Planning is depicted in Appendix D, attached hereto.

PHASE 3: RESTORATION IMPLEMENTATION

Once the Final Restoration Plan is developed, the trustees will then prepare a demand to the RP(s).⁷⁴ The demand must direct the RP(s) to either implement the Final Restoration Plan or advance funds to cover the trustees' costs of assessment and restoration.⁷⁵ The RP(s) have ninety days to respond to the demand.⁷⁶ If the RP(s) do not agree to the demand, the trustees may file a judicial action, submit a claim for damages to the federal Oil Spill Liability Trust Fund, or seek an appropriation from the Oil Spill Liability Trust Fund.⁷⁷ The trustees must then either implement the Final Restoration Plan or oversee the implementation of the Plan by the RP(s).⁷⁸

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

The Oil Pollution Act of 1990 expresses support for public participation, including the requirement that NRDA plans "shall be developed and implemented...only after adequate public notice, opportunity for a hearing, and consideration of all public comment."⁸⁰ The OPA regulations reinforce this sentiment, by

RECEIVE ELECTRONIC NOTICES

The public can sign up to receive notifications pertaining to the Refugio Oil Spill NRDA process at <https://www.wildlife.ca.gov/OSPR/NRDA/Refugio>. The website includes general information, available documents, contact information, and a link to sign up for the latest news and updates.



ATTEND INFORMATIONAL MEETING

As noted in the November 2015 newsletter, an informational public meeting will be held :

January 20, 2016
7:00-8:30 p.m.
Santa Barbara Public Library
Faulkner Gallery
40 E. Anapamu Street
Santa Barbara, CA⁷⁹

requiring trustees to provide opportunities for public involvement in the restoration planning process, or any time prior “if such involvement may enhance trustees’ decision-making or avoid delays in restoration.”⁸¹ Despite these statements, OPA does not provide many mandatory opportunities for public participation. As noted above, for example, the Notice of Intent to Conduct Restoration Planning is not issued until after the Preassessment Phase is concluded and public comment on the Notice is not required. In addition to the opportunities afforded as part of the NRDA process, however, NEPA also provides for public input regarding the assessment of environmental impacts and potential alternatives for restoration planning and selection. Public involvement is important to ensure an accurate and complete NEPA process, and an adequate assessment of damages and restoration planning.

The following chart identifies which steps in the NRDA/NEPA process require public comment, and which steps provide discretion to the trustees. The first formal public notice will be the issuance of a Notice of Intent to Conduct Restoration Planning. As of the date of this Guide, there is no deadline or projected date for issuance of this Notice for the Refugio NRDA process.

Type of Notice/ Document	Public Comment Required	Public Comment Optional	No Public Comment
Notice of Intent to Conduct Restoration Planning		X	
Notice of Intent to Prepare a Draft Restoration Plan/EA		X	
Notice of Availability of Draft Restoration Plan/EA	X		
Notice of Availability of Final Restoration Plan/ Final EA/FONSI	Required in certain circumstances ⁸²		Not required unless certain circumstances apply
Notice of Intent to Prepare a Draft Restoration Plan/EIS	X		
Notice of Availability of Draft Restoration Plan/EIS	X		
Notice of Availability of Final Restoration Plan/ Final EIS/ROD			Not required but the public may comment during a 30-day circulation period

APPENDICES

- A. Appendix A—Identifying Natural Resources & Services at Risk
- B. Appendix B—Flowchart Illustrating the Preassessment Phase Decision-Making Process
- C. Appendix C—Example of Preliminary Objectives during Injury Assessment
- D. Appendix D—Graphic Illustrating the Restoration Plan Development Process
- E. Appendix E—Examples of Other NRDA's

Appendix A

Identifying Natural Resources & Services at Risk¹

Determining whether natural resources or services are or are likely to be injured requires that trustees consider the:

- **Circumstances of the incident. Factors to consider include the:**

- Location of the incident;
- Cause of the incident (e.g. collision, grounding, blowout, etc.);
- Condition of the vessel or facility;
- Environmental conditions contributing to the incident (e.g., climatic, weather, and water conditions, land-water configuration, etc.); and
- Status of the incident (e.g., actual or potential discharge, discrete/intermittent/continuous discharge, etc.) ;

- **Characteristics of the discharge or substantial threat of the discharge. Factors to consider include:**

- The type of oil(s) discharged or threatened to be discharged, which may be described by its physical and chemical parameters;
- Date, time, and duration of the discharge or its threat;
- Extent of the discharge or its threat (e.g., volume, spatial and temporal boundaries, etc.); and
- Characteristics of the discharge or its threat that address its transport and fate (e.g., weathering, evaporation rates, dissolution, tendency for formation of emulsions, photo-oxidation rates, biodegradation potential, and toxicity) ;

- **Characteristics of the natural resources. Factors to consider include:**

- The natural resources in the area of the incident;
- The services they provide
- Habitat and species types;
- Seasonal implications on sensitive life stages; and
- Unique ecological components (e.g., protected habitats, and endangered and threatened species; etc.); and

- **Potential for injury. Factors to consider include:**

- Potential for exposure;
- Pathways;
- Causal mechanisms; and
- Availability of assessment procedures and data to analyze these factors

¹ Eli Reinharz and Jacqueline Michel, Preassessment Phase Guidance Document for Natural Resources Damage Assessment Under the Oil Pollution Act of 1990, accessed September 22, 2015, http://www.fws.gov/Contaminants/FWS_OSCP_05/fwscontingencyappendices/W-NRDA/PreassessmentNOAA.pdf, pp. 3-6.

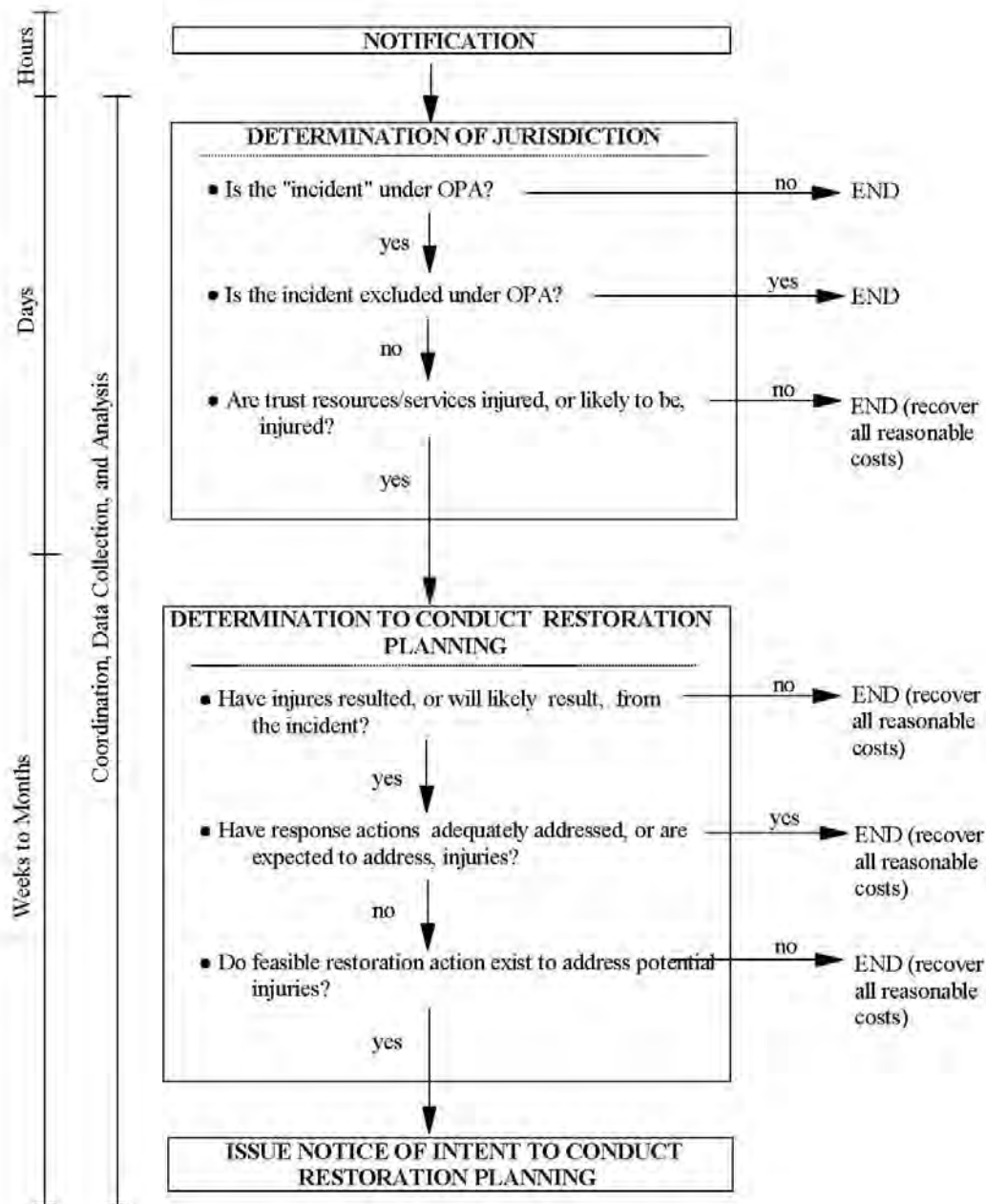


Exhibit 3-1 Preassessment Phase Decisionmaking Framework.

² Reinharz, et al., page 3-2.

- Objective 1.** Clean up, isolate, or remediate any continuing sources of oil that would inhibit natural recovery or limit the success of further restoration efforts. Actions might include removal of buried oil in a gravel beach that continues to generate sheens.
- Objective 2.** Restore or rehabilitate injured habitats to baseline conditions. Actions might include replanting of salt marsh vegetation and protection of oiled areas from erosion during vegetation recovery.
- Objective 3.** Enhance the recovery of specific injured natural resources and services that are important to the environment or public. Actions might include replacement of killed birds by encouraging recolonization of the area (e.g. nesting sites), reseeding of shellfish beds, and placement of clean sand on degraded public beaches.
- Objective 4.** Create or enhance habitat or human facilities to provide equivalent services as compensation for services lost from the onset of injury to rehabilitation of additional areas of degraded salt marsh near the discharge area (but not caused by the discharge).

³ Michael T. Huguenin, David H. Haury, John C. Weiss, et al., Injury Assessment Guidance Document for Natural Resource Damage Assessment Under the Oil Pollution Act of 1990, accessed September 22, 2015, http://www.losco.state.la.us/pdf_docs/NOAA_NRDA_Guidance_Injury_Assessment_1996.pdf, pp. 2-18.

Appendix D

Graphic Illustrating the Restoration Plan Development Process⁴

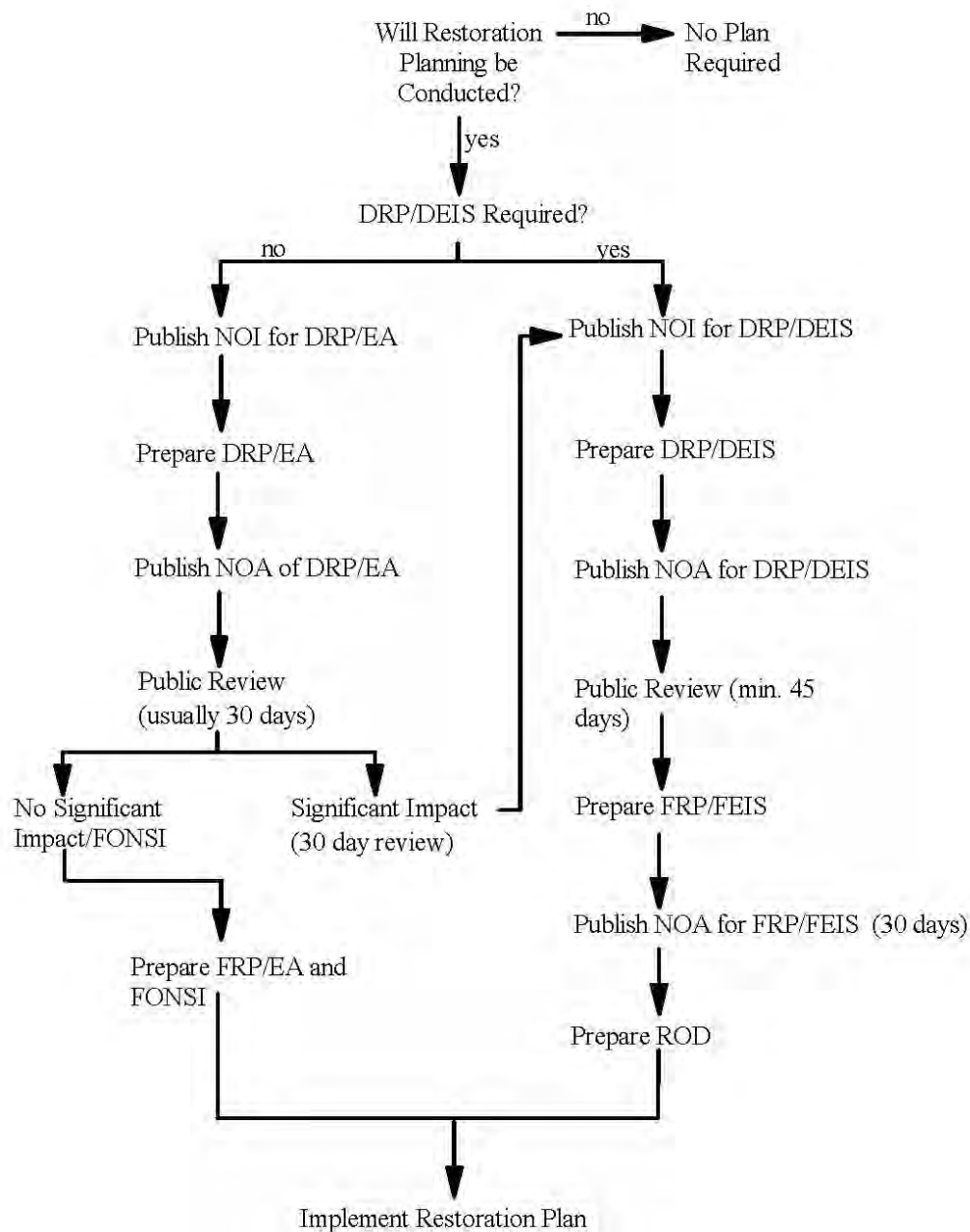


Exhibit 2.1 Restoration plan development. (NOI = Notice of Intent, NOA = Notice of Availability, DRP = Draft Restoration Plan, FRP = Final Restoration Plan, EA = Environmental Assessment, DEIS = Environmental Impact Statement, FEIS = Final Environmental Impact Statement, FONSI = Finding of No Significant Impact, ROD = Record of Decision)

⁴ Reinharz, et al., page 2-8.

A review of other NRDA processes in California can provide valuable information regarding the process, the types of injuries quantified and damages assessed, and the range of restoration projects approved by trustee agencies. This section provides a detailed summary of the Torch Pipeline Oil Spill due its proximity and similarity to the Refugio Oil Spill, as well as summaries of other recent NRDA decisions in California.

TORCH PIPELINE OIL SPILL ⁵

The Torch Pipeline Oil Spill took place on September 28, 1997, and affected seventeen miles of California coastline near Vandenberg Air Force Base. The incident was caused by a rupture in a pipeline that was owned or operated by the Torch Operating Company, Nuevo Energy Company, and Black Hawk Oil and Gas Company—together, these companies are referred to as the Responsible Parties. The pipeline ran from an offshore platform, Platform Irene, to a processing facility located onshore north of the City of Lompoc in Santa Barbara County. The rupture released around 6,846 gallons of a petroleum product, diesel and an anti-corrosion chemical compound, into the ocean, affecting mainly seabirds and shoreline habitats.

The Trustee Council was made up of representatives from the U.S. Fish and Wildlife Service, the U.S. Department of Air Force at Vandenberg Air Force Base, California Department of Fish and Game-Office of Spill Prevention and Response, and the California State Lands Commission, with assistance from the Santa Barbara County Planning and Development Department. Together, the trustees determined that the Spill was considered an “incident” under 15 C.F.R. §990.30 and was not permitted under federal or state law. Because natural resources under the trusteeship of the trustees were most likely affected, they had jurisdiction to pursue restoration.



Platform Irene, MMS photo

The decision to pursue a NRDA was based on the following information:

- “(1) Data gathered during Spill response indicated that injuries to natural resources resulted from the incident, e.g., seabird mortality;
- (2) the response actions were not expected to address the injuries resulting from the incident; and
- (3) feasible primary and/or compensatory restoration actions existed that could address the potential injuries.”

The trustees came up with specific goals for what they wanted the Restoration Plan to recover. Specifically, they wanted to restore the following natural resources and services: seabirds, sandy and gravel beach habitats, rocky intertidal shoreline habitats, and the use of beaches for human recreation.

³ Michael T. Huguenin, David H. Haury, John C. Weiss, et al., Injury Assessment Guidance Document for Natural Resource Damage Assessment Under the Oil Pollution Act of 1990, accessed September 22, 2015, http://www.losco.state.la.us/pdf_docs/NOAA_NRDA_Guidance_Injury_Assessment_1996.pdf, pp. 2-18.

Appendix D (continued)

Examples of Other NRDAs

TORCH PIPELINE OIL SPILL (continued)

During the Injury Assessment Phase, the trustees focused on the magnitude of each injury, for example, number of deaths of animals, as well as the time to full recovery. The trustees narrowed down and selected appropriate assessment procedures to address the injured resources mentioned above. They selected the assessment procedures based on the following:

“(1) Range of procedures available under section 990.27(b) of the OPA regulations; (2) time and cost necessary to implement the procedures; (3) potential nature, degree, and spatial and temporal extent of the injury, (4) potential restoration actions for the injury, (5) relevance and adequacy of information generated by the procedures to meet information requirements of planning appropriate restoration actions, and (6) input from consultants with damage assessment experience, scientific experts, and/or technical consultants.”⁸

The trustees decided on five restoration projects to help mitigate the injuries sustained from the Incident. The five projects are:

- *Seabird Colony Enhancement Project*: The goal of this project is to protect seabirds by reducing human disturbance of their roosts and colonies;
- *Sandy Beach and Dune Habitat Restoration*: The goal of this project is to eradicate invasive plant species and to replant native vegetation more conducive to the wellbeing and survival of indigenous species;
- *Mussel Bed Restoration*: The goal of this project is to accelerate the natural restoration of mussel beds along the rocky intertidal areas;
- *Rocky Intertidal Habitat Protection Program—Focus on Abalone and Other Rocky Intertidal Species*: The goal of this project is to combine educational elements from other proposed restoration alternatives



⁸ Id., p. 20.

⁹ Id. at pp. 5-6.

¹⁰ Id. at p. 14.

TABLE OUTLINING OTHER SPILLS IN CALIFORNIA¹¹

Name of Spill	<u>McGrath</u>	<u>Torch-Platform Irene</u>	<u>Cosco Busan</u>
Location	McGrath Lake and McGrath State Beach, Ventura County	Santa Barbara County	San Francisco Bay
Date of Incident	December 25, 1993	September 28, 1997	November 7, 2007
Date of Final Restoration Plan	January, 2005	October 24, 2007	February, 2012
Amount of Oil Spilled	87,150 gallons	>6,846 gallons	53,569 gallons
Injuries	Birds (206 collected), riparian & coastal habitat	Birds (>700 killed), sandy and rocky shoreline habitat, recreational beach use	Birds, marine mammals, fish, habitat, human use
Settlement	\$1.4 million	\$2.4 million	\$32.3 million
Types of Restoration Projects	1. No Action 2. Land acquisition for easy habitat transition 3. Habitat enhancement 4. Public information and education	1. Seabird colony enhancement 2. Sandy beach and dune habitat restoration 3. Mussel bed restoration 4. Rocky intertidal habitat protection 5. Boardwalk at Ocean Beach Park	Bird, habitat, fish & eelgrass restoration, recreational improvements

¹¹ The information in the chart, as well as information regarding other NRDA processes in California, can be found here: <https://www.wildlife.ca.gov/OSPR/NRDA>.

REFERENCES

- ¹ Natural resources are defined as: “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the exclusive economic zone), and State or local government or Indian tribe, or any foreign government.” 33 U.S.C. § 2701(20); 15 C.F.R. § 990.30.
- ² 33 U.S.C. § 2701(14); 15 C.F.R. § 990.10.
- ³ Eli Reinharz and Jacqueline Michel, *Preassessment Phase Guidance Document for Natural Resources Damage Assessment Under the Oil Pollution Act of 1990*, accessed September 22, 2015, http://www.fws.gov/Contaminants/FWS_OSCP_05/fwscontingencyappendices/W-NRDA/PreassessmentNOAA.pdf, page 1-1
- ⁴ *Id.*
- ⁵ 33 U.S.C. § 2706 (d).
- ⁶ 15 CFR § 990 *et seq.*
- ⁷ 33 U.S.C. §2702.
- ⁸ 15 C.F.R. § 990.12.
- ⁹ “Natural Resource Trustees Begin Natural Resource Damage Assessment Process for the Refugio Beach Oil Spill,” *Refugio Beach Oil Spill*, last modified July, 2015, accessed September 22, 2015. http://www.fws.gov/ventura/docs/news/RBOS%20NRDA%20newsletter_final.pdf, page 2.
- ¹⁰ 33 U.S.C. § 2706(c).
- ¹¹ “Refugio,” last modified July 14, 2015, accessed September 22, 2015, <https://www.wildlife.ca.gov/OSPR/NRDA/Refugio>; “Refugio Response Joint Information Center,” last accessed October 13, 2015, <http://refugioresponse.com/go/doc/7258/254286>.
- ¹² 15 C.F.R. § 990.30.
- ¹³ 15 C.F.R. § 990.41(a)(2).
- ¹⁴ 15 C.F.R. § 990.30.
- ¹⁵ *Id.*
- ¹⁶ 15 C.F.R. § 990.42(a).
- ¹⁷ *Id.*
- ¹⁸ 15 C.F.R. § 990.44(a).
- ¹⁹ *Id.*
- ²⁰ 15 C.F.R. § 990.44(b).
- ²¹ *Id.*
- ²² 15 C.F.R. § 990.44(d).
- ²³ Cyndi Dawson to California Ocean Protection Council, “Update on the Refugio Oil Spill,” last modified July 29, 2015, accessed September 23, 2015, http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20150729/Item4-OPC-July292015-RefugioOilSpill-Memo.pdf.
- ²⁴ *Id.*
- ²⁵ “Refugio Beach Oil Spill Natural Resource Damage Assessment Update,” November 2015.
- ²⁶ *Id.*
- ²⁷ *Id.*
- ²⁸ *Id.*
- ²⁹ “Fact Sheet: Refugio Oil Spill Cleanup Phases,” last modified August 25, 2015, accessed September 22, 2015, <http://www.refugioresponse.com/go/doc/7258/2588430/>.
- ³⁰ 15 C.F.R. § 990.53(a)(2).
- ³¹ 15 C.F.R. § 990.53(b)(3).
- ³² 15 C.F.R. § 990.53(c)(1).
- ³³ Deborah P. French, Henry Rines, Dian Gifford, et al., *Primary Restoration Guidance Document for Natural Resource Damage Assessment Under the Oil Pollution Act of 1990*, accessed September 22, 2015, http://www.fws.gov/contaminants/fws_oscp_05/fwscontingencyappendices/W-NRDA/PrimaryRestorationNOAA.pdf, page 1-5.
- ³⁴ *Id.*
- ³⁵ Michael T. Huguenin, David H. Haury, John C. Weiss, et al., *Injury Assessment Guidance Document for Natural Resource Damage Assessment Under the Oil Pollution Act of 1990*, accessed September 22, 2015, http://www.losco.state.la.us/pdf_docs/NOAA_NRDA_Guidance_Injury_Assessment_1996.pdf, page 2-7.
- ³⁶ 15 C.F.R. § 990.53(c)(2).
- ³⁷ 15 C.F.R. § 990.51.
- ³⁸ 15 C.F.R. § 990.51(b).

- ³⁹ 15 C.F.R. § 990.51(c).
- ⁴⁰ 15 C.F.R. § 990.52.
- ⁴¹ 15 C.F.R. § 990.52(c).
- ⁴² Huguenin, et al., page 2-1.
- ⁴³ *Id.*, page 2-11—2-12.
- ⁴⁴ *Id.*, page 2-16.
- ⁴⁵ 15 C.F.R. § 990.53.
- ⁴⁶ Huguenin, et al., page 2-2.
- ⁴⁷ *Id.*, page 2-19.
- ⁴⁸ *Id.*
- ⁴⁹ 15 C.F.R. §§ 990.53, 990.54.
- ⁵⁰ 15 C.F.R. § 990.54(a).
- ⁵¹ “Refugio Beach Oil Spill Natural Resource Damage Assessment Update,” November 2015.
- ⁵² 15 C.F.R. § 990.54(b).
- ⁵³ 15 C.F.R. § 990.55.
- ⁵⁴ 15 C.F.R. § 990.55(b).
- ⁵⁵ 15 C.F.R. § 990.55(a), (c).
- ⁵⁶ 15 C.F.R. § 990.55(d).
- ⁵⁷ *Id.*
- ⁵⁸ 42 U.S.C. §§ 4321 *et seq.*
- ⁵⁹ 15 C.F.R. § 990.23(b).
- ⁶⁰ 42 U.S.C. § 4321.
- ⁶¹ 42 U.S.C. § 4332.
- ⁶² 15 C.F.R. § 990.23(c)(1).
- ⁶³ 15 C.F.R. § 990.23(c)(1)(ii)(A).
- ⁶⁴ 15 C.F.R. § 990.23(c)(1)(ii)(D).
- ⁶⁵ 15 C.F.R. § 990.23(c)(1)(ii).
- ⁶⁶ 15 C.F.R. § 990.23(c)(2)(ii)(A).
- ⁶⁷ *Id.*
- ⁶⁸ 15 C.F.R. § 990.23(c)(2)(ii)(A)-(C).
- ⁶⁹ 15 C.F.R. § 990.23(c)(2)(ii)(D).
- ⁷⁰ 15 C.F.R. § 990.23(c)(2)(ii)(E).
- ⁷¹ *Id.*
- ⁷² 15 C.F.R. § 990.23(c)(2)(ii)(G).
- ⁷³ 15 C.F.R. § 990.23(c)(2)(ii)(G).
- ⁷⁴ 15 C.F.R. § 990.62.
- ⁷⁵ 15 C.F.R. § 990.62(b).
- ⁷⁶ 15 C.F.R. § 990.62(d).
- ⁷⁷ 15 C.F.R. § 990.64(a).
- ⁷⁸ 15 C.F.R. § 990.66.
- ⁷⁹ *Id.*
- ⁸⁰ 33 U.S.C. § 2706(c)(5).
- ⁸¹ 15 C.F.R. § 990.14(d).
- ⁸² A 30-day public review period is required when a FONSI is prepared when the proposed action is similar to one that normally requires an EIS, or the action is precedent-setting. See 40 C.F.R. § 1501.4(e)(2). Individual agencies may add other criteria for requiring public comment on a FONSI. *Id.*
- ⁸³ Eli Reinharz and Jacqueline Michel, *Preassessment Phase Guidance Document for Natural Resources Damage Assessment Under the Oil Pollution Act of 1990*, accessed September 22, 2015, http://www.fws.gov/Contaminants/FWS_OSCP_05/fwscontingencyappendices/W-NRDA/PreassessmentNOAA.pdf, page 3-5.
- ⁸⁴ *Id.*, page 3-6.

