

# Draft Restoration Plan for the Oahu Sugar Site: Middle Loch, Pearl Harbor

Oahu, Hawai‘i



Prepared by:

U.S. Department of the Interior  
*U.S. Fish and Wildlife Service*

For:

The Natural Resource Trustees  
for the Oahu Sugar Site

U.S. Department of Commerce  
*National Oceanic and Atmospheric Administration*

And

U.S. Department of the Interior  
*U.S. Fish and Wildlife Service*

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<sup>1</sup> ae‘o (Hawaiian stilt, *Himantopus mexicanus knudseni*) by Dan Clark/FWS

<sup>2</sup> ‘alae ‘ula (Hawaiian gallinule, *Gallinula chloropus sandvicensis*) by Gary Kramer/FWS

<sup>3</sup> ‘alae ke‘oke‘o (Hawaiian coot, *Fulica americana alai*) by FWS

<sup>4</sup> Koloa maoli (Hawaiian duck, *Anas wyvilliana*) by USDA NRCS

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# 1 INTRODUCTION

The Oahu Sugar Company, Ltd. (Oahu Sugar) operated sugar cane fields and associated facilities on the island of Oahu, Hawai'i. Over the years, related activities at the site, including storage, mixing, and loading of pesticides, herbicides, and fertilizers, resulted in the release of hazardous substances into the environment. Historic releases of hazardous substances at the site, including dioxin and pentachlorophenol, resulted in injuries to natural resources and their services including plants and other habitats at the Oahu Sugar mixing site on Walker Bay, Pearl Harbor (Site; Figure 1).

This Draft Restoration Plan for the Oahu Sugar Comprehensive Environmental Remediation, Compensation, and Liability Act (CERCLA) Site (Oahu Sugar Site) has been prepared by the U.S. Fish and Wildlife Service (FWS) for the federal natural resource trustees responsible for restoring natural resources and resource services injured by releases of hazardous substances at the [Oahu Sugar Site](#) at Pearl Harbor in Oahu, Hawai'i. The natural resource trustees (the Trustees) for the Oahu Sugar Site are the U.S. Department of the Interior (DOI), represented by FWS, and the U.S. Department of Commerce, represented by National Oceanic and Atmospheric Administration (NOAA). All necessary project specific NEPA analyses will be completed before project implementation.

On February 14, 2022 a [Consent Decree](#) was entered with the U.S. District Court for the District of Hawai'i announcing a settlement that includes approximately \$2.5 million to restore natural resources injured by releases of hazardous substances at the Oahu Sugar Site at Pearl Harbor in Oahu, Hawai'i. The Trustees have prepared this document to propose approximately \$1.25 million in funding for the Restoration of the Waiawa Unit of the Pearl Harbor National Wildlife Refuge Project. For the purposes of this document, the injury being addressed is impacts to core habitat for endangered waterbirds.

## 1.1 Authority

Section 107 of CERCLA provides that duly designated federal, state, and tribal trustees shall act on behalf of the public for natural resources injured by the release of hazardous substances (42 U.S.C. § 9607(f)). Natural resources are defined in CERCLA as including "land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the [natural resource trustees]" (Id. § 9601(16)). The natural resource damage assessment and restoration (NRDAR) process, formalized in the CERCLA NRDA regulations (43 C.F.R. Part 11), allows trustees to pursue claims against potentially responsible parties (PRPs) based on injuries to natural resources and the services they provide to compensate the public for those injuries. The goal of the NRDAR process is to plan and implement actions to restore, replace, rehabilitate, and/or acquire the equivalent of the natural resources and natural resource services that were injured or lost because of the hazardous substance release(s) (42 U.S.C. § 9607(f)(1)).

The Trustees prepared this Draft RP in accordance with CERCLA Section 111(i) (42 U.S.C. § 9611(i)) and its implementing regulation (43 C.F.R § 11.93), the National Environmental Policy Act (NEPA, 42 U.S.C. §. 4321 et seq.), and other applicable federal, state, and tribal laws.

## 1.2 Site History and Natural Resource Injuries

The approximately 3.5 acre Oahu Sugar site is located within the Pearl Harbor Naval Complex on the Waipi'o Peninsula, on Oahu, Hawai'i. The peninsula is located between the West and Middle Lochs of Pearl Harbor and was formerly leased from roughly 1947-1995 from the U.S. Navy to Oahu Sugar Company, Ltd., which conducted sugar cane cultivation including operating a pesticide mixing facility along Walker Bay in the West Loch (Figure 1). Oahu Sugar operated a pesticide mixing plant located along the coastline of Walker Bay that, through the years, resulted in the release of dioxin and

pentachlorophenol, among other hazardous substances, into the environment, with subsequent injuries to natural resources. In addition to pesticides, O'ahu Sugar stored, mixed, and loaded herbicides and fertilizers at the site for use on its fields. Also on site were several above-ground storage tanks, a Quonset hut, and an air strip for its crop-dusting aircraft. Soil sampling by the State of Hawaii Department of Health in 1997 found dioxin/furan contamination as high as 1,530 parts per billion (ppb) for 2,3,7,8-tetrachlorodibenzo-para-dioxin (2,3,7,8-TCDD) toxicity equivalents (TEQ).

In 2002 and 2009 the Environmental Protection Agency issued a Unilateral Administrative Order to investigate contamination at the site. From limited sampling and analyses of benthic invertebrates, fish, and sediment conducted in the 1990s-2010's by the Navy within Walker Bay, the Trustees have concluded that hazardous substances from the Site have migrated to Walker Bay and adversely affected benthic resources, fish, and birds. Terrestrial natural resources, including migratory bird and endangered species habitat, were also adversely affected at the Site.

### 1.3 Summary of Settlement

On February 11, 2022, the United States District Court for the District of Hawai'i entered a Consent Decree between the United States and Kaanapali Land, LLC and Oahu Sugar Company, LLC, Civil Action No. 1:21-cv-00190. The complaint filed in this case alleges claims for natural resource damages under CERCLA against Kaanapali Land LLC and its bankrupt subsidiary, Oahu Sugar. These claims arise from the release and threatened release of dioxins and pentachlorophenol, among other hazardous substances, at and from the former Oahu Sugar pesticide mixing facility located within the Pearl Harbor Naval Complex Superfund Site. Under the Consent Decree, Oahu Sugar paid a total of \$2.5 million to DOI and the NOAA for natural resource restoration projects.

### 1.4 Purpose and Need of Restoration

The purpose of restoration is to return natural resources and the services provided by those natural resources to baseline condition or the condition that would have existed had the injury not occurred, and to compensate the public for the loss of those natural resources over time. Restoration actions are often needed because the injured natural resources may not have the capacity to reestablish their functions within an ecosystem in a timely manner without human intervention. In addition to the cost of restoring resources to baseline condition, CERCLA authorizes trustees to recover compensation for Natural Resource Damage Assessment costs as well as the interim lost use of injured natural resources between the date of injury and the date when restoration has been completed.

These restoration projects are needed to compensate the public for lost natural resources and the services they provide.

### 1.5 Environmental Compliance

Actions undertaken by a federal trustee to restore natural resources or services under CERCLA are subject to NEPA and other federal laws. Under NEPA, federal agencies must consider the environmental effects of their actions, including impacts on social, cultural, and economic resources, as well as natural resources. An agency's NEPA evaluation may take the form of a categorical exclusion, an environmental assessment (EA), or an environmental impact statement (EIS). A categorical exclusion is a category of actions that an agency has determined do not individually or cumulatively have a significant effect on the human environment. When determining whether a categorical exclusion applies for a proposed activity, a federal agency must ensure that the proposed action fits within the category of actions described in the categorical exclusion. The agency must then consider the specific circumstances associated with each proposed activity to ensure no extraordinary circumstances are present that might give rise to significant environmental effects. The Service will complete all necessary NEPA analyses will

before project implementation. Documentation of any projects categorically excluded from further NEPA analyses will be completed and included with the Administrative Record.

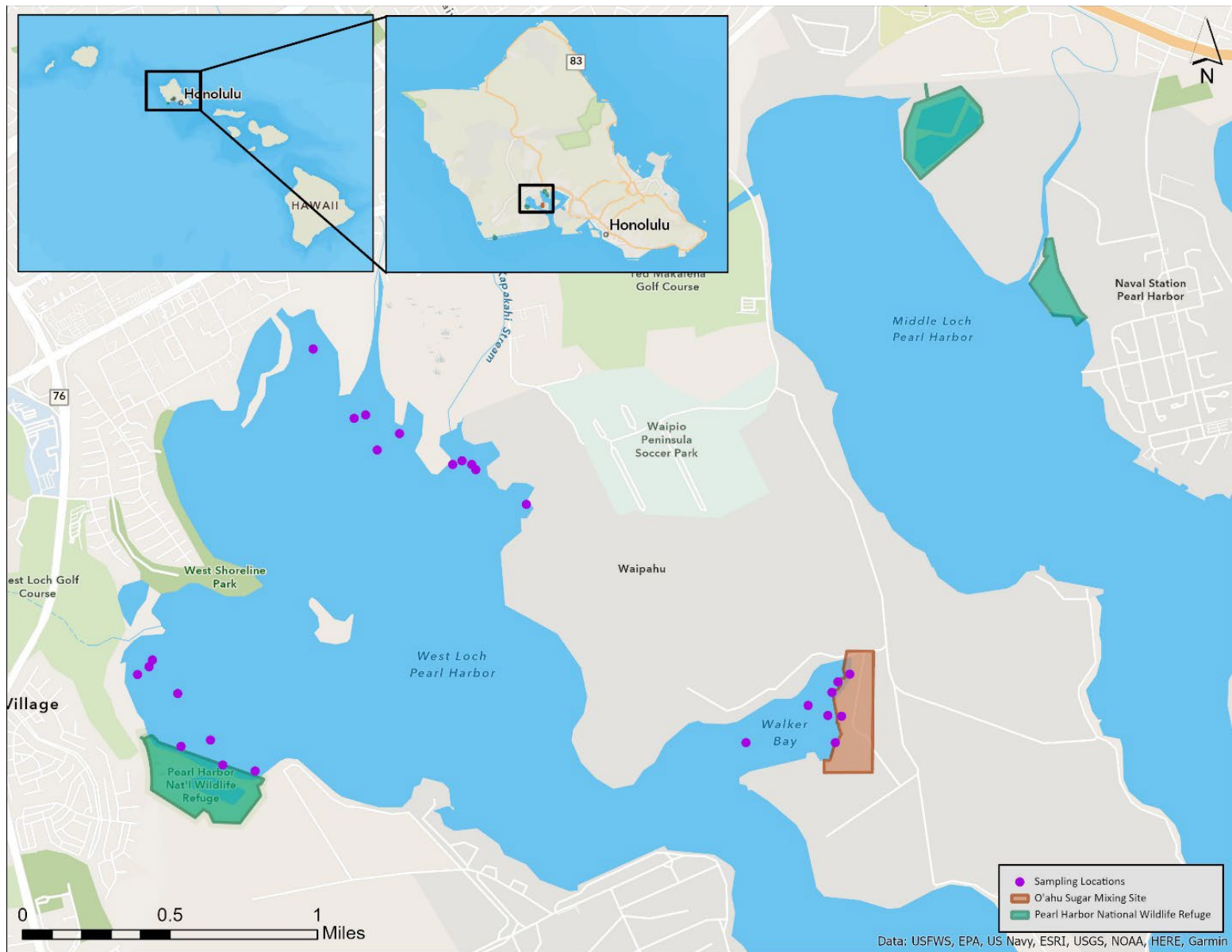


Figure 1. Map of Pearl Harbor and Walker Bay with sampling locations for 1996, 2009, 2012.

## 1.6 Compliance with Other Authorities

The Trustees will ensure compliance with authorities applicable to the restoration project ultimately selected for implementation. Whether and to what extent an authority applies to a particular project depends on the specific characteristics of the project, among other parameters. The subset of authorities listed below are the most relevant (descriptions in Appendix A):

- Endangered Species Act
- National Historic Preservation Act
- Coastal Zone Management Act
- Clean Water Act
- Rivers and Harbors Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Magnuson-Stevens Fishery Conservation and Management Act
- Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

## 1.7 Public Review/Participation

Under the CERCLA NRDA regulations, the Trustees shall notify the public and any federal, tribal, state, and local government agencies that may have an interest in the activities analyzed in the Draft RP. This Draft RP is available to the public for review and comment for a period of forty-five (45) days from the date of publication. The 45-day period for this Draft RP will run from January 13, 2025 until February 26, 2025. The Trustees welcome input from the public regarding evaluation of alternatives and will address and respond to those comments prior to the finalization of the Final RP/NEPA Evaluation.

Written comments or requests for additional information on this USFWS Draft RP should be sent via e-mail to [oahusugarnrdar@fws.gov](mailto:oahusugarnrdar@fws.gov) or via U.S. mail to:

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## 1.8 Administrative Record

The Trustees have maintained records documenting the information considered and actions taken by the Trustees during this restoration planning process and supporting their decisions in this Draft RP. These records are available for review by interested members of the public. Interested persons can access or view these records at: <https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/13205>.

## 2 RESTORATION ALTERNATIVES

The CERCLA natural resource damage assessment and restoration regulations (43 C.F.R. Part 11) provide guidance on the selection of restoration alternatives. Specifically, under 43 C.F.R. section 11.82, direct the Trustees to develop a reasonable number of possible restoration alternatives linked to the injured natural resources and the services those resources provide, and then select the alternative determined to be the most appropriate based on all relevant consideration.

## 2.1 CERCLA Restoration Criteria

The CERCLA natural resource damage assessment and restoration regulations provide factors to consider when evaluating restoration alternatives, 43 C.F.R. § 11.82(d). The Trustees incorporated these factors into the evaluation criteria developed below:

1. Nexus- relationship to the natural resource injuries and lost services.
2. Likelihood of Success/Feasibility- likelihood that potential benefits will be achieved in actuality.
3. Resource Benefits - benefits to specific injured natural resources and lost services.
4. Ecosystem Benefits- degree to which the actions lead to sustainable improvements to broader ecological functions.
5. Environmental Affects - all of the restoration actions under consideration are intended to improve the natural and human environment. Actions are evaluated to determine whether they have no substantial impacts to the environment, have impacts that may be easily mitigated to non-significance, or are likely to result in substantial impacts that require substantial mitigation commitments.
6. Cost Effectiveness - cost estimates were developed for each action.

## 2.2 Alternative A: No Action/Natural Recovery

Pursuant to the CERCLA regulations, the Trustees are directed to consider a No Action-Natural Recovery alternative, 43 C.F.R. § 11.82(c)(2). Under this alternative, the Trustees would rely on natural recovery and would take no direct action to restore injured natural resources or compensate the public for interim lost natural resource services. With the No Action alternative, no restoration, rehabilitation, replacement or acquisition projects or actions would occur discrete from current conditions.

## 2.3 Alternative B: Marsh Enhancement

### 2.3.1 Background and Environment

Pearl Harbor was first identified for protection by the Service in *Hawai'i's Endangered Waterbirds*, which recognized the ponds and tidal flats at Pearl Harbor Naval Base as one of four areas of major importance for waterbirds on Oahu (FWS 1972). The Cooperative Agreement with the Pearl Harbor Naval Base established the Waiawa unit as part of Pearl Harbor National Wildlife Refuge in 1972 to protect, provide habitat, and aid in recovery efforts for four of Hawai'i's endangered waterbirds: ae'o (Hawaiian stilt, *Himantopus mexicanus knudseni*), 'alae ke'oke'o (Hawaiian coot, *Fulica alai*), 'alae 'ula (Hawaiian gallinule, *Gallinule chloropus sandvicensis*), and koloa maoli (Hawaiian duck, *Anas wyvilliana*).

The Waiawa unit at Pearl Harbor National Wildlife Refuge provides core wetland habitat for Hawai'i's endangered waterbirds (FWS, 2011). The Refuge focuses on providing quality habitat for specifically ae'o, 'alae ke'oke'o, and 'alae 'ula. These species overlap in wetlands, however each has slightly different habitat needs. Ae'o require early successional marshlands with water depth less than 24 centimeters (9 inches), and utilize areas of sparse, low-growing perennial vegetation or exposed tidal flats. They appear to select sites with little to no cover surrounding the nest (Coleman 1981), presumably so that they can see predators (Morin 1998). Of the three species the Refuge manages for, ae'o are the most salt tolerant. 'Alae ke'oke'o require dense stands of robust emergent vegetation near open water and floating or barely emergent mats of vegetation, and water depth less than 1 meter (3.3 feet). 'Alae ke'oke'o prefer freshwater but can occasionally handle brackish water. Similar to 'alae ke'oke'o, 'alae 'ula also prefer dense stands of robust emergent vegetation near open water, floating or barely emergent mats of vegetation, water depth less than 1 meter (3.3 feet). 'Alae 'ula are the least tolerant of saltwater and have not used the ponds at Waiawa in several years. The Waiawa unit is also important overwintering habitat for migratory birds such as kōlea (Pacific golden plover) and 'akekeke (ruddy turnstone).



The Waiawa unit is located in Pearl Harbor's Middle Loch (Figure 1) on the leeward side of Oahu, encompassing 24.5 acres. This geographic location results in lower rainfall, larger drainage basins, and more intermittent streams than other regions on Oahu that are more exposed to trade winds. The Waiawa unit is comprised of two ponds, Mauka and Makai (Figure 2) that are 12.4 acres and 5.95 acres, respectively. Refuge infrastructure consists mainly of wells, pump-wells, flashboard risers, and tidegates. Since 2003, an artesian well was drilled into the brackish water lens to supply water to the ponds at Waiawa. Measured salinities at Waiawa wetlands have been high (>12ppt), which affects habitat suitability for endangered Hawaiian waterbirds. The cause is likely intersecting factors such as higher salinity groundwater inputs, evaporative concentration of salts, and seawater encroachment through leaky tidegates or dikes insufficient to withstand higher tides (FWS, 2023). Recommendations to improve water quality to meet the needs of endangered waterbirds consists of:

- Improving roads/dikes and water infrastructure to limit overtopping and backflow of sea water into the Makai Pond.
- Moving or adding another Waiawa well further inland to gain access to lower salinity water.

### 2.3.2 Project Activity: Wetland Rehabilitation

Salinity at the Waiawa unit has been a growing concern. The current artesian well was drilled in a brackish lens and the current salinity of water being pumped into the Waiawa ponds is approximately 9 ppt. This combined with evaporative concentration of salts, intrusion of saltwater through inadequate infrastructure, and low levels of rainfall, results in the ponds having higher mean salinity of 17.9 ppt at Mauka Pond and 25.6 ppt at Makai Pond (FWS, 2023). This is significantly higher than historical levels that had an average salinity of 6.7 ppt reported in the Pearl Harbor National Wildlife Refuge Comprehensive Conservation Plan (CCP; FWS, 2011). To address these issues, the Refuge proposes to contract wetland engineers to determine how to improve the impoundments, reduce evaporative salt build-up, and access and distribute fresh water. The Refuge may also consult with the engineers regarding the possibility of transitioning the Makai pond to a saltwater tidal flat as an adaptive strategy to sea-level rise.

Based upon the wetland assessment by engineers, the Refuge proposes to implement appropriate impoundment improvements. These improvements will likely include building up roads/dikes, replacing infrastructure, and relocating the artesian well. The Great American Outdoors Act (GAOA) team, which is comprised of skilled FWS employees, will mobilize to repair the roads/dikes which will require an excavator, base course, and hauling of material to the refuge. Given the frequent need to move earth and other materials at this site to maintain impoundments, the Refuge believes purchasing an excavator and using the GAOA to be of greater economic value as compared to renting the equipment. To ensure continued access to the roads/dikes, kiawe removal may be required as well.

### 2.3.3 Project Activity: Habitat Management & Restoration

Habitat management activities may include mowing, herbicide application, and rototilling to control dense contiguous patches of pickleweed (*Batis maritima*), California grass (*Brachiaria mutica*), marsh fleabane (*Pluchea spp.*), California bulrush (*Scirpus californicus*), water hyssop (*Bacopa monnieri*), or cattail (*Typha spp.*). These management techniques also benefit a variety of other wetland-dependent species. Current waterbird inventories and monitoring surveys have identified the most productive areas to be the Mauka Pond in the Waiawa unit. Within these areas, pickleweed is the dominant vegetation comprising approximately 5.9 acres (Figure 2). If controlled, pickleweed provides adequate habitat for waterbird species. To control pickleweed, a mechanized, amphibious machine (Marsh Master) is needed for large, landscape areas and these machines have been used successfully at state wildlife sanctuaries in Hawai'i. A Marsh Master is also capable of carrying an herbicide tank sprayer, making it possible to conduct herbicide treatment in previously inaccessible areas. Various other

attachments will be purchased such as a roller chopper, vegetation blade, backhoe, and disc harrows. A Marsh Master has a wide range of capabilities and will be extremely beneficial and efficient at conducting wetland restoration with limited staff capacity. Seasonal pond maintenance often involves drying ponds for over a month so that a tractor can mow vegetation. While relatively effective at suppressing some unwanted wetland plants, this method eliminates waterbird habitat for a significant portion of time, and it is suspected that fish die offs from the draining of ponds contributes to avian botulism. A Marsh Master will allow us to avoid these negative impacts, while conducting vegetation control much more efficiently and throughout the year. We anticipate a ½ FTE Heavy Equipment Operator is needed to operate the Marsh Master and general mowing of Waiawa. A biological science technician will be dedicated to this unit for the purpose of outplanting native plants, trapping and removing invasive mammalian species, and inventory and monitoring of resource conditions.

Habitat restoration efforts will include planting native species. Beaked tasselweed (*Ruppia maritima*) can tolerate a wide range of salinity and has physical adaptations that enable plants to adjust to changing salinities (Murphy et al. 2003). This aquatic grass is an important species for waterbird foraging. The native bulrush, 'aka'akai (*Schoenoplectus lacustris*), is known to grow in both fresh and saltwater wetland areas and there are historical accounts of it growing in the Waiawa area. Kaluha (*Bolboschoenus maritimus*) is a native sedge that is also utilized by the endangered waterbirds as forage, cover, and nesting material. Makaloa (*Cyperus laevigatus*) is a native sedge that has demonstrated some salinity tolerance and currently grows in brackish environments on Midway Atoll. These species can persist in brackish and freshwater which make them an ideal alternative to invasive non-native pickleweed and provide quality foraging and nesting habitat for endangered waterbirds.

## 2.4 Alternatives Evaluation and Selection

### 2.4.1 Alternative A: No Action/Natural Recovery (non-preferred)

This alternative would result in minimal to no costs since no action using settlement funds would be taken. If selected, there would be no implementation of restoration of lost resources and their services/uses, and there would be no intent to implement projects directed at making the public whole for past natural resource and resource use injuries resulting from hazardous waste discharges from the former O'ahu Sugar Site. It is unknown how long natural recovery would take to return resources to baseline condition, if ever. This would allow for some affected resource conditions to continue with uncertain durations or outcomes and would prolong the environmental injury from the Incident.

For purposes of this Draft RP, the No Action Alternative is the non-preferred alternative since compensatory restoration is required. The No Action alternative is retained in this Draft RP for comparative purposes relating to the natural resource restoration activities resulting from the project alternatives considered.

### 2.4.2 Alternative B: Marsh Enhancement (preferred)

The Trustees have evaluated this project using the CERCLA screening criteria to select restoration projects and concluded that this project aligns favorably with these criteria. This type and scale of project will effectively provide appropriate compensation for injured terrestrial natural resources.

The project has a direct nexus to and will directly benefit the natural resources and resource services injured by releases of hazardous substances at the Site. The project also has a high level of success and feasibility as the Trustees have successfully implemented this type of project in other sites. The project will also have benefits to the broader ecological function of the habitat. Without direct intervention, the high levels of salinity in the ponds will continue to hinder key species of birds. These negative impacts can be lessened by clearing invasive vegetation and replanting native vegetation. In addition, this

project is anticipated to have only minimal short-term adverse environmental consequences and multiple long-term beneficial impacts.



Figure 2. Waiawa Ponds and pickleweed infestation.

Table 1. Summary of Alternative Evaluation

Alternative	Description	Criteria and Evaluation
A	No Action/Natural Recovery	<ol style="list-style-type: none"> <li>1. <b>Nexus:</b> Not applicable.</li> <li>2. <b>Likelihood of Success:</b> Minimal.</li> <li>3. <b>Technical Feasibility:</b> Not applicable.</li> <li>4. <b>Resource Benefits:</b> None.</li> <li>5. <b>Ecosystem Benefits:</b> None.</li> <li>6. <b>Environmental Effects:</b> Additional interim loss would occur.</li> <li>7. <b>Cost Effectiveness:</b> Not applicable.</li> </ol>
B	Marsh Restoration (Preferred Alternative)	<ol style="list-style-type: none"> <li>1. <b>Nexus:</b> Improves alternative core habitat for endangered waterbirds following injury to core habitat at the Site.</li> <li>2. <b>Likelihood of Success:</b> High.</li> <li>3. <b>Technical Feasibility:</b> High.</li> <li>4. <b>Resource Benefits:</b> Yes.</li> <li>5. <b>Ecosystem Benefits:</b> Yes.</li> <li>6. <b>Environmental Effects:</b> Additional interim loss would occur.</li> <li>7. <b>Cost Effectiveness:</b> Within limit of funds received.</li> </ol>

## 2.5 Environmental Analysis

In compliance with the CERCLA regulations, the Trustee evaluated the environmental consequences and restoration benefits of the restoration alternatives, including the No Action and Marsh Restoration Alternatives.

### 2.5.1 Alternative A: No Action/Natural Recovery (non-preferred)

Under this alternative, none of the benefits or adverse effects to the human and natural environments would be realized. While the Trustees believe that natural recovery may occur over time for the natural resources injured at the Site, the interim losses suffered during this period would not be compensated for under this alternative. These losses cannot be addressed through a no-action alternative. No impacts to archaeological, historic, cultural or other resources are anticipated as there are no actions.

### 2.5.2 Alternative B: Marsh Enhancement (preferred)

Actions proposed in this alternative, including wetland rehabilitation through impoundment improvement, and habitat restoration and maintenance through invasive species control and native species planting were analyzed in the CCP.

In line with the CCP, impacts to the ecological and human environments were addressed, including an Integrated Pesticide Management Plan. Therefore, this Draft RP incorporates by reference<sup>5</sup> portions of the CCP for expediency and efficiency, as appropriate. Because the proposed restoration is restoring natural habitat structure and function, the Trustees expect that there will be long-term, minor to moderate positive effects on the biological and physical health of the project area under the preferred

<sup>5</sup> The CEQ NEPA regulations state the following regarding “incorporation by reference”: *Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.* 40 C.F.R. §1502.21.

alternative. Cumulative project impacts would not be significant or occur at a regional scale, and are consistent with those described in the CCP.

## 2.6 NEPA Compliance

### 2.6.1 Categorical Exclusion (FWS)

Minor modifications to existing structures in the ponds and access roads, if needed, may be categorically excluded from NEPA under 516 DM 8.5(B)(3):

The construction of, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, instream, or native habitats, which result in no or only minor changes in the use of the affected local area. The following are examples of activities that may be included.

- (a) The installation of fences.
- (b) The construction of small water control structures.
- (c) The planting of seeds or seedlings and other minor revegetation actions.
- (d) The construction of small berms or dikes.
- (e) The development of limited access for routine maintenance and management purposes and public use.

All necessary NEPA analyses will be completed before project implementation. Documentation of categorical exclusions will be completed and included with the Administrative Record.

### 2.6.2 Restoration Center Programmatic EIS (NOAA)

NOAA does not have CEs comparable to the FWS CE 516 DM 8.5(B)(3), and typically does not exercise CEs for implementation of NRDA restoration actions. As such, NOAA is satisfying its NEPA compliance requirements for the proposed action using an alternative approach.

For this Draft RP, NOAA is fulfilling its NEPA compliance obligations by applying the environmental impacts analysis and conclusions drawn in another, previously published NEPA document—the NOAA Restoration Center [\*Programmatic Environmental Impact Statement for Habitat Restoration Activities Implemented throughout the Coastal United States\*](#) (RC PEIS) (NOAA 2015). The RC PEIS provides a program-level environmental analysis of a variety of habitat restoration activities throughout the coastal and marine environment of the United States. Specifically, it evaluates typical impacts related to a wide variety of common habitat restoration activities undertaken frequently by NOAA and its co-trustees. These analyses may be incorporated by reference in subsequent NEPA documents where applicable.<sup>6</sup>

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<sup>6</sup> NEPA allows for broad programmatic analyses that subsequently can be used to meet NEPA requirements for project-level actions through incorporation by reference.

The Fiscal Responsibility Act (42 U.S.C. §4336b, June 2023) amended NEPA to require that when a federal agency relies on a programmatic environmental document more than 5 years old, the federal agency must reevaluate the analysis and any underlying assumptions in the programmatic environmental document to ensure the analysis remains valid. Consistent with the FRA amendment to NEPA, and with 40 C.F.R. §1501.11, NOAA has determined that the analysis in the RC PEIS (2015) and the underlying assumptions therein in the context of the restoration proposed in this RP/NEPA analysis remain valid and that it continues to be applicable.

NOAA has made the preliminary determination that the RC PEIS covers the scope of the proposed action (marsh enhancement, including wetland rehabilitation and habitat management and restoration) and associated direct, indirect, and cumulative impacts.<sup>7</sup> Moreover, there are no site-specific sensitivities, unique habitat, or resources associated with the proposed action that warrant additional NEPA analysis beyond what is provided in the RC PEIS, and a separate NEPA analysis and decision document is not warranted. This determination, and the rationale supporting it, has been documented and summarized in a NEPA “Inclusion Analysis” (Appendix B).

## 2.7 Selected Alternative

The Trustees have determined that a no-action alternative is not acceptable because it fails to compensate the public for natural resources services lost as a result of the injury, and because technically feasible, cost-effective restoration alternatives exist to compensate for these losses.

The preferred alternative is comprised of impoundment improvement and habitat restoration and maintenance in the Mauka and Makai Ponds in Pearl Harbor National Wildlife Refuge. On-the-ground restoration activities include wetland redesign with impoundment improvement, physical and chemical removal of invasive pickleweed and other invasive vegetation, and replanting of native plant species. As these actions meet CERCLA restoration criteria, compensate for injuries to core habitat for endangered waterbirds at the Site, and aid in recovery efforts for four of Hawai‘i’s endangered waterbirds, the selected restoration alternative is Alternative B, Marsh Enhancement.

## 3 BUDGET & JUSTIFICATION

*Table 2. Projected Budget for the Waiawa Marsh Enhancement*

Item/Task	Cost Year 1	Cost Year 2	Cost Year 3	Total
Marsh Master with attachments	\$265,000	-	-	\$265,000
Road repair (material and hauling)	-	\$150,000	-	\$150,000
Biological Science Technician	\$96,439	\$98,368	-	\$194,807
Maintenance Worker	-	\$42,277	\$42,277	\$84,554
Excavator	\$280,639	-	-	\$280,639
Storage facility for equipment	\$100,000	-	-	\$100,000
Wetland engineering contract	\$75,000	-	-	\$75,000
Artesian well upgrade/replacement	-	\$50,000	-	\$50,000
<b>Total</b>	<b>\$817,078</b>	<b>\$340,645</b>	<b>\$42,277</b>	<b>\$1,200,000</b>

<sup>7</sup> These restoration activity types are described in Sections 2.2.1.3 (Fish and Wildlife Monitoring), 2.2.2.4.1 (Invasive Species Control), 2.2.2.7 (Road Upgrading), 2.2.2.10 (Water Conservation and Stream Diversion), 2.2.2.11.1 (Levee and Culvert Removal, Modification, and Set-back), and 2.2.2.11.5 (Wetland Planting) of the RC PEIS. The environmental impacts from these restoration activities have been analyzed in Sections 4.5.1.3 (Fish and Wildlife Monitoring), 4.5.2.4.1 (Invasive Species Control), 4.5.2.7 (Road Upgrading), 4.5.2.10 (Water Conservation and Stream Diversion), 4.5.2.11.1 (Levee and Culvert Removal, Modification, and Set-back), and 4.5.2.11.3 (Wetland Planting) of the RC PEIS. The analysis is incorporated here by reference and summarized in NOAA’s NEPA Inclusion Analysis (Appendix B). The RC PEIS concludes that the anticipated impacts would not be significant, and NOAA proposes to adopt that conclusion for this Draft RP.

### 3.1 Equipment Justification

A Marsh Master will be advantageous to improve current conditions at Waiawa. It will allow for habitat improvements year-round as opposed to a short August-to-October window. The State of Hawai'i has shown great success using a Marsh Master on invasive species such as pickleweed and California bulrush on marshes around Oahu such as Pouhala, Kawainui, and Hamakua. An excavator is necessary to improve roads and dikes within the Waiawa unit. It will also be advantageous to maintain the integrity of ponds by removing invasive species and abating shoreline erosion. As heavy equipment rental can be quite costly, and the repeated nature of such improvements requires agility of operations, purchase of both pieces of heavy equipment is critical to continued maintenance of these ponds over several years. Recent costs for an excavator and operator to dredge 2-3 feet of an 1,800-foot ditch at James Campbell NWR costs \$223,000, almost 80% of the cost of buying an excavator outright. To ensure the equipment stays in optimal operating condition, a storage facility is needed to protect the equipment and extend the life of the equipment.

### 3.2 Positions Justification

To successfully enhance habitat at Waiawa, the Service requires personnel to accomplish this work. A ½ FTE heavy equipment operator will be necessary to operate the Marsh Master and excavator to improve the roads/dikes and habitat. A full-time biological science technician is needed to restore the habitat by outplanting native plants, conduct predator control, and monitor the success of habitat improvement through waterbird monitoring.

## 4 MONITORING & ADAPTIVE MANAGEMENT

Monitoring of the Waiawa Unit's Marsh Enhancement project will include visual evaluation of progress and layout during construction, as well as evaluation of as-built structures, grades, and physical features once construction has concluded. Additionally, hydrology, water quality, and biotic monitoring will be conducted at the site at least for the three years during which a Biological Science Technician will be funded with the proposed project funds. Specific biological monitoring will focus on population and/or reproductive status, trends, and trajectories of waterbirds, predators (e.g., feral cats, mongoose, and rats), and invasive vegetation following implementation actions. Physicochemical parameters monitored post-restoration will include changes in water-level and salinity or a surrogate (e.g., specific conductance) by deploying automated loggers and/or sondes to collect these data at regular intervals. These monitoring efforts are intended to determine restoration actions focused on physical and vegetation alterations affected target resources.

In line with the CCP, the Refuge will strive to reach the goals of 30-60% native cover among open water mudflats with less 25% non-native invasive plant species.

## 5 REFERENCES

- Coleman, R. A. 1981. The reproductive biology of the Hawaiian subspecies of the Black-necked Stilt, *Himantopus mexicanus knudseni*. The Pennsylvania State University.
- Morin, M. P. (1998). Endangered Waterbird and Wetland Status, Kaloko-Honokohau National Historical Park, Hawai'i Island (No. 119). University of Hawaii at Manoa.
- Murphy, L. R., Kinsey, S. T., & Durako, M. J. (2003). Physiological effects of short-term salinity changes on *Ruppia maritima*. *Aquatic Botany*, 75(4), 293-309.
- NOAA 2015. Final Programmatic Environmental Impact Statement for habitat restoration activities implemented throughout the coastal United States, National Oceanic and Atmospheric Administration, NOAA Restoration Center. June 2015.
- FWS (U.S. Fish and Wildlife Service). 1972. First Amendment to the Cooperative agreement for the Conservation and Management of Fish and Wildlife between the U.S. Naval Ammunition Depot, U. S. Bureau of Sport Fisheries and Wildlife, and the Hawai'i State Department of Land and Natural Resources.
- FWS. 2010. Pearl Harbor National Wildlife Refuge. Comprehensive Conservation Plan and Environmental Assessment.
- FWS. 2011. Recovery Plan for Hawaiian Waterbirds, Second Revision. U.S. Fish and Wildlife Service, Portland, OR. xx + 233 pp.
- FWS, 2023. Pearl Harbor National Wildlife Refuge. Water Resource Inventory and Assessment.



## Appendix A: COMPLIANCE WITH LAWS, REGULATIONS, AND POLICIES

### Endangered Species Act (16 U.S.C. §§ 1531 et seq.)

The Endangered Species Act (ESA) establishes a process for identifying and listing species. It requires all Federal agencies to carry out programs for the conservation of federally listed endangered and threatened plants and animals, and prohibits actions by Federal agencies that may adversely affect listed species or adversely modify designated critical habitat without formal consultation with the FWS or NOAA. Section 7 of this Act specifies the consultation program conducted with these Federal agencies.

### National Historic Preservation Act (16 U.S.C. §§ 470 et seq.)

The National Historic Preservation Act requires agencies to take into account the effects of Federal undertakings on historic properties. The Section 106 process, as defined in 36 C.F.R. § 800, provides for the identification and evaluation of historic properties, for determining the effects of undertakings on such properties, and for developing ways to resolve adverse effects through the process of consultation.

### Coastal Zone Management Act (16 U.S.C. §§ 1451-1464)

The purpose of the Coastal Zone Management Act (CZMA) of 1972 is to encourage States to manage and conserve coastal areas as a unique, irreplaceable resource. Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner that is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.

### Clean Water Act (33 U.S.C. §§ 1251 et seq.)

The Clean Water Act (CWA) is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States. Section 401 of the CWA requires any applicant for a federal license or permit that conducts any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification from the State in which the discharge originates or would originate. The Trustees will require all necessary permits to be in place prior to implementation of the proposed restoration activities.

### Rivers and Harbors Act (33 U.S.C. §§ 403 et seq.)

The Rivers and Harbors Appropriation Act regulates development and use of the nation's navigable waterways and regulates obstruction or alteration of navigable waters. The Trustees will require all necessary permits be in place prior to implementation of restoration activities.

### Migratory Bird Treaty Act (16 U.S.C. §§ 703-712)

The Migratory Bird Treaty Act of 1918 (MBTA) implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. The MBTA protects all migratory birds and their eggs, nests, and feathers and prohibits the taking, killing, or possession of migratory birds. It is intended to ensure the sustainability of populations of all protected migratory bird species.

### Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that federal agencies consult with the FWS, NMFS, and state wildlife agencies for activities that affect, control or modify waters of any stream or

bodies of water, in order to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. This consultation is generally incorporated into the process of complying with Section 404 of the Clean Water Act, NEPA or other federal permit license or review requirements.

Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. §§ 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management Act, as amended in 1996, created a requirement for federal agencies to consult with the National Marine Fisheries Service (NMFS) when their actions or activities may adversely affect habitat identified by federal regional fishery management councils or NMFS as essential fish habitat (EFH). Rules published by NOAA (50 C.F.R. §§ 600.805 - 600.930) specify that any Federal agency that authorizes, funds or undertakes, or proposes to authorize, fund, or undertake an activity which could adversely affect EFH is subject to the consultation provisions of the above-mentioned act and identifies consultation requirements. The Trustees will initiate EFH consultation prior to the release of the Final RP. The Trustees believe that restoration activities may adversely affect EFH, but the effects can be minimized through best management practices and consultation with NMFS.

Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

This order, issued by President Clinton On February 11, 1994, requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The U.S. Environmental Protection Agency (EPA) and the Council on Environmental Quality (CEQ) have emphasized the importance of incorporating environmental justice review in the analyses conducted by federal agencies under NEPA and of developing mitigation measures that avoid disproportionate environmental effects on minority and low-income populations. The Trustees have not identified any disproportionate, adverse impacts on human health or environmental effects due to implementation of the proposed action on minority or low-income populations, and believe that this Project will be beneficial to these communities.

Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

On April 21, 2023, President Biden issued Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All. This Executive Order requires each federal agency, as appropriate and consistent with applicable law, "to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of [f]ederal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns". Executive Order 14096 reiterates and strengthens Executive Order 12898 regarding federal actions and environmental justice. The Trustees have determined that the proposed action will result in beneficial impacts to communities with environmental justice concerns in the project area.

# NOAA Restoration Center NEPA Inclusion Analysis

Award Number

## I. IDENTIFYING PROJECT INFORMATION

Project Name <b>Oahu Sugar NRDA RP - West Loch Pearl Harbor Honouliuli Stream Wetland Restoration</b>	Project State <b>HI</b>
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Project Proponent / Applicant <b>NOAA; DOI-FWS; Hawaii DOH and DLNR (Trustees)</b>	Project Contact <b>Jennifer Boyce</b>
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## II. OTHER FEDERAL PARTNERS AND LEVEL OF NEPA ANALYSIS

Has another Federal agency completed NEPA? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is NOAA the lead federal agency for this NEPA analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

## III. PROJECT DESCRIPTION / SCOPE OF ACTIVITIES FOR ANALYSIS

Please check one of the following conditions:

- I am analyzing impacts of project planning and design activities, in order to gather all required project information
- I have all information needed to complete the final analysis of impacts for the entire project

Has a NEPA review been conducted for prior project activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date of NEPA completion for prior phase <b>N/A</b>
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Describe the full scope of the project, including historic/ geographic/ ecological context, the type of restoration, and how it will be conducted.  
**Funds from a CERCLA bankruptcy settlement involving the Oahu Sugar Company, LLC (Oahu Sugar) were awarded jointly to NOAA and DOI in the amount of \$2.5 million, to be dispersed evenly between the two Trustee agencies.**

Honouliuli Stream is a perennial waterway that empties into the West Loch portion of Pearl Harbor, Hawaii. The creek's channel and mouth in its lower reaches are affected by invasive plants, especially mangrove. Red mangrove, California grass, and other non-native vegetation have created poor habitat for fish and wildlife and reduced streamflow capacity and ecological function. Mangrove currently covers approximately 28 acres along the shoreline and previous wetlands and fish ponds of the Honouliuli stream confluence with West Loch Pearl Harbor. Without direct intervention, mangrove and other invasive vegetation will continue to thrive within this active stream channel, thereby increasing the potential for flood damage and continuing to provide poor habitat for native terrestrial and aquatic wildlife. These negative impacts can be lessened by clearing the debris and invasive vegetation, replanting native vegetation, and educating and encouraging local community engagement.

Describe the proposed action (i.e. the portion of the project that NOAA is funding/approving).  
**NOAA is funding the proposed project using the entirety of its share (\$1.25 million) of the Oahu Sugar bankruptcy proceedings. The proposed restoration will restore coastal wetland habitat along West Loch Pearl Harbor shoreline and adjacent to Pearl Harbor National Wildlife Refuge--an area impacted by hazardous waste discharges from the former Oahu Sugar site. Restoration activities include physical removal of invasive red mangrove and other nonnative vegetation, disposal of cut/removed vegetation at approved off-site locations, and replanting of cleared areas with Hawaiian sedges, groundcover, and trees. Supporting technical activities include wildlife, hydrologic, and water quality monitoring; public outreach; environmental education; and partnership development. Restoration will be implemented by the State of Hawaii as part of larger invasive plant removal efforts to restore ecological function and habitat for native aquatic and terrestrial wildlife within all of West Loch, Pearl Harbor and Honouliuli watershed.**

The proposed action exhibits a sufficient nexus to the natural resources injured by hazardous waste from the Oahu Sugar site and that could potentially compensate for injuries to natural resources and services.

Check the types of activities being conducted in this project:

<input checked="" type="checkbox"/> Implementation and Effectiveness Monitoring	<input checked="" type="checkbox"/> Environmental Education Classes, Programs, Centers, Partnerships and Materials; Training Programs	<input checked="" type="checkbox"/> Fish and Wildlife Monitoring
<input type="checkbox"/> Planning, Feasibility Studies, Design Engineering, and Permitting		

Riverine and Coastal Habitat Restoration

# NEPA Inclusion Analysis

<input type="checkbox"/> Beach and Dune Restoration	<input type="checkbox"/> Bank Restoration and Erosion Reduction	<input type="checkbox"/> Water Conservation and Stream Diversion
<input type="checkbox"/> Debris Removal	<input type="checkbox"/> Coral Reef Restoration	<input type="checkbox"/> Levee & Culvert Removal, Modification, Set-back
<input type="checkbox"/> Dam and Culvert Removal & Replacement	<input type="checkbox"/> Shellfish Reef Restoration	<input type="checkbox"/> Fringing Marsh and Shoreline Stabilization
<input type="checkbox"/> Technical and Nature-like Fishways	<input type="checkbox"/> Artificial Reef Restoration	<input type="checkbox"/> Sediment Removal
<input checked="" type="checkbox"/> Invasive Species Control	<input type="checkbox"/> Road Upgrading/Decommissioning; Trail Restoration	<input type="checkbox"/> Sediment/Materials Placement
<input type="checkbox"/> Prescribed Burns/Forest Management	<input type="checkbox"/> Signage and Access Management	<input checked="" type="checkbox"/> Wetland Planting
<input type="checkbox"/> Species Enhancement	<input type="checkbox"/> SAV Restoration	
<input type="checkbox"/> Channel Restoration	<input type="checkbox"/> Marine Algae Restoration	

<b>Conservation Transactions</b>		
<input type="checkbox"/> Land Acquisition	<input type="checkbox"/> Water Transactions	<input type="checkbox"/> Restoration/Conservation Banking

## IV. PROJECT IMPACT ANALYSIS

<b>Core Questions</b>		
1. Are the <b>activities</b> to be carried out under this project fully described in Section 2.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. Are the specific <b>impacts</b> that are likely to result from this project fully described in Section 4.5.2 of the NOAA RC PEIS?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Does the level of adverse impact for the project exceed that described in Table 11 of the NOAA RC PEIS for any resource, including significant adverse impact?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

4. Describe the project impacts to resources (including beneficial impacts) and any mitigating measures being implemented.

**1. Proposed Action - West Loch Pearl Harbor Honouliuli Stream Wetland Restoration**

Actions undertaken by federal trustees to restore natural resources or services under CERCLA and other federal laws are subject to the National Environmental Policy Act, (NEPA), 42 U.S.C. § 4321 et seq., and the regulations guiding its implementation (40 C.F.R. 1500 et seq.). Under NEPA, federal agencies must evaluate potential impacts to the environment from their proposed actions and reasonable alternatives. NEPA allows for broad programmatic analyses that subsequently can be used to meet NEPA requirements for project-level actions through incorporation by reference in subsequent NEPA documents. The NEPA process ensures that public decision-makers are fully informed about the potential impacts of the proposed actions and alternatives and allows for meaningful public involvement in the decision-making process. For the proposed West Loch Pearl Harbor Honouliuli Stream Wetland Restoration project, NOAA and the Trustees propose to satisfy their NEPA obligations by applying the impacts analysis and conclusions drawn in another, previously published programmatic NEPA document—the NOAA Restoration Center's Programmatic Environmental Impact Statement (RC PEIS, available at: <https://www.fisheries.noaa.gov/resource/document/restoration-center-programmatic-environmental-impact-statement>). The RC PEIS provides a program-level environmental analysis of NOAA's habitat restoration activities throughout the coastal and marine environment of the United States. The Trustees' proposed action and alternatives are fully described in a Draft Restoration Plan/NEPA Evaluation for the Oahu Sugar Site. The public will be invited to provide feedback on the Draft Restoration Plan and NEPA Evaluation (RP/NEPA Evaluation) for the Oahu Sugar Site and the analysis conducted in this Draft Inclusion Analysis.

The Trustees' proposed restoration activities are similar to those described in sections 2.2.2.4.1 (Invasive Species Control), 2.2.2.11.5 (Wetland Planting), 2.2.1.2 (Implementation and Effectiveness Monitoring), 2.2.1.3 (Fish and Wildlife Monitoring), and 2.2.1.4 (Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs) of the RC PEIS. The proposed activities do not have impacts beyond those analyzed in the RC PEIS, including adverse effects that are significant, or meet any other criteria for exclusion from analysis (Table 10 of the RC PEIS).

Impacts from the proposed restoration activities are provided in sections 4.5.1.2 (Implementation and Effectiveness Monitoring), 4.5.1.3 (Fish and Wildlife Monitoring), 4.5.1.4 (Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs), 4.5.2.4.1 (Invasive Species Control) and 4.5.2.11.3 (Wetland Plantings), and in Tables 13-15, 20 and 35 of the RC PEIS. That information is incorporated by reference and summarized below.

1) Technical Assistance Activities - Environmental Education Classes, Programs, Centers, Partnerships, and Materials; Training Programs:

Implementation and Effectiveness Monitoring:  
 Restoration monitoring could have indirect, long-term, major beneficial impacts on geology and soils, water, and living coastal and marine resources and EFH and threatened and endangered species beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on land use and recreation and socioeconomics beyond the project site. These

## Core Questions (continued)

activities could have direct, short-term, minor adverse impacts on geology and soils, water, air, living coastal and marine resources and EFH, and cultural and historic resources that would be localized. These activities could have direct and indirect, short-term, minor adverse impacts on threatened and endangered species that would be localized.

### Fish and Wildlife Monitoring:

Fish and wildlife monitoring could have indirect, long-term, major beneficial impacts on geology and soils, water, and living coastal and marine resources and EFH and threatened and endangered species beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on land use and recreation and socioeconomics beyond the project site. These activities could have direct, short-term, minor adverse impacts on geology and soils, water, air, and living coastal and marine resources and EFH that would be localized. These activities could have direct and indirect, short-term, minor adverse impacts on threatened and endangered species that would be localized. These activities could have indirect, short-term, minor adverse impacts on cultural and historic resources that would be localized. These activities could have direct, short-term, minor adverse impacts on land use and recreation that would be localized.

### Environmental Education Classes, Programs, Centers, Partnerships, and Materials;

#### Training Programs:

Environmental education, outreach, training, and partnership activities could have direct, long-term, minor beneficial impacts on geology and soils and socioeconomics beyond the project site. These activities could have direct and indirect, long-term, minor beneficial impacts on water, living coastal and marine resources and EFH, threatened and endangered species beyond the project site. These activities could have indirect, long-term, minor beneficial impacts on cultural and historic resources and land use and recreation beyond the project site. These activities could have direct, long-term, minor adverse impacts on air but these impacts would be localized.

### 2) On-the-Ground Restoration Activities:

#### Invasive Species Control:

The impacts of invasive species removal ultimately benefit the immediate ecosystem by allowing native species the chance to re-establish. Generally, invasive species removal activities may cause direct, short-term, localized, minor adverse impacts to the affected area from mechanical or human activities. For terrestrial and aquatic invasive plant removal, direct adverse impacts to geology and soils may include compaction, whereas impacts to in-water substrate and water resources may include temporary sedimentation, turbidity, or other water quality impacts. However, long-term moderate to major beneficial impacts to geology and soils, water resources, coastal and marine resources, and EFH and threatened and endangered species would result as non-native species are replaced by diverse native plant and animal communities.

#### Wetland Planting:

Wetland planting may occur as a separate restoration activity or in combination with other restoration types described in the RC PEIS. Planting may cause short-term, direct adverse impacts to living coastal and marine resources when existing vegetation is trampled during the planting process. Planting is generally short-term in duration, lasting days to weeks. Minor adverse impacts to cultural and historic resources may occur during wetland restoration, when historic structures are present within a project site. Long-term, moderate beneficial impacts to water resources, living coastal and marine resources and threatened and endangered species would occur due to the erosion reduction and increased shelter provided by wetland plants. Woody and herbaceous plant communities play an important role in stabilizing the shoreline. Wetland planting activities would result in beneficial impacts by restoring or creating wetland and/or shallow-water habitats that provide areas for feeding and shelter for fish, as well as nutrient cycling and carbon sequestration and storage capacity. Changes in land use would be permanent if uplands were converted to wetlands. In general, increases in wetlands are beneficial land use and recreation impacts, due to the historic loss of wetland habitat. Minor beneficial impacts related to socioeconomic resources may result from increased tourism opportunities that could develop around an improved resource.

### 2. No Action

NEPA requires that federal agencies consider a "no action" alternative and the CERCLA regulations require consideration of a "natural recovery" alternative. These alternative options are equivalent. The no action alternative is the non-preferred alternative to the proposed action described above. With the no action alternative, no on-the-ground-restoration would be implemented and current environmental conditions at West Loch, Pearl Harbor, would remain as-is or continue to degrade. The no action alternative would not result in direct impacts to the physical, biological, and cultural/human use environment since no restoration action would be undertaken. However, the benefits from the proposed restoration would not be realized and the public would not be compensated for natural resource injuries resulting from the release of hazardous substances at the Oahu Sugar site.

# NEPA Inclusion Analysis

5. Describe any potential cumulative impacts that may result from past, present or reasonably foreseeable future actions (beneficial or adverse).

Cumulative project impacts would not be significant or occur at a regional scale, and are consistent with those described in the RC PEIS (section 4.9, "Cumulative Impacts"). Because the proposed restoration is restoring natural habitat structure and function, and stabilizing existing habitat, the Trustees expect that there will be long-term, minor to moderate positive cumulative effects on the biological and physical health of the project area under the preferred alternative.

There may be a long-term adverse effect to the physical and biological resources of the project area were the no action alternative selected because the restoration would not occur. However, relative to the magnitude of adverse ecological impacts that currently exist in the affected area, the adverse cumulative effect of the no action alternative is also not expected to be significant.

6. Describe the public outreach and/or opportunities for public comment that have taken place to this point. Are any future opportunities for public input anticipated?

The Draft RP/NEPA Evaluation, including this Draft Inclusion Analysis, will be made available to the public for review and comment. All comments on the Draft RP/NEPA Evaluation and Inclusion Analysis will be addressed prior to finalization and approval of the Final RP. If, after the public comment period, and review of any additional information, it is determined that no substantive changes are needed to the Draft RP/NEPA Evaluation, NOAA and the Trustees will not be preparing any further NEPA analysis or seeking a FONSI or ROD for the proposed restoration project, and the Final RP/NEPA Evaluation will be prepared.

7. Have any public comments raised issues of scientific/environmental controversy? Please describe.

There have been no public comments to date identifying issues of scientific and environmental controversy related to the project. There is strong public support for restoring the West Loch Pearl Harbor shoreline. All comments on the Draft RP/NEPA Evaluation and Inclusion Analysis will be addressed prior to finalization and approval of the Final RP/NEPA Evaluation.

8. Describe the most common positive and negative public comments on issues other than scientific controversy described above in Question 7.

The proposed restoration activities are similar to those that have been occurring throughout the Pacific region for many years, and the public has generally been supportive of spending restoration funding (including CERCLA case settlement funds) on on-the-ground restoration projects, especially those associated with restoring and protecting natural resources and habitats. Any common positive and negative public comments received on this draft Inclusion Analysis will be addressed in the Final RP/NEPA Evaluation and Inclusion Analysis.

## V. NEPA DETERMINATION

The action is completely covered by the impact analysis within the NOAA RC Programmatic EIS (PEIS). The project and its potential impacts may be limited through terms or conditions placed on the recipient of NOAA funds. It requires no further environmental review. An EIS Inclusion Document will be prepared.

The action analyzed here has unknown impacts. At this time, funding will be limited to those portions of the action and impacts analyzed in the PEIS. These limitations will be described in terms or conditions placed on the recipient of NOAA funds. If all remaining activities and impacts are later determined to be described in the PEIS, this analysis will be documented in the program record and the applicant may then proceed with the project. If all remaining activities and impacts are later determined to not be described in the PEIS, further NEPA review will be required; see below.

The action or its impacts are not covered by the analysis within the PEIS. It will require preparation of an individual EA, a supplemental EIS, adoption of another agency's EA or EIS, or will be covered by a Categorical Exclusion.

Signature \_\_\_\_\_

Date Signed \_\_\_\_\_