KURE/STUYVESANT TRUSTEE COUNCIL
Restoration Projects Update
January 2013

Little River State Beach, November 2010

BACKGROUND

In November 1997, the *M/V Kure* punctured a fuel tank and spilled approximately 4,500 gallons of Intermediate Fuel Oil (IFO-180) while docked in Humboldt Bay, California. The oil spill spread through much of Humboldt Bay and outside the bay north towards Trinidad Head. Less than two years later in September 1999, a fuel tank on the dredge *Stuyvesant* was punctured releasing at least 2,100 gallons of IFO-180 into the Pacific Ocean near the mouth of Humboldt Bay. A Natural Resource Damage Assessment (NRDA) was conducted for each spill, and natural resource trustee agencies obtained settlement funds and prepared Damage Assessment and Restoration Plans (DARPs). The final DARPs (Stuyvesant: June 2007; Kure: July 2008) provide details on injuries to natural resources and descriptions of preferred and non-preferred restoration options.

The Kure/Stuyvesant Trustee Council (KSTC) oversees implementation of restoration projects for both spill settlements. The KSTC is composed of representatives from the US Fish and Wildlife Service, the California Department of Fish and Wildlife (previously the Department of Fish and Game), and the California State Lands Commission, although the State Lands Commission has deferred to the Department of Fish and Wildlife for oversight of restoration implementation. Because the impacts of the two spills were similar, many preferred restoration projects are jointly funded by the two settlements. Table 1 provides a summary of injuries and restoration projects for both spills.

This report provides a summary of the status of each restoration project as well as financial information from 2007 (when restoration funds were first available) through December 2012.

Table 1. Summary of Injuries and Preferred Restoration Projects

Injury Category	Kure Injury Estimate	Stuyvesant Injury Estimate	Preferred Restoration Project
Birds: Loons and Grebes	243 estimated dead	77 estimated dead	Protection of grebe nesting colonies on northern California Lakes
Birds: Pelicans, Cormorants, and Large Gulls	220 estimated dead	139 estimated dead	Protection of Brown Pelican roost sites through education, potential access restrictions, and potential roost site creation
Birds: Alcids (except Marbled Murrelets) and Procellarids	910 estimated dead (mostly Common Murre)	1,937 estimated dead (mostly Common Murre)	Contribution to Reading Rock project to benefit Common Murre nesting colony
Birds: Marbled Murrelets	130 estimated dead	135 estimated dead	Protection and enhancement of occupied habitat and corvid management program
Birds: Wetland Birds (waterfowl and shorebirds)	2,447 estimated dead	117 estimated dead	Restoration of wetland habitat at McDaniel Slough (9.0 acres)*
Habitat: Shoreline and Water Column impacts	6,200 acres of shoreline habitat exposed to oil	4.6 million shrimp and 6,000 fish estimated dead; 162 acres of rocky intertidal habitat impacted	Restoration of wetland habitat at McDaniel Slough (9.6 acres)
Habitat: Sandy Beach	(included above)	3,054 acres impacted	Restoration of 7.1 acres of dune habitat at Little River State Beach
Recreation: Human Recreational Use Losses	767 lost user-days	9,415 lost user-days and 197 diminished user-days	Contribution towards enhanced recreational use at McDaniel Slough (Kure and Stuyvesant) and at Palmer's Point (Stuyvesant).

* A second project to enhance nesting success of Snowy Plovers at the South Spit was added using discretionary funds.

PROJECTS

Protection of Grebe Nesting Colonies on Northern California Lakes

Loons and grebes occur in nearshore marine waters along the Pacific Coast during winter (where they are susceptible to oil spills) and nest on lakes throughout western North America during spring and summer. Restoration options for these species on their wintering grounds are limited, but pressures on their nesting grounds present some opportunities for restoration. Western and Clark's Grebes (genus *Aechmophorus*) also were heavily impacted by the 1990 *American Trader* oil spill, and the American Trader Trustee Council funded a study of factors limiting *Aechmophorus* grebe nesting in California. Subsequently, the American Trader Trustee Council funded U.C. Davis to conduct 3 years (2005-2007) of disturbance reduction work at major nesting colonies in northern California.

The KSTC funded a continuation of the U.C. Davis disturbance reduction work in 2008 and 2009 (through the California Institute of Environmental Studies in 2009). This five-year project focused on reduction of human disturbance to nesting grebes at Clear Lake and Eagle Lake, with some additional effort at other nesting lakes in northern California. Although a reduction in disturbance during this period has been difficult to quantify (in part because grebe nesting effort is highly variable from year to year), the 5-year project resulted in identification of chronic disturbance issues, the creation of educational materials, and local outreach. Beginning in 2010, the Luckenbach Trustee Council continued funding of this project (through California Audubon).

In 2010, the KSTC funded Ducks Unlimited to protect nesting habitat at Lake Earl (Del Norte County) from grazing cattle, and to produce and distribute educational materials to reduce human disturbance at this small colony. In 2011, fencing was erected to prevent cattle from wandering directly into emergent vegetation used by nesting grebes. Educational signs were produced in 2012 and are expected be installed in 2013. Monitoring of nesting grebes was conducted from 2010 through 2012, but grebes successfully nested only in 2011; failure to nest in 2010 and 2012 was likely related to dramatic drops in lake water level (see monitoring reports for more detail). The fencing and educational outreach at Lake Earl are expected to allow grebes to nest more successfully in years when water level is sufficient.

The KSTC is considering options for additional grebe restoration with the remainder of project funding.

Grebe Project Funding Summary

Approved project budget:	$350,000	($250,000 Kure; $100,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$ 37,100	
Funds disbursed in 2009:	$ 52,226	
Funds disbursed in 2010:	$ 90,070	
Funds disbursed in 2011:	$ 0	
Funds disbursed in 2012:	$ 0	
Funds disbursed to date:	$179,396	
Project funds remaining:	$170,604	($159,930 Kure; $10,674 Stuyvesant)

Protection of Brown Pelican Roost Sites

Non-breeding pelicans and cormorants spend a considerable portion of each day at communal roost sites. Because these species have wettable plumage, they will become heavy and hypothermic in cold water if they do not come ashore regularly to dry and restore their plumage. It is thus important that disturbance-free roost sites are available for these birds. Reduction of disturbance at pelican roost sites will also benefit cormorants and gulls as these species often use similar roosting areas.

The KSTC funded the Bureau of Land Management (BLM) to conduct a project that includes identification of major pelican and cormorant roost sites in the Humboldt Bay area, investigation of disturbance-related issues at these sites, and development of targeted outreach materials to aid in reducing disturbance. The project involved a unique approach to assessing people's attitudes towards wildlife (through in-person surveys), and developing educational materials and/or other management actions that were specifically targeted to address these attitudes. Principal Investigator Dr. Carolyn Ward and colleagues completed the final phase of this study in 2011, including the development and testing of outreach materials, and distribution of materials to local natural resource managers and educators (see final report for more detail). In the future, information gathered during this study will help in additional disturbance-reduction efforts for seabirds.

In late summer 2011, many pelicans became contaminated with fish oil in northern California harbors. The pelicans were apparently having a hard time finding normal prey such as anchovies, and began scavenging for scraps at fish cleaning stations, resulting in fouling of their plumage with fish oil, requiring assistance from local wildlife rehabilitators. In 2012, the KSTC recognized that this issue was likely to continue, and funded BirdAllyX and Pacific EcoLogic to monitor northern California ports to further identify the problem, and to conduct outreach and education to minimize oiling of pelicans and other birds scavenging at fish cleaning stations. The research conducted by Dr. Ward helped inform the design of outreach and education materials. This project will continue in 2013.

<u>Pelican Project Funding Summary</u>

Approved project budget:	$341,000	($250,000 Kure; $91,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$101,700	
Funds disbursed in 2009:	$ 0	
Funds disbursed in 2010:	$146,200	
Funds disbursed in 2011:	$ 63,656	
Funds disbursed in 2012:	$ 20,951	
Funds disbursed to date:	$332,507	
Project funds remaining:	$ 8,493	($19,193 Kure; $-10,700 Stuyvesant)

Common Murre/Nesting Seabird Restoration

The vast majority of alcids (or auks) injured by the spills were Common Murres. Common Murres nest on offshore rocks throughout northern California, including major colonies at Trinidad Head and at Cape Mendocino. Reading Rock, a smaller colony located 4 miles off Gold Bluff Beach in Humboldt County, was identified in the DARPs as a preferred site for restoration of Common Murres. It is part of the California Coastal National Monument, and is managed by BLM in cooperation with the Yurok Tribe. The decline in the murre population at Reading Rock is apparently in response to disturbance from US Coast Guard helicopters landing on the rock (to service an automated navigational light), and to increasing numbers of California sea lions encroaching on murre nesting sites.

The KSTC funded an assessment of the management issues at Reading Rock (including analysis of historical colony photos), and potential management actions to reduce human disturbance and disturbance from sea lions. The assessment project, completed by the BLM, US Fish and Wildlife Service, and Humboldt State University, identified logistical and political challenges associated with restoration actions at Reading Rock.

Consequently, the KSTC approved use of remaining assessment funds for assessment of other restoration alternatives discussed in the DARPs for nesting seabirds off the North Coast. Alternative projects, including the creation of a North Coast Seabird Protection Network to reduce disturbance to nesting seabirds, are being considered by the KSTC.

<u>Reading Rock Project Funding Summary</u>

Approved project budget:	$950,000	($450,000 Kure; $500,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$285,678	
Funds disbursed in 2009:	$ 13,500	
Funds disbursed in 2010:	$ 0	
Funds disbursed in 2011:	$ 0	
Funds disbursed to date:	$299,178	
Project funds remaining:	$650,822	($450,000 Kure; $200,822 Stuyvesant)

Marbled Murrelet Projects

Marbled Murrelets are small seabirds that nest in old-growth coniferous forests. They are listed as Threatened under the Federal Endangered Species Act and as Endangered under the California Endangered Species Act. Major threats to the species include loss of nesting habitat, and decreased nesting success as a result of increasing nest depredation by jays and ravens (corvids). The KSTC identified two preferred projects to restore Marbled Murrelet populations in Humboldt County, listed below.

Preservation/Management of Marbled Murrelet Habitat

For each spill, the trustees worked out agreements with the responsible parties to purchase Conservation Easements in southern Del Norte County for habitat occupied by Marbled Murrelets but otherwise not protected. Under the terms of the permanent Conservation Easements, the property owner (Green Diamond Resource Company) agrees to refrain from timber harvesting and other disturbance-causing activities in the old-growth stands and in specified buffer areas (second-growth forest) around the stands. The property owner also agrees to management practices (e.g., thinning of second growth stands) for the enhancement of Marbled Murrelet habitat and reproduction in the parcels.

The responsible parties in the *Kure* settlement purchased a Conservation Easement for the Big Mynot and E.F. Hunter parcels, containing approximately 77 acres of old-growth forest and approximately 222 acres of surrounding buffer areas. For the *Stuyvesant* settlement, the responsible parties purchased an easement for the Miracle Mile complex of parcels containing approximately 135 acres of old-growth forest and approximately 489 acres of surrounding buffer areas. All parcels are a few miles east of the mouth of the Klamath River, and are now monitored and managed by Save the Redwoods League. Monitoring for Marbled Murrelet activity occurs during two out of every five years. The most recent monitoring occurred in 2008 and 2009 at E.F. Hunter and Big Mynot and in 2011 and 2012 at Miracle Mile. Marbled Murrelets were detected at all sites on the most recent surveys.

As the responsible parties paid for the Conservation Easements and for long-term monitoring directly, there is no Trustee Council funding to report.

Corvid Management for Marbled Murrelets

Corvid populations (Steller's Jays, American Crows, and Common Ravens) have increased dramatically in California over the last several decades. These increases are believed to be due to an increase in human refuse available to these scavengers. The increase in corvid populations apparently has led to an increase in the depredation of Marbled Murrelet nests, resulting in a decrease in murrelet nesting success. The KSTC funds contribute to on-going management efforts to limit anthropogenic food sources for corvids at Redwood National and State Parks and vicinity.

Funding from the KSTC contributed to the purchase and installation of scavenger-proof trashcans and food lockers; development of interpretive materials to convey the connection between refuse and murrelet predators; staff time for public outreach and

corvid monitoring; and an effectiveness assessment of outreach efforts (including a pilot study to assess effectiveness of at-sea surveys for Marbled Murrelet productivity in 2011 and 2012). This project will continue for at least seven years.

Corvid Management Project Funding Summary

Approved project budget:	$1,250,000	($750,000 Kure; $500,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$ 69,200	
Funds disbursed in 2009:	$160,115	
Funds disbursed in 2010:	$ 0	
Funds disbursed in 2011:	$145,059	
Funds disbursed in 2012:	$154,875	
Funds disbursed to date:	$622,049	
Project funds remaining:	$627,951	($632,300 Kure; $1,651 Stuyvesant)

McDaniel Slough Wetland Restoration

The McDaniel Slough wetland enhancement project managed by the City of Arcata and the California Department of Fish and Wildlife is restoring tidal marsh in the northern portion of Humboldt Bay. The project will breach the levee along Humboldt Bay restoring tidal influence to more than 200 acres of historic marsh land that were were diked and drained over 100 years ago. Additionally, the project will create 35 acres of brackish and freshwater ponds (at the Arcata Marsh & Wildlife Sanctuary). This restoration project will benefit a variety of birds including wading birds, waterfowl, shorebirds and other wetland bird species, as well as anadromous fish and other aquatic species. Trails, wildlife viewing structures, benches, and information kiosks will provide recreational and educational benefits to compensate for recreational losses during both spills.

Levee removal and construction began in 2008, and is still ongoing. Restoration of tidal action is scheduled for late 2013.

McDaniel Slough Project Funding Summary

Approved project budget:	$670,000	($420,000 Kure; $250,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$250,000	
Funds disbursed in 2009:	$350,000	
Funds disbursed in 2010:	$ 0	
Funds disbursed in 2011:	$ 0	
Funds disbursed in 2012:	$ 70,000	
Funds disbursed to date:	$670,000	
Project funds remaining:	$ 0	

Little River State Beach Habitat Restoration

The *Stuyvesant* spill impacted sandy beach habitat (including sandy beach invertebrates) as well as Snowy Plovers. Snowy Plovers are small birds that nest on sandy beaches and are listed as Threatened under the Federal Endangered Species Act. To compensate for impacts to sandy beach habitat and wildlife, the KSTC allocated funds for restoration of dune habitat at Little River State Beach.

In October and November 2009, approximately 34 acres of dunes infested with non-native European beachgrass were treated. Beachgrass on 28 acres was removed and buried using a bulldozer and excavator while beachgrass on an additional 6 acres near sensitive natural resources was removed by hand. The site was retreated to remove regrowth of beachgrass in 2010 and 2011. All KSTC funds for this project have been allocated, although CA Department of Parks and Recreation will continue monitoring and follow-up treatments.

Little River SB Project Funding Summary

Approved project budget:	$132,000	($0 Kure; $132,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$ 0	
Funds disbursed in 2009:	$ 98,500	
Funds disbursed in 2010:	$ 19,000	
Funds disbursed in 2011:	$ 14,500	
Funds disbursed to date:	$132,000	
Project funds remaining:	$ 0	

South Spit Habitat Restoration

The South Spit is a 4.5-mile long strip of land extending south from the mouth of Humboldt Bay. The land is owned by the State but managed by the BLM. In 2004, the BLM cleared non-native beachgrass from 24-acres of dunes to enhance habitat for nesting Snowy Plovers. Although relatively few Snowy Plovers currently use the site, it is considered an important alternate nesting site for these birds because it is relatively far from forest habitat with high densities of corvids (nest predators). The KSTC allocated $100,000 of discretionary funding from the *Stuyvesant* settlement to further enhance dune habitat for nesting Snowy Plovers.

In winter 2008/2009, bulldozers removed beachgrass that had grown back from an area that was treated in 2004; an additional 27 acres of habitat also were cleared of beachgrass. The site was re-treated to remove beachgrass in 2010, and in 2010, 2011, and 2012, oyster shells were placed on a portion of the site to discourage regrowth of beachgrass and to provide nesting habitat for Snowy Plovers. Snowy Plovers have been seen in the restored habitat, but have not yet nested at the sites. Monitoring at the site will continue in 2013.

South Spit Project Funding Summary

Approved project budget:	$100,000	($0 Kure; $100,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$ 33,500	
Funds disbursed in 2009:	$ 13,500	
Funds disbursed in 2010:	$ 49,929	
Funds disbursed in 2011:	$ 0	
Funds disbursed in 2012:	$ 0	
Funds disbursed to date:	$ 96,929	
Project funds remaining:	$ 3,071	($0 Kure; $3,071 Stuyvesant)

Palmer's Point Enhancement Project

To compensate for lost recreational use in the area impacted by the *Stuyvesant* spill, the trustees funded restoration and improvement of recreational trails at McDaniel Slough (described above) and enhancement of recreational opportunities at Palmer's Point, within Patrick's Point State Park. Palmer's Point is a popular site for tide pool exploration and wildlife viewing. The Palmer's Point Enhancement Project includes improvement of trails between the parking lot and a viewing area, improvement of the viewing area including ADA accessible spotting scopes, and interpretive signs, brochures, and a video. The project also includes monitoring of intertidal habitat to assess the effectiveness of interpretive materials in reducing impacts to intertidal plants and animals.

Creation of outreach materials was completed in 2011. As of December 2012, all allocated funds have been disbursed for this project; physical infrastructure improvements and tidepool monitoring will be completed in 2013.

Palmer's Point Enhancement Project Funding Summary

Approved project budget:	$102,000	($0 Kure; $102,000 Stuyvesant)
Funds disbursed in 2007:	$ 0	
Funds disbursed in 2008:	$ 25,200	
Funds disbursed in 2009:	$ 50,800	
Funds disbursed in 2010:	$ 14,375	
Funds disbursed in 2011:	$ 11,625	
Funds disbursed to date:	$102,000	
Project funds remaining:	$ 0	

FINANCIAL SUMMARY

Note: this budget information does not include funds allocated directly by the respective responsible parties for Marbled Murrelet habitat protection and management.

Category	**Kure**	**Stuyvesant**	**TOTAL**
Settlement Funds			
Funds from Settlements	$2,504,279.31*	$2,049,968.60†	$4,554,247.91
Interest (as of 9/30/12)	$ 26,535.57	$ 123,346.53	$ 149,882.10
TOTAL Restoration Funds	**$ 2,530,814.88**	**$ 2,173,315.13**	**$4,704,130.01**
Project Funds Disbursed Through December 2012			
Protection of Grebe Nesting Colonies	$ 90,070	$ 89,326	$ 179,396
Protection of Brown Pelican Roost Sites	$ 230,807	$ 101,700	$ 332,507
Reading Rock Common Murre Project	$ 0	$ 299,178	$ 299,178
Corvid Management for Marbled Murrelets	$ 117,700	$ 504,349	$ 622,049
McDaniel Slough Wetland Restoration	$ 420,000	$ 250,000	$ 670,000
BLM South Spit Dune Restoration	N/A	$ 96,929	$ 96,929
Little River State Beach Dune Restoration	N/A	$ 132,000	$ 132,000
Palmer's Point Recreational Improvements	N/A	$ 102,000	$ 102,000
TOTAL Disbursed Project Funds	$ 858,577	$1,575,482	$2,434,059
Administrative Funds Disbursed for Restoration Planning and Council Activities			
US Fish and Wildlife Service/DOI	$ 60,000	$ 134,500	$ 194,500
California Department of Fish and Wildlife	$ 5,000	$ 65,000	$ 70,000
TOTAL Disbursed Administrative Funds	$ 65,000	$ 199,500	$ 264,500
TOTAL Funds Disbursed	**$ 923,577**	**$1,774,982**	**$2,698,559**
Remaining Funds (including interest)	**$1,607,238**	**$ 398,333**	**$2,005,571**

* Includes $40,255.89 received in 2009 from Marbled Murrelet escrow account.

† Includes $1,579.56 in past interest and $74,968.60 from Marbled Murrelet escrow account both received in 2008.