

Initiation of Thin-Layer Sediment Augmentation on the Pacific Coast

QUARTERLY PROGRESS REPORT NO. 1

Date: October 1, 2015

Project Title: Initiation of Thin-Layer Sediment Augmentation on the Pacific Coast

Funding Sources:

U.S. Fish and Wildlife Service - 2015 Cooperative Recovery Initiative

Grantee: San Diego NWRC

Total Grant Amount Awarded: \$ \$502,425 Grant Term: September 30, 2018

California Department of Fish and Wildlife – Wetland Restoration for Greenhouse Gas Reduction

Grantee: U.S. Fish and Wildlife Service, San Diego NWRC (Grant No. P1496011 00)

Total Grant Amount Awarded: \$1,055,827 Grant Term: March 1, 2020

California State Coastal Conservancy

Grantee: Southwest Wetlands Interpretive Association (SWIA)

Total Grant Amount Awarded: \$632,500

Orange County, California - OC Parks

In-kind Contribution (sediment, application/contracting): \$1,064,550

Activities Performed from June 1, 2015 - September 30, 2015:

- Signed Cooperative Agreements with SWIA and Orange County Parks, the subcontractors on the grant. The Cooperative Agreement for Orange County Parks includes \$125,500 from CDFW and \$350,000 from the USFWS.
- Finalized scope of work for various components of the carbon storage/sequestration analysis.
- Developed and finalizing protocols for carbon work and pre- and post-sediment augmentation monitoring.
- SWIA is finalizing all contracts for carbon-related analysis, pre- and post-sediment augmentation monitoring, and eelgrass surveys, actions which will be funded with CDFW and California Coastal Conservancy grant funds.
- USFWS purchased a boat using USFWS grant funds for use by project monitors and access to the site by researchers. A motorized boat safety class is being arranged so researchers can operate the boat without USFWS staff present.
- Orange County Parks completed 100% construction drawings for dredging and sediment augmentation.
- Held a coordination meeting with Naval Weapons Station Seal Beach, Orange County Parks, and USFWS to discuss the logistics of access during sediment augmentation.
- Provided Final CEQA/NEPA Compliance Documents on July 24, 2015.

- Received all required permits and approvals
 - ESA Section 7 Compliance – USFWS and NOAA
 - Essential Fish Habitat and Marine Mammal Protection Act Compliance – NOAA (discussion included in the NOAA letter)
 - National Historic Preservation Act Section 106 Compliance
 - Coastal Commission Consistency Determination
 - Regional Water Quality Control Board 401 Certification
 - U.S. Army Corps of Engineers Nationwide Permit 27
- Orange County Parks issued request for bids for the Sunset/Huntington Harbour Maintenance Dredging and Waterline Installation on August 25, 2015. USFWS staff attended the pre-bid meeting on September 9, 2015 to describe the sediment augmentation component of the project. Bids were opened on September 23, 2015. Three bids were received, with Curtin Maritime Corp. the apparent lowest, responsive, responsible bidder. The bid for the sediment augmentation portion of the project came in higher than expected, we are currently addressing this issue with Orange County Parks, the County Board of Supervisors will consider approval of the contract in late October 2015. Sediment augmentation would begin in December.
- USGS has installed 21 deep rod surface elevation tables (SETs) (15 SETs in the sediment augmentation area and 6 SETs in the control area) during August of 2015 and will monitor elevation change and accretion rates over the five year study. These SETs and associated feldspar marker horizons will accommodate measurement of vertical rates of mineral and organic accumulation on the marsh surface and capture both below and above ground mineral and organic accretion processes pre- and post-sediment augmentation.
- USGS also continued ongoing work on sediment budget within the Seal Beach NWR using funding from another source. Autonomous equipment deployed at two channels within Seal Beach NWR has been continually measuring turbidity and sediment flux in adjacent and adjoining channels and more specifically eelgrass beds within the vicinity of the project area. Water samples are periodically taken to calibrate the sensors. Water level monitoring is done every 6 minutes with Solinst and Hobo loggers at three locations within the Refuge.
- Using Coastal Conservancy funding, CSULB has completed plant cover and biomass estimates within 0.25 m² quadrats for each plant species within 24 randomly generated plots in the augmentation area and 15 randomly generated plots in the control area. Measurements of pore water salinity, redox potential, and temperature were also made within the randomly selected plots. In the augmentation and control areas, cores (18.1 cm², 6 cm deep, total of 39 cores) were collected to assess infaunal invertebrate community structure, measuring the diversity and abundance of macroinvertebrates. To date, 11 of these cores have been processed. In addition, 5 of the cores collected will be used for sediment threshold testing. These cores will be sorted during Fall 2015. Finally, epifauna (typically snails and crab burrows as a proxy for crabs) were counted with 0.25 m² quadrats in both augmentation and control areas and the diversity of invertebrates (infauna, epifauna) was calculated.
- Monitoring of light-footed Ridgway's rail nesting activity by the Huntington Beach Wetlands Conservancy has been conducted throughout the 2015 breeding season. The Refuge's light-footed Ridgway's rail program includes provision and monitoring of nesting platforms, predator observations during the winter season, an annual evening call count, and an annual high tide count. In 2015, two biologists spent approximately 100 field hours monitoring 85 platforms from March through August. Rafts were visited once every 3 weeks. A high-tide count is scheduled for late October 2015. The preliminary breeding pair estimate for the Refuge in 2015 is 66 pairs. No successful nests were identified within the project area.
- Shorebird surveys of the project area were also conducted during this period. Shorebird surveys are conducted twice monthly, once during a high tide and once during a low tide.

- USFWS has been working to fill a biotech term position to be funded through our USFWS grant to assist in project monitoring and research coordination. The person is expected to start work on October 19, 2015.
- Sediment Augmentation Team Meeting Conference Calls with all project partners were held on July 17 and September 1, 2015. The next meeting is scheduled for October 27, 2015.
- Bids have been obtained for possible LiDAR, color IR, and aerial photography surveys of the project area. We are in discussions with the U.S. Army Corps of Engineers regarding potential funding.
- Field cameras have been purchased with USFWS station funds for 5-year time-lapse photography of project site. Trials will begin in late October 2015.
- Kirk Gilligan, Refuge Manager for the Seal Beach NWR, gave a presentation about the project at the San Diego Management and Monitoring Program's symposium on Climate-Smart Conservation Case Studies in the Southern California Coast held on September 23, 2015.

Proposed Activities and Tasks for the Following Quarter:

Task 1 – Project Management and Administration

Continue to monitor the performance of subcontractors, assist researchers in the field, complete all monitoring protocols, process invoices, prepare for the next quarterly report, and implement all other responsibilities that may be necessary to successfully complete the project.

Task 2 – Sediment Augmentation

Facilitate the sediment augmentation process, which is expected to begin in early December 2015. Coordinate with Orange County Parks, their dredging contractor, and the Navy to ensure that sediment augmentation is completed in compliance with all permitting requirements, safety requirements, and monitoring requirements. Work with the contractor to ensure that the sediment augmentation process is adaptively managed and actions taken to achieve the project goals are recorded and any lessons learned are captured and fully addressed.

Task 3 – Project Monitoring

Implement all pre-augmentation monitoring efforts prior to the end of November 2015. Ensure that pre-augmentation eelgrass surveys are conducted in compliance with NOAA requirements. Monitor turbidity levels in adjacent tidal channels during the augmentation process, as well as monitor for the potential presence of rails and shorebirds on the project site, and the potential presence of sea turtles and marine mammals in adjacent subtidal areas. If any sensitive species are identified in proximity to the project site, ensure that appropriate avoidance measures are implemented.

Task 4 – Engineering Design/Environmental Documentation

This task has been completed. If CDFW determines that they must consider the Final Mitigated Negative Declaration certified by the California Coastal Conservancy, the Service will provide assistance as needed.

Task 5 – Public Participation/Presentations

A webpage will be developed for the Seal Beach NWR website where information about the sediment augmentation project will be posted and progress on the project can be updated. Acknowledgement of our funding partners will also be provided at that site.

Kirk Gilligan will give a presentation on the project at the 2015 Climate Summit (*Bridging the gap—from science to management action in climate adaptation*) to be held on November 2 and 3, 2015, in Sacramento, California.

Evyan Borgnis, from the California Coastal Conservancy, has prepared a poster describing our sediment augmentation project for the Coastal and Estuarine Research Federation 2015 Conference to be held in Portland, Oregon on 8-12 November 2015. The theme of the conference is “Grand Challenges in Estuarine and Coastal Science: Securing our Future.”