Work Task C59: Selenium Monitoring in Created Backwater and Marsh Habitats

FY15 Estimate	FY15 Actual Obligations	Cumulative Expenditures Through FY15	FY16 Approved Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate
$250,000	$65,217.24	$110,385.45	$200,000	$160,000	$160,000	$160,000

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Start Date: FY13

Expected Duration: FY25

Long-Term Goal: To develop a long-term selenium monitoring plan for the LCR MSCP

Conservation Measures: MRM2 and MRM5 (BONY, RASU, CLRA, and BLRA)

Location: Big Bend Conservation Area (BBCA), Hart Mine Marsh, and the Imperial Ponds Conservation Area

Purpose: To evaluate the selenium levels within created backwater and marsh habitats and establish a selenium monitoring plan as required by the Habitat Conservation Plan

Connections with Other Work Tasks (Past and Future): Monitoring for selenium will be conducted for habitat created through Conservation Area Development and Management (Section E) work tasks (E1, E9, E14, E15 [closed], E16, E25, E27, and E28) and will be incorporated into Post-Development Monitoring (Section F) work tasks (F1, F3, F5, and F7).

Project Description: As described in the Habitat Conservation Plan conservation measures, 512 acres of marsh and 360 acres of backwaters are being developed under the LCR MSCP as part of its habitat creation goals. These created habitats will be monitored over the term of the program to ensure that they maintain their function for all associated covered species. Sampling efforts will be implemented or continued at designated project sites for the purpose of determining the baseline or changes in selenium concentrations. The initial sampling phase is expected to provide a representative baseline sample and assessment of variability across each site. Once this information is known, a long-term selenium monitoring plan can be recommended for each specific conservation area to be carried out under the appropriate Post-Development

Monitoring (Section F) work task. This baseline sampling phase may be established through a 1- or 2-year approach. If initial levels of detected selenium are well below thresholds of concern, followup sampling may not need to be conducted for a longer period and will be established as part of the long-term selenium monitoring plan for the site. If there is some concern regarding the initial levels of selenium, a second year followup sampling may be conducted to ascertain the relative rate of accumulation of selenium so that a more appropriate long-term monitoring plan can be established. Multi-year sampling can then be used to develop a larger dataset on which management decisions can be based through the adaptive management process. Subsequent years' sampling may be reduced as appropriate, and the frequency and levels of sampling intensity are expected to vary from site to site. Accordingly, annual expenditures are also expected to vary based on these levels of effort. As new conservation areas are developed, this exploratory sampling phase will continue to be accomplished under this work task.

Previous Activities: Sampling sites were identified in FY14 and included the BBCA, Hart Mine Marsh, and Imperial National Wildlife Refuge (Imperial NWR).

FY15 Accomplishments: Selenium monitoring was initiated in FY15. Water and substrate samples were collected from the BBCA, Hart Mine Marsh, and the Imperial NWR. Analyses of water samples from the Imperial NWR determined that current levels of dissolved selenium are below threshold water quality standards for fish and wildlife. Selenium concentrations were elevated in individual samples from the BBCA and Hart Mine Marsh, but the remaining samples contained concentrations below detection limits. Analyses of sediment samples from all three sites reported total selenium concentrations below detectable levels. In light of additional findings at an adjacent site, however, additional sampling will be conducted.

In addition to the three sites currently identified under this work task, a fourth site was also sampled during FY15 to collect baseline data for the reopening of Work Task E13. Water, substrate, plankton, and whole body fish samples were collected from McAllister Lake during FY15. Analyses of water and periphyton samples determined selenium concentrations to be well below threshold standards for fish and wildlife. Selenium concentrations were highest in sediment, plankton, and particularly in fish tissue samples, indicating a potential concern for accumulation. Selenium levels in McAllister Lake will need to be monitored into the future.

Original FY15 budget projections were based on a wide range of estimated costs associated with a relatively high degree of sampling intensity and analyses. The FY15 actual obligations represent the actual costs incurred by implementing the revised initial baseline collection scenario at a limited number of sites.

FY16 Activities: Water and substrate samples will again be collected at the BBCA, Hart Mine Marsh, and the Imperial NWR for comparison with baseline samples collected in FY15. Baseline sampling may also be expanded to the Laguna Division Conservation Area and Yuma East Wetlands. Laboratory analyses of water and substrate samples will be compared to selenium thresholds suggested by the U.S. Fish and Wildlife Service for aquatic species, and data will be summarized as they become available.

Proposed FY17 Activities: Selenium monitoring will continue at identified LCR MSCP conservation areas. Specific work proposed will be similar to the previous year and will include collecting water and sediment samples from each site, analyzing collected samples, comparing extant selenium levels to known thresholds, and summarizing data. Additional sites may also be included for pre- and/or post-development sampling as they are identified. Individual site evaluations will be conducted for each new site in order to determine sampling locations, number of samples, and expected level of effort.

Pertinent Reports: N/A