



SAN FRANCISCO BAY
BIRD OBSERVATORY

Waterbird Use of Commercial Salt Evaporation Ponds In South San Francisco Bay

RLF Contract #2009-0406
Contract Period:
October 2009 – November 2010

Final Report

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The South Bay Salt Pond Restoration Project (the SBSPRP) has begun to restore former commercial salt ponds in the South San Francisco Bay (South Bay) to tidal action. One of the goals of the SBSPRP is to maintain current bird numbers that use the salt ponds in the South Bay, in a smaller habitat footprint. As the restoration continues, it is important to monitor the salt ponds that are not part of the restoration (the ponds remaining in salt production) as these ponds may provide habitat for birds displaced by the SBSPRP. As more ponds are restored to tidal action in the coming years, understanding bird use of the remaining ponds will be vital to the success of the SBSPRP in meeting its goal of maintaining bird numbers. The San Francisco Bay Bird Observatory (SFBBO) began monitoring these commercial salt ponds in September of 2005. In October 2009, we contracted with Resource Legacy Fund and the California State Coastal Conservancy to continue monitoring these South Bay ponds through November 2010.

Our original project objectives were to survey 22 salt ponds once a month for birds and test the ponds for various water quality parameters. Our first conservation outcome was to track bird use of the salt ponds and identify important ponds and features within the salt ponds. Our second conservation outcome was to identify water quality parameters preferred by waterbirds and inform the management of the remaining salt pond habitat.

To meet these objectives, we surveyed on 22 salt ponds in the Coyote Hills, Dumbarton, and Mowry salt pond complexes from October 2009 – November 2010. During the surveys, we recorded the number of birds, species and behaviors. We also recorded the birds' locations within the ponds, using a 250m X 250m grid system. We conducted monthly water quality surveys and measured the temperature, salinity, pH and dissolved oxygen at the ponds. We

entered and proofed this data and sent it to the Don Edwards San Francisco Bay Nation Wildlife Refuge (Refuge) staff on a quarterly basis.

We successfully completed our objective of surveying the salt ponds and measuring water quality parameters monthly, with the exception of two ponds for five months. We faced two large challenges doing our field work this past year. The first challenge we faced was the levee closures at the Mowry complex, which made it impossible to access two of the salt ponds for five months. The levee is now open again and we have resumed surveys on all 22 ponds. The second challenge was accessing the levees during the wet winter. Many of levees are not drivable for days after any rain and the constant and late rains we experienced in the winter and spring made it challenging to complete our surveys.

This year we have continued working successfully with our partners on the project, the Refuge and the USGS. We have shared the data we collected on this project with the Refuge throughout the year. We sent them raw data quarterly and prepared a large annual report in December 2009, which analyzed the results of our surveys from September 2008 through September 2009. This report met one of our other objectives, which was to use our data to inform management of the remaining salt ponds. We are in the process of preparing the 2010 annual report and expect to send it to the Refuge by the end of December 2010. We will provide RLF a copy of both these reports.

In addition to sharing this data with the Refuge, we collaborated with the United States Geological Survey (USGS) on a presentation and manuscript with our collective data at the Limnology and Aquatic Birds conference in Spain in October 2009 and the *Hydrobiologia* journal. We

also collaborated on an oral presentation at the 6th Bi-Annual Bay-Delta Science Conference. We hope to present this data at other conference venues in the future.

The next phase of the project is to continue our monthly monitoring surveys. We have secured funding from the Refuge to continue this project through 2011. We thank RLF for the opportunity to continue monitoring these ponds as we feel these data provide land managers and SBSPRP Project Management Team invaluable data as the restoration project moves forward.

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Project Outcomes

Objective	Progress/Process	Conservation Outcomes
Conduct monthly bird surveys in 22 Cargill ponds to document bird use of non-SBSPRP ponds and track changes in bird distribution.	Conducted monthly bird surveys of 22 Cargill ponds from October through September.	Tracked the bird use of salt ponds and identify most important ponds and pond features.
Conduct monthly water quality surveys in 22 Cargill ponds.	Conducted monthly water quality surveys of 22 Cargill ponds from October through September.	Identified water quality parameters preferred by waterbirds and inform management of remaining salt ponds habitat

Financial Reporting

	Original Budget	Modified 10/11/10	Spent	Remaining Funds	Notes
Task 1: Surveys	\$27,000	\$25,990	\$25,031	\$959	Modified 10/11/10
Task 2: Data Entry	\$3,000	\$3,000	\$3,331	(\$331)	
Task 3: Data Management	\$1,620	\$1,620	\$1,823	(\$203)	
Task 4: Reporting	\$5,000	\$5,000	\$5,311	(\$311)	
Subtotal	\$36,620	\$35,610	\$35,496	\$114	
Expense	\$3,000	\$4,010	\$4,115	(\$105)	Modified 10/11/10
Total	\$39,620	\$39,620	\$39,611	\$9	

SFBBO spent all but \$9.00 of this contract and did not need these remaining funds to complete the required tasks.