



Lake Elsinore Dredged Island Evaluation

ERDC Dredging Operations Technical Support Program (DOTS)

U.S. ARMY CORPS OF ENGINEERS

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Response Summary:

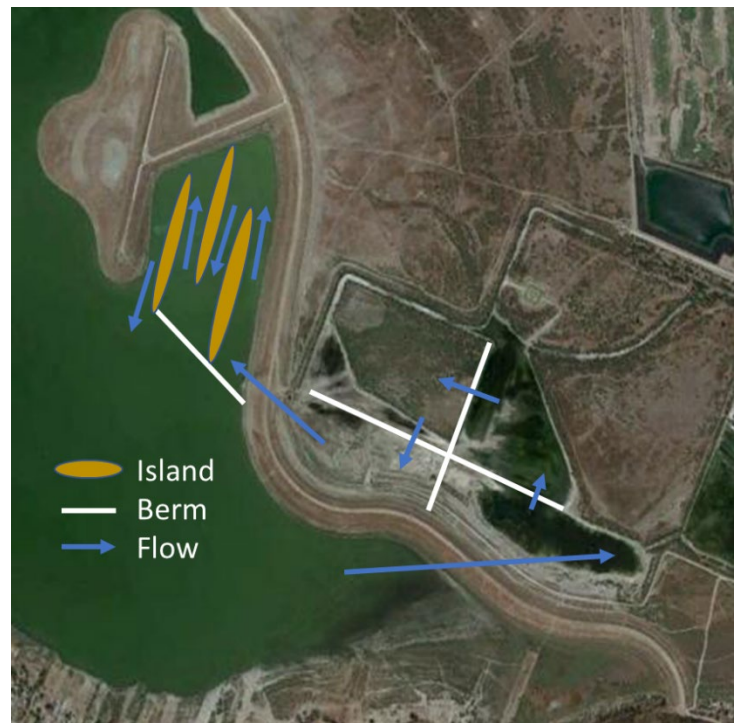
Lake Elsinore, Riverside County, CA is the largest freshwater lake in southern California at about 3,000 acres. It is a terminal lake in the San Jacinto River watershed. The lake was an ephemeral feature that filled and dried depending on rainfall in the 750 sq. mi. watershed. It became a permanent lake when the City of Lake Elsinore diverted reclaimed water to the lake and a constructed a levee to make the lake basin smaller. The lake is subject to municipal wastewater, numerous septic systems, urban, and agricultural nutrient enrichment. As a result, Lake Elsinore has substantial nutrient enrichment and harmful algae blooms. Water quality is poor and several management measures are in place to remediate the low dissolved oxygen levels. Chuck Theiling and Burton Suedel consulted with the PDT and arranged a site visit for Dr. Theiling May 17, 2022. The PDT field trip included sampling sediment in several locations to simply observe sediment characteristics which will be discussed below. During the trip it became apparent that water quality is the biggest issue for the City which wants to focus future development on outdoor extreme sports centered around the lake. Degraded water quality may be treated more effectively by other means than dredging. It may be possible to build off the current CAP study and introduce a treatment wetland alternative. Dredging to construct project features may still be a component of a future project, but island building ideas were largely ruled out.

Period of Performance:

May 1 – 18, 2022

Benefits of the Response to the USACE Dredging/Navigation Program:

USACE environmental dredging is used to address many aquatic habitat problems. In this case nutrient rich sediment driving harmful algal blooms (HABs) was investigated as a source to build habitat islands in the lake. Lake Elsinore hydro-geomorphology was not conducive to island building, but the project did lead to a different Engineering With Nature alternative to reduce nutrient levels in the lake. Existing structures can be modified and constructed to build a wetland treatment area that filters lake water to reduces HABs while providing valuable wildlife habitat (see figure).



Deliverable:

The project consisted of a site visit to investigate lake sediment composition and the environmental/social setting. A 13-page letter report recommending a treatment wetland alternative was delivered.



Providing environmental and engineering technical support to the U.S. Army Corps of Engineers Operations and Maintenance navigation and dredging missions

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