

## Visualizing and Aggregating Intensive Datasets to Better Understand the Cumulative Effects of Positive and Negative Impacts

Shakoora Azimi-Gaylon, Sacramento-San Joaquin Delta Conservancy, shakoora.azimi-gaylon@deltaconservancy.ca.gov

Cristina Grosso, Aquatic Science Center/San Francisco Estuary Institute, cristina@sfei.org

Gemma Shusterman, Aquatic Science Center/San Francisco Estuary Institute, gemma@sfei.org

Shira Bezalel, Aquatic Science Center/San Francisco Estuary Institute, shira@sfei.org

Lawrence Sim, Aquatic Science Center/San Francisco Estuary Institute, lawrences@sfei.org

Lorenzo Flores, Aquatic Science Center/San Francisco Estuary Institute, lorenzo@sfei.org

Tony Hale, Aquatic Science Center/San Francisco Estuary Institute, tonyh@sfei.org

This project visualized and aggregated large, intensive datasets with other data to facilitate a common understanding of the individual and cumulative effects of various activities on the landscape. The project goals were to summarize landscape-scale habitat metrics through customized views to help guide restoration project planning and better meet reporting needs; make these data available to a broad audience; and visualize intensive datasets relevant to scientific inquiry and decision-making in EcoAtlas.

This project supported the visualization of the CALVEG habitats and California Stream Condition Index (CSCI) data layers in EcoAtlas. While the California Aquatic Resource Inventory (CARI) is used as the base map to evaluate water quality improvement, CALVEG is the appropriate base map for evaluating wildlife habitat conservation. With the new CALVEG data layer, users are able to visualize CALVEG habitat types with links to CDFW's Wildlife Habitat Relationships (WHR) classifications, and summarize acres by habitat type for an area of interest. CSCI scores translate complex data about individual benthic macroinvertebrates living in a stream into an overall measure of stream health. With the new CSCI data layer, users are able to generate charts that show the distribution of CSCI scores for an area of interest using the Landscape Profile Tool and view the CSCI scores managed by SWAMP on a map along with other landscape-scale data layers.

There are numerous benefits to visualizing data that include increasing access to key information by displaying data in a dynamic, geospatial landscape context, and extending the value of data by visualizing and aggregating it with supplemental datasets. Data visualization facilitates a common understanding of the individual and cumulative effects of activities on the landscape, and aids in discovering trends and outliers that affect management actions to better guide monitoring and assessment.

**Keywords:** data visualization, landscape-scale, cumulative effects, decision-making tools

**Poster Topic** Watershed Management