

The Climate Commons: Making Climate Science Accessible for Conservation Planning

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The Climate Commons is a comprehensive online library of climate change science relevant to conservation planning in California. Land managers can rely on the Commons as a starting point for discovery of climate change data and related resources, information about the science that produced it, and guidance for applying climate change science to conservation.

Climate data and information are organized in searchable catalogs that are continuously updated. The Commons also contains helpful materials explaining key concepts for applying climate change science in the conservation planning process, and for getting started with processes such as vulnerability assessment and scenario planning. Data hosted by the Commons includes the California Basin Characterization Model, a collection of downscaled climate and hydrologic projections used to evaluate the impacts of future climates on biodiversity, natural resources, and human systems. Tools developed for understanding and projecting changes due to sea-level rise and other impacts to the San Francisco Bay Estuary are compared side-by-side, and the spatial datasets behind them are made available for download.

The Commons, developed in partnership with Point Blue Conservation Science and UC Davis Information Center for the Environment, is the repository for all products of the applied research projects funded by the California Landscape Conservation Cooperative. Project leads work with the Commons team to provide their results and data along with documentation to support ongoing use, promoting the delivery of science to managers in a timely and relevant manner to inform the stewardship of a resilient San Francisco Bay Estuary ecosystem.

Keywords: Climate change data, online resources

Poster Topic: Data/Tools: Network

Delta Watershed Initiative Network

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The Sacramento-San Joaquin Delta and Suisun Marsh (Delta) waterways are identified as threatened and are listed on the Clean Water Act Section 303(d) list as impaired by multiple pollutants. The current drought and projected impacts of climate change are expected to exacerbate existing water quality problems. Many water quality and ecosystem problems have multiple causes and are therefore best addressed using an integrated and coordinated approach, at the watershed level. A comprehensive approach supports sound science, informs adaptive management, uses innovative thinking, and implements best management practices. The Sacramento San Joaquin Delta Conservancy (Conservancy) is moving forward with this approach through the Delta Watershed Initiative Network (Delta WIN). Delta WIN is an initiative that integrates multiple efforts to improve water quality and ecosystem health while providing regional and state-wide benefits. One main focus of Delta WIN is coordinated water quality monitoring. A framework and toolset for coordinated monitoring exists under the auspices of the California Water Quality Monitoring Council and its workgroups. This framework is to guide evaluation and reporting on the public's investment in ecosystem health across its various public policies and programs throughout the Bay-Delta ecosystem. Delta WIN is piloting this framework through coordinated water quality monitoring using standardized methods. Achieving a vision for coordinated regional efforts includes applying standard methods through existing state infrastructure rather than developing new stand-alone programs.

Keywords: water quality, pollutants, watershed, standardized methods

Poster Topic: Data/Tools: Network

Estuary-wide Data Repository

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The Sacramento-San Joaquin Delta (Delta) is the backdrop for some of the most pressing water supply and ecological issues facing California. To navigate such matters comprehensively with transparency, and rigor, it is important to ensure broad dissemination of data to support the State's mandates for water resources and ecological management. In 2014, a Data Summit was held to discuss the vision for an open community of science with interoperability standards, state-of-the-art data exchange and access tools, and the documentation to correctly interpret the data. To support this goal, the Sacramento-San Joaquin Delta Conservancy is collaborating with the Aquatic Science Center and Delta Science Program to integrate disparate data from multiple sources and legacy data that are currently not currently in any of the State's data sharing systems. This project is expanding the existing infrastructure to house water quality data from the Delta to address management questions. Ultimately, this makes it possible for data to be uploaded, aggregated and displayed in tools such as those created under the auspices of the California Water Quality Monitoring Council, like EcoAtlas and the My Water Quality Portals. The project presents an opportunity to provide accurate, accessible, and synthesized data for scientists and decision-makers as a foundation to inform management actions with the best available science.

Keywords: data exchange, tools, integration, synthesized, best available science

Poster Topic: Data/Tools: Network

WARMF-Online: Data and Model-based Forecast Visualization for Real-time Management of Salinity in the San Joaquin Basin

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Collaborative, real time water quality management is best facilitated when all stakeholders have a forum and toolset for aggregating and accessing the data and information used to inform management decisions and operations. These data include reports, GIS data, DEMs, telemetered data (real time, discrete and historic), model inputs and results, graphs, visualizations and much more. The SJR real time management program has developed a comprehensive online resource to support collaborative efforts to provide a salt assimilative capacity forecasting model and supplemental decision support tools to improve salinity management in the lower San Joaquin River. The online decision support platform combines WARMF model output visualizations alongside customizable data dashboards with the supplemental data visualizations for understanding the bigger picture. The tools provide collaborators with timely information and a transparent process for estimating their salt load contributions to the River in relation to other dischargers in the Basin. The collaborative forum creates opportunity to coordinate west-side Basin salt loading schedules with reservoir releases of high quality flows from the East-side of the Basin. The talk will provide information on the long-term goals of the project, demonstrate accomplishments to date and details of the various GIS-based visualization techniques being deployed on a publicly accessible web server to support real-time salinity management.

Keywords: salinity, real-time, visualization, San Joaquin River, TMDL

Poster Topic: Data/Tools: Network

California Estuary Monitoring Workgroup – Using Web Portals to Improve Scientific Understanding

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The California Water Quality Monitoring Council was mandated to improve the efficiency of California's water quality and associated ecosystem monitoring, assessment, and reporting through increasing collaboration between the numerous governmental agencies and non-governmental organizations that monitor California's waters. Under the guidance of the Monitoring Council, the Estuary Monitoring Workgroup is answering stakeholder questions with a collaborative toolset that brings together peer-reviewed datasets with tools to help practitioners tell their stories. One of the tools is the California Estuaries Portal, an interactive website under development that will present information for decision makers and the public on the health of California estuaries. The portal includes information about water quality and quantity, living resources, habitat, ecosystem processes, and stewardship for California's estuaries. While currently the focus is on the San Francisco Bay-Delta Estuary, content relating to other California estuaries will be added in future updates. The Estuary Monitoring Workgroup continues to develop the public portal, which will include improved web-based tools for enhanced access to environmental monitoring data. Currently the workgroup is developing additional data query and visualization functions for the Department of Water Resources' online interactive Delta Water Quality Conditions Report, as well as the U.S. Fish and Wildlife Service's Delta Juvenile Fish Monitoring Program. Additional portal content is also being developed for several ecosystem health indicators detailed in the State of the Estuary Report 2015. To learn more about the Estuary Portal and how you can participate in this collaborative effort, visit: www.mywaterquality.ca.gov/eco_health/estuaries/.

Keywords: Water quality, species, data, habitat, monitoring, Delta, Estuary, Bay, public

Poster Topic: Data/Tools: Network

Decision Support Tools for Understanding Juvenile Salmon Entrainment and Survival in the South Sacramento/San Joaquin Delta through the Use of Acoustic Telemetry and Hydrodynamic Measurements

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The intent of the web application is to support National Marine Fisheries Services, U.S. Fish and Wildlife, U.S. Bureau of Reclamation, California Department of Water Resources, and U.S. Geological Survey and participating agencies with key ***RPA analysis and decisions*** as well as fundamental management and support of the acoustic telemetry receiver network operations. This Data Dashboard will offer visualizations of raw and processed data from the receivers as well as aggregate time series data from the real time data network via web services.

34 North presents this data through its OPENNRM data dashboard technology on www.BAYDELTALIVE.com.

Collaborators include: USFWS, USGS, DWR, USBR, MWD.

Keywords: decision support tools, fisheries management, data dashboards, real time management

Poster Topic: Data/Tools: Network