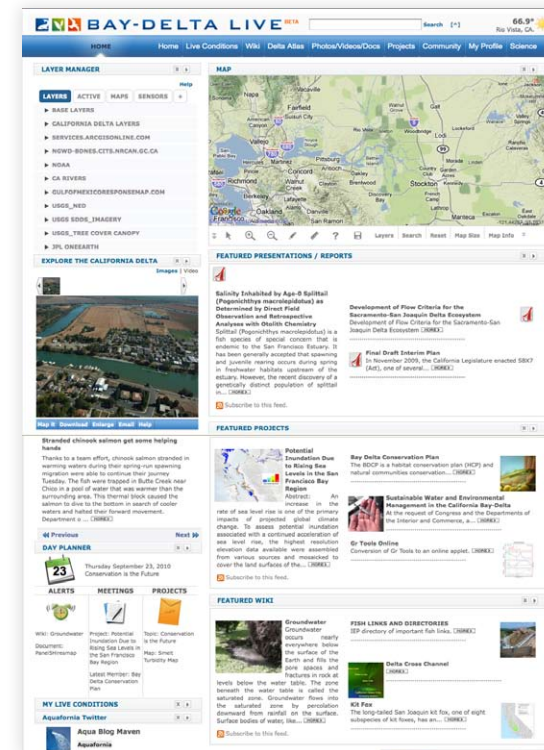
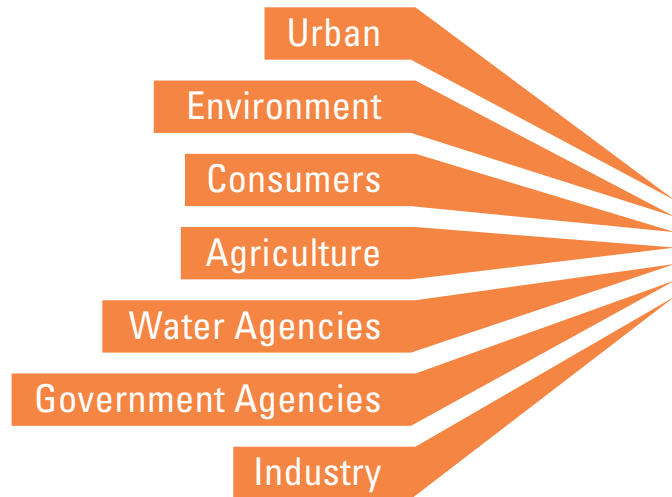


SHARING THE VISION

WHAT IS BAY-DELTA LIVE

Bay-Delta Live is a cooperative arrangement among stakeholder groups to aggregate information about the Sacramento-San Joaquin Delta into a single web site. Bay-Delta Live aims to capture the dynamic estuary with real-time information, interactive mapping and access to the latest research and policy discussions.

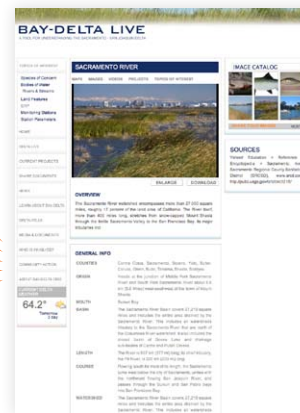
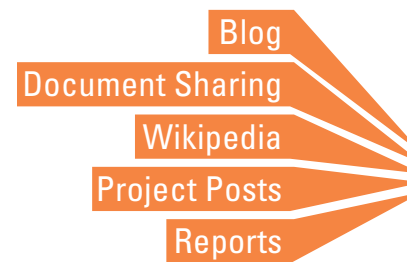
COMMUNITY



BUILD, ORGANIZE, SHARE

BUILD your own projects, document libraries, wiki topics, visualizations, reports and more.

ORGANIZE AND SHARE your results with the Bay-Delta Community, Project Teams, Colleagues or KEEP PRIVATE. Use your content and pages to promote topics that are important to you and your community.



MOBILE AND PERSONAL

Baydeltalive.com mobile application and desktop widget will keep you and your team connected to important information: Real-Time Station Data Alerts, Project and Document Notifications and Community Updates. Personalize Delta Live and your mobile application to suit your workspace needs and preferences.



ABOUT BAYDELTALIVE.COM

The Sacramento San Joaquin Bay-Delta is a very important topic in the state of California because it is in crisis. The Sacramento-San Joaquin Delta is the hub of California's water system; it is home to a unique and fragile ecosystem; and is the center stage for many stakeholders and their vital interests.

The mission of baydeltalive.com is to aggregate the wealth of knowledge and information that already exists and to display it in an easy-to-use interface. Additionally the web site will make it easy to discover, organize and display information about the Delta and its watershed. Real-time station parameters, water quality data, species and environmental data, GIS data and more.

Baydeltalive.com is a place where stakeholders may go to contribute and gather the necessary information to make the important decisions that lay ahead. It will also be a place to track and monitor progress of these important decisions.

BAYDELTALIVE.COM

Printed on 100% recycled content, 50% postconsumer waste, processed chlorine-free paper.

BAY-DELTA LIVE

COLLABORATIVE SCIENCE FOR THE BAY-DELTA COMMUNITY



REAL-TIME MONITORING | INTERACTIVE MAPPING | LATEST RESEARCH

COMMUNITY DATA IN ONE PLACE

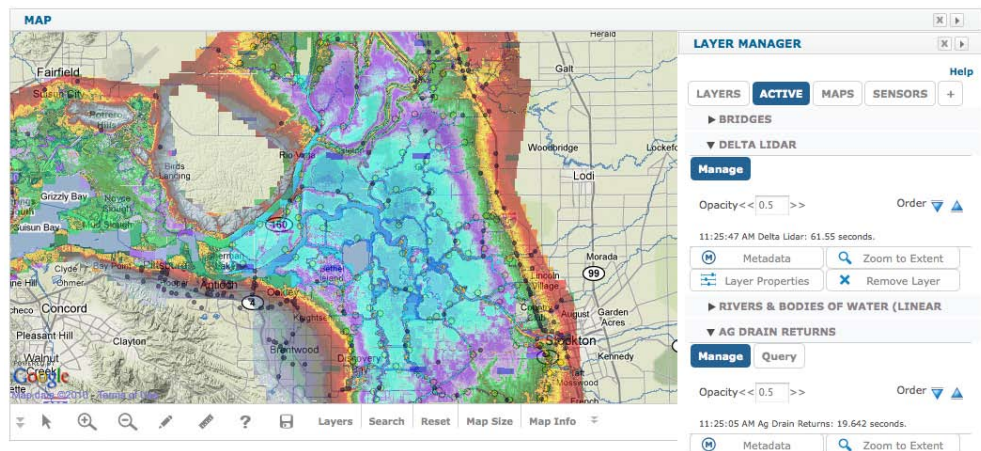
DATA AT YOUR FINGERTIPS

Visualize and access the Delta's real-time station data from CDEC, USGS NWIS and NOAA using easy data tools. Accessing turbidity, temperature, flow, wind speed, water quality and more than 50 station parameters has been simplified. Additional datasets on Delta Live (or coming in 2010) include:

DOCUMENTATION	GIS DATA	DATASETS
Images	Imagery (Lidar/Bathymetry)	DWR CDEC Station Data
Reports	Base Maps	USGS NWIS Station Data
Presentations	Water & Infrastructure	CADFG 20 MM Trawl Data
Videos	Delta Features & County Data	CADFG SKT Trawl Data
News	Species & Environment	Water Quality
Journals	Weather & Tides	Species Data
Maps	Monitoring Stations	Custom Datasets
Meeting Materials	ArcGIS Online Services	

INTERACTIVE MAPPING

Delta Live easy-to-use GIS tools brings mapping and visualization out of the back office. Users can access and contribute an unlimited amount informational layers about the Delta to better manage and visualize projects and project data. Delta Live currently displays all DWR Casil layers (features, species data, water & infrastructure etc), an extensive library of base maps (Google, Bing, Open Street Maps), bathymetry data, monitoring data and more. Build rich maps using data layers, drawing and query tools and then share your combinations with projects, wikis and the community.



LIVE CONDITIONS

Water flow (Cfs)
Rate of water flow is an important environmental factor affecting many species in the Delta. Watch Delta flow in real-time.
[Map It](#) | [More info](#)

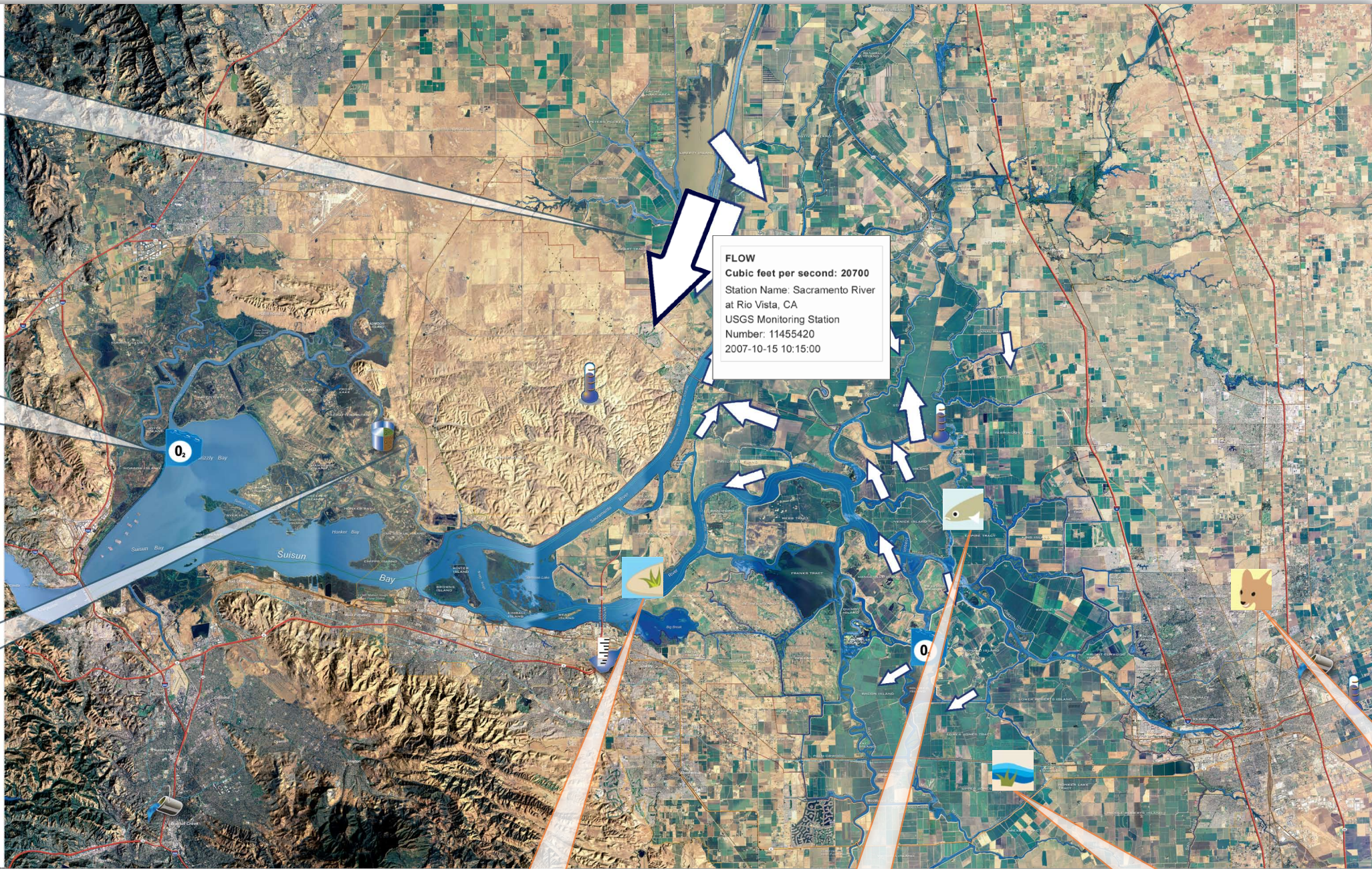
Current Water Temperature (C)
Temperature is a key factor for understanding the ecological health, water quality and water management of the Delta.
[Map It](#) | [More info](#)

Total Dissolved Oxygen (Ppm)
Low Dissolved Oxygen impedes Fish migration. View live Dissolved Oxygen stations throughout the delta.
[Map It](#) | [More info](#)

River Stage
Watch River Stage and Tides.
[Map It](#) | [More info](#)

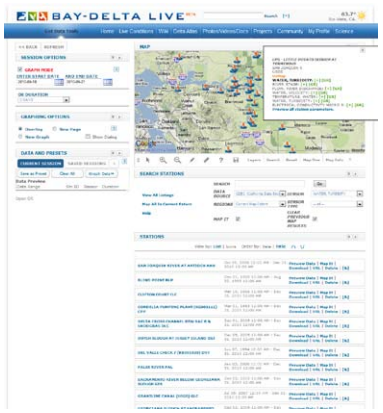
Turbidity
Turbidity
[Map It](#) | [More info](#)

Precipitation
Live Precipitation Statistics and Forecasts
[Map It](#) | [More info](#)



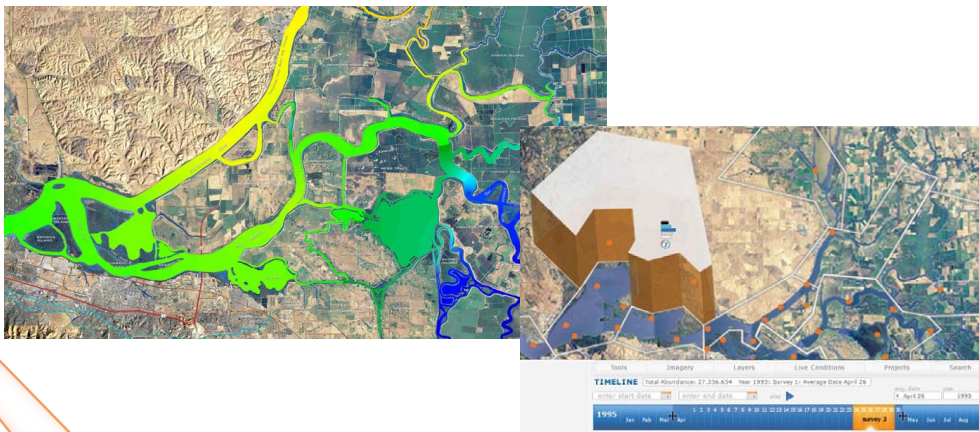
REAL-TIME DATA TOOLS

ACCESS AND ANALYZE DATA



Using Delta Live Real-Time Data Tools, users can easily access real-time station sensor data, analyze the data using USGS GR graphing application, and VISUALIZE the data using the 2-D or 3-D mapping and modeling toolset.

TIME SERIES DATA VISUALIZED MANY WAYS

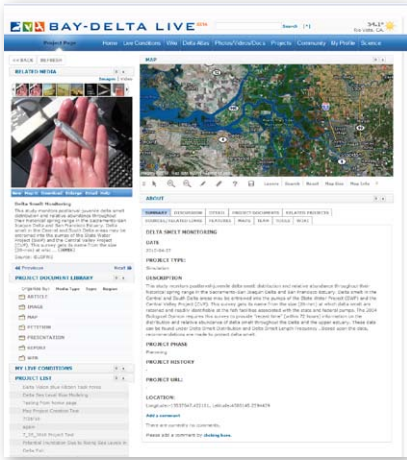


PLANNING AND MANAGEMENT TOOLS

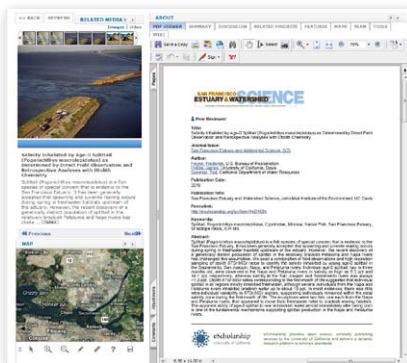
AGGREGATE | ORGANIZE | BUILD | ANALYZE | VISUALIZE | COLLABORATE

Delta Live provides efficient and elegant access to data and information using basic project management tools, document management tools, wikis and maps. Users can upload documents, create projects and project teams, build wiki pages, maps and more. Users may make associations to each asset for simple storytelling and communication. All information is stored using your profile and can be made public or kept private.

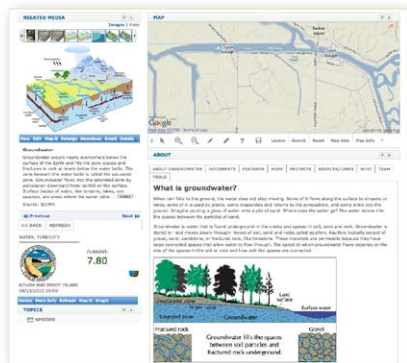
PROJECTS



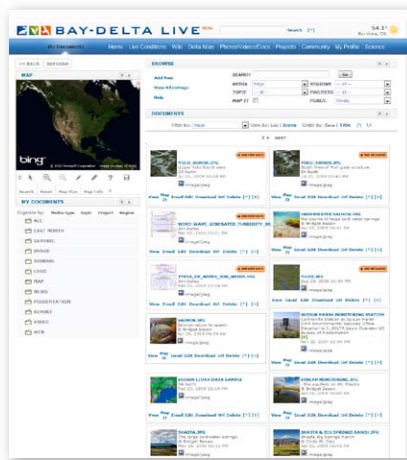
DOCUMENTS



WIKIS



ARCHIVE



MOBILE APPS



CALIFORNIA ESTUARY MONITORING WORKSHOP MEETING

JANUARY 26, 2011



WEB SERVICES • GIS • VISUALIZATION

Open and Collaborative
Natural Resource Management

34 North

- Over 15 years GIS experience
 - 12 years of high profile website development
-

Our experience gives our clients the benefits of geospatial and the functionality and versatility of enterprise websites.

Clients include: State Federal Water Contractors Agency, USGS, Metropolitan Water District of Southern California, XPrize/SpaceshipOne, Warner Brothers, Sundance Film Festival, Cartoon Network (and more).



The Core Technologies: Open NRM

Open Natural Resource Management

- A Suite of web based tools for analyzing and managing natural resources.
- Composed of a number of inter-dependant software modules.

Mapping

Collaboration

**CMS: Content
Management
System**

**Project
Management**

**Custom
Templates**

Support

EXPLORE THE CALIFORNIA DELTA

Images | Video



Map it Download Enlarge Help

CLIMATE CHANGE

California produces roughly 1.4 percent of the world's, and 6.2 percent of the total U.S., greenhouse gases. Our state has been working on and finding solutions to our impact on climate since 1988. Governor Arnold Schwarzenegger's 2005 executive order on climate change kicked into high gear to further advance clean renewable energy and other solutions to lower our state's greenhouse gas (GHG) emis ... [MORE>](#)

[Previous](#)[Next>](#)

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Aqua Blog Maven

Aquaforia

This just in ... Members of Congress send letter to Westlands asking for clarification of it's surplus #cawater <http://b2l.me/asfskq> 4 days ago

C-WIN, CSPA & AquaAlliance file suit against SWRCB & DWR to protect Delta public trust fisheries & enforce #cawater law <http://b2l.me/ap29uy> 13 days ago

Troubled Waters: Will the state build or falter on the Legislature's historic compromise? <http://tinyurl.com/23pw6xz> #cawater #sacdelta 17 days ago

Veteran #cawater reporter E.J. Schultz headed for Chicago <http://tinyurl.com/26fn9gj> EJ you will be missed! 33 days ago

#cawater users: the Delta Stewardship Council wants to communicate with you! Take the survey: <http://b2l.me/agbwub> 41 days ago

twitter

Join the conversation

PRESENTATIONS AND REPORTS

Latest Reports
and Information

MAP



Layers Search Reset Map Size Map Info

FEATURED PRESENTATIONS / REPORTS

**Salinity Inhabited by Age-0 Splittail (Pogonichthys macrolepidotus) as Determined by Direct Field Observation and Retrospective Analyses with Otolith Chemistry**

Splittail (*Pogonichthys macrolepidotus*) is a fish species of special concern that is endemic to the San Francisco Estuary. It has been generally accepted that spawning and juvenile rearing occurs during spring in freshwater habitats upstream of the estuary. However, the recent discovery of a genetically distinct population of splittail in... [MORE>](#)

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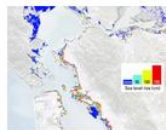
Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem

Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem [MORE>](#)

**Final Draft Interim Plan**

In November 2009, the California Legislature enacted SBX7 (Act), one of several... [MORE>](#)

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**Potential Inundation Due to Rising Sea Levels in the San Francisco Bay Region**

Abstract: An increase in the rate of sea level rise is one of the primary impacts of projected global climate change. To assess potential inundation associated with a continued acceleration of sea level rise, the highest resolution elevation data available were assembled from various sources and mosaicked to cover the land surfaces of the... [MORE>](#)

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The BDCP is a habitat conservation plan (HCP) and natural communities conservation... [MORE>](#)

**Sustainable Water and Environmental Management in the California Bay-Delta**

At the request of Congress and the Departments of the Interior and Commerce, a... [MORE>](#)

Delta Smelt Culture Facility and Project

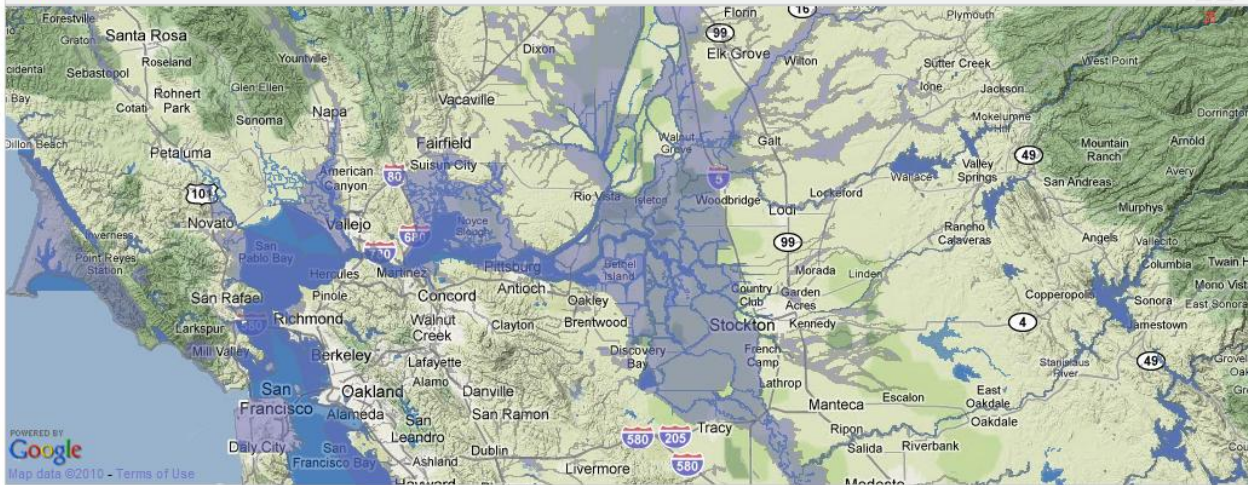
Delta Smelt Culture Facility - The University of California, Davis, and the State... [MORE>](#)

FEATURED WIKI

Delta Cross Channel

Mapping
Web Services
Collaborate-Wiki
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Management
Project
Management
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MAP



LAYER MANAGER

LAYERS

- ▶ BASE LAYERS
- ▼ CALIFORNIA DELTA LAYERS
- ▶ ADDITIONAL IMAGERY
- ▶ PLACES, URBAN AREAS AND CENSUS
- ▶ TRANSPORTATION & INFRASTRUCTURE
- ▶ LAND DESIGNATION
- ▶ DELTA GEOMORPHOLOGY
- ▼ WATER & INFRASTRUCTURE
 - ☐ RIVERS & BODIES OF WATER (LINEAR)
 - ☒ RIVERS & BODIES OF WATER (POLYGON)
 - ▶ Manage this layer.
 - ☐ DAMS
 - ☐ CANALS
 - ☐ DELTA PROJECT LEVEE
 - ☐ DELTA NON-PROJECT LEVEES
 - ☒ FEMA FLOOD DATA
 - ▶ Manage this layer.
 - ☐ CALDIS
 - ☐ CALIFORNIA INTERAGENCY WATERSHED
- ▶ GEOPOLITICAL
- ▶ DELTA FEATURES & DWR ATLAS

FEATURED PRESENTATIONS / REPORTS



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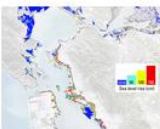
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FEATURED PROJECTS



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Delta Smelt Culture Facility - The University of California, Davis, and the State...

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ENTER START DATE AND END DATE

2010-09-18 2010-09-21

OR DURATION

3 DAYS

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☐ New Graph

☐ Show Dialog

DATA AND PRESETS

CURRENT SESSION SAVED SESSIONS + ?

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Clear All

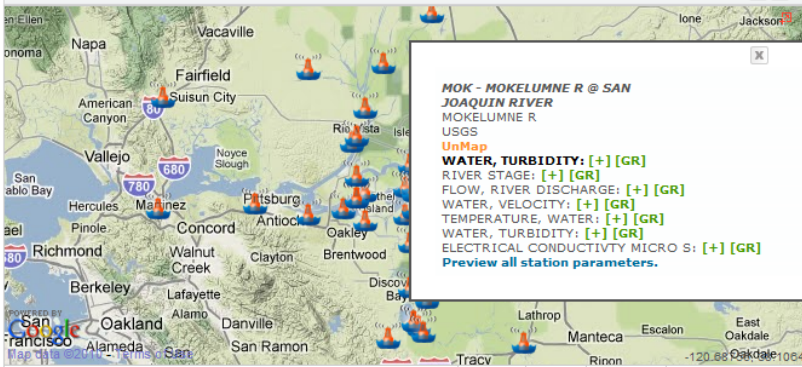
Graph Data»

Data Preview

Data Range Stn ID Sensor Duration

Open GR

MAP



SEARCH STATIONS

SEARCH

Go

DATA SOURCE CDEC (California Data Excl)

SENSOR

WATER, TURBIDITY

REGIONS Current Map Extent

SENSOR TYPE

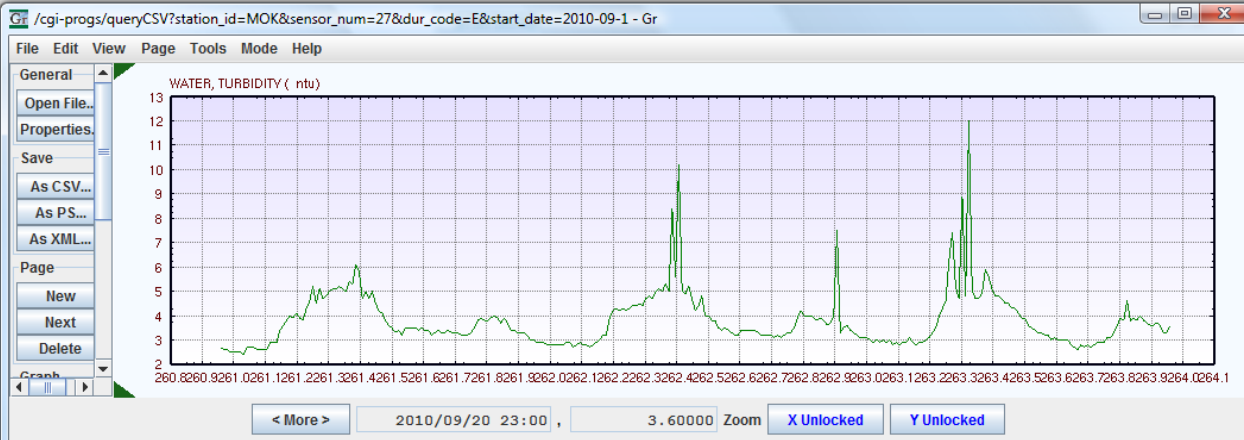
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STATIONS

View by: List Icons Order by: Date Title



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Chinook Salmon



Share

CAPTION

Chinook Salmon

DESCRIPTION

Chinook salmon are easily the largest of any salmon, with adults often exceeding 40 pounds (18 kg); individuals over 120 pounds (54 kg) have been reported. Chinook salmon are very similar to coho salmon in appearance while at sea (blue-green back with silver flanks), except for their large size, small black spots on both lobes of the tail, and black pigment along the base of the teeth. Adults migrate from a marine environment into the freshwater streams and rivers of their birth in order to mate (called anadromy). They spawn only once and then die (called semelparity). They feed on terrestrial and aquatic insects, amphipods, and other crustaceans while young, and primarily on other fishes when older. Populations exhibit considerable variability in size and age of maturation, and at least some portion of this variation is genetically determined. There is a relationship between small size and long distance of migration that may also reflect the earlier timing of river entry and the cessation of feeding for Chinook salmon stocks that migrate to the upper reaches of river systems. Body size, which is related to age, may be an important factor in migration and spawning bed, or redd, construction success. Juvenile Chinook may spend from 3 months to 2 years in freshwater before migrating to estuarine areas as smolts and then into the ocean to feed and mature. Chinook salmon remain at sea for 1 to 6 years (more commonly 2 to 4 years), with the exception of a small proportion of yearling males (called jack salmon) which mature in freshwater or return after 2 or 3 months in salt water. There are different seasonal (i.e., spring, summer, fall, or winter) "runs" in the migration of Chinook salmon from the ocean to freshwater, even within a single river system. These runs have been identified on the basis of when adult Chinook salmon enter freshwater to begin their spawning migration. However, distinct runs also differ in the degree of maturation at the time of river entry, the temperature and flow characteristics of their spawning site, and their actual time of spawning. Freshwater entry and spawning timing are believed to be related to local temperature and water flow regimes. Adult female Chinook will prepare a redd (or nest) in a stream area with suitable gravel type composition, water depth and velocity. The adult female Chinook may deposit eggs in 4 to 5 "nesting pockets" within a single redd. Spawning sites have larger gravel and more water flow up through the gravel than the sites used by other Pacific salmon. After laying eggs in a redd, adult Chinook will guard the redd from just a few days to nearly a month before dying. Chinook salmon eggs will hatch, depending upon water temperatures, 3 to 5 months after deposition. Eggs are deposited at a time to

SCIENTIFIC NAME

Oncorhynchus tshawytscha - (Walbaum, 1792)

OVERVIEW



Delta Blues: Trucking salmon around the California Delta from Steven Johnson on Vimeo.

Four distinct runs of Chinook salmon spawn in the Sacramento-San Joaquin River system, named for the season when the majority of the run enters freshwater as adults. Fall-run Chinook migrate upstream as adults from July through December and spawn from early October through late December. The timing of runs varies from stream to stream. Late fall-run Chinook migrate into the rivers from mid-October through December and spawn from January through mid-April. The majority of young salmon of these races migrate to the ocean during the first few months following emergence, although some may remain in freshwater and migrate as yearlings. Fall-run Chinook are currently the most abundant of the Central Valley races, contributing to large commercial and recreational fisheries in the ocean and popular sportfisheries in the freshwater streams. Fall-run Chinook are raised at five major Central Valley hatcheries which release more than 32 million smolts each year. Due to concerns over population size and hatchery influence, Central Valley fall/late fall-run Chinook salmon are a Species of Concern under the federal Endangered Species Act.

SPECIES OF CONCERN

yes

CONSERVATION STATUS

(SE,FT)

NATIVE

yes

KINGDOM

Animalia

PHYLUM

Chordata

CLASS

Actinopterygii

ORDER

Salmoniformes

FAMILY

Salmonidae

GENUS

Oncorhynchus

SPECIES

Oncorhynchus tshawytscha (Walbaum in Artdi, 1792) -- Chinook salmon, chinook salmon or king salmon, salmon boquinegra, saumon chinook

Mapping
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<< BACK

REFRESH

DELTA ATLAS

DELTA ATLAS MAPS

The Legal & Primary Delta

Major Roads

Railroads

Deep Water Ship Channels

Power Transmission Lines

Gas & Oil Fields/Storage

Islands & Waterways

Population & Counties

Urban Areas

Land Use

Conservation Lands

Protected Lands

Managed Lands

Organic Soils

Elevations

Marsh Watersheds

Suisun Marsh Boundaries

Recreation

Boat Launch Facilities

Tidal Flows

Tidal Levels

Historic Flooding 1930-1966

Recent Flooding 1967-1992

100-Year Flood Stage Elevations

Salinity 1921-1944

Salinity 1944-1990

Irrigation Diversions

Agricultural Drainage Returns

Monitoring Stations

Major Diversions

Project & Nonproject Levees

Aqueducts

Constructed Waterways

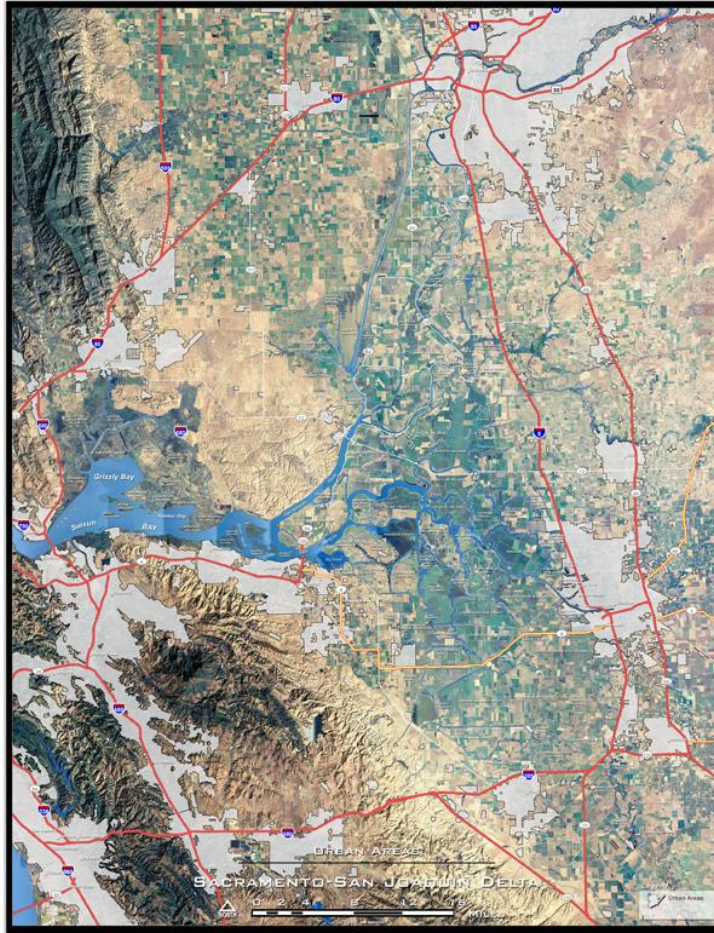
Congressional Districts

State Senate Districts

Urban Areas

Source: California Department of Water Resources

Map Design: 34 North

To Download this map [CLICK HERE.](#)[EDIT THIS PAGE](#)

DELTA ATLAS MAPS

The Legal & Primary Delta

Major Roads

Railroads

Deep Water Ship Channels

Power Transmission Lines

Gas & Oil Fields/Storage

Islands & Waterways

Mapping

Web Services

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Presentation

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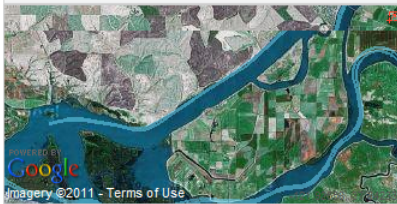
Management

Project

Management

Social

Networking



This model is for testing. And may be used for any kind of experiments, learning, saving, etc.

Jan 13, 2011 12:37 PM



Bay Delta Live Screen Cast for Gr Real-Time Data
34 North
Jan 11, 2011 07:43 PM



DWR
Jan 11, 2011 01:23 PM



DWR
Jan 11, 2011 01:23 PM



DWR
Jan 11, 2011 01:22 PM



34 North/DWR
Jan 11, 2011 01:22 PM



DWR
Jan 11, 2011 01:22 PM



DWR
Jan 11, 2011 01:21 PM



DWR
Jan 11, 2011 01:21 PM



DWR
Jan 11, 2011 01:20 PM



DWR
Jan 11, 2011 01:19 PM



The objective of this effort is to calibrate the turbidity model to the best available in-Delta turbidity data so that reasonably accurate turbidity ...

Jan 11, 2011 08:30 PM



Jan 11, 2011 07:01 PM



Jan 11, 2011 03:14 PM



DWR
Jan 11, 2011 01:23 PM



DWR
Jan 11, 2011 01:23 PM



DWR
Jan 11, 2011 01:22 PM



34 North/DWR
Jan 11, 2011 01:22 PM



DWR
Jan 11, 2011 01:21 PM



DWR
Jan 11, 2011 01:21 PM



DWR
Jan 11, 2011 01:20 PM



DWR
Jan 11, 2011 01:20 PM



DWR
Jan 11, 2011 01:19 PM



Mapping

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Presentation

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REFINE SEARCH

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U.S. FISH AND WILDLIFE SERVICE – SPOTLIGHT SPECIES 5-YEAR
ACTION PLAN
2010-2014**Common Name:** Delta Smelt**Scientific Name:** *Hypomesus transpacificus***Lead Region:** Pacific Southwest Region**Lead Field Office:** San Francisco Bay-Delta Fish and Wildlife Office**Species Information:****Status:** Threatened**Recovery Priority Number:** 2C**Recovery Plan:** Recovery Plan for the Sacramento/San Joaquin Delta Native Fishes, November 1996**Most Recent 5-year Review:** March 31, 2004**Other:** 90-Day Finding on a Petition to Reclassify the Delta Smelt (*Hypomesus transpacificus*) From Threatened to Endangered (73 FR 39639), July 10, 2008.**Other:** Determination of Threatened Status for the Delta Smelt (58 FR 12854), March 5, 1993**Threats:****Factor A** -- Present or threatened destruction, modification or curtailment of habitat or range

1. Salinity
 - Delta smelt utilize the low salinity zone (LSZ) as preferred habitat for rearing
 - Upstream reservoir operations, upstream diversions, and exports have reduced Delta outflow resulting in the LSZ moving upstream from its historic location
 - Upstream movement of the LSZ has resulted in delta smelt moving into smaller, less productive areas
 - Upstream movement of the LSZ in the fall is correlated with reduced smelt abundance the following summer
2. Turbidity
 - Delta smelt require turbid waters in rearing areas to capture prey and avoid predators

Mapping
Web Services
Collaborate-Wiki
Presentation
Document
Management
Project
Management
Social
Networking

Delta Smelt Culture Facility and Project



DESCRIPTION

Delta Smelt Culture Facility - The University of California, Davis, and the State, working with federal agencies, operate a Delta smelt culture laboratory located at the Department of Water Resources Banks Pumping Plant in the Delta. UC Davis rears and provides over 20,000 juvenile and adult fish annually to researchers carrying out elements of the POD investigation and evaluating ways to improve the performance of existing and new fish screening facilities. These research fish are the progeny of wild fish collected in the Delta in 2006, and with the curtailment of the collection of wild fish due to the declining population they are now the only source of live research fish. Research is also carried out at the UC Davis fish culture facility into the physical and biological requirements of delta smelt.



Related Images and Videos



View by: List | Icons Order by: Date | Title / \ V

[P]


DELTA SMELT

DWR
May 21, 2010 11:45 AM

+ Tools

[P]


DELTA SMELT

Delta Smelt
Apr 19, 2010 10:49 AM

+ Tools

[P]


SMELT TURBIDITY MAP

Smelt Turbidity Map
Apr 19, 2010 10:41 AM

+ Tools

[P]


DELTA FISH SCREENS 2 3-2-03

Apr 07, 2010 12:02 PM

+ Tools

[P]

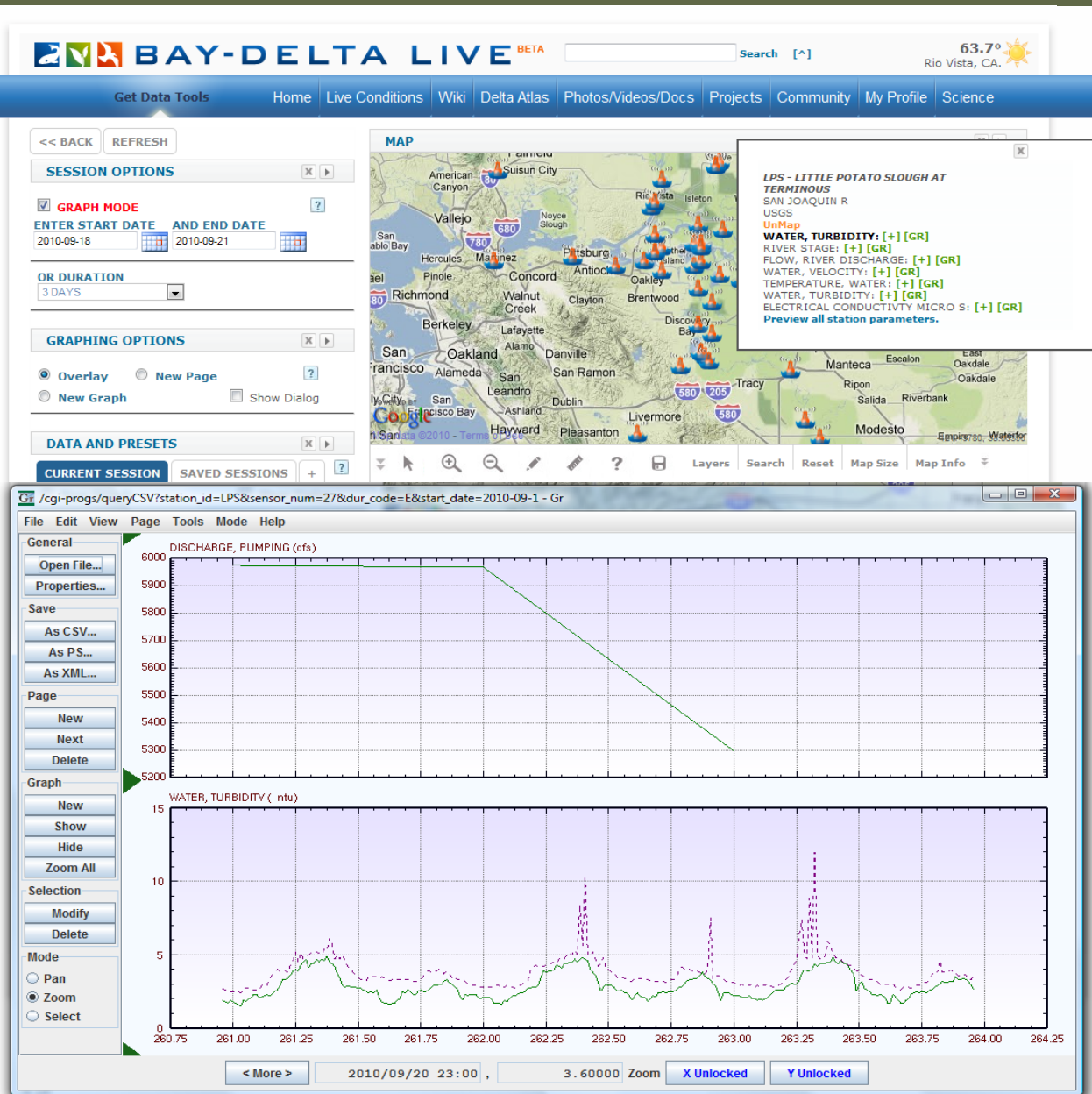

FINDING DRIVERS OF SMELT...

January 26, 2010
David Fullerton, Metropolitan Water

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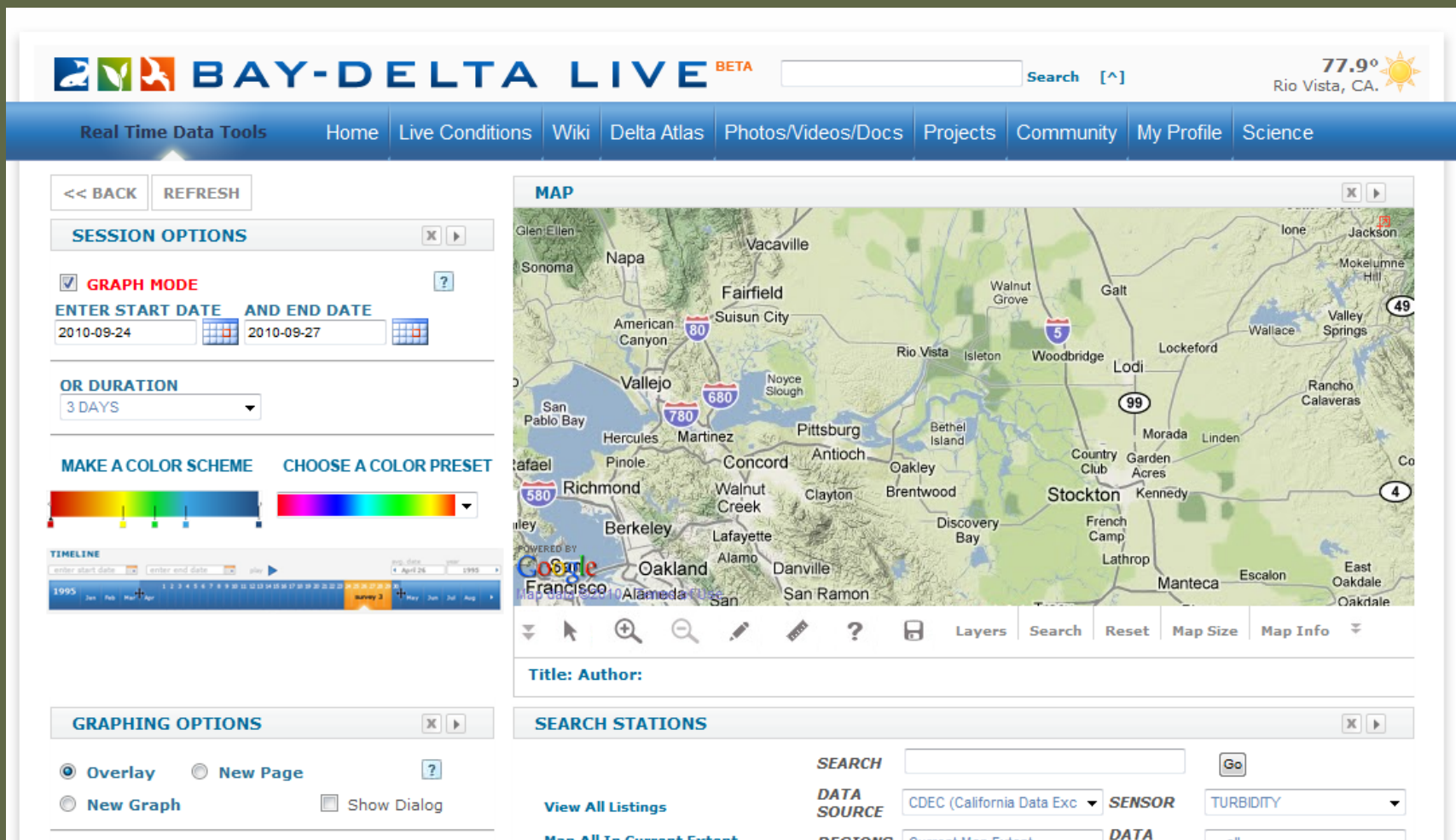
Real Time Data Management Tools

- Access Real Time Data from CDEC
- Select Sensor Type
- Choose Time Frame
- One Click Graph Mode
- Send Data to GR
- Overlay Data – Add new graphs



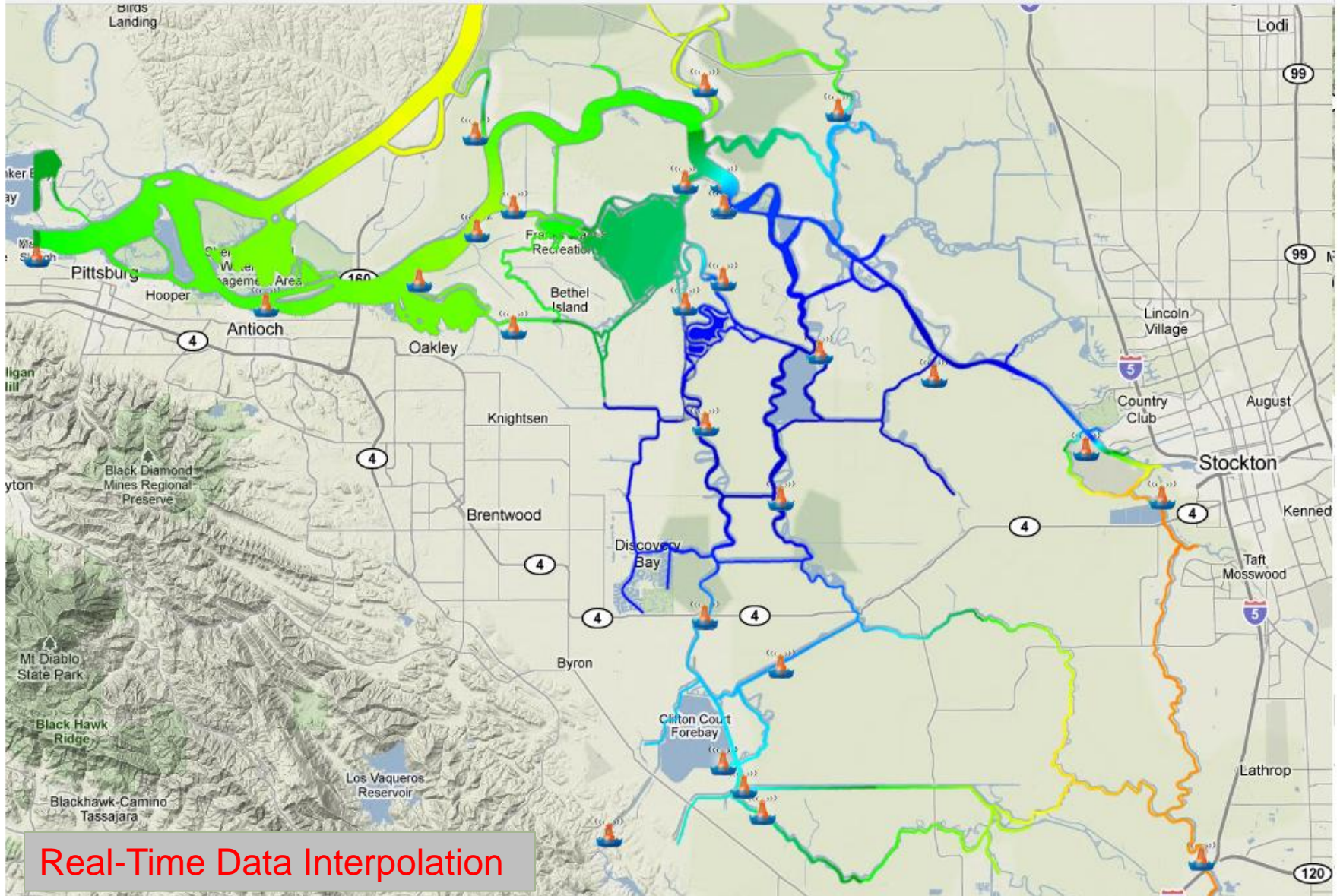
Using Time Series Data for Scalar Field Interpolations:

A Spatial Contour Mapping and Animation Modeling Toolset to Observe Point Time Series Data





MAP



Mobile Apps

