

CALIFORNIA ESTUARY MONITORING WORKGROUP INTRODUCING THE CALIFORNIA ESTUARIES WEB PORTAL **KELSEY COWIN, EMILY DEMARCO, AND STEPHANIE FONG**

CALIFORNIA WATER QUALITY MONITORING COUNCIL

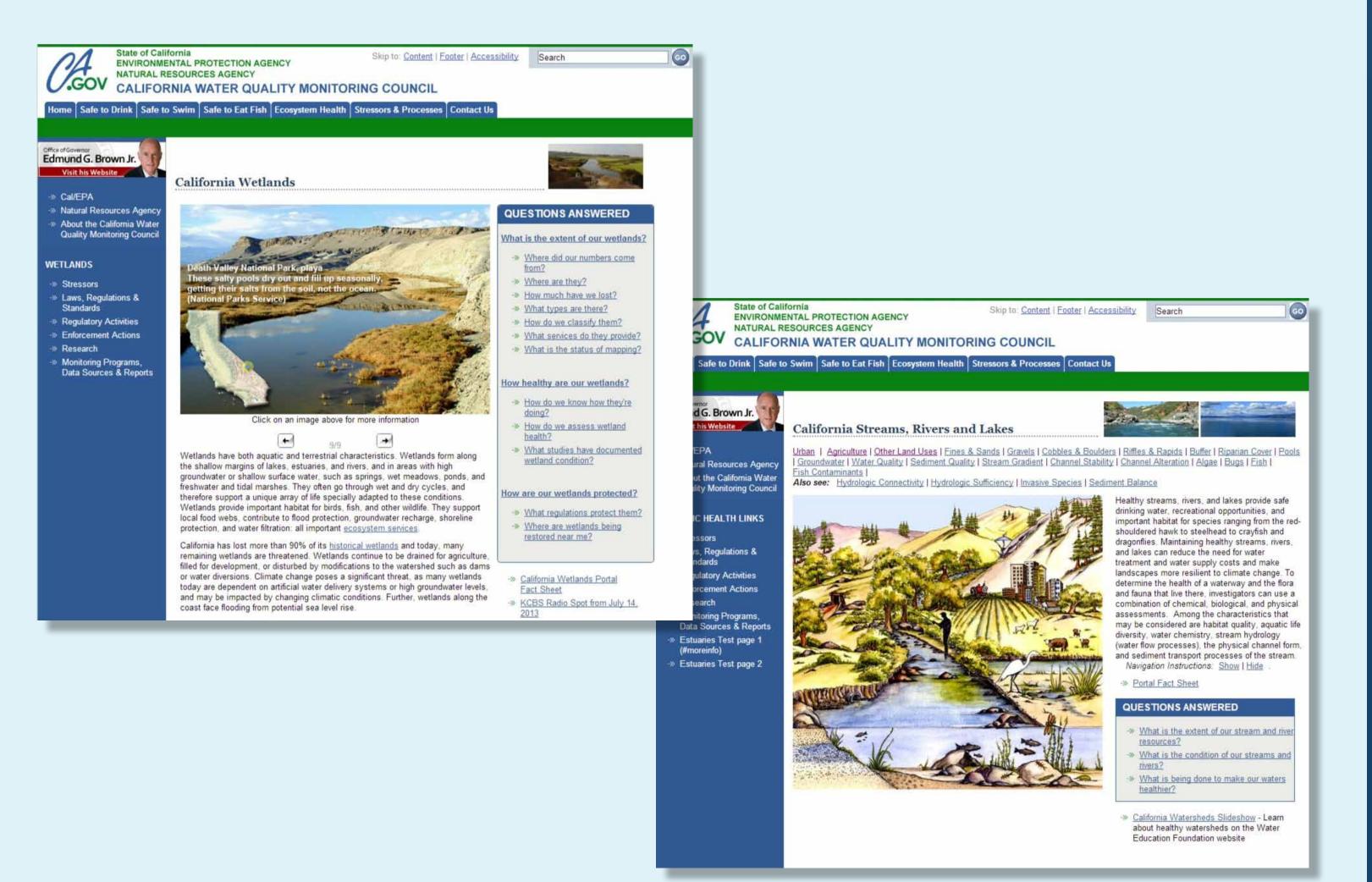
CA Senate Bill 1070 mandated that water quality monitoring and assessment activities be coordinated among organizations inside and outside the California government, and that the information be made available to decision makers and the public via the Internet.

As a result, the California Water Quality Monitoring Council was formed to integrate and coordinate water quality and related ecosystem monitoring, assessment, and reporting.

MY WATER QUALITY: WEB PORTALS

Aquatic ecosystems portals that have already been launched, under the oversight of the California Water Quality Monitoring Council, include the California Wetlands Portal and the California Streams, Rivers, and Lakes Portal.

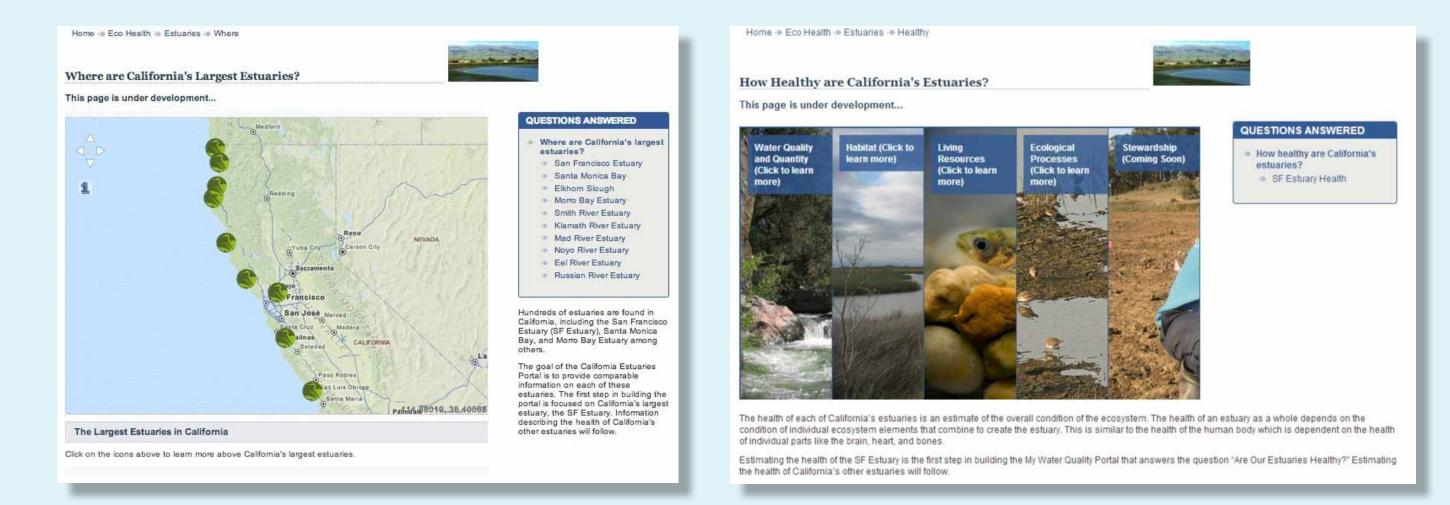
The new web Portal, developed by the California Estuary Monitoring Workgroup (CEMW), will house information on California's estuaries and their health. The Ocean Ecosystem and Health Portal is also under development.





Hundreds of estuaries are found in California, including the San Francisco Estuary, Santa Monica Bay, and Morro Bay Estuary among others.

The goal of the California Estuaries Portal is to provide comparable information on each of these estuaries and their health. Compiling information in this way will help amline monitoring practices, identify relevant data gaps, and develop a deeper understanding of California's estuaries.



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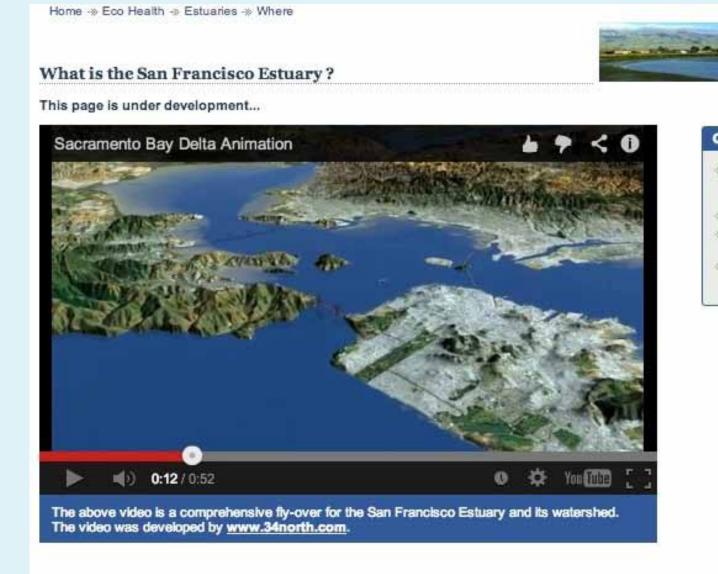


and get connected to their conservation program

The Estuaries Portal is based on the state of the San Francisco Bay 2011 Report five key attributes to examine the health of California's Estuaries.

THE SAN FRANCISCO **ESTUARY**

The California Estuaries Portal initially focuses on the health of California's largest estuary, the San Francisco Estuary, by evaluating five ecosystem elements called "key attributes" that are used in the State of the San Francisco Bay 2011 Report. These key attributes are living resources, water, habitat, ecological processes, and stewardship. For now, the portal includes information on the San Francisco Estuary's living resources. Information on other San Francisco Estuary key attributes as well as on California's other estuaries will be added as the portal develops.



ESTIONS ANSWERED What is the San Francisco

The San Francisco Estuary (SF Estuary) is a partly enclosed body of water where salt water from the Pacific Ocean mixes with freshwater from rivers draining the surrounding watershed. The SF Estuary is the largest estuary on the west coasts of North and South America and includes the Golden t 'trait, San Francisco, San Pablo, and Richardson Bays (western Bays), Carquinez Strait, Suisun, Grizzly, and Honker Bays (eastern Bays), and the scramento-San Joaquin River Delta (Delta). The mixing of sea water and freshwater creates characteristic estuarine aquatic habitat that transitions from salty sea water to brackish (less salty) to freshwater. Tides bring water from the Pacific Ocean through the Golden Gate Strait into the estuary while California's two largest rivers, the Sacramento and San Joaquin, contribute the greatest amount of freshwater to the estuary. The Sacramento and San Joaquin Rivers carry water from the Sierra Nevada and Cascade mountain ranges to the Delta where the transition from freshwater to sea water is observed. The river channels combine, and fresh and salty water mix and move back and forth with the tides throughout the SF Estuar Home -> Eco Health -> Estuaries -> Healthy -> San Francisco and economic resource, and the natural res How Healthy is the San Francisco Estuary? mmunities, and ecosystems.

The CEMW began eval the health of the San rancisco Estuary using 2 Invironmental Data Exe Network (CEDEN), and California Data Exchange Center (CDEC).



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bout these key attributes is currently under development

Health of the San Francisco Estuary

There is widespread agreement that the SF Estuary ecosystem is in poor health and many think that it is in crisis. Symptoms of this crisis include rapidly declining resident and migratory fish populations, proliferation of non-native species, the collapse of California's salmon fishing indust changes and declines in the aquatic food web, and growing conflicts over the allocation and management of limited fresh water supplies. impact of these changes is magnified and concentrated in the eastern, fresh water part of the SF Estuary, the Sacramento-San Joaquin Riv Delta which is also known as the California Delta or simply the Delta. Beginning with the California gold rush in the middle of the 19th century, the Delta has been dramatically transformed from vast wetlands to dry gricultural lands surrounded by dense urban areas. For more than half a century, the Delta has also functioned as the center of California's state wide water distribution system.

ng individually and in combination. Future threats to the health of the Delta ecosystem include climate change (sea level rise, warming emperatures, further altered flows), continued human population growth and non-native species invasions, and catastrophic events such as wide pread levee failures following large earthquakes or prolonged drought periods.



Take an aerial tour of California's largest estuary and watershed, the San Francisco Bay Estuary, and

view it in new ways.

STIONS ANSWERED How can I be part of the solution? (coming soon)

living resources, water, habitat, ecological processes, and stewardship. These are the same attributes used in State of the San Francisco Report to evaluate the health of the San Francisco Bay (the western portion of the SF Estuary). Measurable elements of each attribute are luate the condition or health of the five attributes, which are then used to estimate the overall health of the estuary. Portal is currently focusing on an evaluation of the health of two key attributes: living resources and water in the SF Estuary. Information



This page is under development... QUESTIONS ANSWERED Birds (Click here to learn more) How healthy is the SF Estuary? Why are living resources a key attribute?



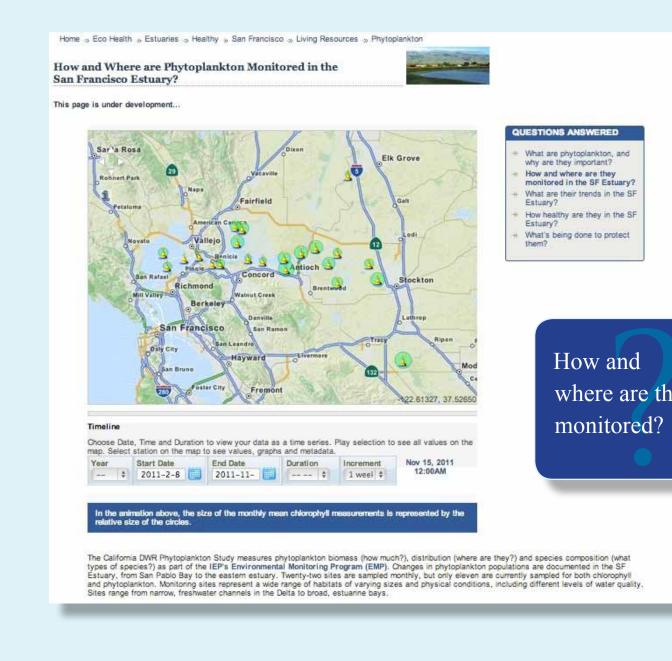
Healthy estuaries support diverse and resilient populations of living resources, dominated by native species and broadly distributed across different vabitats. These living resources include phytoplankton, zooplankton, benthic organisms, fish, birds, plants, and mammals. How healthy are SF Estuary living resources?

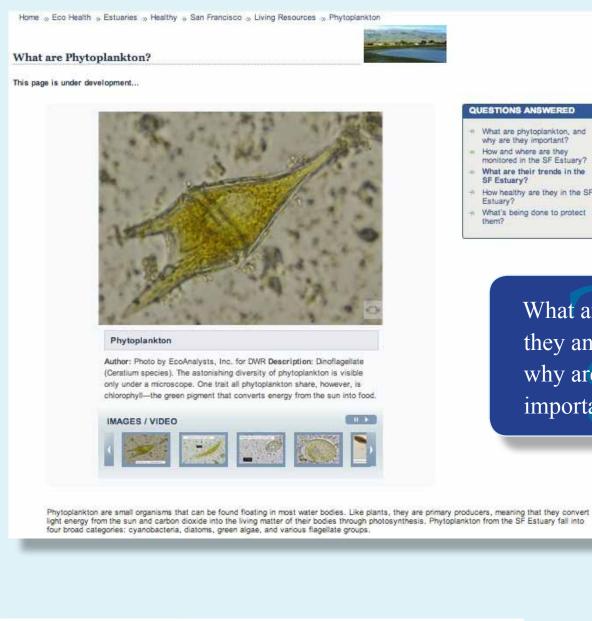
The SF Estuary is in crisis due to rapidly declining resident and migratory fish populations, the collapse of California's salmon fishing industry, and changes and declines in the aquatic food web. More than 90 species of plants and animals have regulatory protection to prevent losing them from the SF Estuary ecosystem. However, some introduced species such as largemouth bass, Asian clams, jellyfish, and blue-green algae are thriving.

Healthy estuaries support diverse and resilient populations of living resources, dominated by native species and broadly distributed across different habitats. The portal currently includes information on phytoplankto zooplankton, benthic organisms, fish, and birds in the San Francisco Estuary. Additional content on plants and mammals in the San Francisco Estuary will be included in future developments.

ANSWERING OUR QUESTIONS

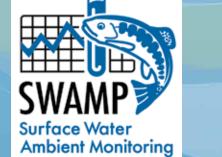
The portal follows a similar "Questions Answered" format and answers these questions for each living resources section.













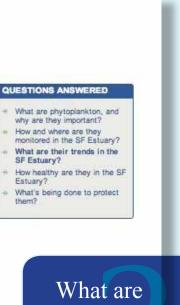






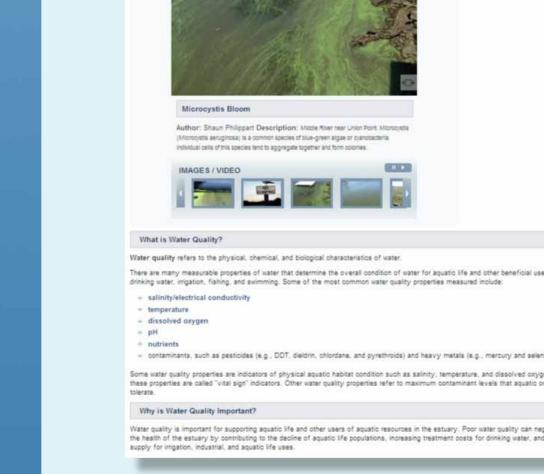




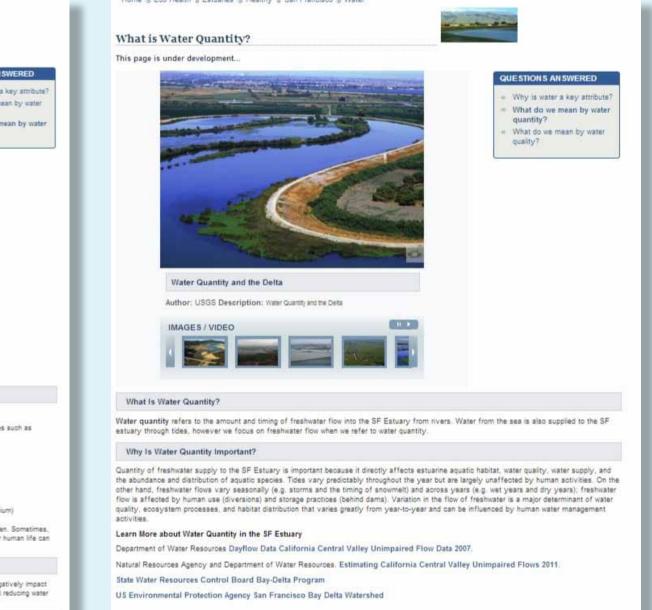


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NEXT STEPS



quality and water quantity for the San Francisco Estuary. Depending on continued participation, development of Ecological Process will occur

Following the lead of the Delta Science Program, the CEMW will report performance measures (biological health indicators with targeted goals) that support restoration efforts and water quality evaluations through assessments that inform adaptive management. The California Estuaries portal endeavors to include performance measures as a means of evaluating progress towards restoring the health of the ecosystem and water reliability. Including these will help managers evaluate the effectiveness and efficiency of habitat restoration and current monitoring, and identify the potential for future monitoring changes and science integration.

WHY GET INVOLVED?

- **Dissemination of information** generated through monitoring and research activities to a variety of audience, including the public, managers, and policy makers
- Opportunities to facilitate interdisciplinary science and collaborate across organizations
- Share ideas and data in an open forum with **fewer communication boundaries**
- Opportunities to improve efficiencies in monitoring (e.g., reduce redundancies, improved *coordination, and comparability)*
- Improve access to data and information generated by others to increase the power of your own research, and increase use potential beyond the original purpose
- Access to tools that support data analysis and reporting (e.g., visualization tools on workgroup site) and ability to help develop new tools
- Provide a place for all sides of stories to be told

HOW TO GET INVOLVED

We are continually working to improve the quality of the information presented in this web portal and the underlying water quality monitoring and assessmen programs. Please help us make them better.



• Contact facilitator Stephanie Fong (sfong@sfcwa.org).