



THE OFFICE OF INFORMATION MANAGEMENT & ANALYSIS

BROWN BAG SEMINAR

2018 Water Quality Status Report: The Status of California's Surface Waters

Speaker: Michelle Tang
Environmental Scientist, State Water Resources Control Board

Please Note:

- All participants are muted upon log in
- For questions, all participants will be un-muted after the presentation is completed. Or, send via chat box.
- A recording of the presentation will be posted on http://www.waterboards.ca.gov/water_issues/programs/swamp/brownbag_seminars.shtml

Brown Bag Seminar: 2018 Water Quality Status Report

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What is the Water Quality Status Report?

- An annual **data-driven** report highlighting the status of California's surface waters.
- Data visualization showcase.
- For a broad audience.
- Only surface waters... for now.
- Collaborative effort between Water Boards staff and partners.

2017 Water Quality Status Report

- Seven important stories about the health of California's surface waters.

2017 Water Quality Status Report

Contaminants and Toxicity in Stream Sediments

Many contaminants entering streams adhere to sediments that are transported downstream and may accumulate at the bottom of large watersheds. SWAMP's Stream Pollution Trends (SPT) Monitoring Program collects yearly sediment samples at 130 fixed integrator sites at the bases of large watersheds across California. Each sample is analyzed for industrial compounds, legacy and current-use pesticides, metals and the algae toxin, microcystin. Samples are also tested for toxicity to resident aquatic organisms, the amphipod *Hyalella aspera* and the chironomid *Chironomid dilutus*, to evaluate effects of multiple contaminants that may pose a threat to the health of aquatic life.

Cylindrocapsa bloom *algae bloom*

2017 Water Quality Status Report

Some Pesticide Levels Are Still Excessive

Water data improves our understanding of the toxicity in stream sediments. The following sampling highlighted the findings presented in the 2017 report.

2017 Water Quality Status Report

Setting Flow Targets to Support Biological Integrity in Southern California Streams

Among the range of approaches available for setting flow targets that support biological integrity, a recently completed project in southern California utilized the Ecological Limits of Hydrologic Alteration (ELOHA) framework to assess the effect of flow alteration on the condition of benthic macroinvertebrate (BMI) communities across the region. The framework establishes recommended flow targets using a process that includes estimation of flow alteration and development of flow-ecology relationships based on the response of biological communities to changes in flow.

Biological Data Provide Ecological Context for Hydrologic Data

Establishing flow targets based on ecology requires large amounts of both biological and hydrologic data. In order to better understand the application of streamflow to streamflow, SWAMP's large-scale measurement network is currently working to make establishing flow targets possible. The network, collected by Southern Watersheds Assessment (SWA) and the California Watershed Assessment Program (CWAP), is currently the most comprehensive data set for understanding hydrologic variability across the California Stream Condition Index (CSI), a scoring tool for streamflow data, and the biological condition variability across multiple watersheds.

Over the past eight years, the Southern California effort developed flow-ecology relationships using data from nearly 100 measurement sites sampled by SWAMP's In-stream Stream Assessment (ISA) program. Another Southern Watersheds Assessment (SWA) and the California Watershed Assessment Program (CWAP) is currently the most comprehensive data set for understanding hydrologic variability across the California Stream Condition Index (CSI), a scoring tool for streamflow data, and the biological condition variability across multiple watersheds.

2017 Water Quality Status Report

Freshwater Harmful Algal Bloom Monitoring

Cyanobacteria, also known as blue-green algae, are commonly found in freshwater, brackish, and marine environments all over the world. Provided adequate light and nutrients, they can form dense blooms in which they outcompete other algal species, deplete dissolved oxygen levels during bloom die-off, and, for some species, release toxins which can impact aquatic species, wildlife, livestock, humans, and their pets. Human activities can contribute to harmful algal bloom (HAB) occurrences. Nutrients found in fertilizers, animal waste, and human waste can stimulate blooms, and excessive water diversions can also increase temperatures, reduce flows and stimulate HABs.

In recent years freshwater HABs in California have become an emerging public health concern, impacting environmental and recreational interests as well as drinking water supplies. In response to this growing concern about the frequency and severity of reported freshwater HABs in California lakes and rivers, SWAMP initiated its **Freshwater Harmful Algal Bloom (FHAB)** program to monitor and respond to blooms throughout the state. Major components of the program are the bloom incident response coordination and a project utilizing satellite imagery to detect possible HABs in California's largest lakes. These actions are being implemented in support of and in partnership with the **California Cyanobacteria and Harmful Algal Bloom (CCHAB) Network**.

Blooms Continue to Occur

Bloom incidents reported: A HAB tracking system was deployed in 2016 to collect data on all voluntarily reported blooms and presented as an online map. HABs are reported through the Freshwater Blooms Incident Reporting System (FBIRS) to support immediate event response. The incident form collects information about observed harmful algal blooms (both suspected and confirmed). Water Board staff review the reports and initiate a response plan to protect public health and resources.

2017 Water Quality Status Report

Blooms Continue to Occur

2018 Water Quality Status Report

- One data story: Land to Sea Connectivity.
- 2018 Water Boards Science Symposium: Adapting in the Face of Disruptive Landscape Change.
- Highlight new methods being developed to transform data into new insights.


2018 Water Quality Status Report


Land to Sea Connectivity


What we do on land impacts what happens in our waters, from streams to lakes all the way to the ocean. Runoff from snowmelt, precipitation, or irrigation picks up soil and pollutants along the way, which end up in our waterways.

By monitoring our water bodies along the entirety of the connected system, we can better understand how disturbances move through our environment and create impacts felt far away from their source.

As we navigate through a watershed, we will take you on a journey to better understand the **Status of California's Surface Waters** by sharing insights from data collected and analyzed by our programs and projects we use to measure water quality. And we encourage you to explore more on your own. Please look for the following icons associated with each story to help guide you on this journey.

 **Measures of long-term disruptors:** this measure aims to inform on effects that result from long-term disruptions, like land use activities, changes in watershed hydrology, temperature shifts, and global forces.

 **Measures of short-term disruptors:** this measure aims to inform on effects that result from events that happen suddenly, like fires, floods, and large point-source pollution.



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Live Demo – Let's go!

2018 Water Quality Status Report



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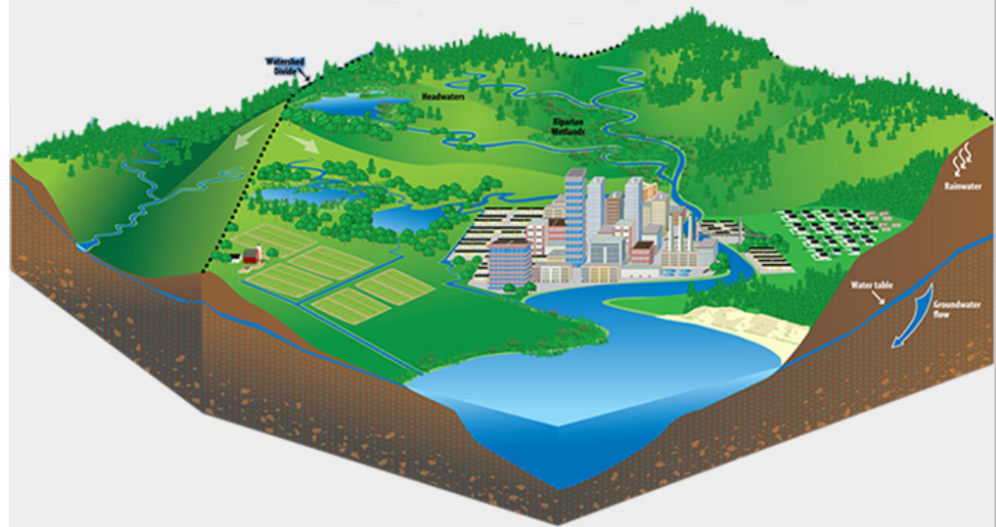
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<https://arcg.is/1LyS9>

Thank you! Questions?

Link to the 2017 and 2018 Water Quality Status Report:

www.waterboards.ca.gov/resources/data_databases/wq_status_report.html

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