

Science Advisory Panel for Constituents of Emerging Concern (CECs) in California's Aquatic Ecosystems

Briefing on Panel final report
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Background

- State of California formed CEC scientific advisory panel for ambient waters a decade ago
- 2012 Panel's report, adopted by State, offered risk assessment framework to prioritize constituents of emerging concern (CECs) to be monitored
- Implementing framework hampered by sparse available data

Panel's goals

- Field has expanded greatly over last decade
 - Much more data on CECs now, and advances in technology
- Panel charged with updating CEC management strategy given all these changes
 - Provide recommendations for monitoring program development for State

Panelists

➤ Dr. Jörg Drewes (Chair)

- Civil Engineer, Technical University of Munich, Germany



➤ Dr. Paul Anderson

- Human Health Toxicologist/Risk Assessor, Independent Consultant



➤ Dr. Daniel Schlenk

- Ecotoxicologist, UC Riverside



➤ Dr. Adam Olivieri

- Risk Assessor, EOA Incorporated



➤ Dr. Nancy Denslow

- Biochemist, University of Florida



➤ Dr. Shane Snyder

- Analytical Chemist, Nanyang Technological University, Singapore



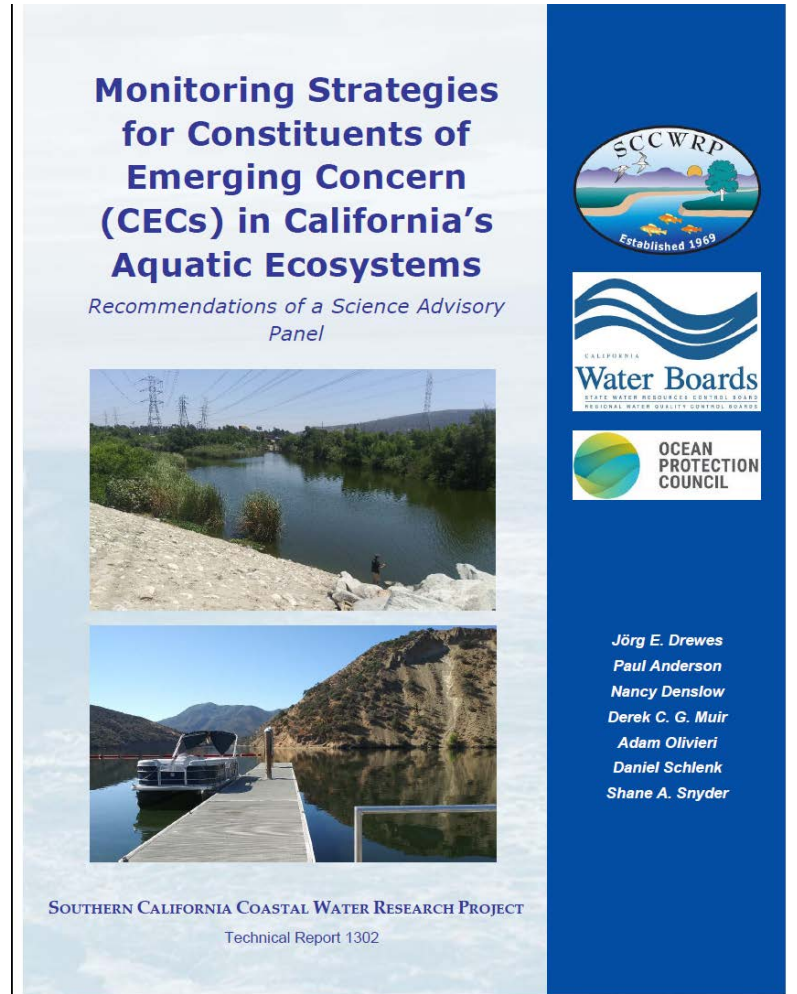
➤ Dr. Derek Muir

- Environmental Chemist, Environment and Climate Change Canada



Panel's timeline

- Launched October 2020 by webinar
- Met numerous times by videoconference working meetings and offline work
- Met in-person February 2022 and May 2022
- Draft report released November 2022
- Report-out of findings and recommendations by webinar December 12, 2022
- Final report submitted June 2023



Panel's major findings

1. Affirm earlier Panel's risk-based framework for CECs
2. Address challenges with implementing framework

Affirm earlier Panel's risk-based framework for CECs

- 2012 Panel's risk-based framework relied on both chemical occurrence, and chemical toxicity
 - What's there, and is it too much?
- Panel found that this approach is sound
- Sound data for occurrence and toxicity needed to make framework go
 - 2012 Panel lacked this information

Address challenges with implementing framework

- Panel has a lot of new information to apply to framework
- Many problems with both occurrence and effects data
- Panel's efforts focused on fixing these problems
 - Devil is in the details, and Panel worked through those details

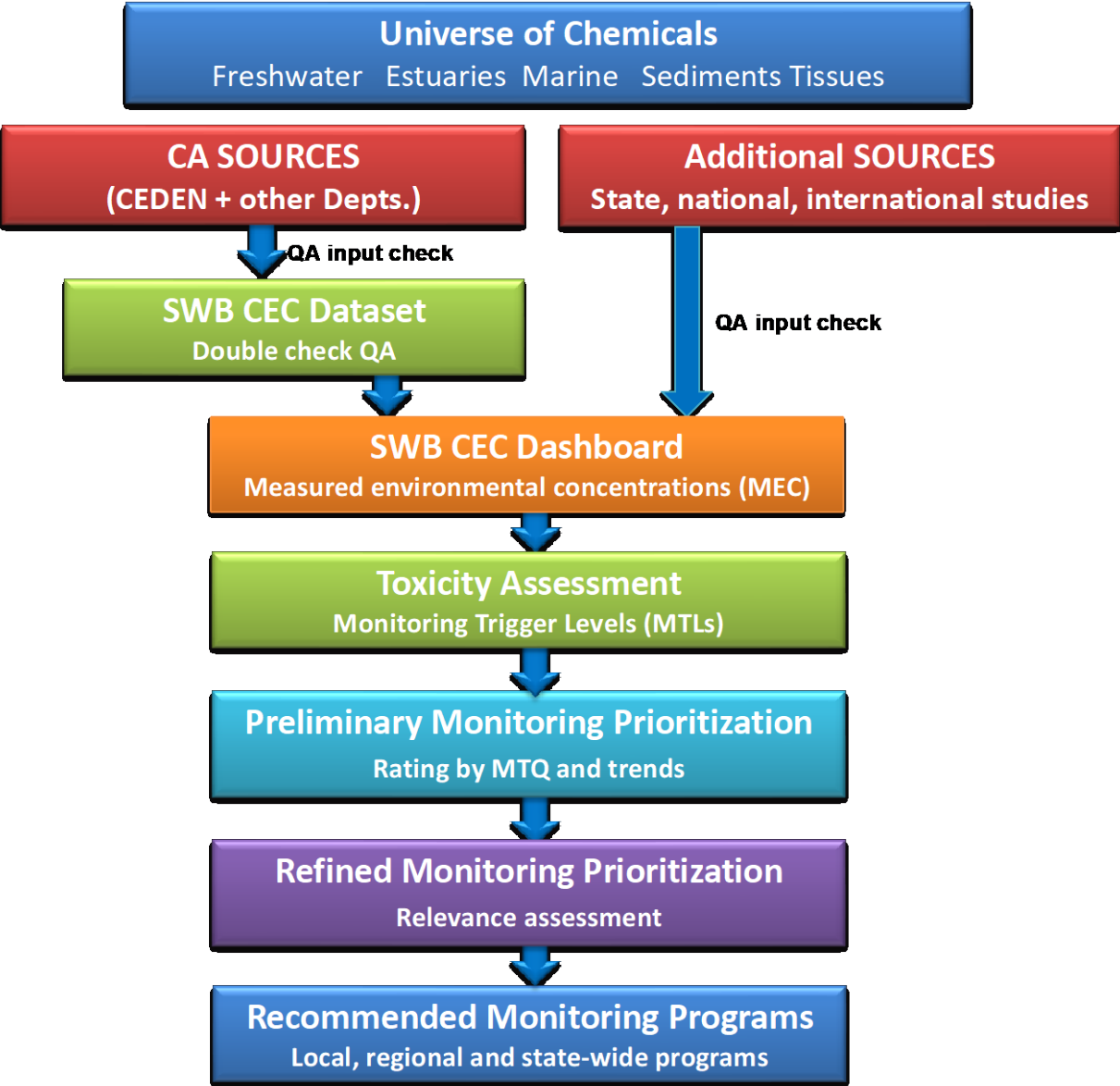
Challenges with occurrence data

- Data not of common quality, and some is poor quality
 - Many non-detects, missing information, multiple levels of detection limits, undocumented methods, and more
- Presence of bad data poisons entire dataset
 - Not always obvious what data is problematic
- Panel developed data quality criteria, and means to screen data, so framework can be effective

Challenges with effects data

- Data not of common quality, and often incompatible with each other
 - Thresholds from wildly different methods and endpoints, calculated by unclear means
- Panel identified suitable data sources for reliable ecotoxicology data
- Panel developed thresholds from data using uniform and consistent metrics
 - Readily applied to new data

Risk-based framework for prioritizing CECs for monitoring



Handoff

- Panel validated risk-based strategy, and addressed data quality issues limiting implementation
 - Necessary to create monitoring lists, but the Panel did not produce monitoring lists of CECs
- Panel trained and guided State Water Board to vet high-quality data and implement framework
 - State Water Board CEC Program currently executing this work

For more information

- Panel report: Drewes JE, Anderson P, Denslow N, Muir DCG, Olivieri A, Schlenk D, Snyder SA (2023). Monitoring Strategies for Constituents of Emerging Concern (CECs) in California's Aquatic Ecosystems. SCCWRP Technical Report 1302.
<https://www.sccwrp.org/publications/search-results/>
- SCCWRP Panel website: <https://www.sccwrp.org/about/research-areas/emerging-contaminants/cec-ecosystems-panel/>
- State Water Board CEC Program website:
https://www.waterboards.ca.gov/water_issues/programs/cec/index.html
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