

Compounds of Emerging Concern (CEC) Science Advisory Panel(s)

Dr. Jörg E. Drewes

Ocean Protection Council
Panel on Toxins and Marine Debris
San Diego, California, November 30, 2009

CEC Panel Members

Paul Anderson, ARCADIS, Chelmsford, MA

– Human Health Toxicologist

Nancy Denslow, University of Florida, Gainesville, FL

– Biochemist

Adam Olivieri, EOA, Inc., Oakland, CA

- Epidemiologist/Risk Assessor

Dan Schlenk, University of California-Riverside, Riverside, CA

- Environmental Toxicologist

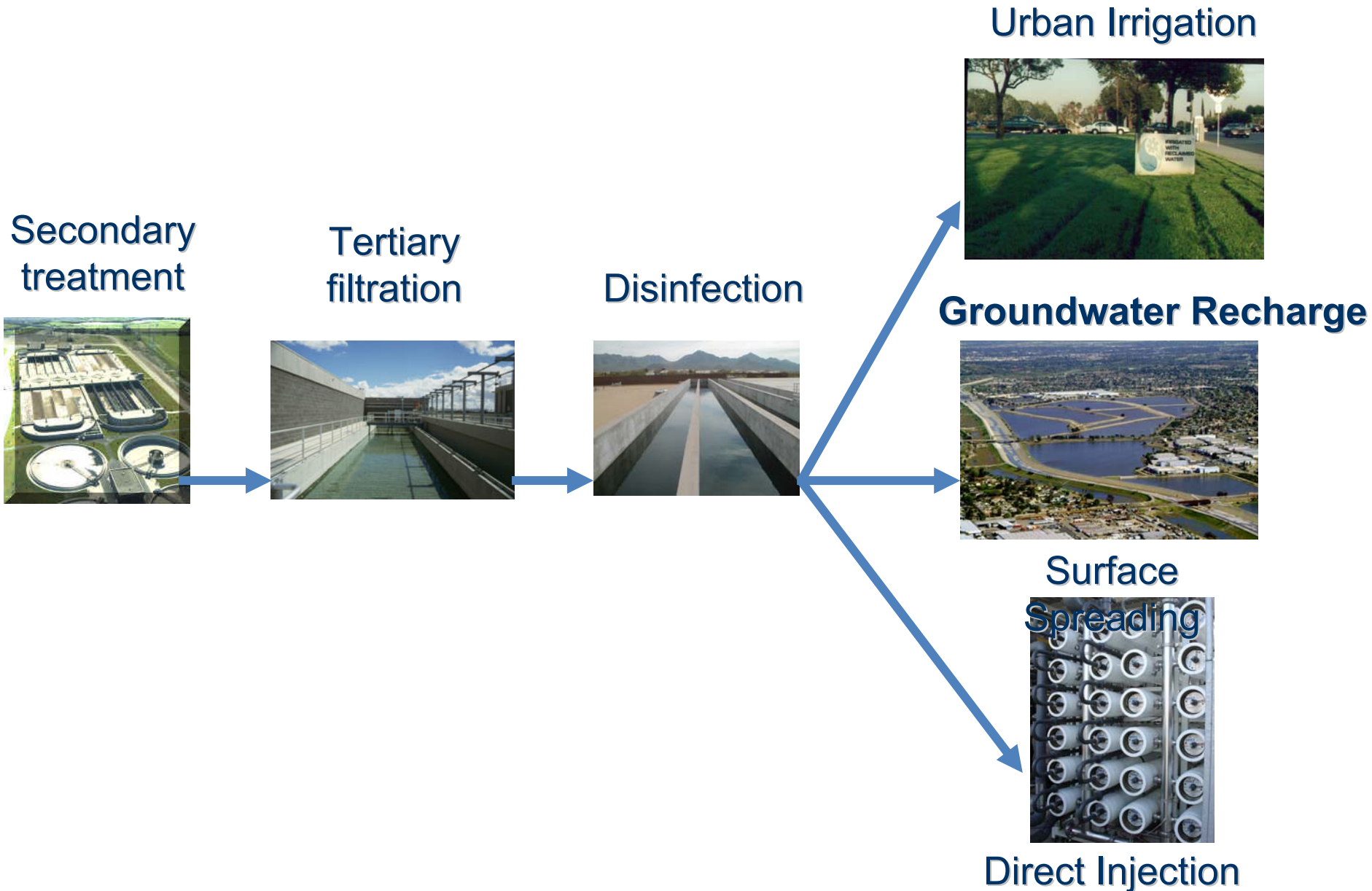
Shane Snyder, Harvard School of Public Health, Cambridge, MA

- Environmental Chemist

Jörg E. Drewes, Colorado School of Mines, Golden, CO (Chair)

- Environmental Engineer

CECs in Water Recycling Systems in CA

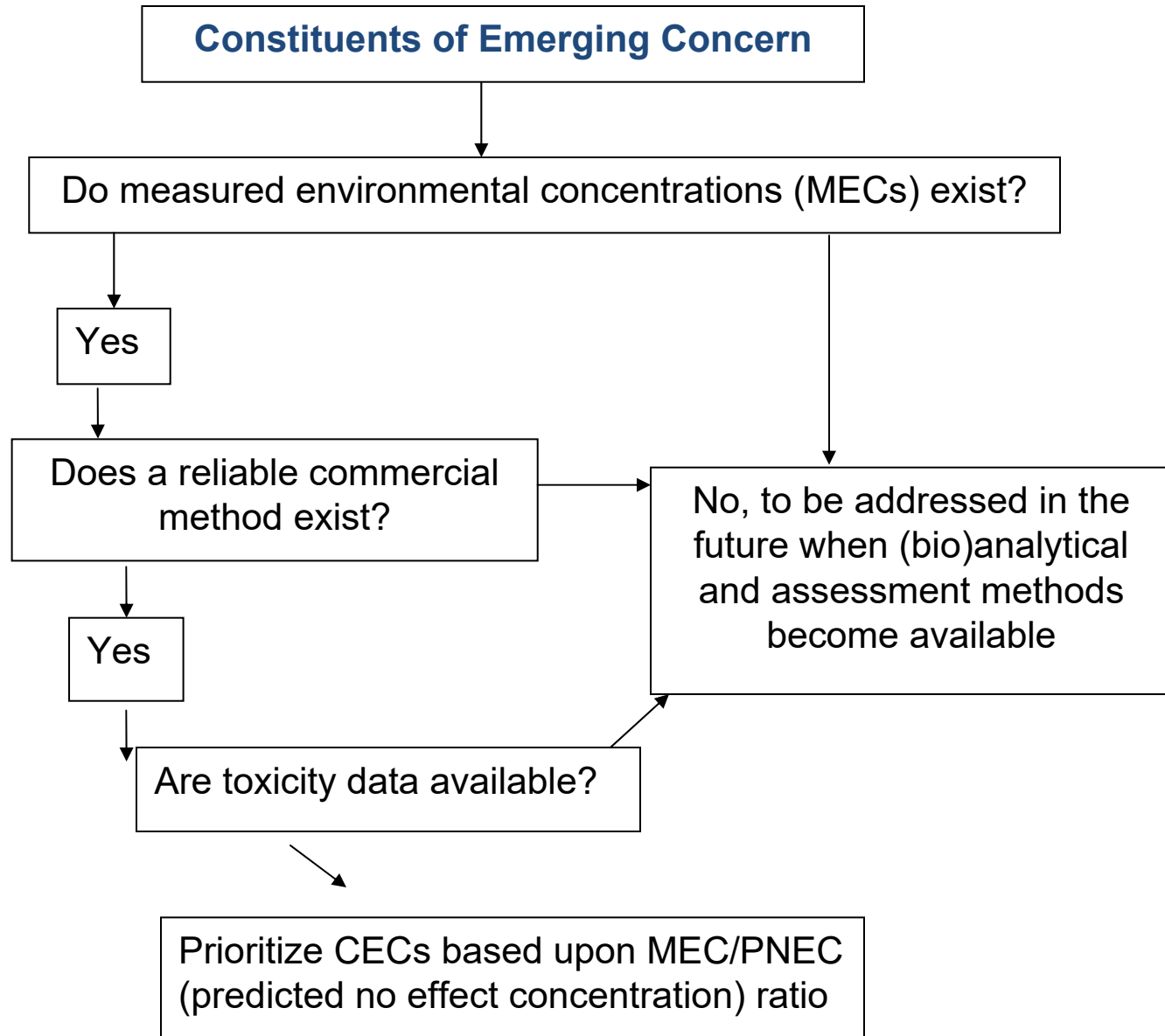


CEC Panel for Water Recycling Systems in CA

- Core Questions to be Addressed

- What are the appropriate compounds to be monitored, including analytical methods and MDLs?
- What is the known toxicological information for the above compounds?
- Would the above lists change based on level of treatment and use?
- What are possible indicators that represent a suite of CECs?
- What levels of CECs should trigger enhanced monitoring of CECs in recycled water, groundwater and/or surface waters?

Conceptual CEC Prioritization Scheme



Supplemental Information

- Reviews
 - Existing epidemiological studies
 - Effects in fish
 - Microbial resistance
- Current treatment practices & plant performance
 - Current regulatory & redundancy requirements
 - Plant operational monitoring (on-line)
 - Current regulatory source control requirements
- Human health surveillance
- Bioanalytical screening tools
- Changing CEC use

CEC Panel for Coastal/Marine Ecosystems in CA

- Core Questions to be Addressed

- What are the relative contributions of CECs discharged into coastal aquatic systems from wastewater and stormwater?
- What specific compounds are most appropriate for monitoring in discharges to coastal aquatic systems and what are the applicable monitoring methods and detection limits?
- What is the appropriate design (e.g. media, frequency, locations) for a CEC monitoring and biological effects assessment program given the current state of the art for monitoring methods?
- How are these priority constituents affected by the chemistry, biology and physics of treatment in wastewater systems, by discharge into and transport by coastal streams, rivers and estuaries?
- What approaches should be used to assess biological effects of CECs to sentinel species in coastal aquatic systems?
- What levels of CECs or biological effects should trigger further actions and what options should be considered for further actions?

CEC Ecosystems Panel Members

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– Human Health Toxicologist

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