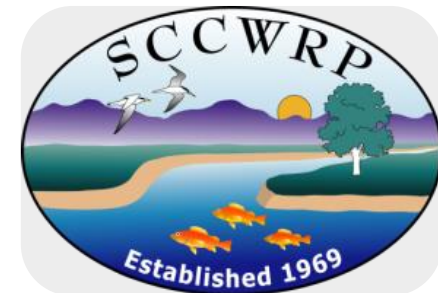


# Proposal to Establish an Environmental Flows Workgroup



**Eric Stein**

Southern California Coastal Water Research Project



# Roadmap for Today

- Recap of our discussion from last council meeting on rationale for a new workgroup
- Follow up on action items from last time
- Discussion of next steps

# What are Environmental Flows?

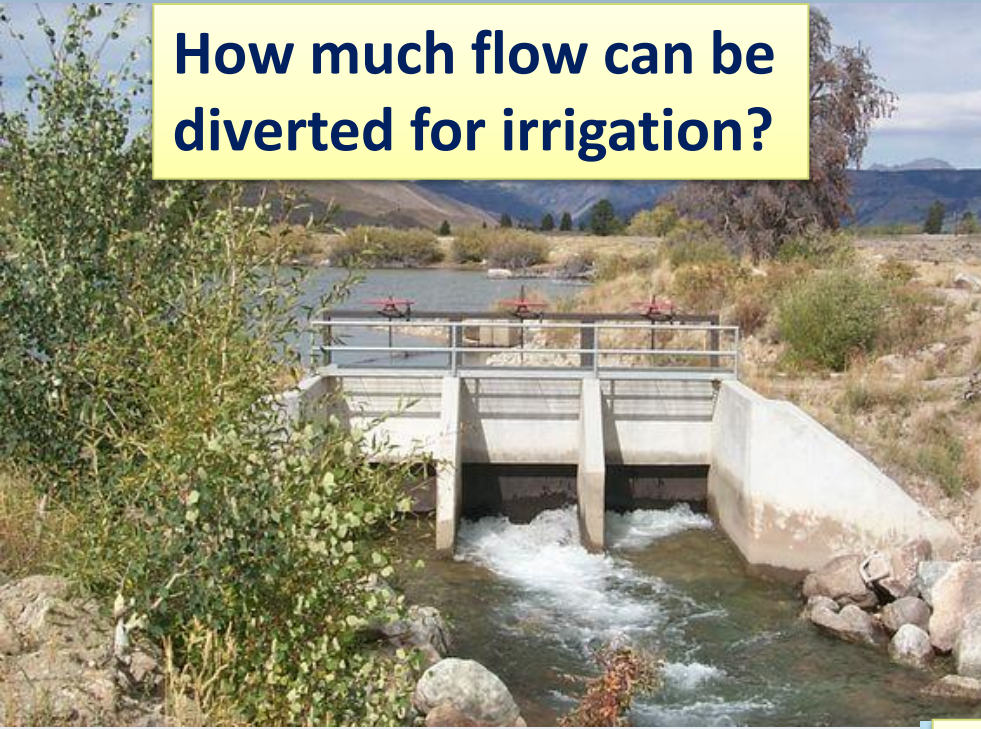
*The magnitude, timing, duration, rate of change, and frequency of flows and associated water levels necessary to sustain the biological composition, ecological function, and habitat processes within a water body and its margins*

Environmental flows are not necessarily “natural flows”. They allow for some degree of hydrologic alteration due to other uses. However, environmental flows are intended to mimic the patterns and ecological outcomes of the natural flow regime

# Statewide Needs for Environmental Flows

- Set instream flow standards to protect biological communities
- Assess vulnerability of streams to future changes in flow conditions
  - Prioritize areas for restoration/management
- Evaluate/inform management actions
  - e.g., reservoir operations, water withdrawals

**How much flow can be diverted for irrigation?**



**How much runoff can I retain?**



**How much treated wastewater can be recycled?**



**Are there seasonal restrictions in groundwater withdrawals?**



# Challenges

- California is a very complex/diverse state



- Hard to balance environmental flow needs with a broad range of other demands



- No mechanism for coordination and information sharing among agencies and with the public

# Environmental Flows Workgroup



California Water Quality Monitoring Council

## My Water Quality

A COLLABORATION BETWEEN THE CALIFORNIA ENVIRONMENTAL PROTECTION AND NATURAL RESOURCES AGENCIES



Portals

About Us

Work Groups

These web portals, supported by a wide variety of public and private organizations, present California water quality and aquatic ecosystem monitoring data and assessment information that may be viewed across space and time.



## Are Our Aquatic Ecosystems Healthy?

California has many types of aquatic habitats. Follow the links below to learn more ...



## CA Environmental Flows Partnership



### Wetlands Portal

Wetlands form along the shallow margins of deepwater ecosystems such as lakes, estuaries, and rivers. They also form in upland settings where groundwater or runoff makes the ground too wet for upland vegetation.



### Estuaries Portal

Estuaries are unique habitats found where rivers and the ocean mix. They feature a diverse array of plants and animals adapted to life along the mixing zone.



### Streams & Rivers Portal

California's streams and rivers flow through diverse habitats, from mountain canyons, valleys, deserts, estuaries and urban areas. Riparian woodlands develop along stream banks and floodplains, linking forest, chaparral, scrubland, grassland, and wetlands. California lakes, supporting deep water, wetlands, riparian woodlands, offer a quiet refuge for plants, animals and humans alike.



### Ocean & Coastal Portal

California has 1,100 miles of shoreline and 220,000 square miles of state and federal oceanic habitat, featuring one of the world's most diverse marine ecosystems.

# Questions Raised at the Last Meeting

- Are environmental flows within the scope of the council?
- What are the workgroup's objectives?
- Who would be involved in an Environmental Flows Workgroup?
- What agency needs would the workgroup address and support?

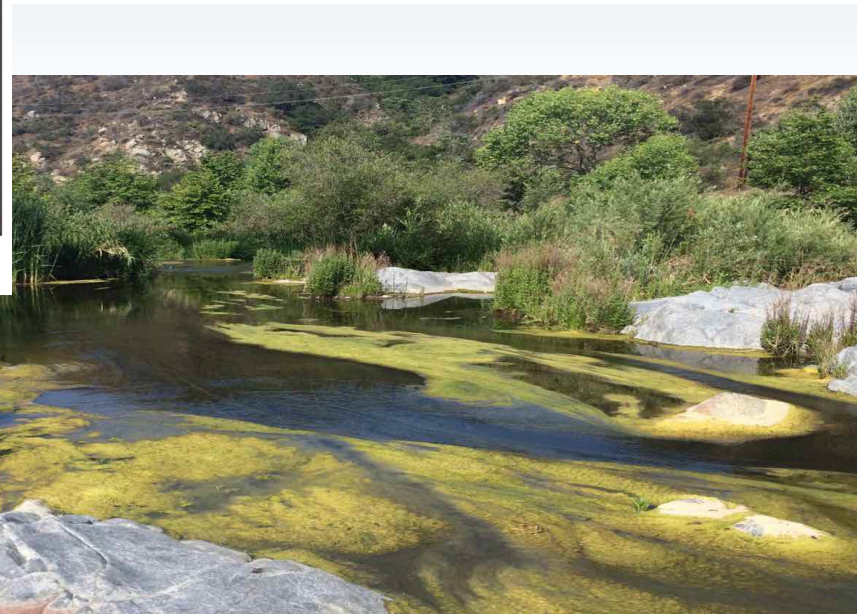
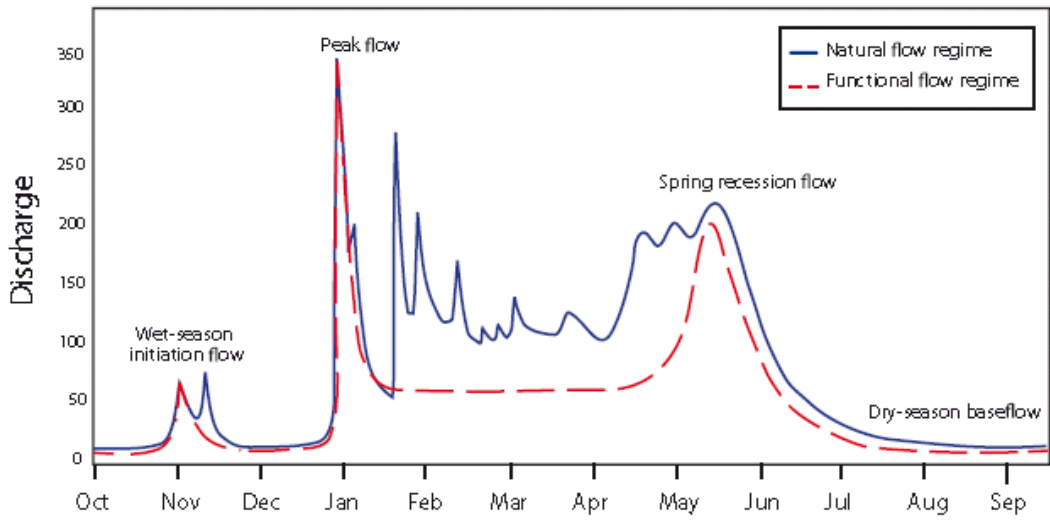
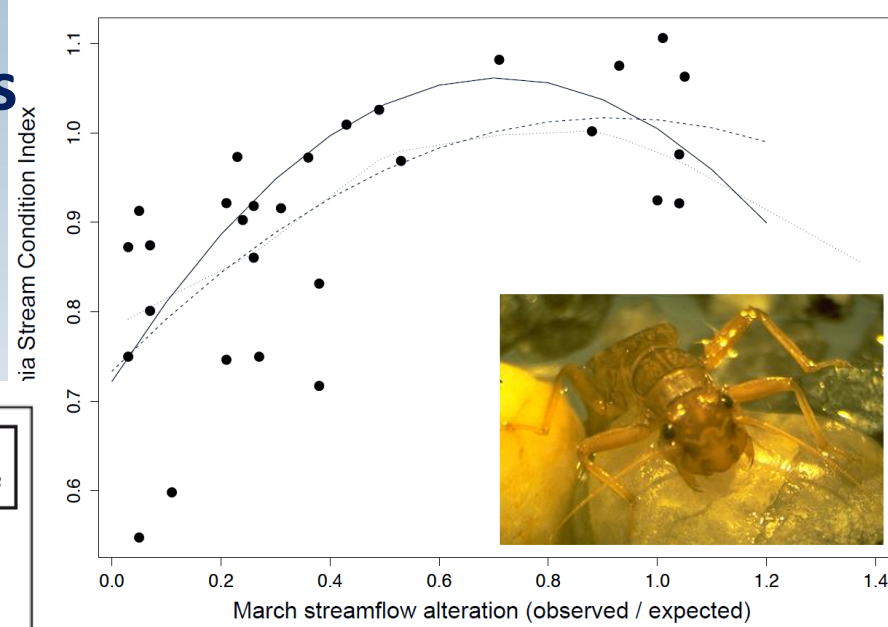


# Are Environmental Flows a “Water Quality Issue”?

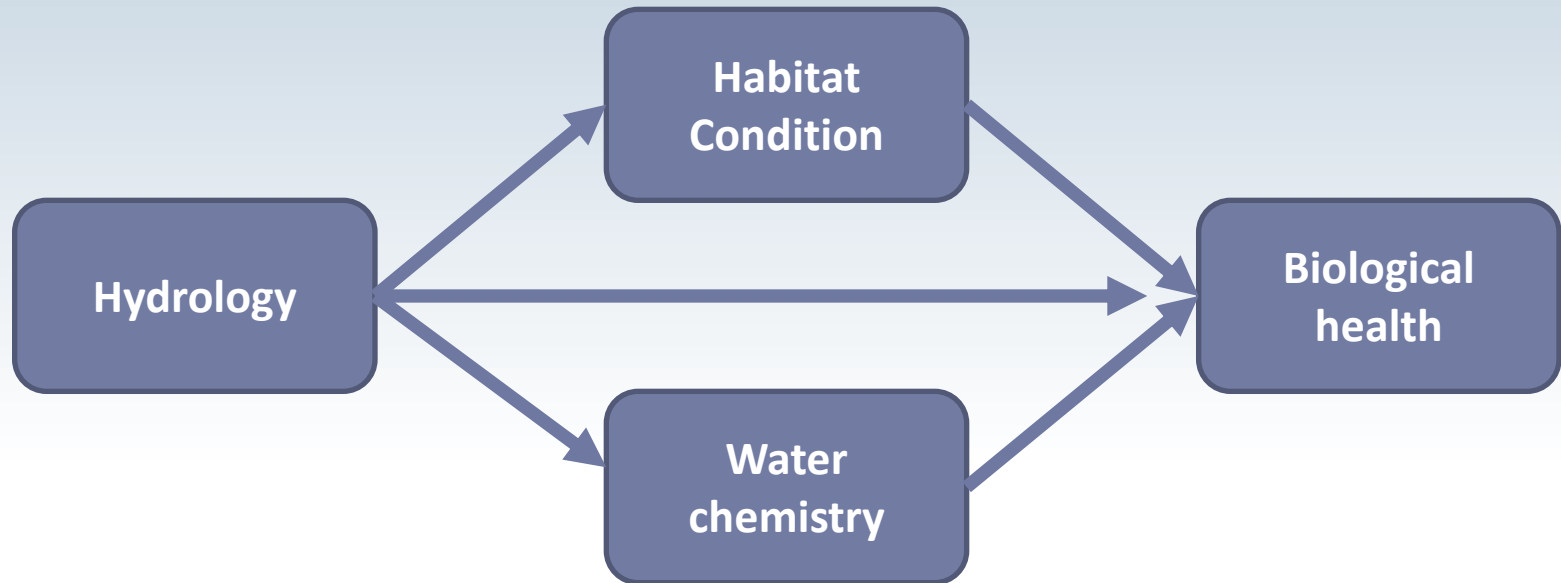


# Absolutely!!!

- Ability to attain beneficial uses
- Key habitat driver
- Influences contaminant levels



# Hydrology is an Integrative Driver of Stream Health



**If you can mitigate hydrologic alteration, you'll solve a lot of other problems**

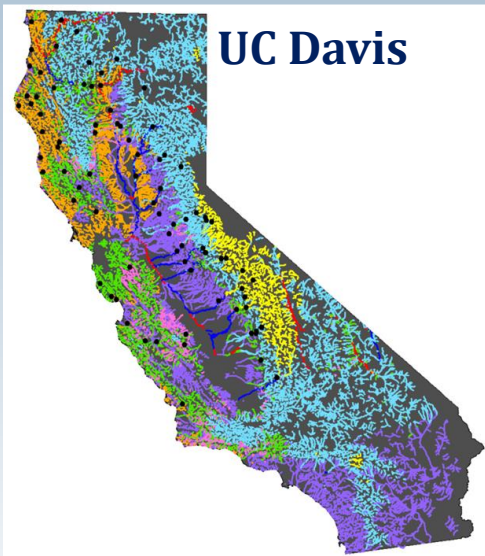
# Agencies Whose Programs Involve Consideration of Environmental Flows

- Department of Fish and Wildlife
  - Instream flows program
- State Water Board – Division of Water Rights
  - Regional instream flows program
  - Cannabis licensing
- State Water Board – Division of Water Quality
  - Biointegrity and Biostimulatory Substances Program
- Department of Water Resources
  - Water Action Plan Implementation
  - Sustainable Groundwater Management Program

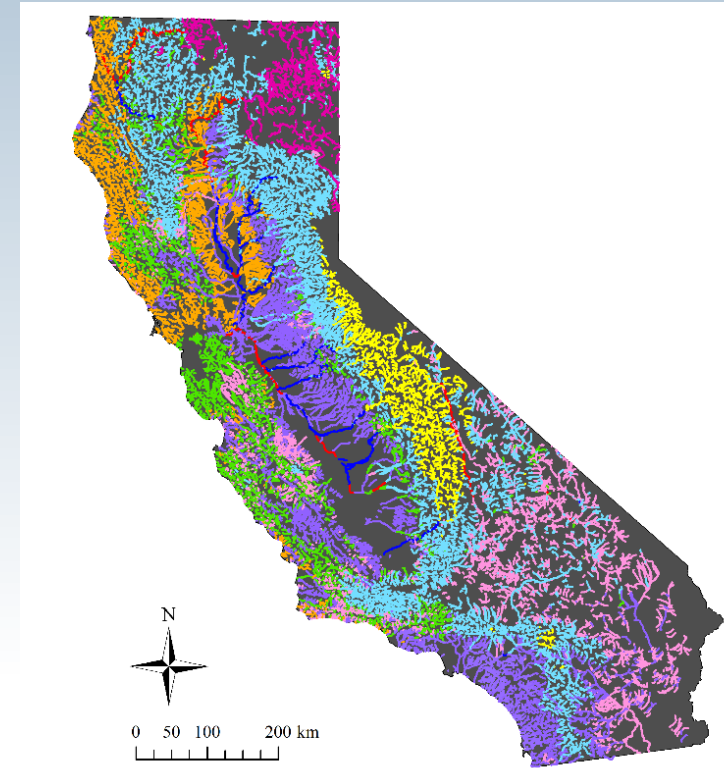
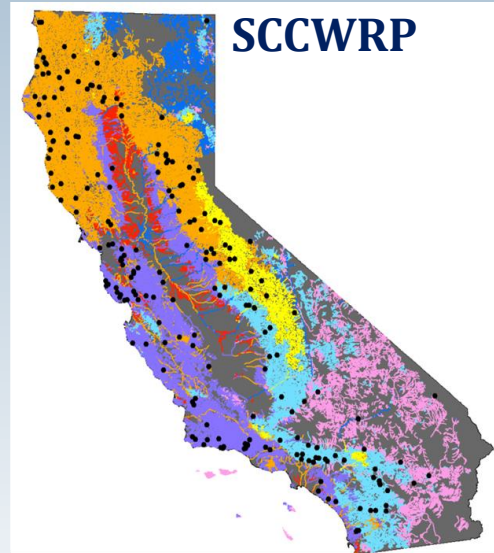
# Council's Overarching Goals

1. Improve the efficiency and effectiveness of our state's water quality and related ecosystem monitoring and assessment systems (e.g., improve coordination and collaboration)
2. Ensure that the resulting data and information are made available to decision makers and the public via the internet

# Coordination at the Technical Level

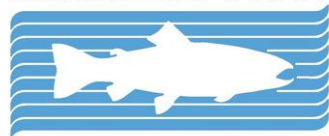


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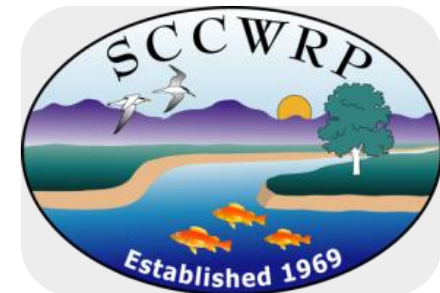
The Nature Conservancy  
Protecting nature. Preserving life.

CALIFORNIA TROUT



Berkeley  
UNIVERSITY OF CALIFORNIA

UC DAVIS  
UNIVERSITY OF CALIFORNIA



# Improve Agency Coordination



**POLICY FOR  
MAINTAINING  
INSTREAM FLOWS  
IN NORTHERN  
CALIFORNIA  
COASTAL STREAMS**

EFFECTIVE FEBRUARY 4, 2014  
DIVISION OF WATER RIGHTS  
STATE WATER RESOURCES CONTROL BOARD  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

**Important to  
Combine Technical  
and Policy  
Discussions in a  
Single Workgroup**





Sources: Esri, DeLorme, NAVTEQ, USGS, AeroGRID, IGN, SPC, TomTom

# Improve Information Dissemination

 View published

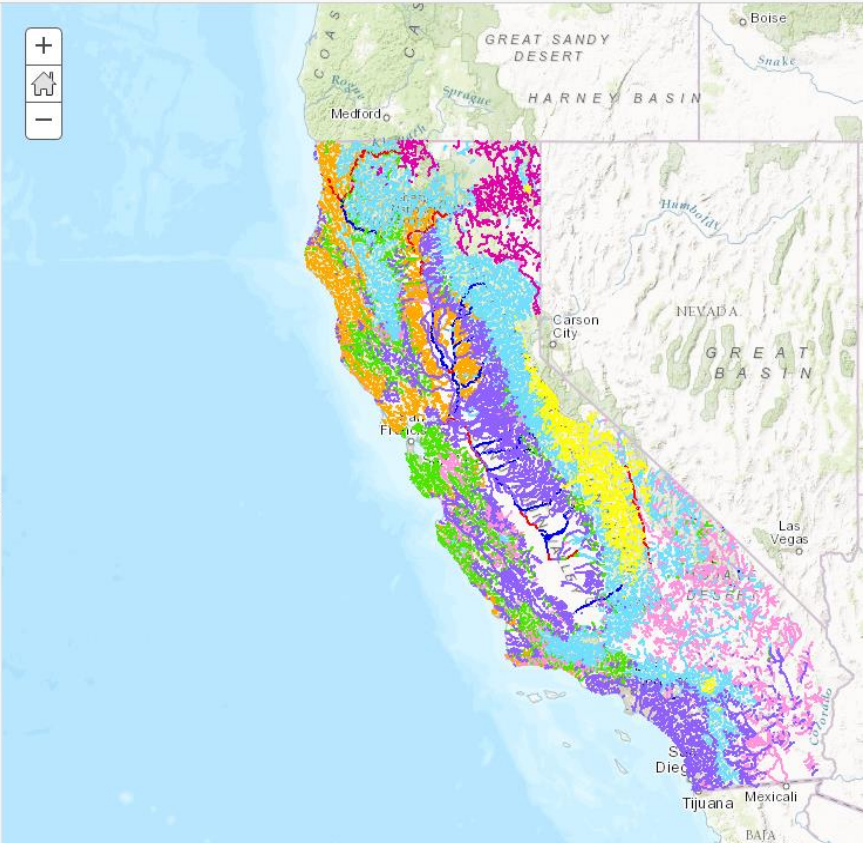
ArcGIS ▾ My Map

 Details  Basemap

 About  Content  Legend

Contents

- ecohydrology streamclasses
- Reconciled Hyd Classification 9class
  -  (SM) Snowmelt
  -  (HSR) High-volume snowmelt and rain
  -  (LSR) Low-volume snowmelt and rain
  -  (RGW) Rain and seasonal groundwater
  -  (WS) Winter storms
  -  (GW) Groundwater
  -  (PGR) Perennial groundwater and rain
  -  (FER) Flashy, ephemeral rain
  -  (HLP) High elevation, low precipitation
- Topographic



**California State Water Resources Control Board**

To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations



# Workgroup's Objectives

- Develop a consistent and defensible statewide framework for rapidly assessing environmental flows
- Facilitate coordination between various agencies and programs involved with development and implementation of environmental flows efforts
- Create a “clearinghouse” for tools, data, example applications
  - Connect to existing web-based sources of protocols, data, and resources
- Establish and maintain a “portal” to answer basic questions related to environmental flows
- Assess statewide status of environmental flows

# Statewide E-flows Framework

**Statewide approach for setting coarse scale flow targets**

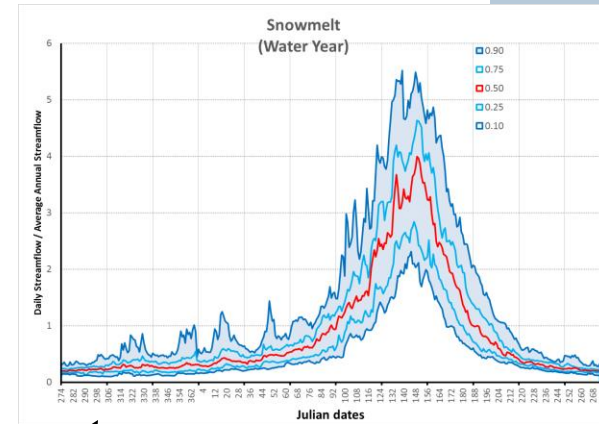
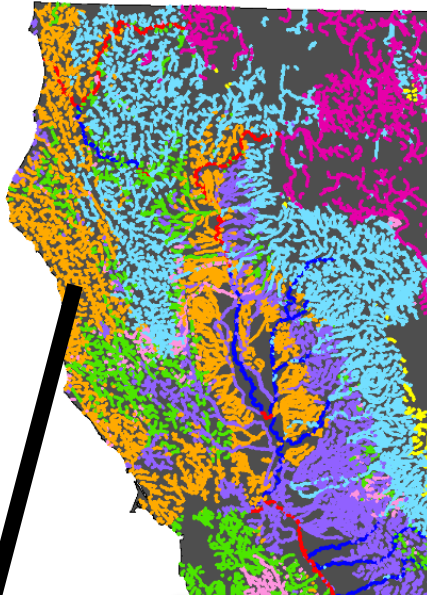


**Site specific e-flows where necessary**



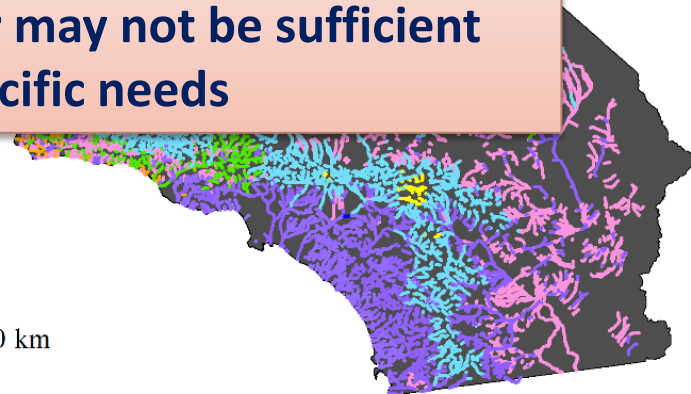
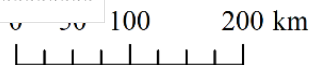
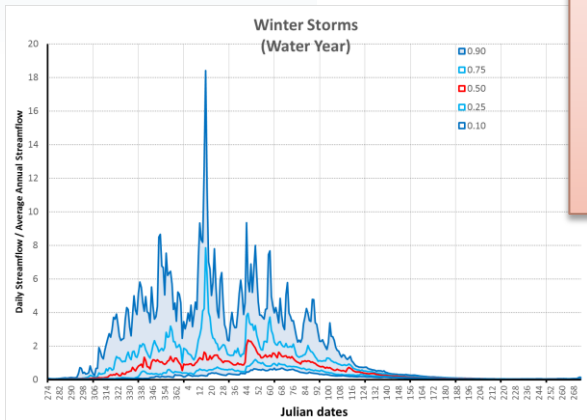
**Data sharing (open data) + information dissemination to the public**

# Statewide Targets by Stream Class



**Provides targets/ranges based on reference conditions**

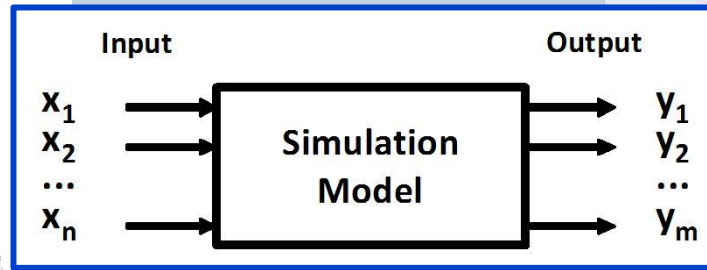
**May or may not be sufficient for specific needs**



# Local Targets

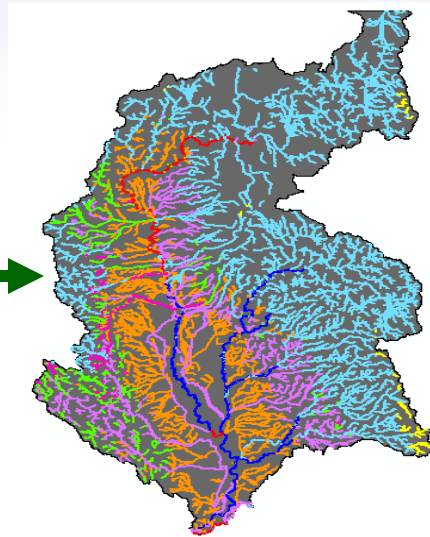
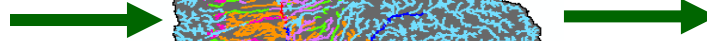
Stream Gages

Sites of Interest

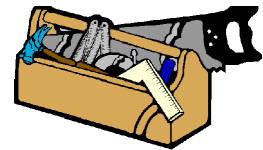


Geomorphology

Ecology



Reach scale  
environmental  
flow methods



Flow targets

# Environmental Flows Portal



California Water Quality Monitoring Council

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- **How “healthy” is the hydrology of streams in my area?**
- **What would “natural flows” be in my stream?**
- **What are the main “stressors” affecting hydrologic condition?**
- **How has drought affected the flow conditions of streams?**
- **What are the risks to future hydrologic alteration?**
- **What organisms may be most affected by hydrologic alteration?**
- **Has there been any environmental flows work done in my area?**
- **What tools or approaches are available? Appropriate?**
  - **How do I choose which tool to use?**
  - **What data is already available?**

# Recommendations

- Support adoption of the environmental flows workgroup by the Council
- Identify agency staff to partner with technical team
  - refine goals, objectives, structure, and tasks
- Complete statewide environmental flows framework
- Evaluate statewide status of environmental flows
- Proceed with development of an Environmental Flows Portal

# Topics for Discussion

- Questions regarding responses to the issues raised at the last meeting?
- Does consideration of environmental flows fall within the scope of the Monitoring Council?
- Is there support for the adoption of the Environmental Flows Workgroup?

# Questions



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