



Shasta River TMDL Implementation

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North Coast Regional Water Quality Control Board

Shasta is a main tributary of the Klamath

- Listed for
 - Dissolved Oxygen
 - Temperature

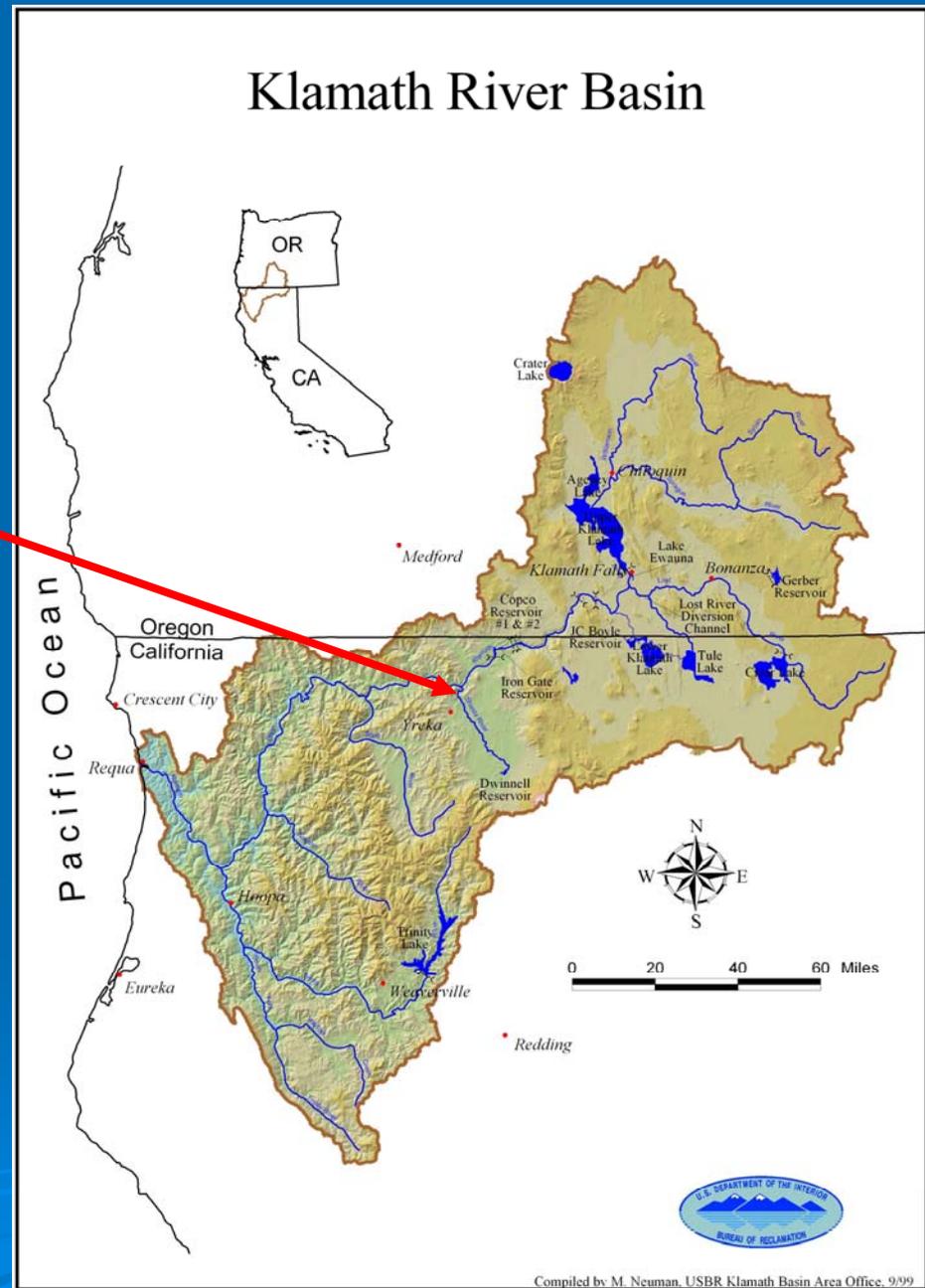
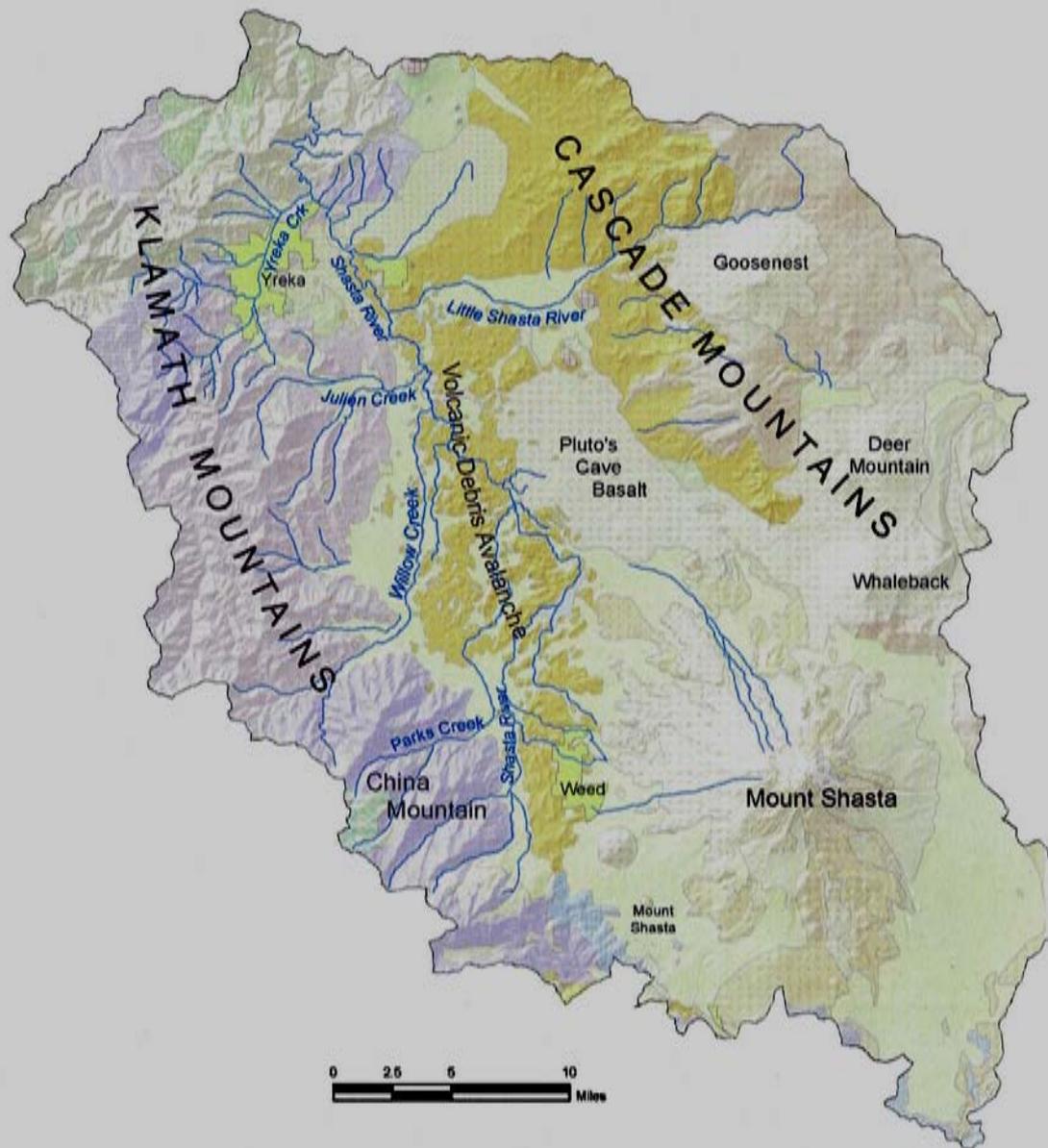


FIGURE 4. Shasta Valley Geology



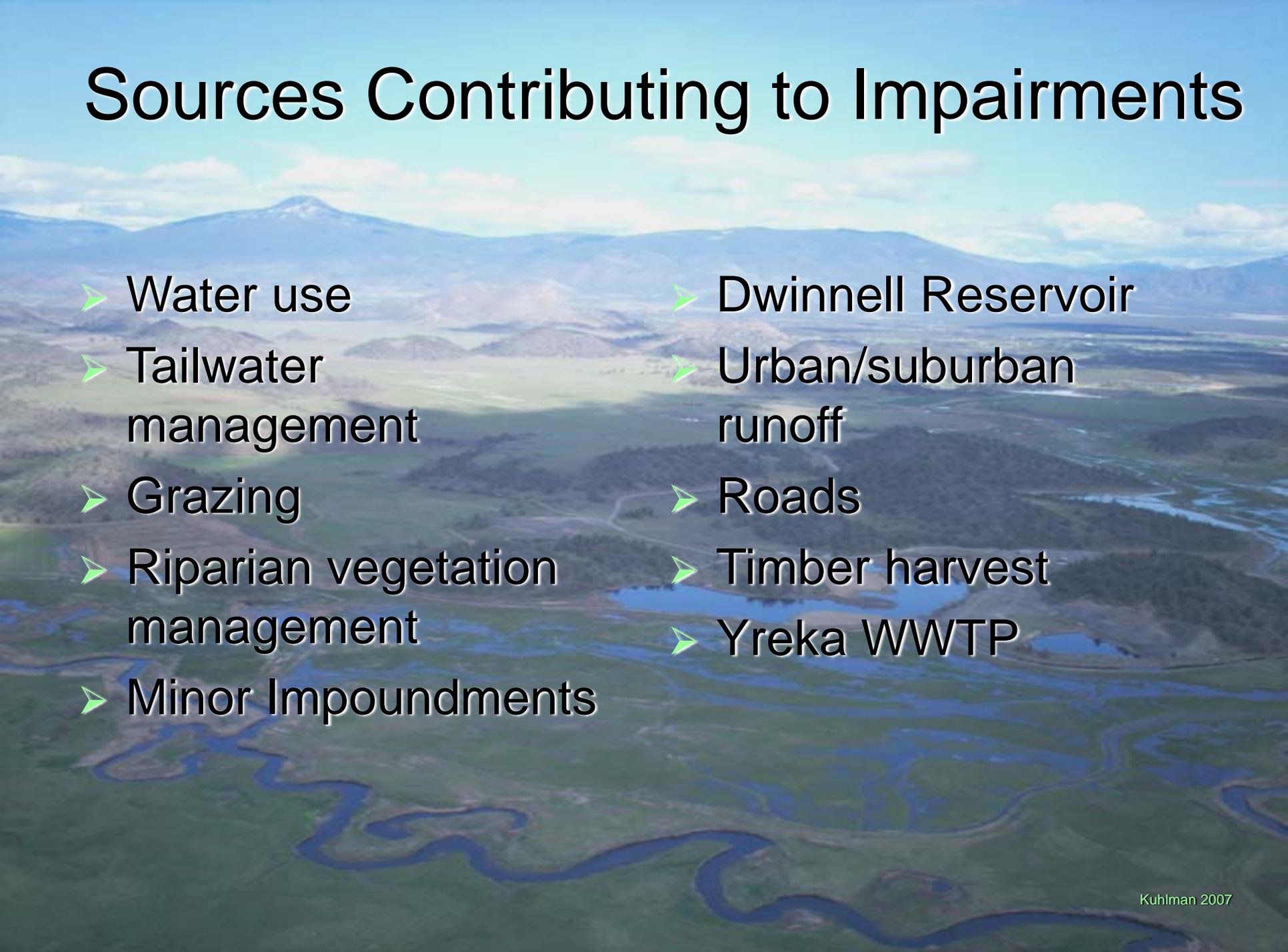
Shasta River Fisheries

- Spring Chinook disappeared in 1926 (same year Dwinnell Dam constructed)
- Coho listed under State and Federal ESA
- Fall Chinook numbered 81,000 in 1932, numbers dwindled to a few hundred in the 1990s
- Steelhead present
- Summer steelhead?

A TMDL is a framework for:

- Evaluating and quantifying the factors that contribute to water quality problems in a waterbody or watershed
- Developing a strategy to meet the loading capacity and attain water quality standards

Sources Contributing to Impairments

An aerial photograph of a wide river valley. The river winds through a green valley floor, with several meanders and oxbow-like features. In the background, there are rolling hills and a prominent mountain peak under a blue sky with light clouds. The overall scene is a natural landscape with human-made features like roads and reservoirs visible.

- Water use
- Tailwater management
- Grazing
- Riparian vegetation management
- Minor Impoundments
- Dwinnell Reservoir
- Urban/suburban runoff
- Roads
- Timber harvest
- Yreka WWTP

Framework of Action Plan

- Recognize/ support/ build upon existing programs and voluntary efforts
- Conditional Waiver with landowner progress reports
- Develop new programs through studies
- Enforce existing Water Board programs and policies



TMDL Implementation Plan

- Increase riparian shade
- Prevent /minimize irrigation (tailwater) return flows
- Increase dedicated cold stream water flows
- Remove, re-engineer, limit minor impoundments
- Reduce nitrogen and oxygen consuming sources from Dwinnell Dam, Yreka WWTP, and stormwater

Coordination with other Agencies and Organizations

- Shasta Valley RCD
- Landowners
- CA DFG
- DWR
- NRCS
- USFWS
- NOAA Fisheries
- Montague Water Cons. District
- Caltrans
- City of Weed
- City of Yreka
- Montague
- Lake Shastina CSD
- The Nature Conservancy
- USFS
- Siskiyou County

Minor impoundments

Responsible Parties: Irrigation Districts, Individual irrigators

Actions: Develop-Implement actions to reduce SOD

- i. Remove
- ii. Re-engineer
- iii. Limit

Schedule: Report to Board
Periodically on progress
and need for program
updates



Increase Riparian Shade

Responsible Parties: private and public riparian landowners

Actions: Implement grazing and riparian measures:

- Exclusionary fencing
- Develop and implement ranch management plans

Schedule: Report to Board by
January 2010 on progress/need
for program updates



Prevent/Minimize Irrigation (Tailwater) Return Flows

Responsible Parties: Dischargers with irrigated lands

Actions:

- Minimize use
- Improved conveyance
- Reclaim/re-use (tailwater capture systems)
- Shasta RCD technical assistance/grants



Increase Dedicated Cold Water Instream Flows by 45 CFS

Responsible Parties: Water Diverters

Actions:

- Increase irrigation efficiency
 - Upgrade water conveyance
 - Monitor crop requirements
 - Conserve, re-use
- Develop Water Plans
 - Ramped Diversion Plan; Dry Year Plan
- Obtain technical assistance, grants

Schedule: Report to Board by January 2012 on progress/
need for program updates

45 CFS Dedicated Instream Flow Recommendation

➤ Problems:

- Shasta River is a fully appropriated system
- The adjudicated water right decree does not provide water for fish and wildlife
- No requirement for fish releases from Dwinnell Dam

Solutions

- Dedicate cold instream flows through Water Code Section 1707
- Amend the Water Rights Decree
- Water conservation and tailwater reuse recycle



Basin Plan Compliance: Shasta Conditional Waiver

1. Enlist in recognized program
2. Implement recommended management measures
3. Monitor effectiveness of management measures
4. Adapt land use or management measures if monitoring indicates need
5. Report to Board on status and effectiveness of implementation actions
6. Issue modified waiver by January 2012

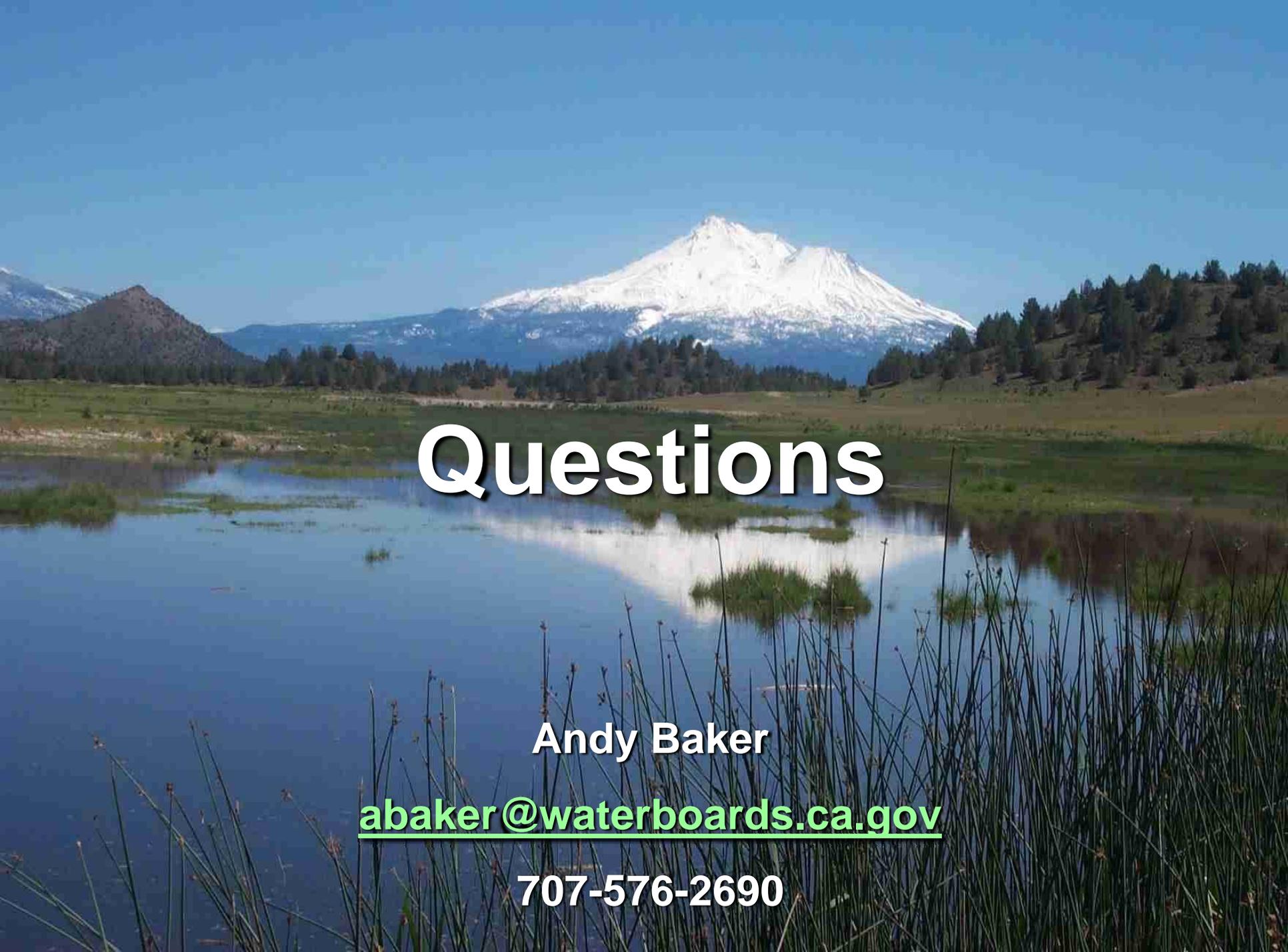












Questions

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