

# 100-year Floodplain Protections at the Lahontan Water Board

Caltrans Road Ecology Meeting, Water Quality Session  
February 26, 2009

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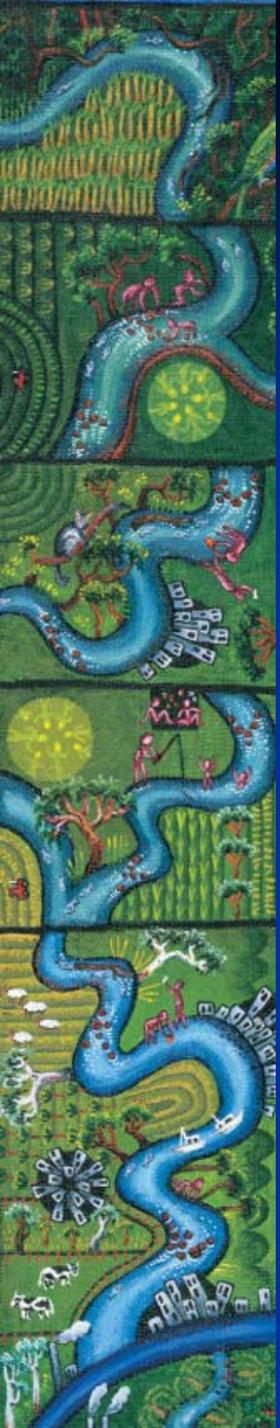
**FREE Workshop Announcement:  
Using Green Infrastructure to  
Address Hydromodification  
Issues Within the Arid West**

**March 9th, ½-day Tour, 1 – 5 pm  
Apple Valley, California**

**March 10th, Workshop, 9 am – 5 pm  
Victorville, CA**

**To register:**

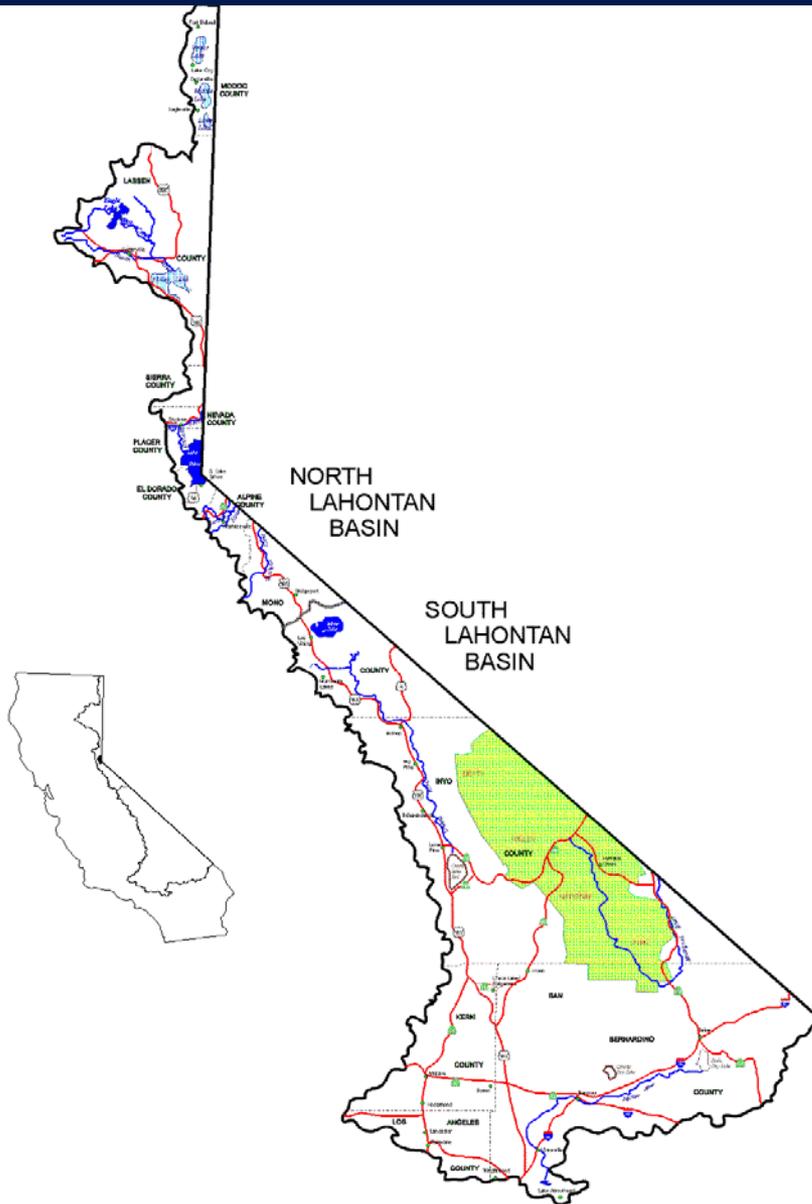
**<http://www.waterboards.ca.gov/academy/>**



# Presentation Outline

- Where is Lahontan Region?
- Regulatory basis for what we do
- SW and 401 Programs and General Permits that apply
- Example projects and messages from the ground troops
- 100-year floodplain discharge prohibition in the Truckee and Tahoe

# Lahontan Water Board's Jurisdiction



- ◆ Extends from the Oregon Border east of the Sierra Nevada crest to the northern Mojave Desert
- ◆ Lahontan name derived from prehistoric Lake Lahontan
- ◆ 570 miles long
- ◆ Total area over 33,000 square miles

# Regional Setting

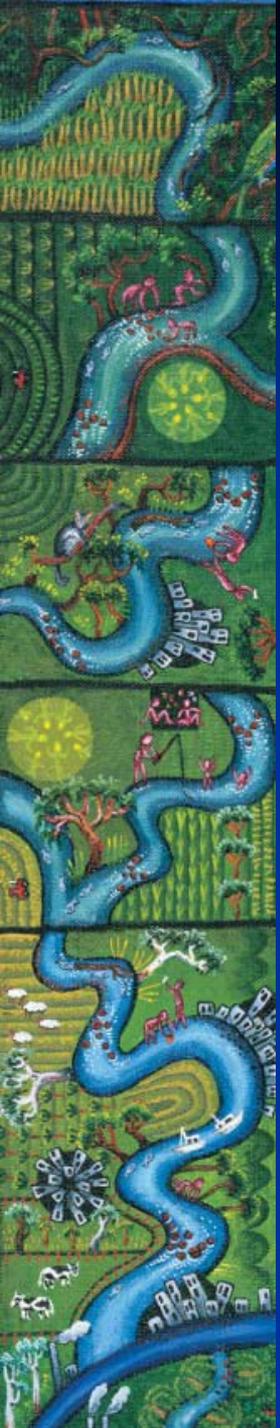


- Over 700 lakes
- 3,170 miles of streams
- 1,581 square miles of ground water basins
- Varied topography, soils, climates, precipitation amounts
  - Mountainous areas-70 in./yr.
  - Desert areas- 2 in./year
- Resident population of region is low
  - Concentrated in high density communities

# Porter-Cologne Water Quality Control Act (CA Water Code)

- Establishes State Board and 9 Water Boards to protect ground and surface water quality
- Water Boards adopt Basin Plans
  - Watershed based
- Basin Plans are regulatory (enforceable)
  - Water Quality Standards (WQS)
    - Designated Beneficial Uses
    - WQ Objectives (Criteria)
      - Narrative
      - Numeric
      - Anti-degradation
  - Implementation Plans
    - Plan to obtain WQ standards including:
      - Total Maximum Daily Loads (TMDLs) for impaired waters
  - Policies and Plans
  - Monitoring and Assessments





# Basin Plan Strategy

- Existing and Potential Water Quality Problems
- Water Quality Standards
  - Objectives
  - Beneficial Uses
- Prohibitions
- Policies, Guidelines, and Implementation Measures
- [http://www.waterboards.ca.gov/waterboards\\_map.shtml](http://www.waterboards.ca.gov/waterboards_map.shtml)

# Beneficial Uses



- Agricultural Supply  
(Truckee River, NV)

- Hydropower  
(Farad Hydropower Facility)



# Beneficial Uses (cont.)

- Municipal/Domestic Water Supply

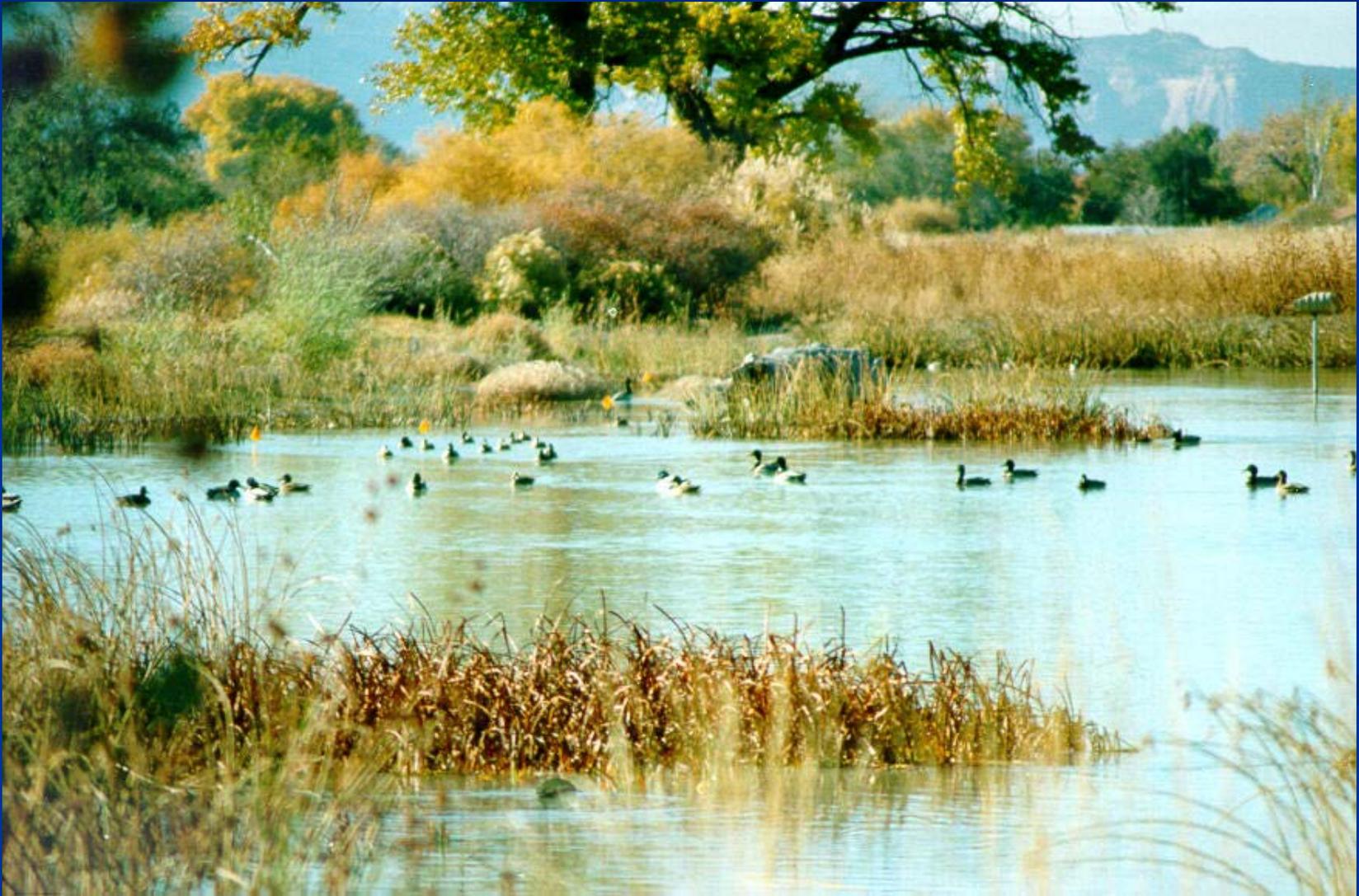


- Industrial Supply  
(Granite's Concrete Batch Plant,  
I-80 Boca/Floriston Project)



# Beneficial Uses (cont.)

- Wildlife Habitat (Owens River)



# Beneficial Uses (cont.)



- Rare, Threatened, and Endangered Species  
(Lahontan Cutthroat Trout)

# Beneficial Uses (cont.)

## ■ Fishing

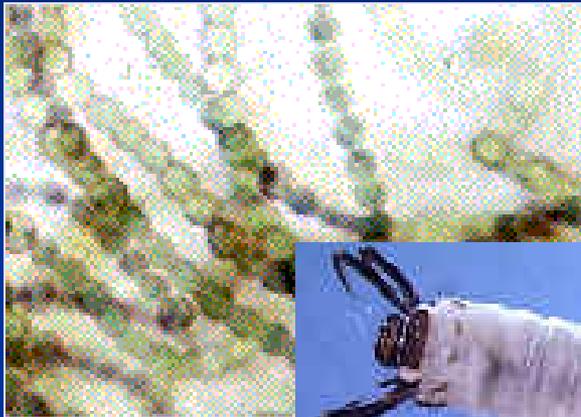


■ Recreation ↑  
(Truckee River)

■ Navigation →  
(Lake Tahoe)



# Beneficial Uses (cont.)



- Inland Saline Water Habitat (Desert Pup Fish)



- Migration of Aquatic Organisms

# Beneficial Uses (cont.)

- Preservation of Biological Habitat of Special Significance  
Mono Lake



# Beneficial Uses (cont.)

## Flood Peak Attenuation / Flood Water Storage

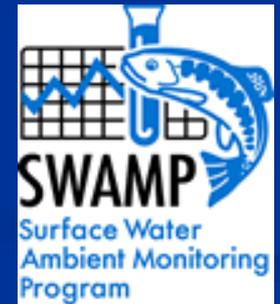
Lower Owens River Project (Owens Valley) ↓

(Truckee River, CA) ↓



# Water Board Elements

- Basin Plan
- CEQA Review
- Monitoring
  - Surface Water Ambient Monitoring Program  
[www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/)
- Outreach/Education
- **Regulatory/Enforcement Program**
  - Regulations/Prohibitions
  - Permits, including 401 certifications and SW construction
  - Inspections
  - Enforcement Actions





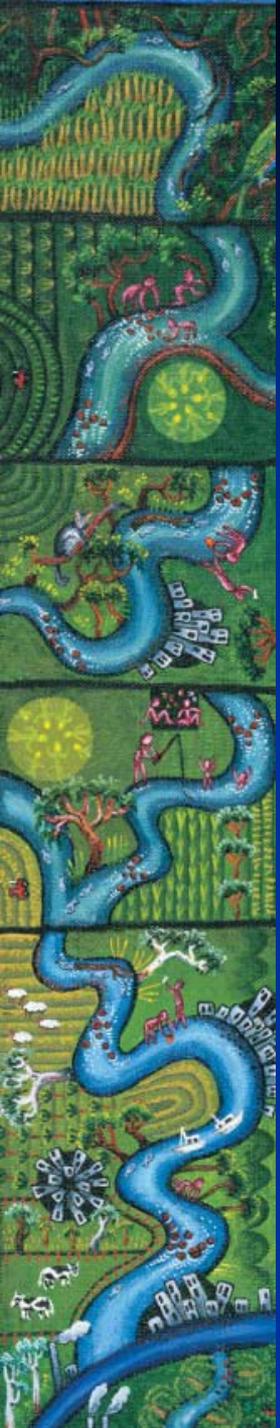
# Fill and/or Dredge Permitting

## ■ U.S. Waters

- Subset of waters of state
- D/F at or below OHWM
- Wetland Delineation
- Requires
  - Corps 404 permit
  - State 401 certification
    - State Board certified by blanket Order – a few NWPs
    - State Board issue individual multi-regional 401 certs
    - Regional Water Boards issue individual 401 certs

# Fill and/or Dredge Permitting (cont.)

- State Waters that are NOT also US waters
  - Ground and surface waters, including:
    - Isolated waters
    - Headwaters
    - Swales
  - WDRs required
    - Individual Waste Discharge Requirements
    - General WDRs
      - Order No. 2004-0004-DWQ (F/D for non-federal waters)
        - < 0.2 acre and
        - < 500 linear feet of fill and excavation, or
        - < 50 cy of dredging activity
      - Order No. R6T-2003-0004 ("Small Construction Permit")
        - Fill/dredge – for non-federal waters
        - 10,000 ft<sup>2</sup> to 1 acre disturbance outside Tahoe Basin



# Erosion Control Guidelines

## During Construction

- **October 15 – May 1:** No Soil Disturbance Period, site stabilized by 10/15
- No surplus or waste materials to surface waters or 100-year floodplains
- Diversions/Dewatering – no pollutant discharge
- Control run-on water

## Post-construction

- Treat or retain runoff from the **20-year, 1-hour storm** (= about 0.7 inches of rain)
- Revegetation with native plants





















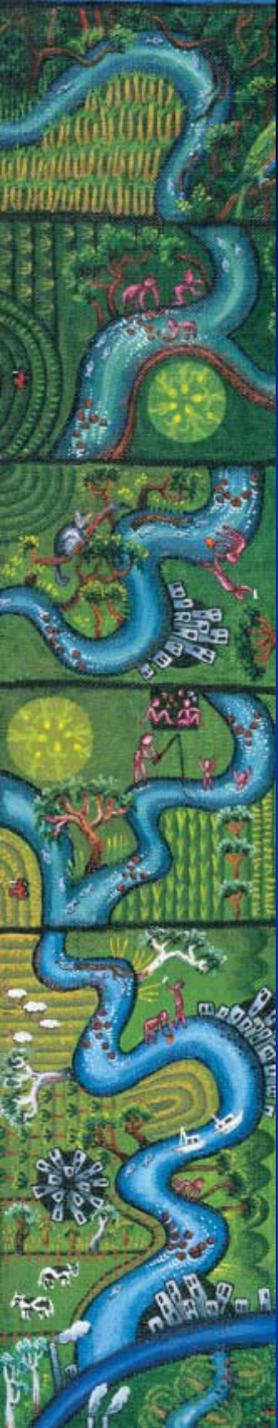
# Things to Think About

## (Message from the trenches)

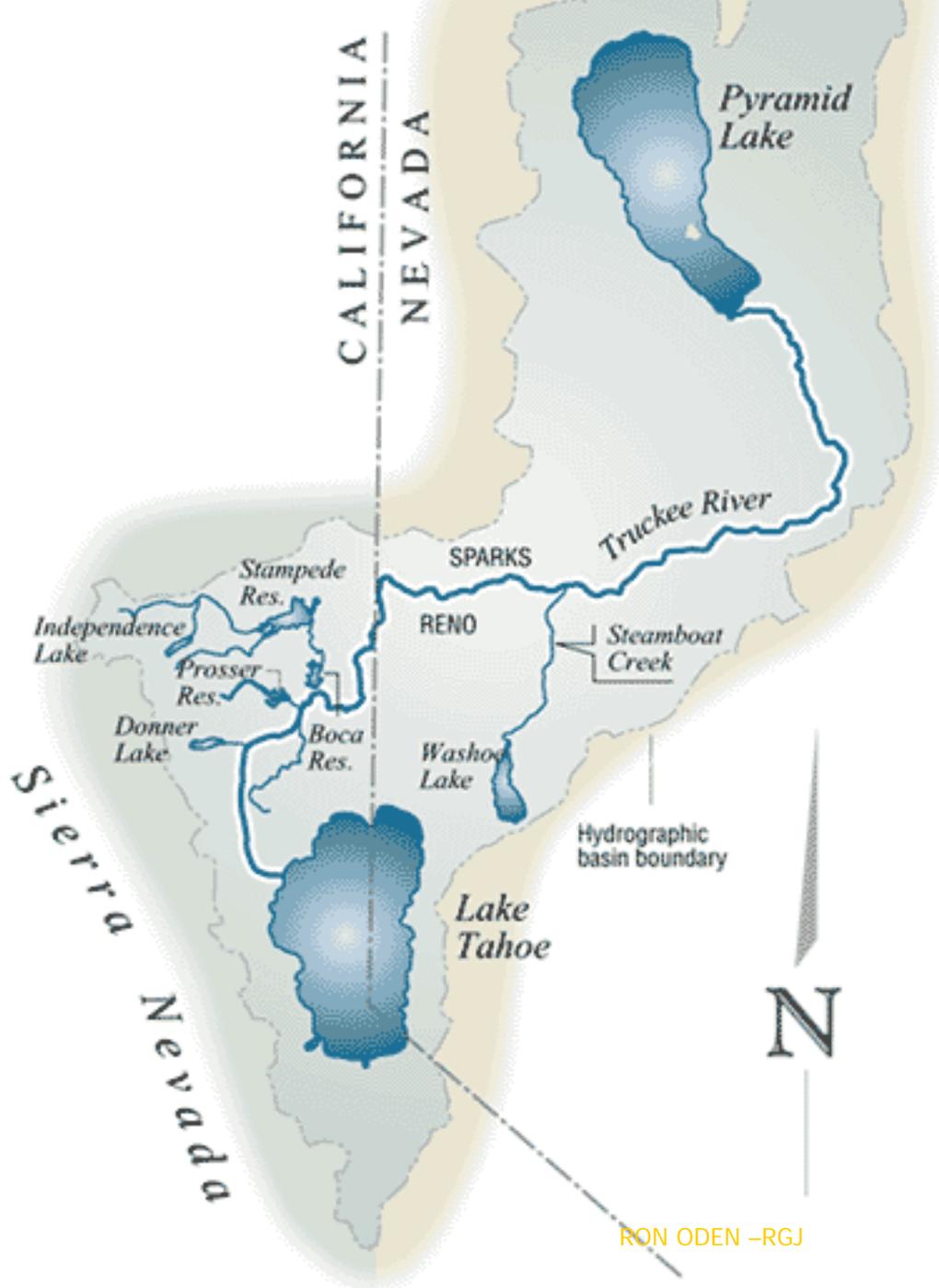
- Road runoff – SHEET FLOW is best – traps & basins are fine, but do NOT concentrate flow to waterway w/ roadside V-ditch.
- No stockpiling next to creek.
- Communication and Training: Disconnect between maintenance staff, biologists and engineers.
- Communicate with other agencies in area.
- Anticipate the worst and prepare for it.
- **Keep the dirt out of the waterway by some manner of infiltration – either basins or sheet flow**

# Prohibitions

- Discharge of wastes to surface waters (including wetlands)
- Discharge of wastes to 100-year flood plains in the Tahoe Basin and the Truckee River watershed.
- "Wastes" include earthen materials.



# Lake Tahoe and Truckee River Watersheds



RON ODEN -RGJ

# History of 100-year Floodplain Prohibition & Exemptions

- 1975 – 100-year floodplain prohibition
  - BUs – Flood Peak Attenuation
  - WQO – particularly the anti-degradation standard
- 1985 – Exemption Amendment Adopted
- Pre-1985 decisions
- How it has worked:
  - WDRs -> Waivers -> Resolutions

The image consists of a vertical strip on the left side of the slide, divided into four horizontal panels. Each panel depicts a blue river winding through a green landscape. The top panel shows a river flowing through a field of tall, thin crops. The second panel shows a river with a red structure, possibly a dam or bridge, and a yellow sun in the background. The third panel shows a river flowing through a field with a red structure and a yellow sun. The bottom panel shows a river flowing through a field with a red structure and a yellow sun. The background of the slide is a solid blue color.

# Basin Plan Prohibition

The discharge or threatened discharge, attributable to human activities, of solid or liquid waste materials including soil, silt, clay, sand, and other organic and earthen materials to lands within the 100-year floodplain of the Truckee River (high water level of Lake Tahoe) or any tributary to the Truckee River (Lake Tahoe) is prohibited.

# Benefits of Floodplains

- Flood flow attenuation
- Sediment removal
- Nutrient uptake (wetland / riparian areas)
- Fish and other wildlife habitat (riparian areas)
- Scenery
- Access for water contact recreation

# Exemption Criteria

- Project Types – must be at least one
  - Repair/replace existing structures
  - Erosion control, water quality improvement, or watershed restoration
  - Public health or safety or to provide essential public service, including transportation
  - Bridge abutments, approaches, or other essential transportation facilities
  - Public recreation

# Exemption Criteria (cont.)

- No reasonable alternative to locating the project or portions of the project within the 100-year flood plain
- Project, by its very nature, must be located within the 100-year flood plain (recreation only)
- The project incorporates measures that mitigate erosion and surface runoff problems to levels of insignificance

# Exemption Criteria (cont.)

- The project will not individually or cumulatively, directly or indirectly, degrade water quality or impair beneficial uses
- The project will not reduce the flood flow attenuation capacity, the surface flow treatment capacity, or the ground water treatment capacity (mitigation)

# How we grant exemption

- Staff make findings for each criterion in Waste Discharge Prohibition Exemption
- Exemption Findings + Notice of Applicability (NOA) for coverage under General WDR
  - Project associated with Small Construction permit (10,000 sq. ft to 1 acre)
- Floodplain Exemption + 401 cert
- Floodplain Exemption + 401 cert + NOA
- Floodplain Exemption

# Two "Lines in the Sand"

- Ordinary High Water Mark (OHWM)
  - CWA Section 404 and 401 needed
- 100-year Floodplain
  - Floodplain Exemption needed



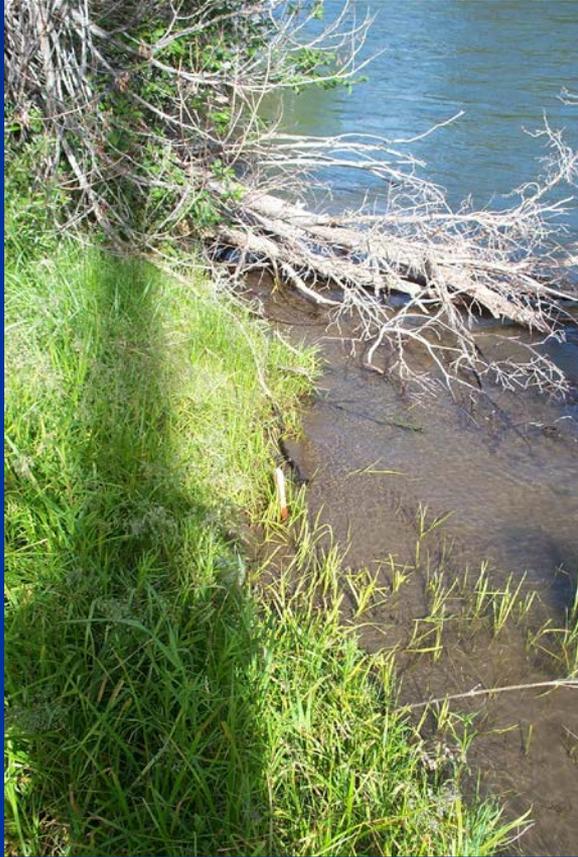
# Locating the OWHM



Matt Gingrich

- Geomorphological (geological) evidence
- Botanical evidence
- Soil evidence
- Other physical evidence

# Botanical Evidence



Paul Pace



Paul Pace

# Other Evidence of OHWM

OHWM



Paul Pace





Matt Gingrich

# Floodplain Protections Result

- Limited encroachment
  - Limited flood damage
- Water quality in the Truckee River
  - Truckee River impaired for sediment, BUT, background levels are only 3 NTU of turbidity
- Beneficial Uses protected
- Anti-degradation standard maintained





Questions?