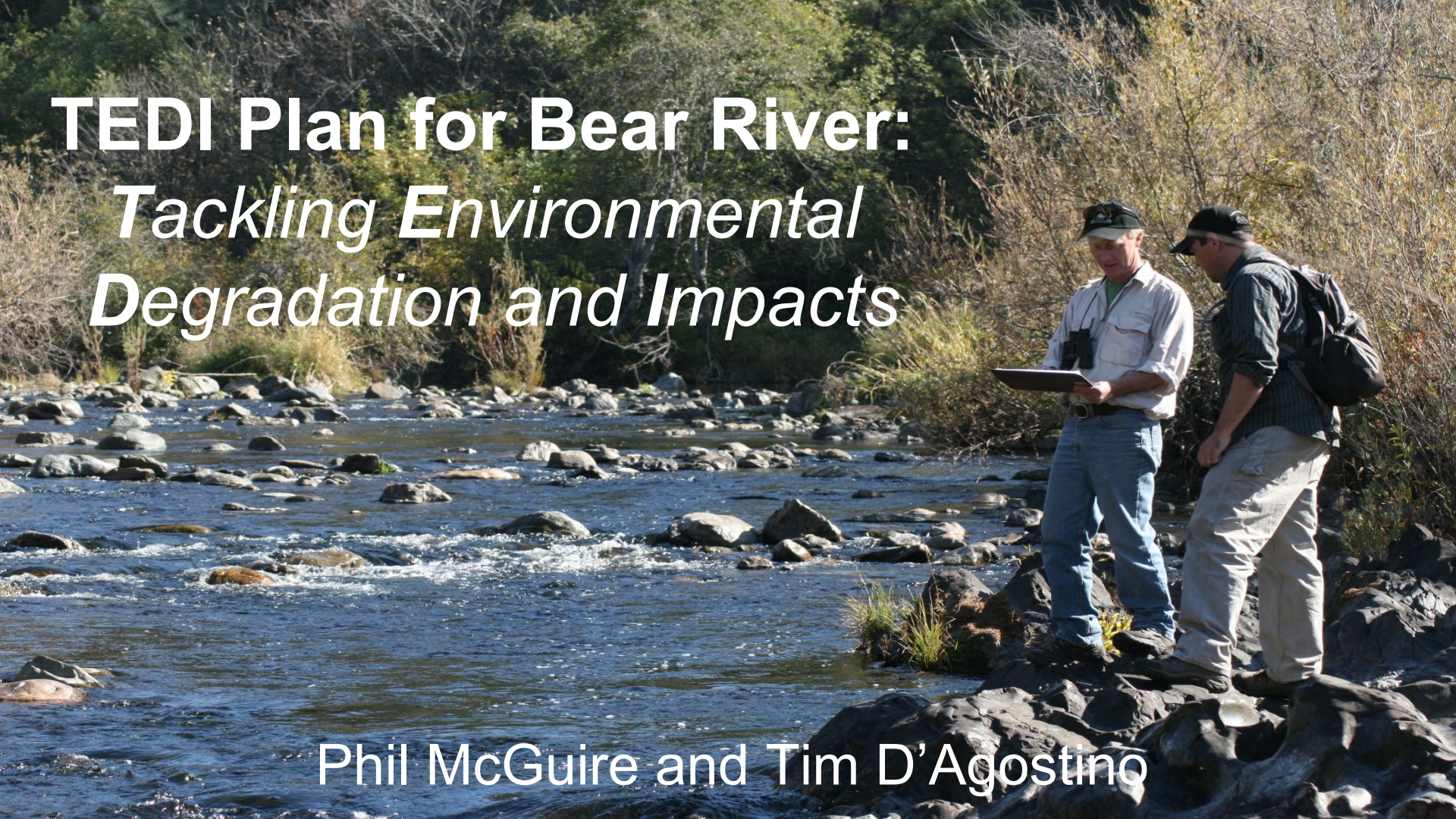


TEDI Plan for Bear River:
Tackling Environmental Degradation and Impacts

Phil McGuire and Tim D'Agostino

Overview

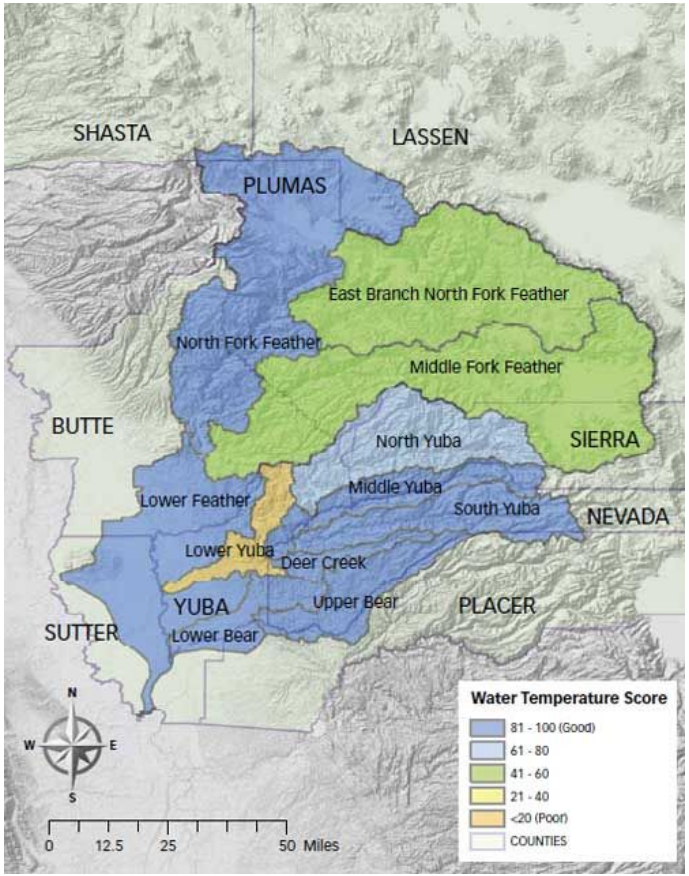
- Mission Statement
- Watershed Characteristics
- Land Use
- Water Use
- History
- Environmental Problems
- Existing Organizations
- Problems and Solutions
- Recommendations

Mission Statement

The T.E.D.I. Plan for Bear River seeks to restore fishable and swimmable water quality in the Bear River Watershed by 2045.

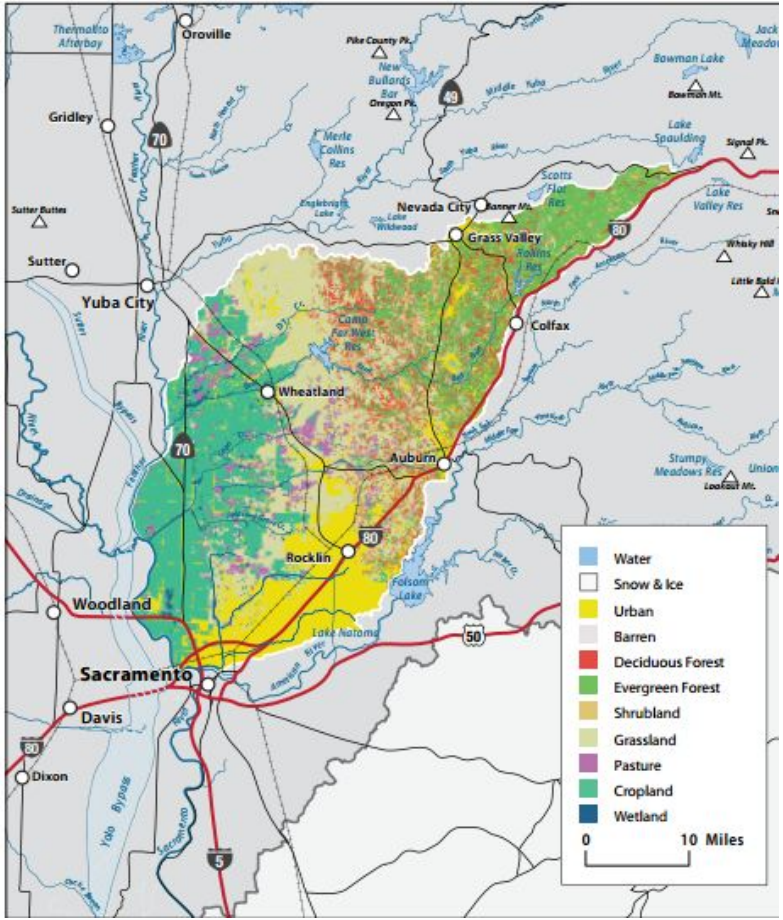
Watershed Characteristics

- Part of the American River Subregion of the Sacramento River Watershed
- Comprised of 4 counties (Placer, Sutter, Nevada, and Yuba)
- Origin: Sierra Nevada Mountain Range (Elevation 5,000 ft)
- Terminus: Feather River (Elevation ~ 100 ft)
- Area: 220,000 acres
- Annual Precipitation: 25-45 inches



Land Use

- Composition: 990 miles of streams, creeks, and rivers
- Development: 2,000 miles of roads within the watershed (45% of streams are within 100 m of a public road)
- Urban, Forest, and Cropland are major land designations

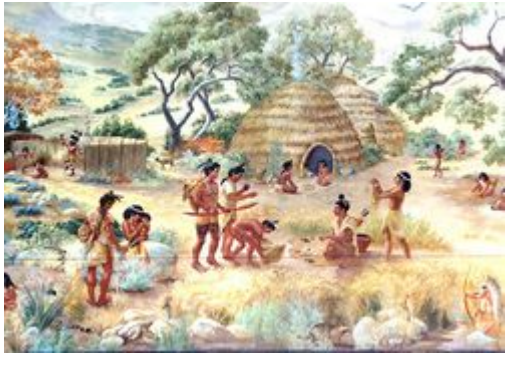


Water Use

- Mining - canals and sluice boxes
- Agricultural growth in 1800s and 1900s increased irrigation needs
- Dams built to encourage farming
- In the late 1880s and early 1900s, hydroelectric dams were built
- In 2011, the Nevada Irrigation District proposed a dam for city drinking water
- In 2014, a new dam proposal was introduced

History

- First settled ~3,000 BC by Nisenan Native American tribe
- Region discovered in the 1800s
- Settlement accelerated with the California Gold Rush
- Gold mine construction contributed to sediment runoff and mercury contamination
- Agriculture later increased irrigation needs in the 1800s and 1900s
- During the same period, several hydroelectric dams were constructed



Environmental Problems

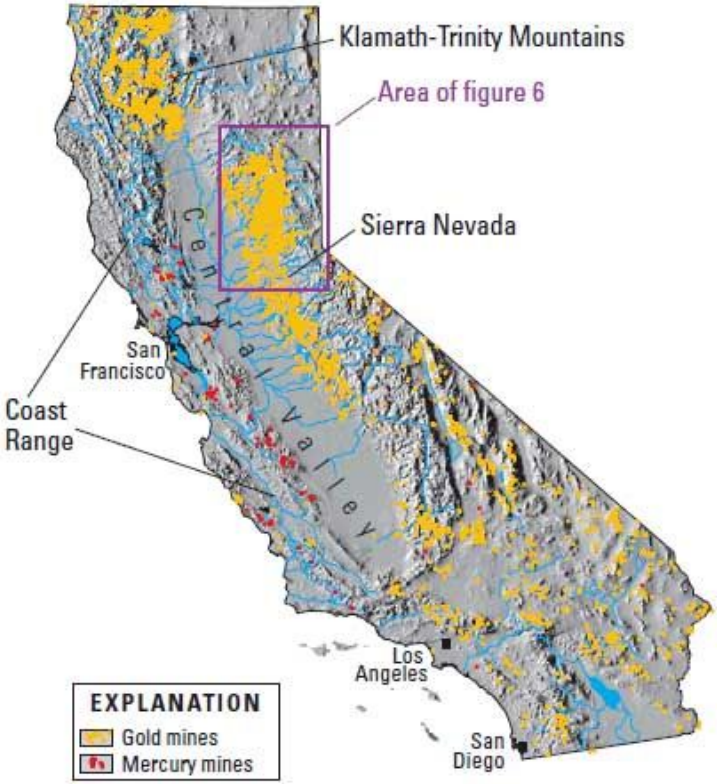
- I. Fishery Destruction
- II. Water Quality Contamination
- III. Reduced Water Flow

I. Fishery Destruction

- Salmon and Steelhead populations
- No self-sustaining salmon runs exist
- Restoration of fishery benefits
    - Return of predatory species
    - Economic boost/tourism
    - Funding for additional management

II. Water Quality Contamination

- Mercury and bacteria
- Biomagnification
- Safety monitoring
- Benefits of improved water quality
    - Swimmable/fishable goal
    - Tourism



III. Reduced Water Flow

- Greater population demands more water
- Dam/Reservoir construction
- Less for downstream communities/habitats
- Benefits of increased flow
    - Reduced water stress
    - Protection of river for future generations

Problems and Solutions

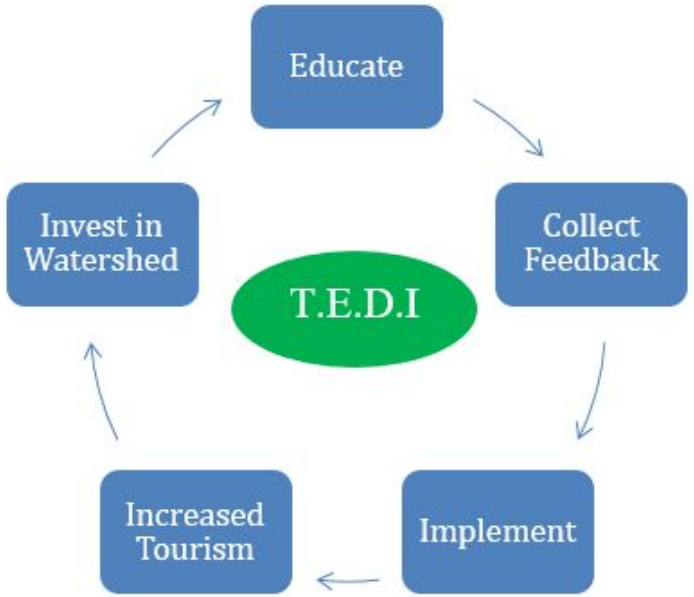
Problem Number (P)	Goal Number (G)	Solution Number (S)
P1: Fishery Destruction	G1.1: Mitigate Effects of Dams G1.2: Minimize Methylmercury Contamination	S1.1.1: Fishways/Ladders/Elevators S1.1.2: Halt Dam Construction S1.2.1: Limit Eutrophication S1.2.2: Monitor Contamination
P2: Water Quality	G2.1: Mercury Remediation G2.2: Healthy Vegetative Cover	S2.1.1: Thermal Desorption S2.1.2: Phytoextraction S2.2.1: Riparian Buffers S2.2.2: Controlled Burns
P3: Reduced Water Flow	G3.1: Reduce Water Consumption G3.2: Increase Groundwater Storage	S3.1.1: Public Education S3.1.2: County Ordinances S3.2.1: Reduce Impervious Cover S3.2.2: Employ Aquifer Storage

Existing Programs and Organizations

- CABY
- SRWP
- Sierra Watch
- Sierra Water Workgroup
- Placer Land Trust
- Bear Yuba Land Trust

Conclusions and Recommendations

- Implementation of T.E.D.I. Plan for Bear River Watershed
- Establishment of an overseeing committee
- Grassroots outreach and collaboration with political leaders
- Monitoring of progress



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