

TRIBAL RESPONSE TO TRUCKEE RIVER WATER QUANTITY & WATER QUALITY IMPACTS

A large, conical rock formation, known as Pyramid Rock, stands prominently in the middle of a deep blue lake. The rock is light-colored and has a rough, textured surface. To its right, several smaller, more rounded rock formations are visible. The sky is a clear, bright blue, and the water in the foreground shows gentle ripples.

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Regional Tribal Operations Committee
Fall Meeting
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OUTLINE

- Truckee River Water Supply Management
 - Brief History
 - Truckee River Water Supply
- Pyramid Lake Paiute Tribe – TAS & WQS
 - WQ Monitoring Programs
- PLPT Annual Water Management
- Future Direction



TRUCKEE RIVER WATER SUPPLY

A Brief History

- ORR DITCH DECREE – September 8, 1944
 - Claims #1 & #2 with 1859 Priority Date
 - TOTAL = 31,855.15 Acre-Feet
 - 2015 Irrigation Allocation = 8,610.0 AF
 - Unused Portion = 23,245.15 AF
- OPERATING CRITERIA AND PROCEDURES, (OCAP) 1967, 1997
- *PYRAMID LAKE PAIUTE TRIBE V. MORTON* – February 20, 1973
 - Maximize Carson River, minimize Truckee River, Reduces annual MAD from 406,000 AF to 288,000 AF.
- ENDANGERED SPECIES ACT – December 28, 1973
 - ENDANGERED CUI-CUI; 1992 Recovery Plan
 - THREATENED LAHONTAN CUTTHROAT TROUT; 1995 Recovery Plan, Truckee River Recovery Implementation Team (TRIT)

TRUCKEE RIVER WATER SUPPLY

A Brief History

- *NEVADA V. U.S.* – June 24, 1983
 - Supreme Court denies reopening Orr Ditch Decree
- STAMPEDE RESERVOIR – August 22, 1984
 - Capacity = 226,500 AF; Prosser Creek Reservoir = 29,800 AF
- PUBLIC LAW 101-618 November 16, 1990
 - Section 205: Truckee River Water Supply Management – [Truckee River] Operating Agreement (TROA, 2008)
 - Ownership of Beds & Banks, 1994
 - Stampede Reservoir held in perpetuity for the recovery of threatened and endangered fish in Pyramid Lake.
 - Unappropriated Water of the Truckee River, November 24, 1998
 - 6,700 AF Agreement – PLPT acquires 2,748 AF; Local Govts 3,952 AF

TRUCKEE RIVER WATER SUPPLY

- TRUCKEE RIVER OPERATING AGREEMENT MEMORANDUM OF AGREEMENT 1999 (TROA MOA)
 - USFWS, USBR, USBIA TRANSFERS TEAM LEAD TO PLPT
 - WATER SUPPLIES TO PROTECT AND CONSERVE THREATENED AND ENDANGERED FISH IN PYRAMID LAKE.
- WATER RIGHT ACQUISITION PROGRAM
 - WATER QUALITY SETTLEMENT AGREEMENT 1996
 - DESERT TERMINAL LAKES GRANT FUNDING, 2008 FARM BILL
 - TOTAL WATER RIGHTS ACQUIRED = 11,211.41 AF
 - 6,700 AF Agreement provides water for instream flows.
- OVERALL:
 - STAMPEDE AND PROSSER CREEK RESERVOIR = 256,300 AF
 - UNAPPROPRIATED WATER = Up to 477,851 AF
 - ACQUIRED W/R + Unused Claim #1 & #2 = 34,456.56 AF

PYRAMID LAKE PAIUTE TRIBE TAS & WQS

- EPA Authority Granted CWA 106 to Develop Water Quality Standards, **May 1990**.
- Five Volumes – Pyramid Lake, Nevada, Water Quality Study **1989-1993**.
- WATER QUALITY ORDINANCE (No. 53), PLPT Resolution PL 31-05, **April 15, 2005**.
- Achieved TREATMENT as STATE, **January 30, 2007** and received Section 401 Certification permitting authority.
- WATER QUALITY CONTROL PLAN, **September 16, 2015** (updated as part of the PLPT WQS Triennial Review, originally adopted in 2008).

TAS & WQS

- **BENEFICIAL USES;** forms the basis for PLPT's WQS
 - 20 Uses listed includes Cold Freshwater Habitat, Irrigation, Maintenance & Restoration of Native Fish, Ceremonial Use, Water Contact Recreation, Fishing, Spawning, Wildlife Habitat, etc.
- **NARRATIVE & NUMERIC CRITERIA;** standard characteristics
 - Narrative = qualitative description for characteristics
 - Numeric = actual concentrations of measurable parameters
- **ANTIDEGREDATION POLICY;** conserve, maintain, and protect existing uses by maintaining high water quality
 - Protect existing uses
 - Support fishable/swimmable designation
 - Outstanding national resource

PYRAMID LAKE PAIUTE TRIBE Water Quality Program



- TRUCKEE RIVER MONITORING
- Water Quality Monitoring Sites
 - Monthly Sampling at 5 Sites
- Physical Habitat & Bioassessment
 - Annual Sampling at 11 Sites
- Non-Point Source Monitoring
 - Monthly Sampling at 5 Sites
- <http://plpt-waterquality.net>
- PYRAMID LAKE MONITORING
- Sampling Sites #96 (deep) and #93 (shallow)
 - SBE SeaCAT 19*plus* Profiler
- Hatchery Sampling
 - Dunn Hatchery
 - Lake Operations
 - Numana Hatchery
- <http://www.pyramidlakefisheries.org>

WATER QUALITY MONITORING

- River: Sampling Sites
 - Pierson Dam, Wadsworth Bridge, Dead Ox, Nixon Bridge, and Marble Bluff Dam.
- NPS Sampling Sites
 - Paiute Pit Outlet, Tile Drain (3 sites), Numana Wetlands (2 sites).
- YSI Sonde
 - Temperature, TDS, Salinity, Conductivity, Turbidity and DO.
- Lab Analysis
 - Nitrates & Nitrites, Ammonia, Total Phosphorus (TP), and Dissolved Reactive Phosphorus (DRP).
- Lake: SBE SeaCAT 19*plus*
 - Temperature, pH, Conductivity, TDS (salinity), Depth, DO, and PAR/Irradiance.
- Lake Samples: Lab Analysis
 - Ammonia, Nitrate & Nitrite, DRP, TP, and Total Kjeldahl Nitrogen (TKN).
- Hatchery: GW & Recycled Water Sources
 - Ammonia, Nitrate & Nitrite.

ANNUAL WATER MANAGEMENT

- **TROA – MOA**

- Annual Flow Regime Determination.
- Concentrate on critical times for water supply to most effective.
- Beneficial use factor is applied.

- **PLPT INTERDISCIPLINARY TEAM (IDT)**

- NRCS Monthly Forecasts (beg. in January) sets the baseline
- Irrigation and unused portion of decreed water rights
- Acquired water rights
- Spawning flows
- Monitor scheduled flow regime, adjusting as necessary

FLOW REGIME

MAGNITUDE
FREQUENCY
DURATION
TIMING
RATE OF CHANGE

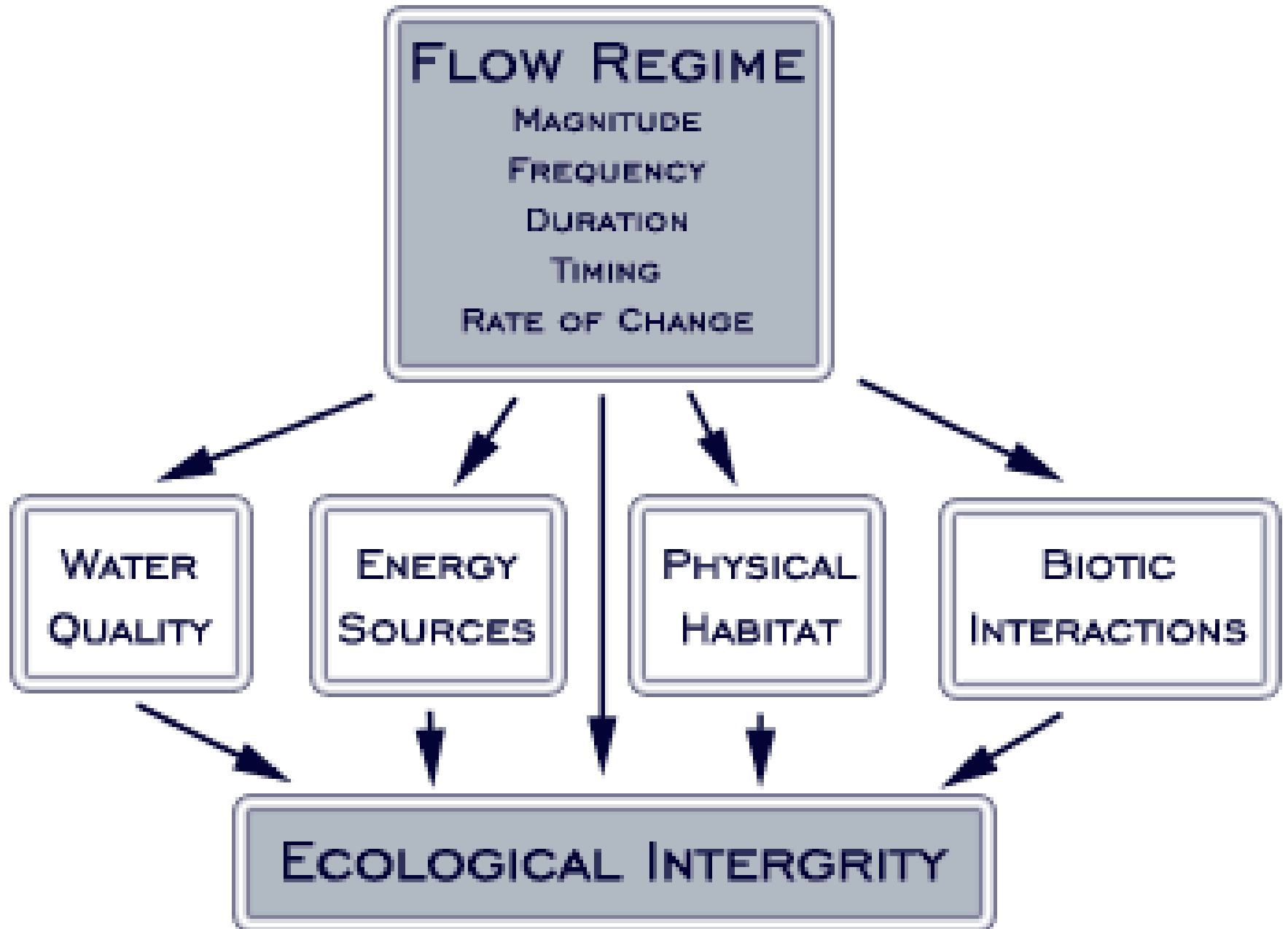
WATER
QUALITY

ENERGY
SOURCES

PHYSICAL
HABITAT

BIOTIC
INTERACTIONS

ECOLOGICAL INTEGRITY



FUTURE DIRECTION

- **Further Investigations: 2015 WQCP**
 - Modeling dissolved inorganic nitrogen dynamics in the river.
 - Ecological physiology of river periphyton.
 - Influence of augmented river flow on nutrient, Dissolved Oxygen and Total Dissolved Solids levels.
 - Endocrine Disruptor compound effects on aquatic life.
 - Management of local and regional Non-Point Source pollution.
 - Low Flow Considerations – 7Q10.

REFERENCES

- Pyramid Lake Paiute Tribe
- Pyramid Lake Environmental Department
- Pyramid Lake Water Quality Program
- Pyramid Lake Fisheries
- Great Basin Land & Water
- Environmental Protection Agency
- U.S. District Court Water Master's Office
- U.S. Department of Interior, U.S. Geological Survey
- Stream and Watershed Restoration.
[http://riverrestoration.wikispaces.com/Environmental+flows.20151025.](http://riverrestoration.wikispaces.com/Environmental+flows.20151025)
- Short-term Action Plan for Lahontan Cutthroat Trout in the Truckee River Basin. Truckee River Basin Recovery Implementation Team, USFWS. 2003.

<http://pubs.usgs.gov/circ/2004/1267/#N10099>