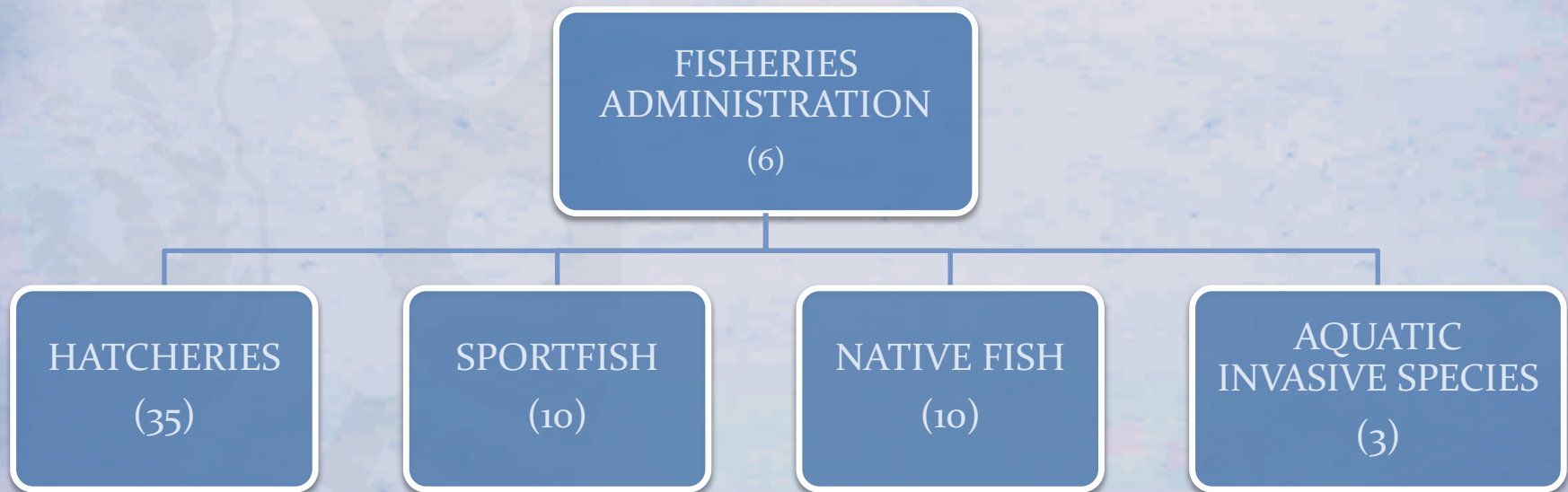


# **Workshop – Discussion of Fisheries Management Division Activities**



# Division Structure



# Management Guidance



New Mexico Department of Game and Fish

## 2016 Statewide Fisheries Management Plan

Approved by the New Mexico State Game Commission on April 14, 2016



Conserving New Mexico's Wildlife

### Rio Grande Cutthroat Trout (*Oncorhynchus clarkii virginialis*) Conservation Strategy



Photo courtesy of New Mexico Department of Game and Fish

October 2013

24 May 2019

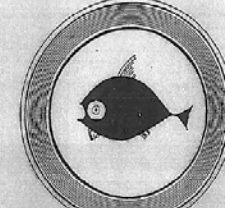
U.S. Fish and Wildlife Service

### Draft Revised Recovery Plan for Gila Trout (*Oncorhynchus gilae*)

4<sup>th</sup> Revision  
24 May 2019



CHIHUAHUA  
CHUB



RECOVERY  
PLAN



1986

## Management Plan for the San Juan River

2004-2009

May 2004  
New Mexico Department  
Of Game and Fish  
Fisheries Management Division

By  
C. Marc Wethington  
Peter Wilkinson

# State Fish Hatcheries

The map displays the following hatchery locations marked with yellow stars: **LOS OJOS**, **RED RIVER**, **SEVEN SPRINGS**, **LISBOA SPRINGS**, **ROCK LAKE**, and **GLENWOOD**. Major cities shown include Farmington, Raton, Santa Fe, Albuquerque, Tucumcari, Clovis, Roswell, Alamogordo, Las Cruces, Silver City, and Hobbs. Highways 10, 25, 40, 64, 70, 77, 84, and 285 are also indicated.

**NEW MEXICO GAME & FISH**  
**NEW MEXICO'S STATE HATCHERIES**

**LOS OJOS**  
**SEVEN SPRINGS**  
**RED RIVER**  
**ROCK LAKE**  
**LISBOA SPRINGS**  
**GLENWOOD**

Approximately 650,000 lbs. of fish annually

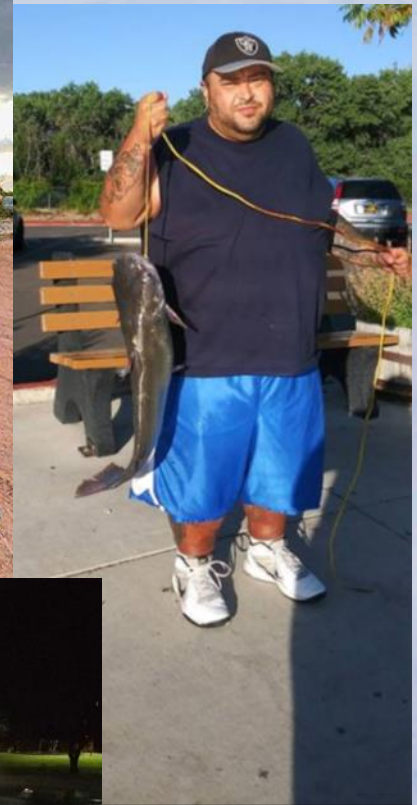
# Triploid Rainbow Trout Programs

- Catchable - 10 to 11 inches
- Winter, Summer, Annual stocking
- Sterile RBT – native trout hybridization concerns
- Hatcheries converted to triploid RBT in 2010
- Large RBT program



# Summer Catfish Program

- Purchase from private hatchery
- ~37,000 lbs/year
- Two fish daily limit
- Focus on urban waters
- Allocate based upon use



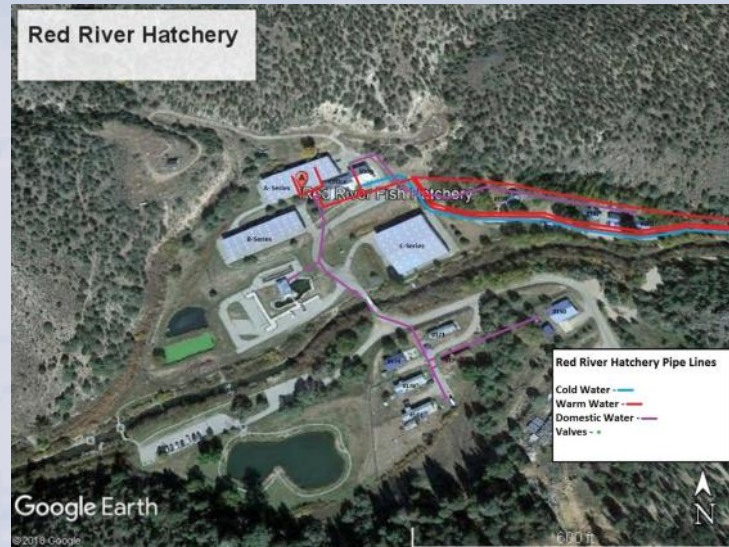
# Spawning and Broodstock

- Rio Grande Cutthroat Trout – Seven Springs and Wild
  - ~400,000 eggs annually
- Largemouth Bass – Rock Lake
  - ~250,000 fry in 2019
- Walleye – Conchas and Santa Rosa
  - ~30,000,000 eggs annually
- Kokanee – Heron Lake
  - ~3,000,000 eggs annually
- Gila trout
  - Long-term plans



# Capital Needs for Hatcheries

- Visitor centers update and restoration
- Pipelines
- Drinking water systems
- Modernization of hatchery housing
- Hatchery building at Rock Lake
- Asbestos remediation at Glenwood
- Mine tailings remediation at Lisboa Springs



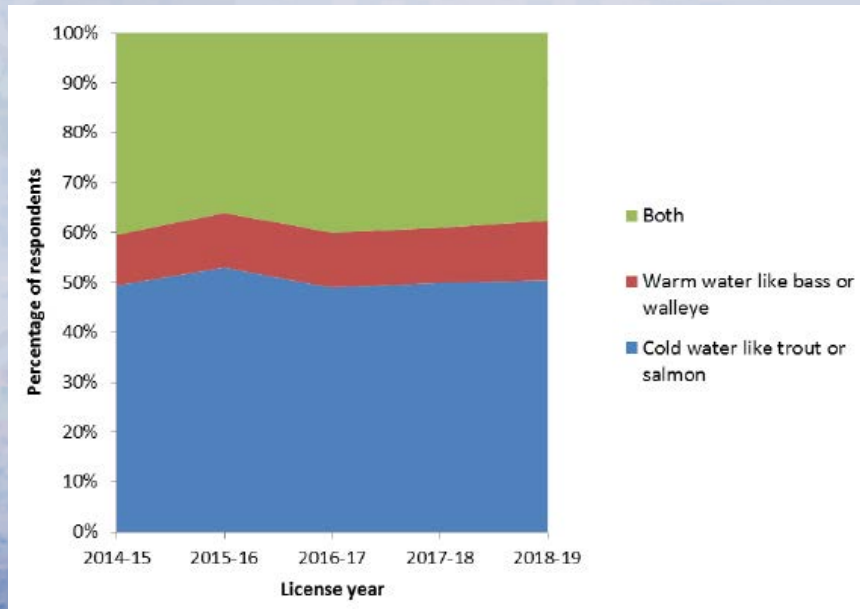
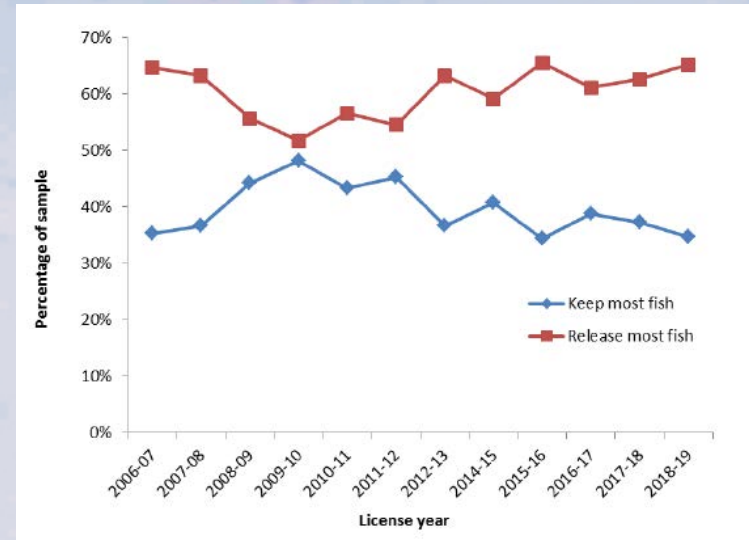
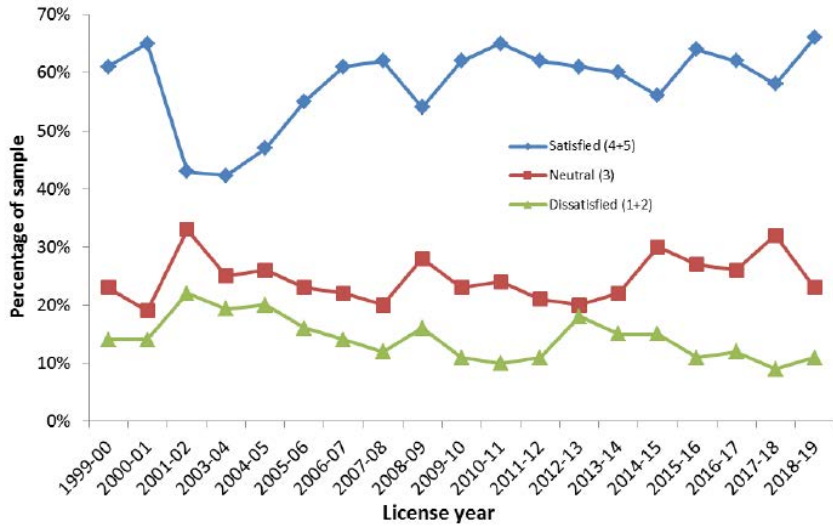


# Research and Management



Fisheries Management Division

# Angler Satisfaction Surveys

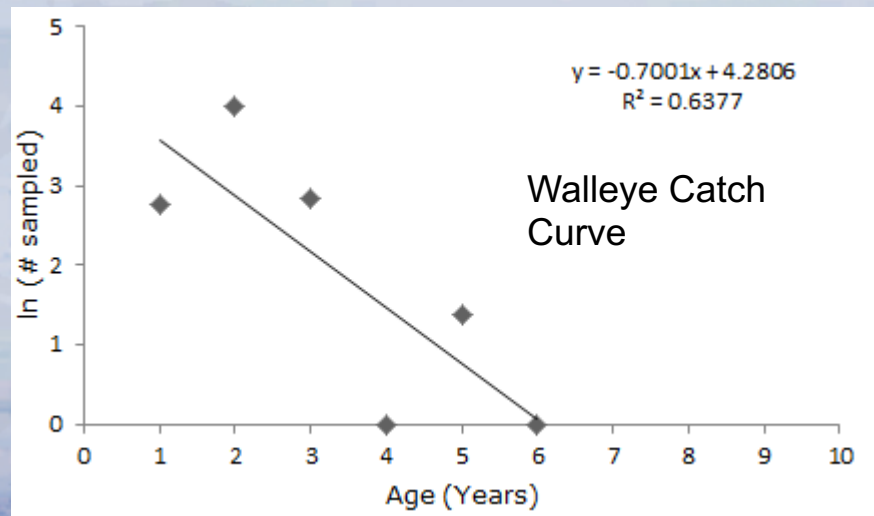
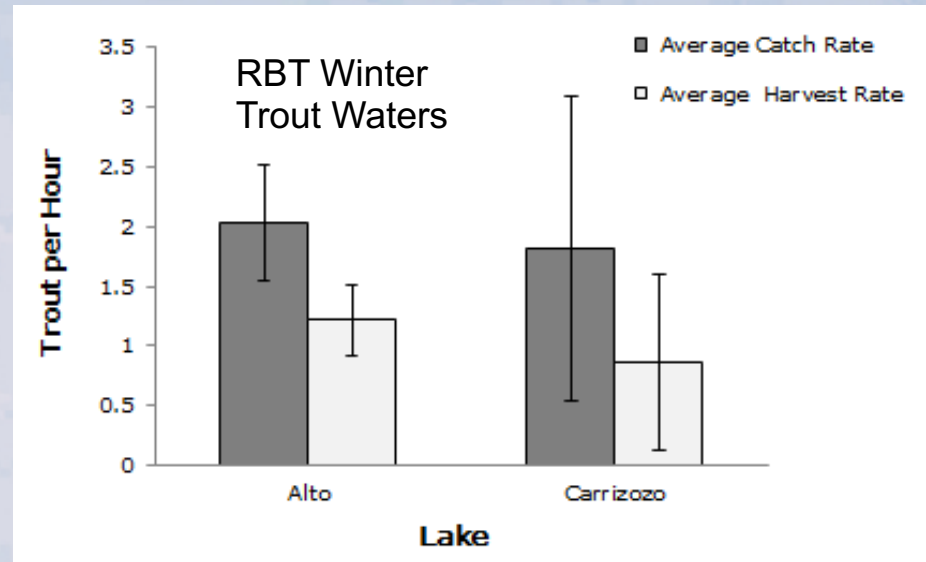
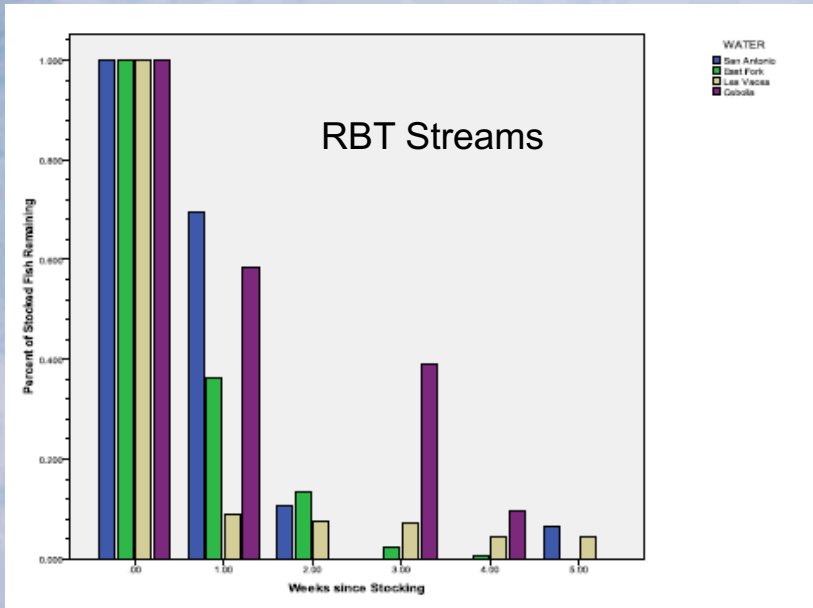


# Annual Angler Use and Harvest

- Email survey to anglers
- Able to estimate use based upon proportion of responses
- Determine average angler days and harvest

Water Name	Average Angler Days
San Juan River (Quality)	226,895
Fenton Lake	80,541
Red River	42,809
Lake Roberts	38,853
Navajo Reservoir	180,844
Elephant Butte Lake	277,268
Pecos River (Cowles)	111,423
Mineral Creek	142
Bull Creek	292

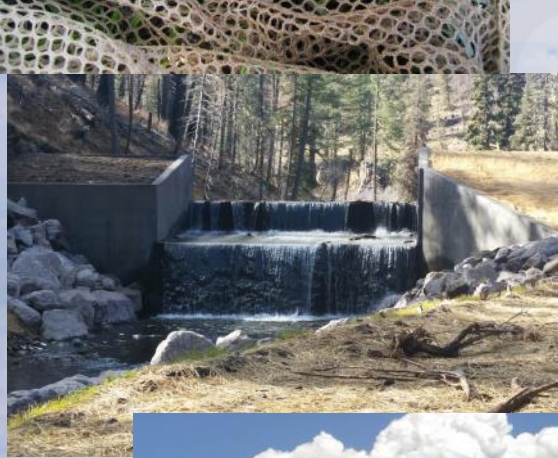
# Hatchery Product Allocation



# Native Trout Conservation

- Rio Grande cutthroat trout
- Gila trout
- Other native species
- Barriers
- Rotenone
- Fire opportunities

~ 150 miles, 10 lakes, and one reservoir restored for native trout since 2007

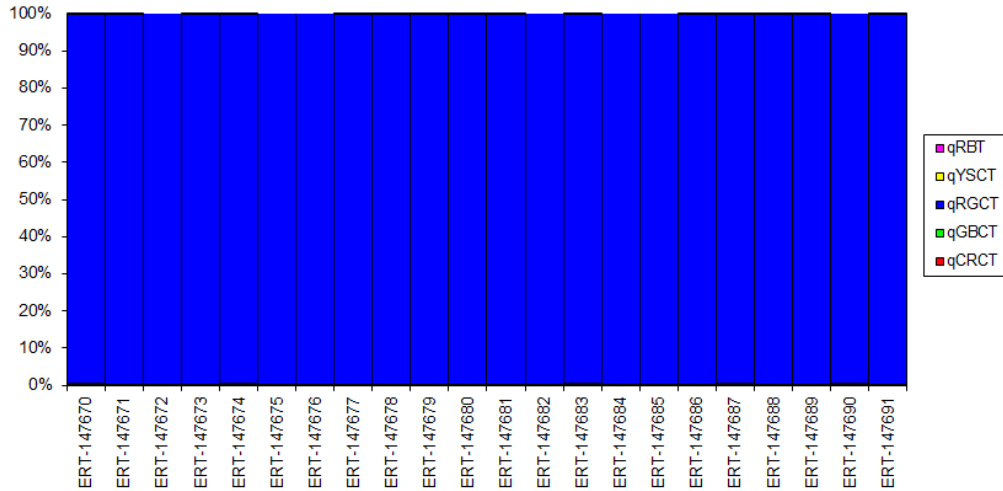


# Non-Game Species Conservation



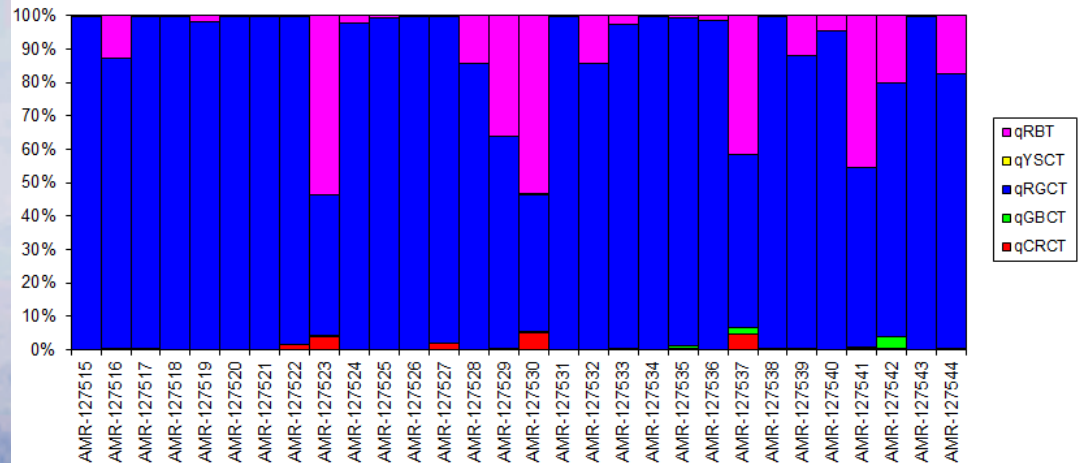
# Conservation Genetics

El Rito Individual Sample Admixture Proportions



No evidence of hybridization with nonnative trout

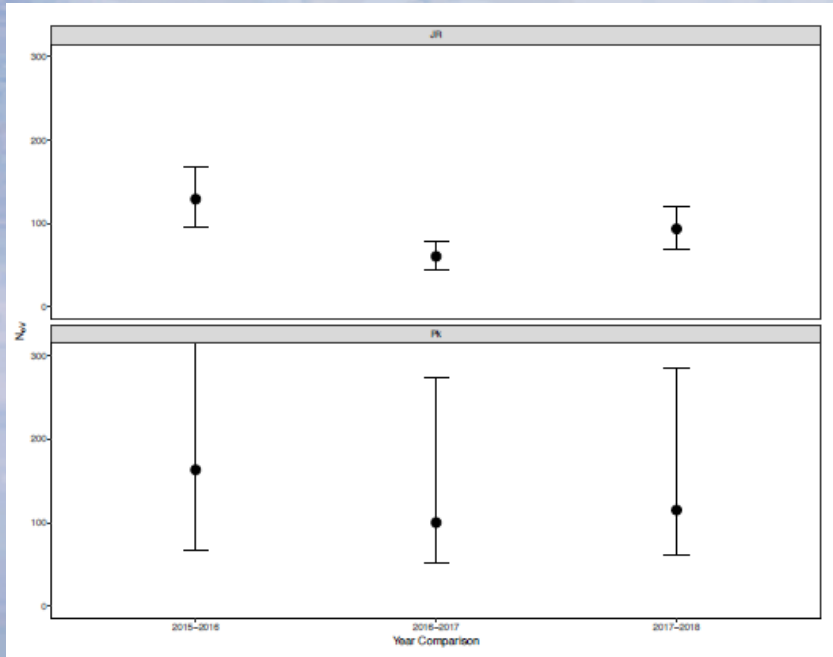
American Creek Individual Sample Admixture Proportions



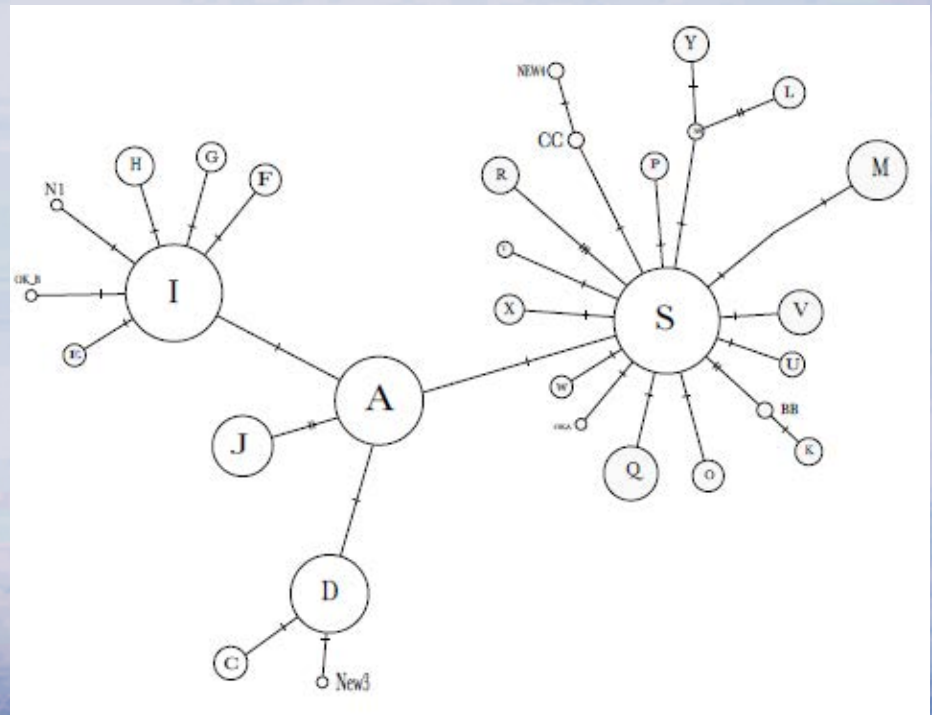
Hybridized with RBT and other closely related cutthroat trout

# Conservation Genetics

Peppered chub effective population size



Peppered chub population structure



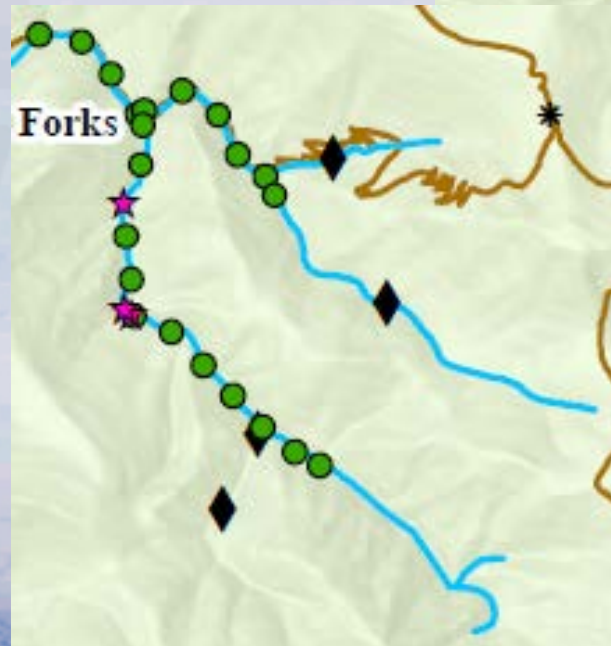


# eDNA for Species Detection

- Species detection via water samples
- High resolution
- Rare taxa
- Presence of unwanted taxa



TX hornshell detection



Non-native trout presence/absence

August 2019

# YY-Male Technology

## ARTICLE

### Simulated Effects of YY-Male Stocking and Manual Suppression for Eradicating Nonnative Brook Trout Populations

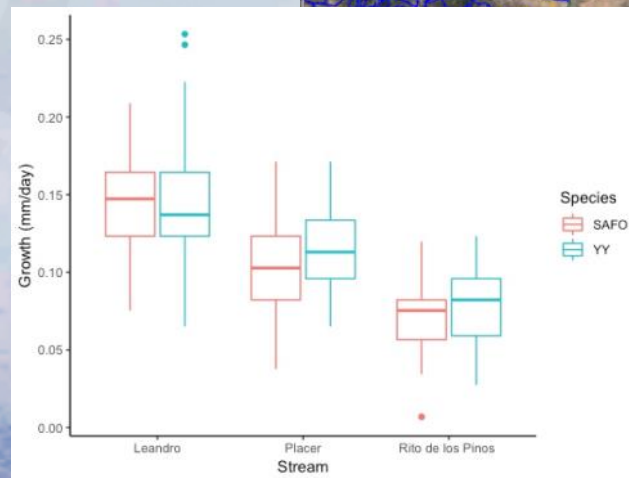
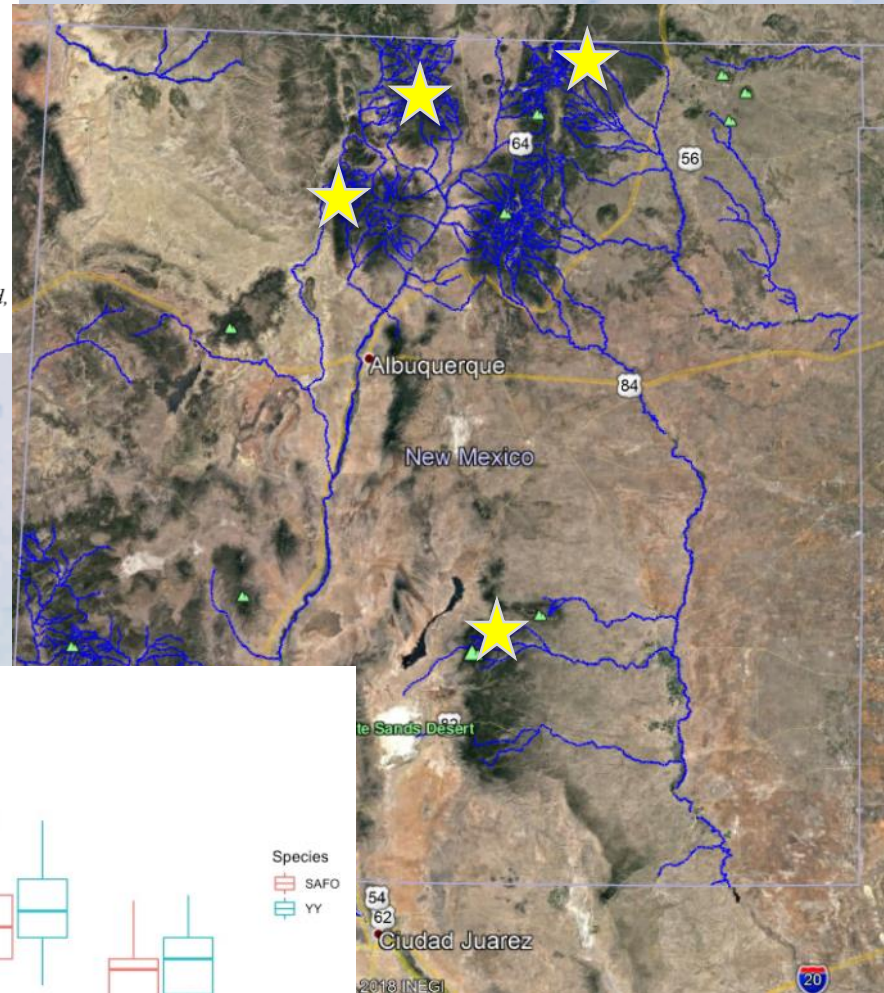
Daniel J. Schill\* and Kevin A. Meyer

Idaho Department of Fish and Game, 1414 East Locust Lane, Nampa, Idaho 83686, USA

Michael J. Hansen

U.S. Geological Survey, Great Lakes Science Center, Hammond Bay Biological Station, 11188 Ray Road, Millersburg, Michigan 49759, USA

- Alternative fish control technology
- Brook trout - ID, WA, OR, NM
- West-wide development for other species
- High survival to date

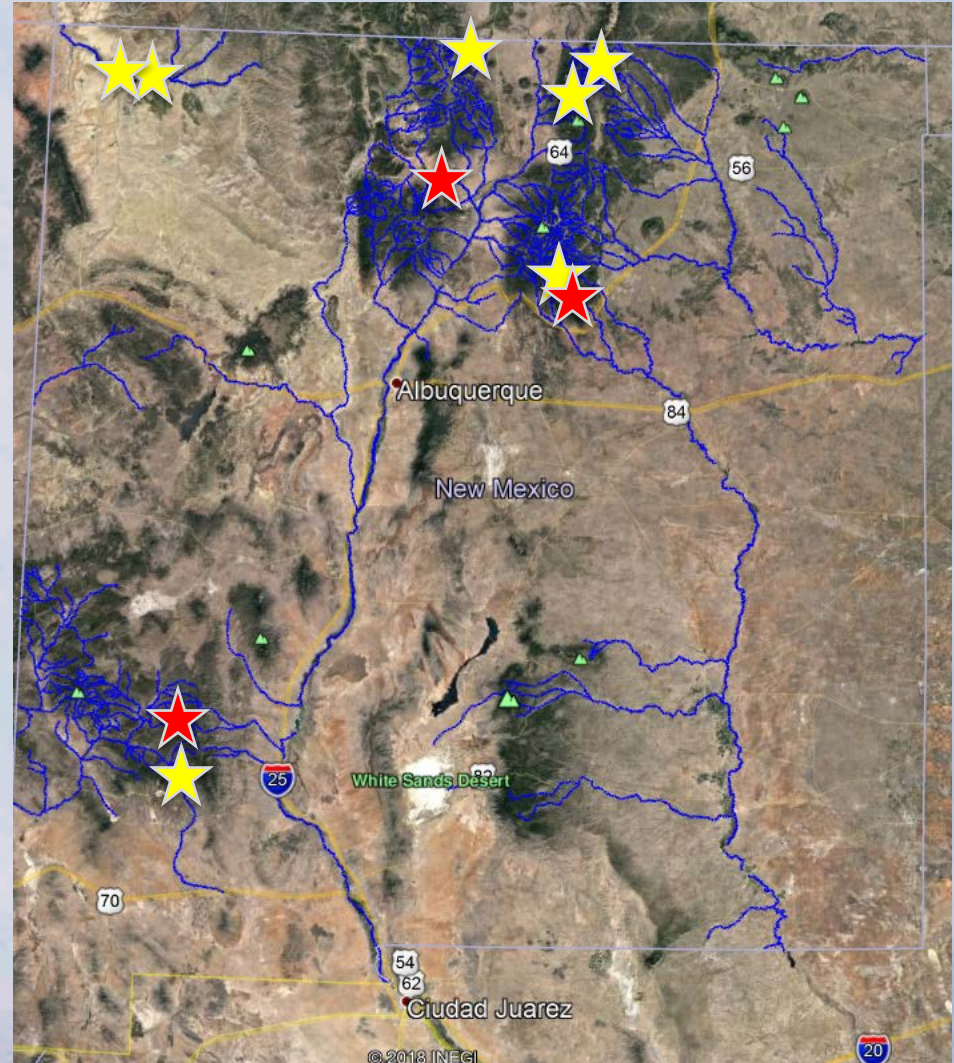


# Texas Hornshell



# Habitat Restoration

- San Juan tailwater – Rainbow trout
- Los Pinos – Trout
- Pecos River – Brown trout, Rio Grande chub
- Costilla – Rio Grande cutthroat trout, sucker, chub
- Mimbres – Chihuahua chub, Rio Grande sucker, Chiricahua leopard frog
- Red River – Brown trout
- Chama – Trout, Rio Grande chub
- SWA Lakes – Largemouth bass, channel catfish, trout

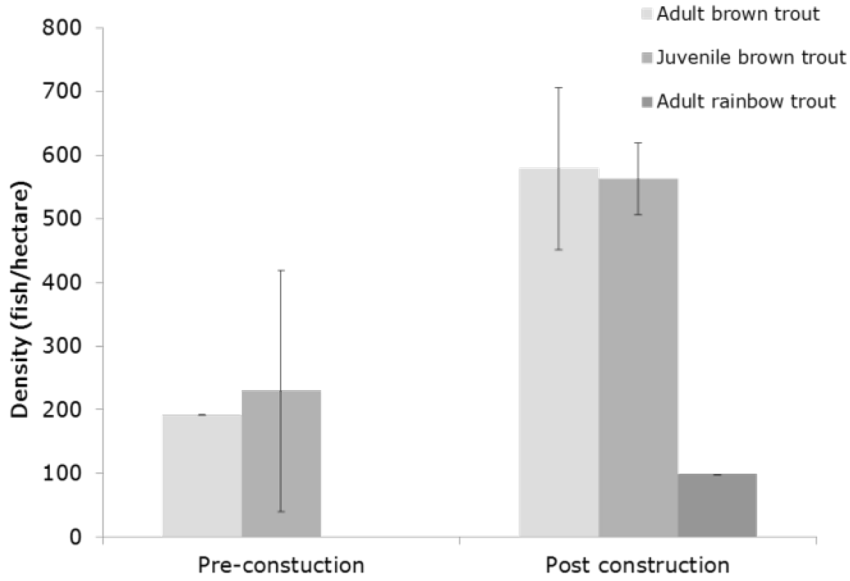


# Habitat Restoration

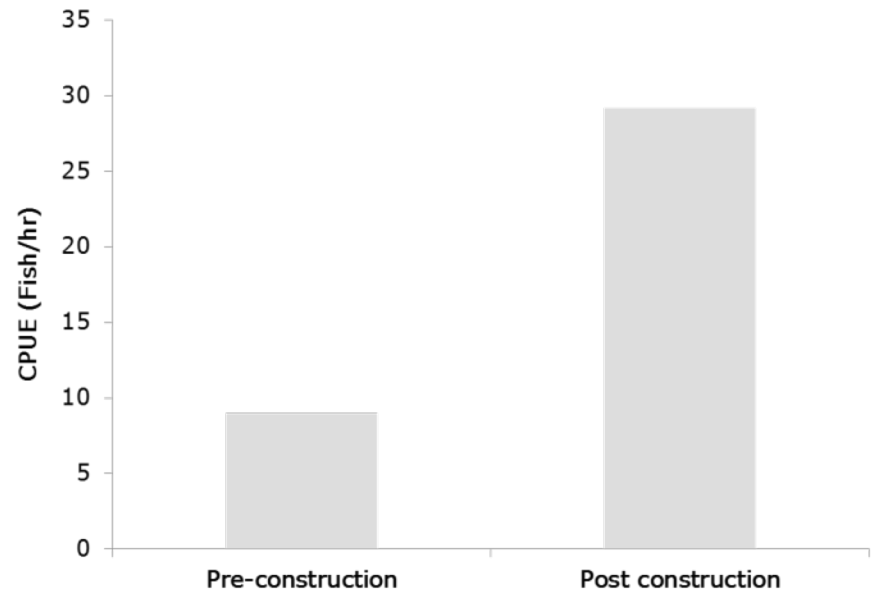


# Habitat Restoration

### Red River Eagle Rock Site

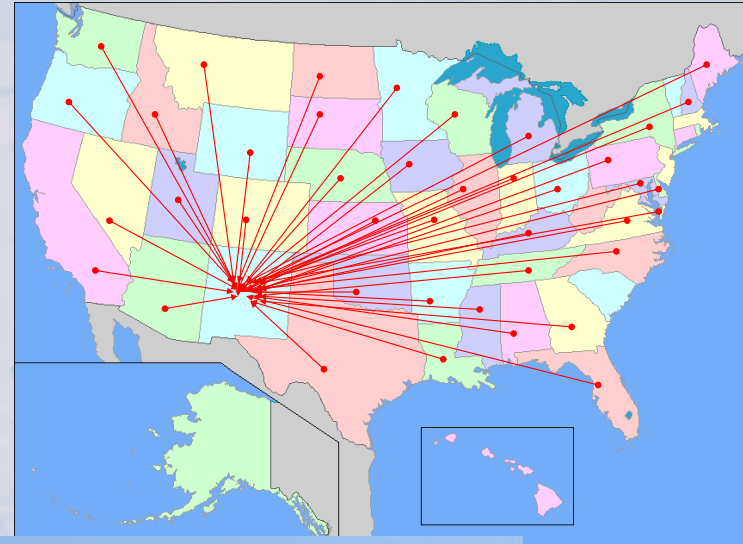


### Mimbres River Chihuahua Chub

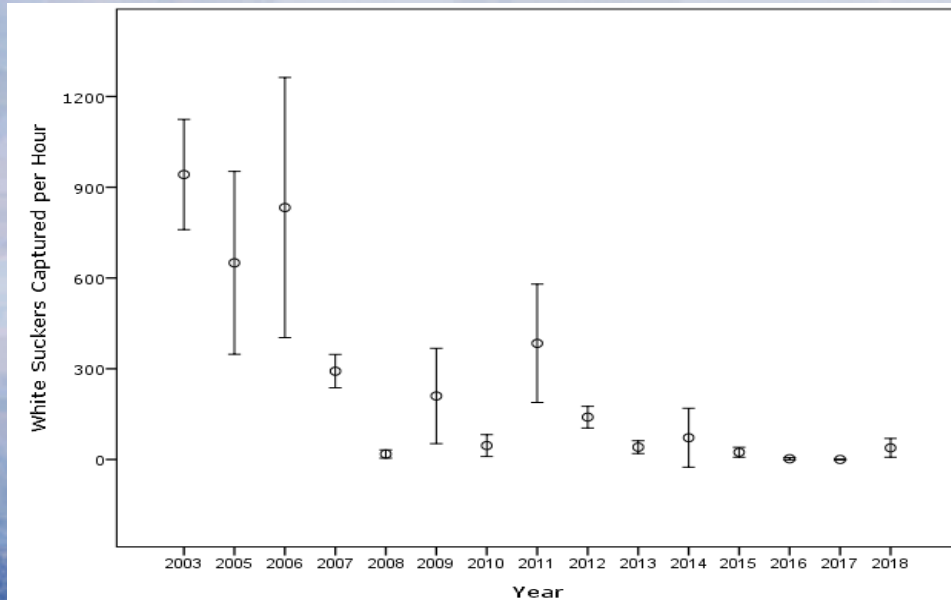
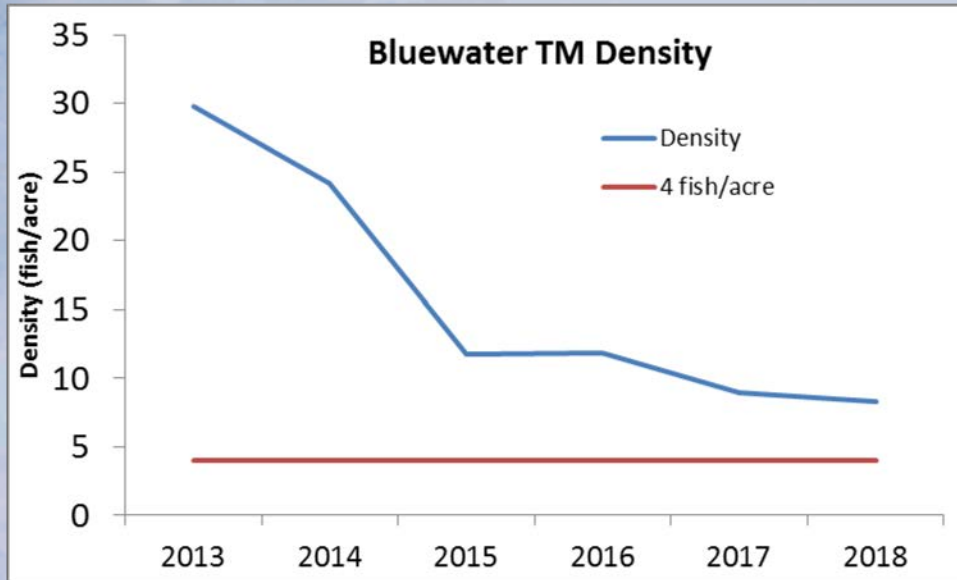


# Aquatic Invasive Species

- Zebra and Quagga mussel
- Inspections at priority reservoirs – 40,000/year
- 17-4-5 NMSA – AIS statute
- Golden algae, didymo, New Zealand mudsnail

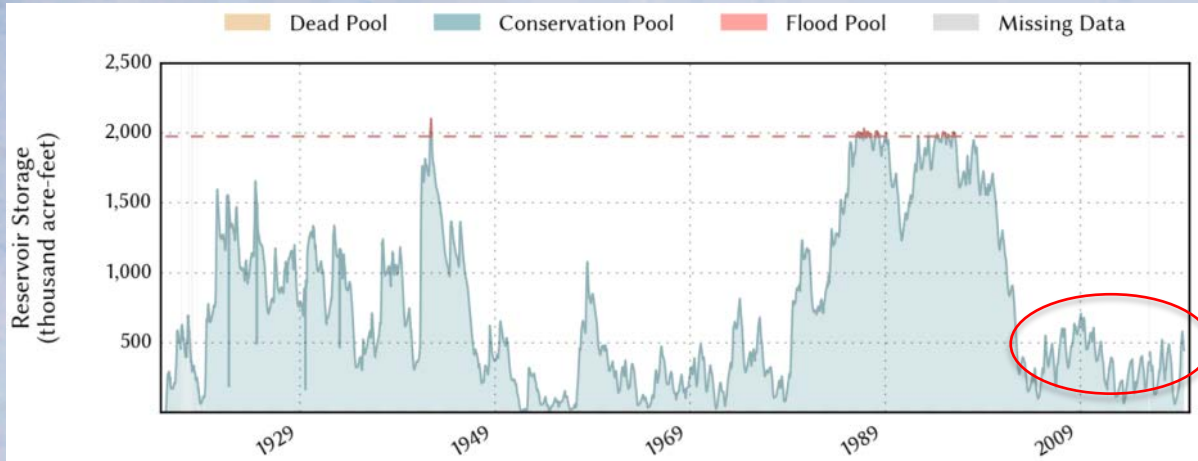


# Tiger Muskie Management



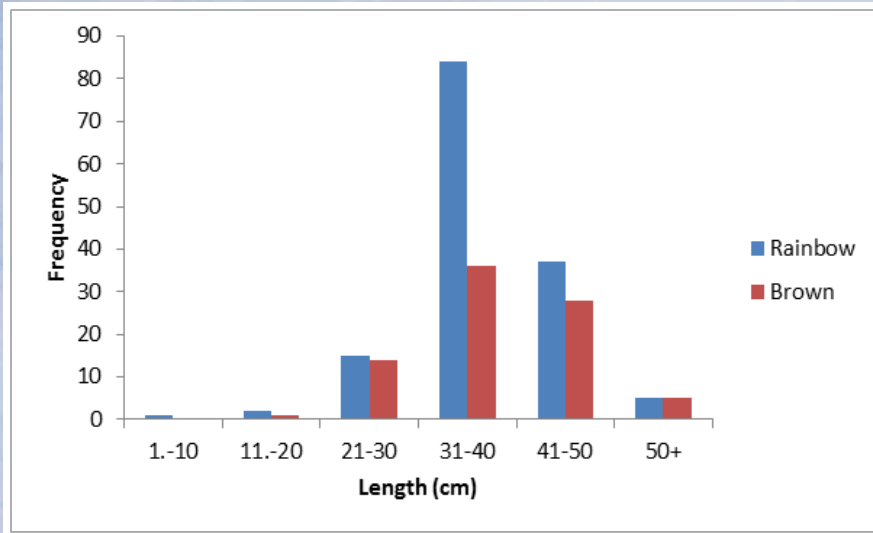


# Elephant Butte Lake



- Contribution of stocked LMB to population?
- Microchemistry of bony structures
- Approximately 10% of population attributed to stocking

# San Juan Tailwater Trout Fishery



- Average Length = 14.4 in.
- 4% exceed 20 in.
- >1,250 fish/acre

