

Golden Eggs: Kern River Hatchery and the Conservation of California's State Fish

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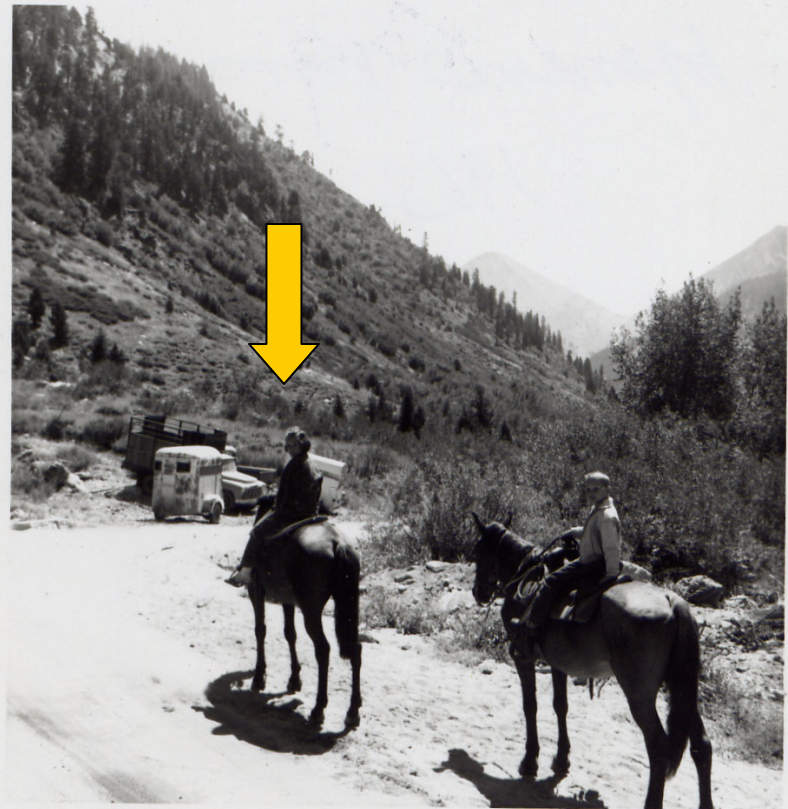
California Dept. of Fish and Game

Northwest Fish Culture Conference

December 2009



Mineral King, 1963



Overview

- The Three Native Kern River Trout
- Kern River Hatchery - Changing roles
- The Little Kern Golden Trout Program
- The Kern River Rainbow Program

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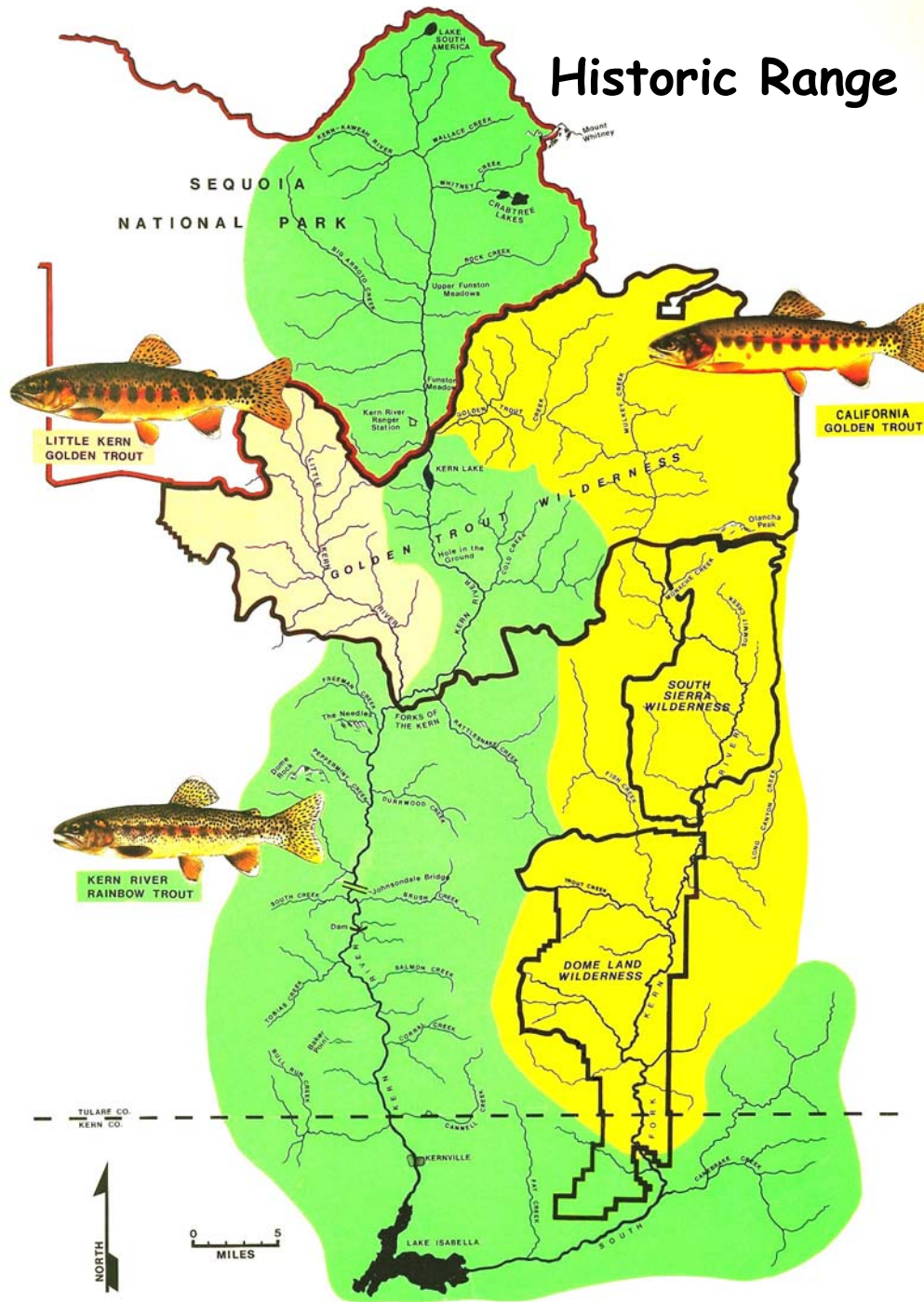
Kern River Basin



Native Trout of the Golden Trout Complex

- California golden trout
Oncorhynchus mykiss aguabonita
- Little Kern golden trout
O. m. whitei
- Kern River rainbow trout
O. m. gilberti

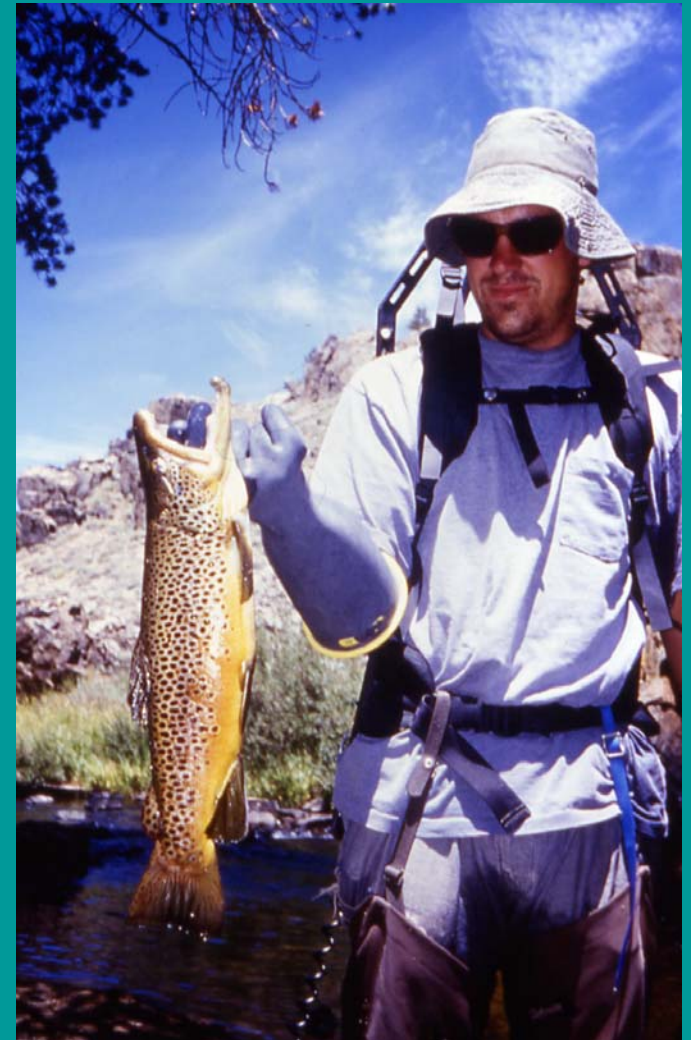
Historic Range

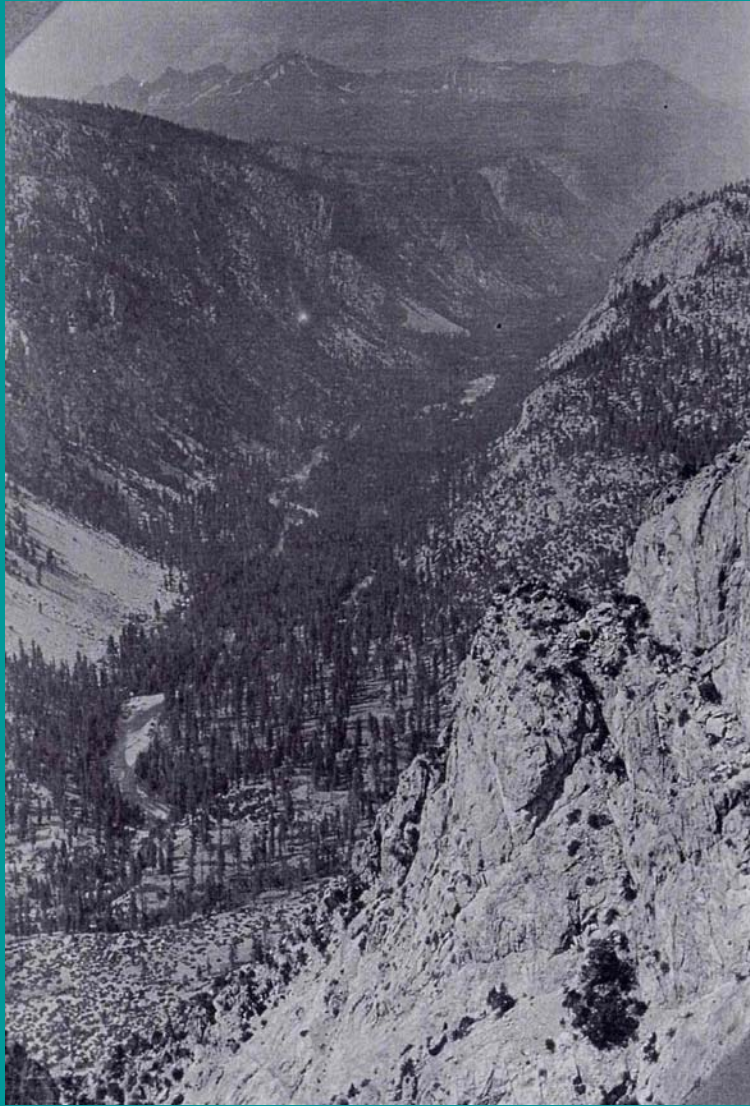


Non-native Fish Introductions



- Hybridization with rainbow trout
- Predation and competition





**Upper Kern Canyon
ca. 1911**

**Upper Kern Canyon
1993**



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Kern River Hatchery

Changing Roles



Kern River
Hatchery →

1928 - First rearing ponds built by Kern County Sportsmen

1941 - CDFG assumes operation

1979 - Downgrade to planting base

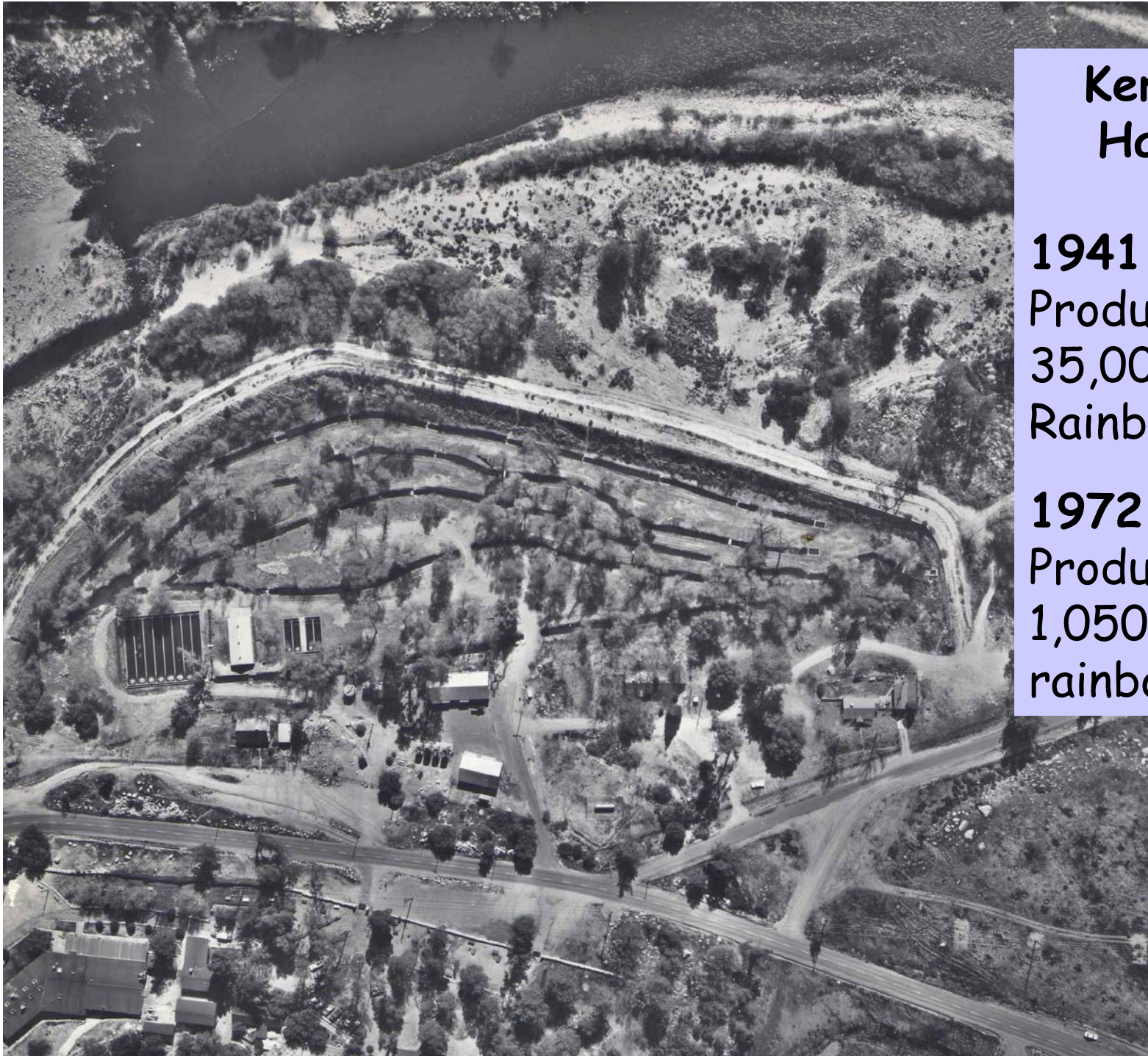
1981 - 1998
Little Kern Golden Trout production

1995 - 2003
Wild Kern River Rainbow experimental program

2010? - Conversion to native Kern River Rainbow Hatchery

Early History

- 1928 - First rearing ponds built by the Kern County Sportsmen
- 1929 - Moved to present location across the Kern River
 - 4 ponds built as a Works Progress Administration project
 - Kern County Sportsmen provided funding
 - CDFG provided fingerlings
 - Kern County Fire Dept., Civilian Conservation Corps and Camp Owen provided labor



Kern River Hatchery

1941

Production of
35,000
Rainbow trout

1972

Production of
1,050,000
rainbow trout

1979 - Downgraded to Kern River Planting Base (KRPB)

- Inefficient unit in relation to other more modern hatcheries
- Limited efficiency due to fluctuating water supply and temperatures
- Cold winter water temps (down to 33°F) caused slow growth adding to rearing expense
- High summer water temps (up to 78°F) also caused slow growth, reduced holding capacity, stressed fish, promoted disease & added expense.

Kern River Hatchery Managers



1992-1999
Judy Urrutia

1999-2007
Greg Kollenborn

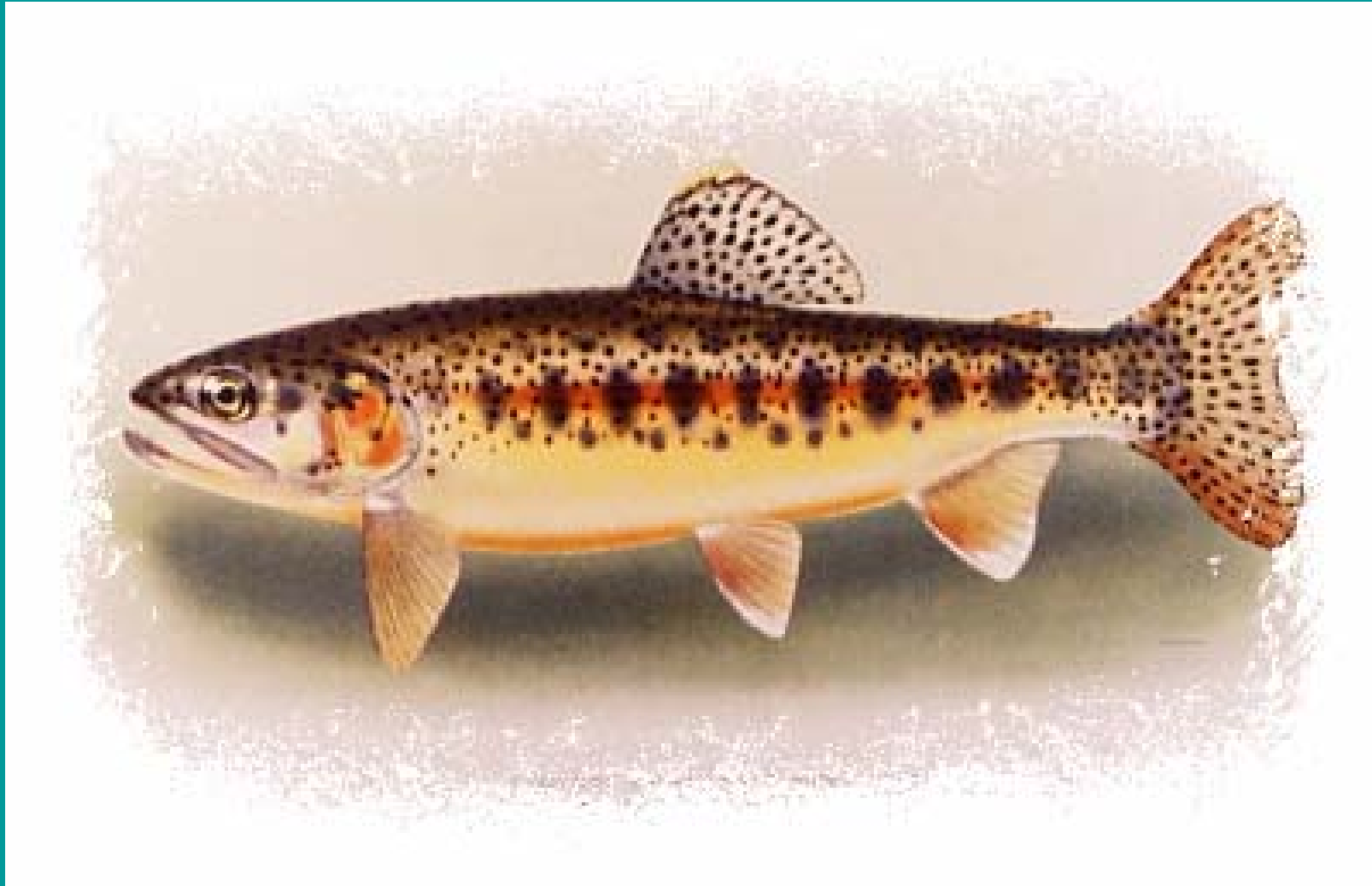


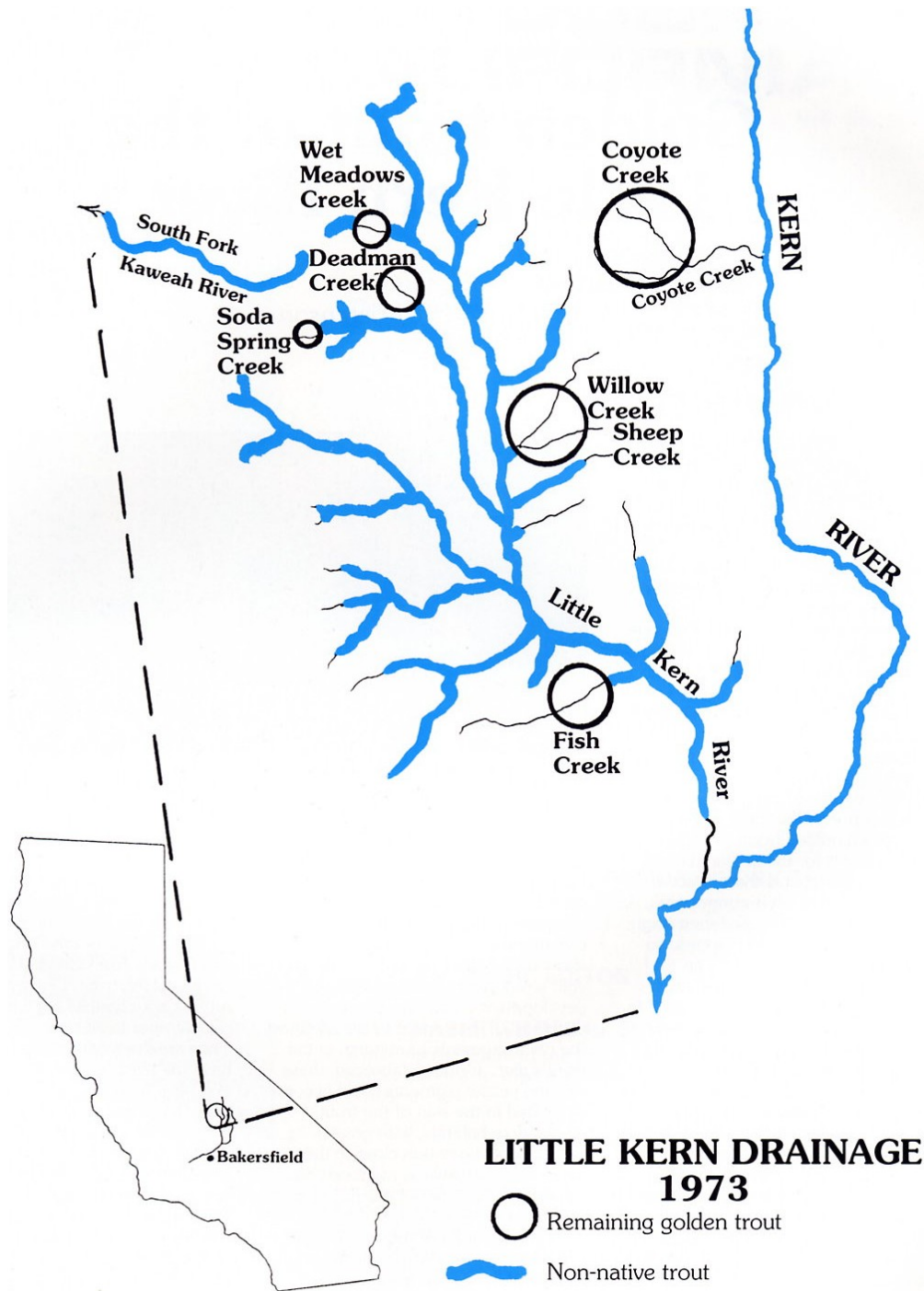
2007 - Present
Marvin Waters
with assistant
Danny Zide

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- **The Little Kern Golden Trout Program (1982-1997)**
- The Kern River Rainbow Program

Charles B. Hudson painting of a trout
from the Little Kern River, 1904.





Early genetic studies, using allozymes, identified only six remaining pure populations of Little Kern Golden Trout.

Five of these occurred in the endemic habitat occupying only 10% of 100 stream miles in the basin.

One was identified outside the native habitat.

Wild Broodstock Collection



Hatching and rearing at KRPB



Restocking Little Kern Golden Trout reared at Kern River Hatchery



Further Restoration and Restocking ?



- Pending development of a *Genetics Management Plan*
- And revision of the *Recovery Plan*

The program, terminated in 1997, met with both successes and failures

- Success: Restoration of pure Little Kern Golden Trout in approx. 1/3 of the native watershed
- Failure: Contamination of one of the broodstocks held at KRPB near the end of the program
- Lessons learned:
 - Failures due to external pressure to complete chemical treatments
 - follow step by step plan based on good science, not political pressure
 - no stocking of trout from outside the basin into native waters

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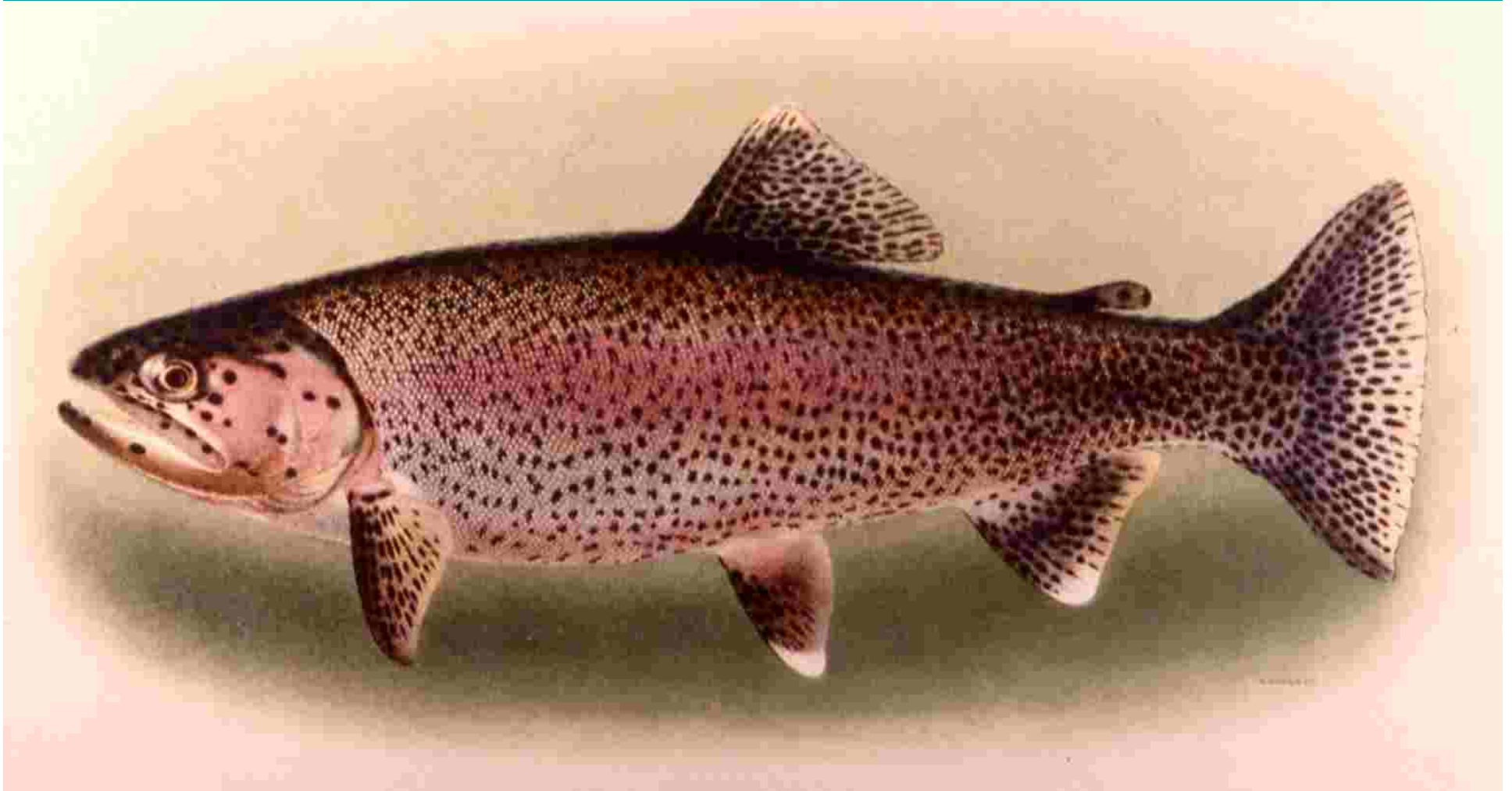
Genetic Monitoring



With help from
U.C. Davis and volunteers



Charles B. Hudson painting from life of a male fish, 18.5 inches long, weighing 3.5 lbs, taken in Kern River, July 19, 1904.



Upper Kern Basin Fishery Management Plan



1995 - Signed by cooperating agencies

2010 - Revision to incorporate updated genetic information and statewide Wild and Heritage Trout Program management goals.



Goals

- Protect and enhance native fish populations and their habitats
- Restore, protect, and enhance the native Kern River rainbow trout populations so that threatened or endangered listing does not become necessary.
- Provide for recreational fishing.

Experimental Wild Kern River Rainbow Broodstock Program 1995 - 2003





**Collection of
Experimental Wild
Kern River Rainbow
Broodstock
1995-2003**

Present and Future

- Genetic study to identify possible wild source populations due for completion by January, 2010
- Hatchery operations planning in progress to comply with AB7
- Funding needed for broodstock management plan
- Additional funding needed for hatchery infrastructure improvements

Upper Kern
Watershed



California
Golden Trout

Little Kern
Golden Trout



Kern River
Rainbow Trout

2002
McNally Fire
150,696
acres

The Challenges Are Many

Cooperators

- Friends of the Hatchery
- California Trout
- Trout Unlimited
- Federation of Flyfishers
- Local clubs and individuals
- Southern California Edison Co.
- Kern County and Camp Owen
- University of California at Davis
- Inyo and Sequoia National Forests
- Sequoia-Kings Canyon National Park
- US Fish and Wildlife Service



*With many thanks to all of our cooperators
Dedicated to the memory of Jay Cartwright*