

# Interagency Fish Passage Steering Committee

## Annual Report of Activities

John Hannon, USBR

2:20pm

# Fish Passage Program Background

- Temperature related impacts expected to increase
- High elevation habitat potentially suitable for salmonid production exists above CVP dams
  - Potential refuge for cold water fish

Evaluate reintroduction of listed species upstream of Shasta, Folsom, and New Melones

# Steering Committee Membership

Agency	Lead	Alternate
<b>Bureau of Reclamation</b>	Mike Chotkowski	John Hannon
<b>National Marine Fisheries Service</b>	Jeff McLain	Garwin Yip
<b>US Fish and Wildlife Service</b>	Jim Smith	Donnie Ratcliff
<b>Department of Fish and Game</b>	Alice Low	George Heise
<b>Department of Water Resources</b>	Leslie Pierce	Randy Beckwith
<b>US Forest Service</b>	Mike Chapel	
<b>Academic member</b>	Lisa Thompson	

# Fish Passage Actions – Near Term

## 2010 - 2016

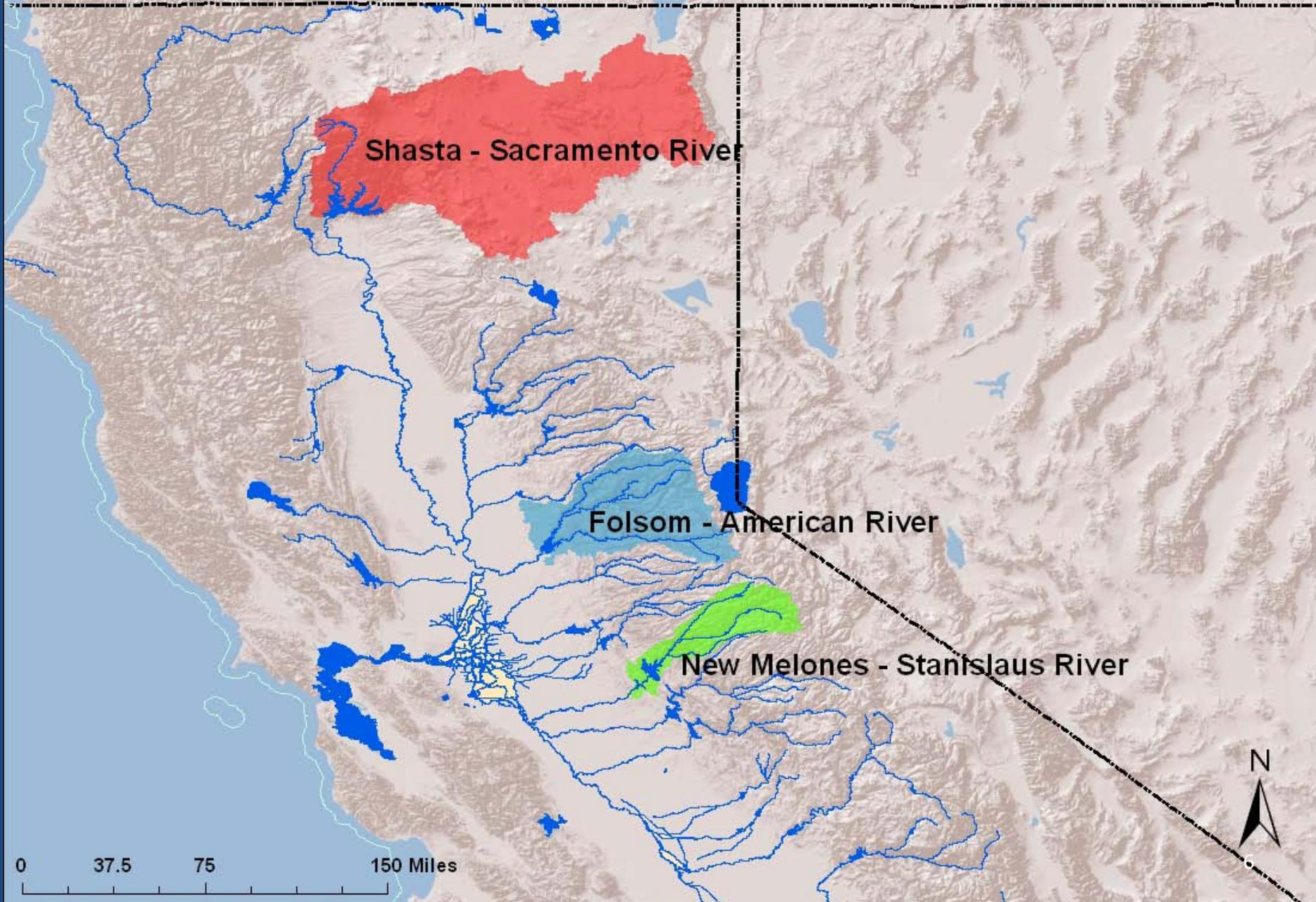
- NF1. Form Interagency Fish Passage Steering Committee
- NF2. Evaluate Habitat Above Dams
- NF3. Fish Passage Pilot Plan
- NF4. Pilot Reintroduction Program – Includes 7 actions
- NF5. Comprehensive Fish Passage Report

# Fish Passage Actions – Long-term

2016+ if determined feasible and desirable

- LF1. Long-term Funding and Support for the Interagency Fish Passage Steering Committee.
- Long-term fish passage program
  - LF2.1. Adult and Juvenile Fish Passage Facilities
  - LF2.2. Supplementation and Management Plan
  - LF2.3. Adult and Juvenile Release Locations and Facilities
  - LF2.4. Monitoring and Evaluation Plan

# Fish Passage Evaluation Watersheds



# Upper Sacramento River Watershed

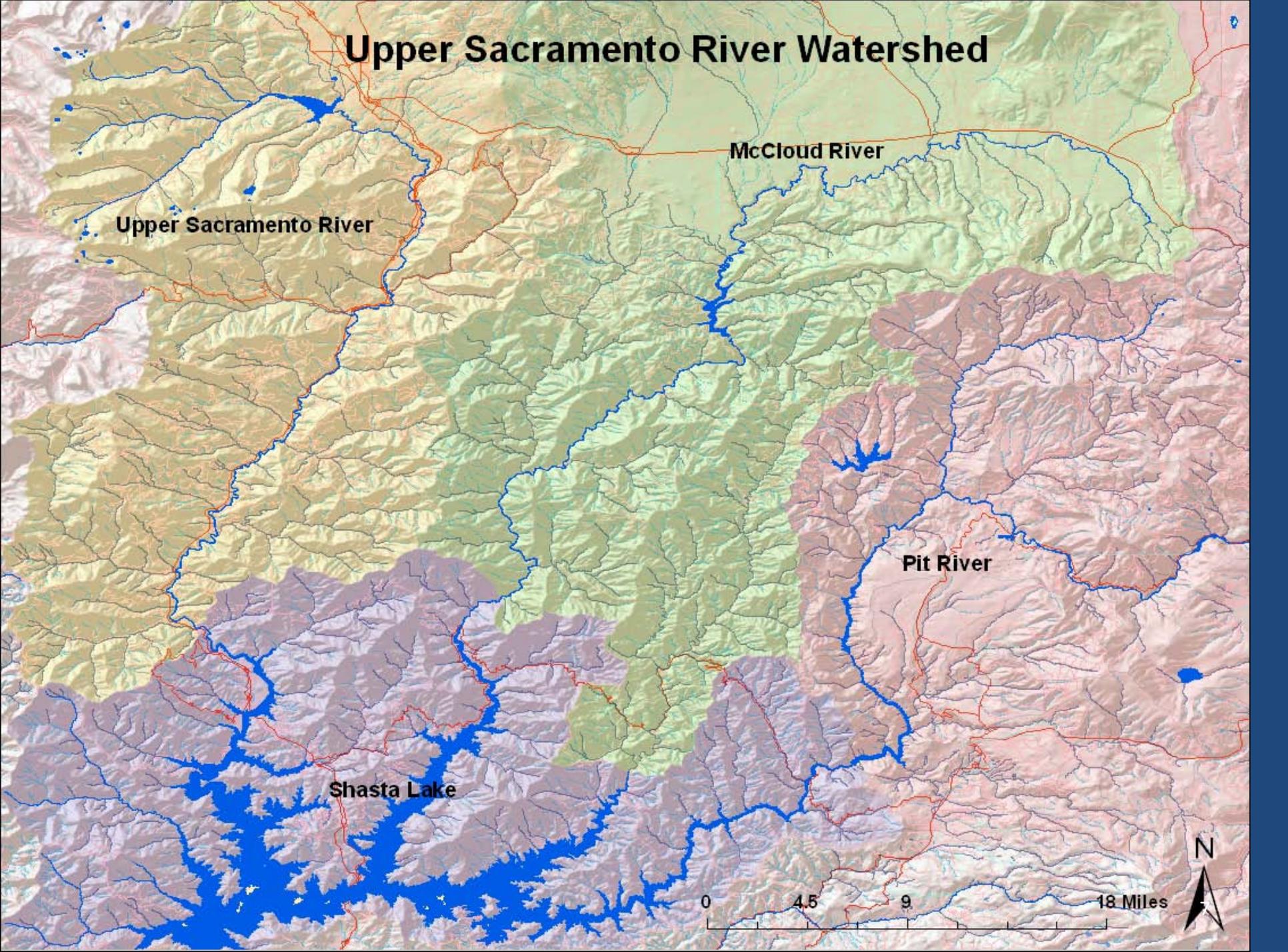
Upper Sacramento River

McCloud River

Pit River

Shasta Lake

0 4.5 9 18 Miles



# American River Watershed

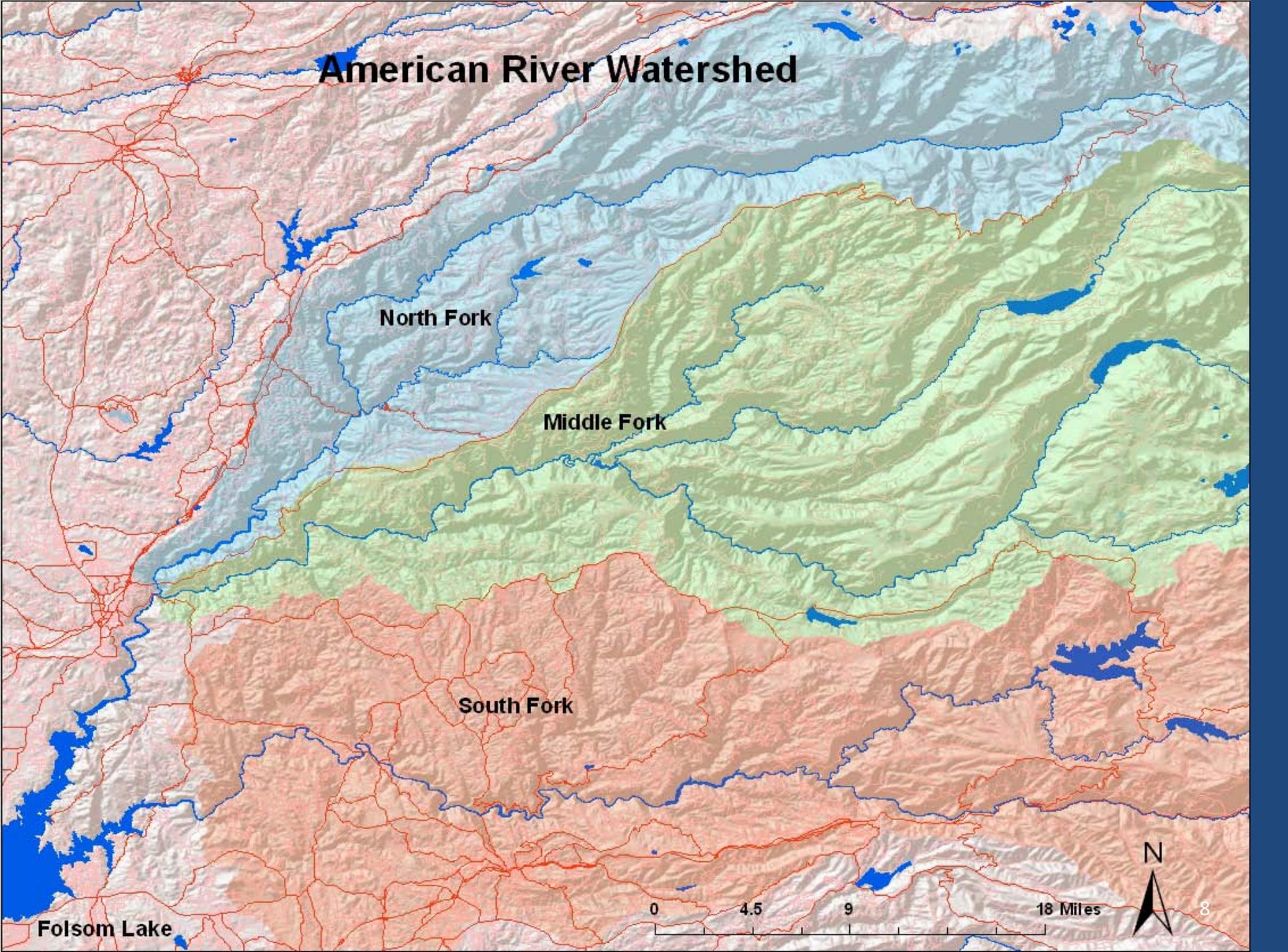
North Fork

Middle Fork

South Fork

Folsom Lake

0 4.5 9 18 Miles



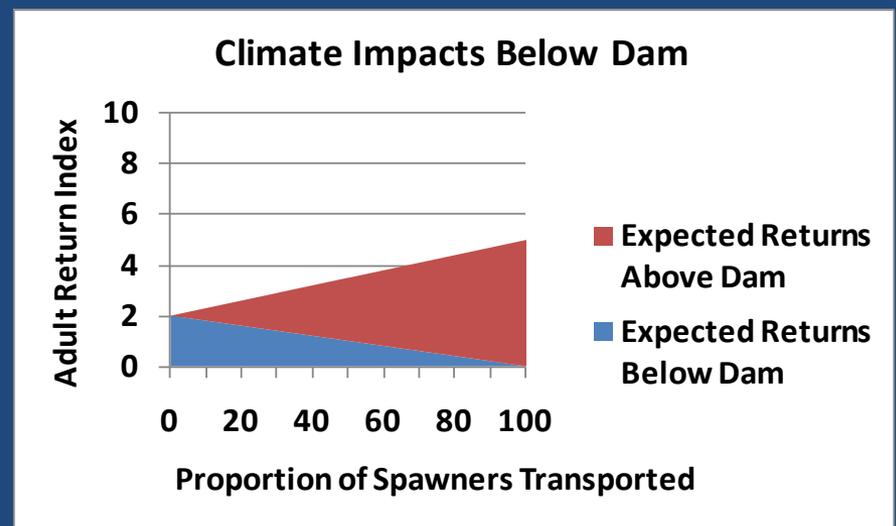
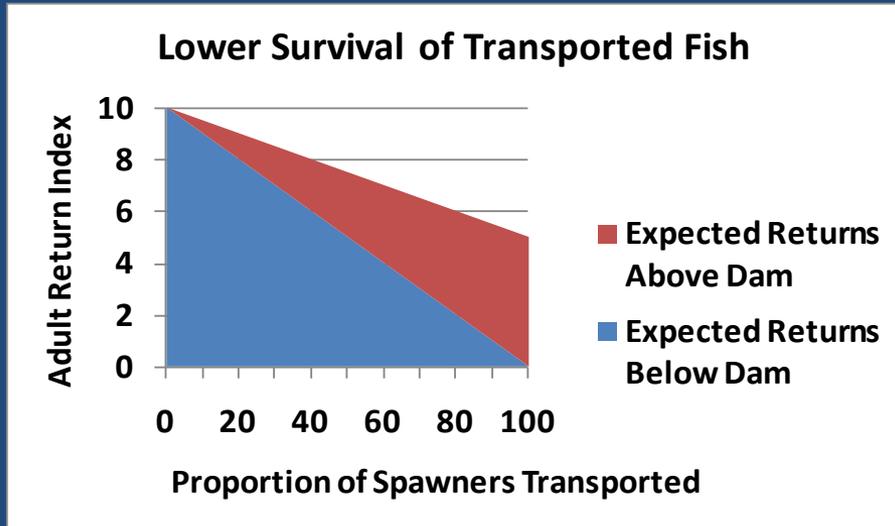
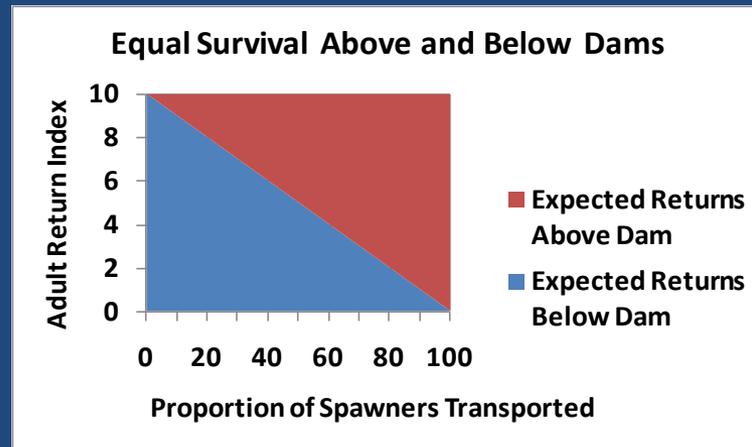
# Upstream Habitat (mainstems)

Reservoir	River Mainstem	Full pool elevation	Stream miles from full pool to first definite known barrier	Elevation at base of barrier	Average gradient	Lake miles from dam to trib
Shasta	Sacramento	1,067'	37.4	3,100'	1.03%	21
Shasta	McCloud	1,067'	23.3	2,440'	1.12%	22.5
Shasta	Pit	1,067'	1.75*	~1,072'	0.05%	29
Folsom	American North/Middle	466'	5.6 to confluence	540' @ confluence	0.25%	15
Folsom	North Fork American	540' @ confluence	2.1	580'	0.36%	15
Folsom	Middle Fork American	540' @ confluence	23.75	1,100'	0.41%	15
Folsom	South Fork American	466'	19.6	970'	0.49%	10

# Activities to date

- Steering Committee formed
- First meeting in summer 2010
- Funding requested for FY 2012
- Upstream habitat evaluation subgroup formed
- Habitat evaluation goal and tasks identified
- Existing information collection ongoing
  - water temperatures, hydrographs, upstream dam operations, stream habitat survey data, fish barriers, access to the river/land ownership/contacts, fish population data
- Habitat evaluation reconnaissance above Shasta

# Potential Abundance Tradeoffs Associated with Transporting Fish Above Dams



# Habitat Evaluation Goal

- Determine whether sufficient habitat exists upstream of Shasta and Folsom dams for a reasonable number of the target species to reproduce
  - Target species
    - Shasta = winter-run and spring-run Chinook
    - Folsom = steelhead
    - Recovery plan includes more
  - Minimum capacity number set at 1,000 adults in priority tributary

# Habitat Evaluation Team Tasks

1. Check accessibility for people
2. Determine accessibility for fish
3. Locate and quantify spawning habitat and significant adult holding and rearing habitat patches.
4. Determine reaches with suitable temperatures.
5. Evaluate hydrograph suitability
6. Identify top priority tributary in each watershed.

# Use Test Fish to Evaluate Suitability/Productivity of Habitat and capture/transport methods

- Likely fall-run Chinook in Shasta
- Capture, transport and release adults in top priority tributary stream
- Monitor spawning activity
- Estimate juvenile production
- Identify areas of juvenile concentration for volitional passage or collector site

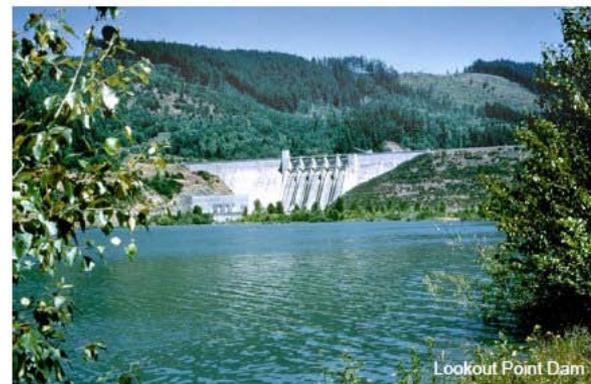
## Willamette BO juvenile collection design requirement document

- In-river
- In-reservoir
- At-dam

DWR compiling a white paper  
documenting technologies used or  
planned for upstream, through  
reservoir, and downstream fish  
passage at large dams

# Willamette Downstream Fish Passage Design Requirements Report Final Submittal

Contract W9127N-10-D-0002, T.O. 003



(Photos courtesy of Bonneville Power Administration)

# American River

- American River steelhead almost entirely Nimbus Hatchery stock.
  - Nimbus Hatchery steelhead are not considered a part of the ESU
- RPA Action II.6.1
  - Genetic screening to determine most appropriate broodstock source for Nimbus
  - Study potential to replace Nimbus steelhead stock with more appropriate sources.



# McCloud River Habitat

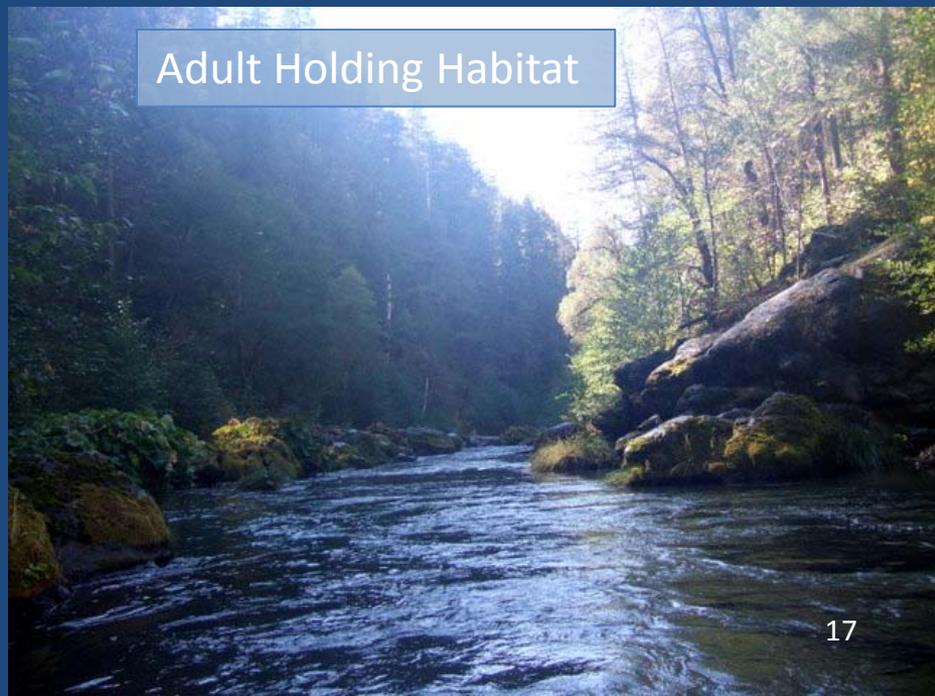
Moderate gradients



Largest Spawning Habitat Patch



Adult Holding Habitat



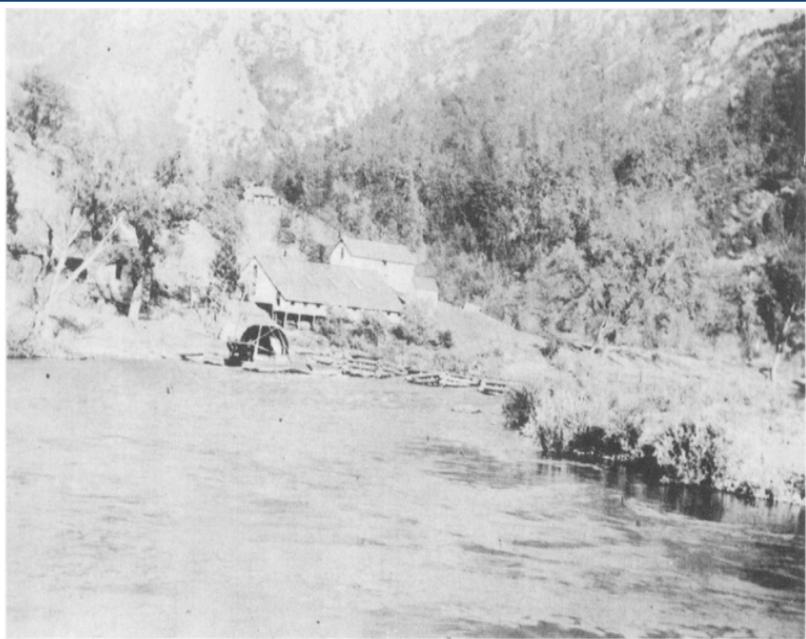
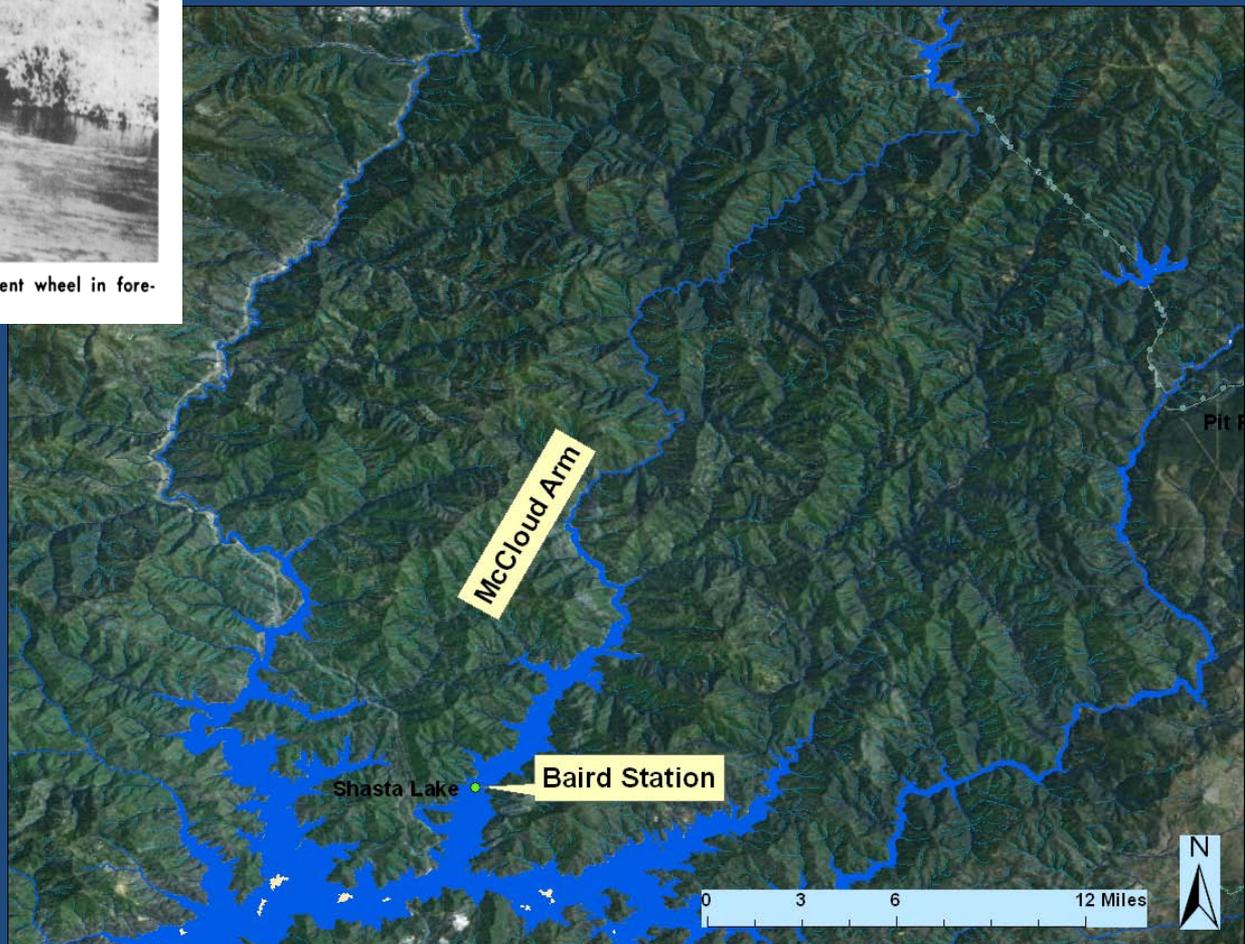
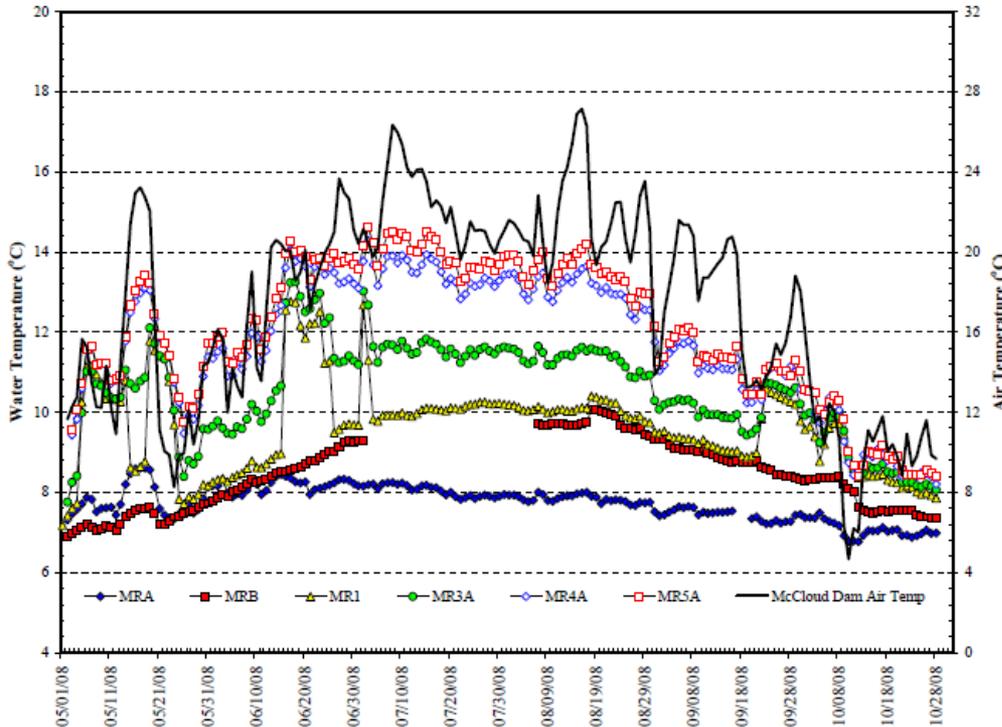
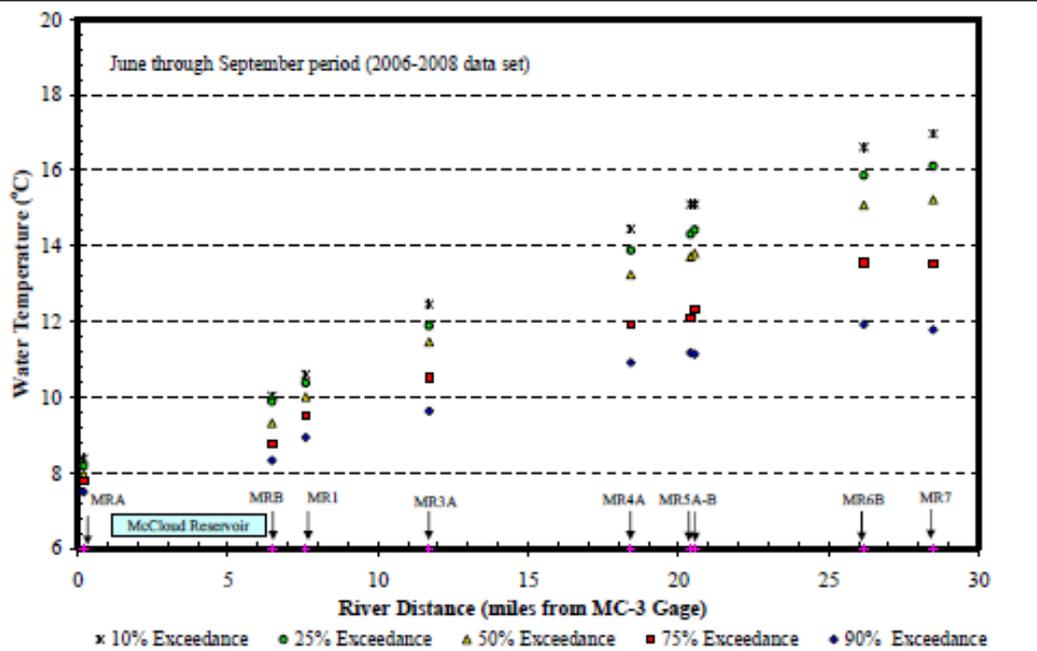


FIGURE 2. Baird Hatchery as reconstructed after the flood of 1881. Current wheel in foreground.

0.4% gradient  
between base of  
Shasta Dam and top  
of reservoir in  
McCloud Arm



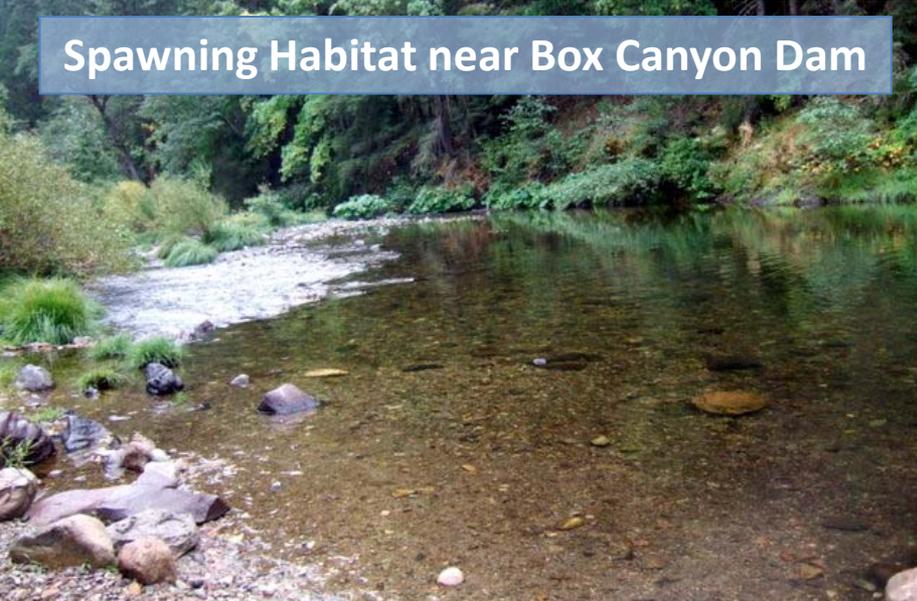


~10 miles of  
McCloud R.  
provides  
temperatures  
suitable for  
winter-run  
incubation

Charts from PG&E

# Upper Sacramento River Habitat

Spawning Habitat near Box Canyon Dam



Sacramento River – Potential Adult Holding



Cantara Loop reach



Railroads and highways parallel stream

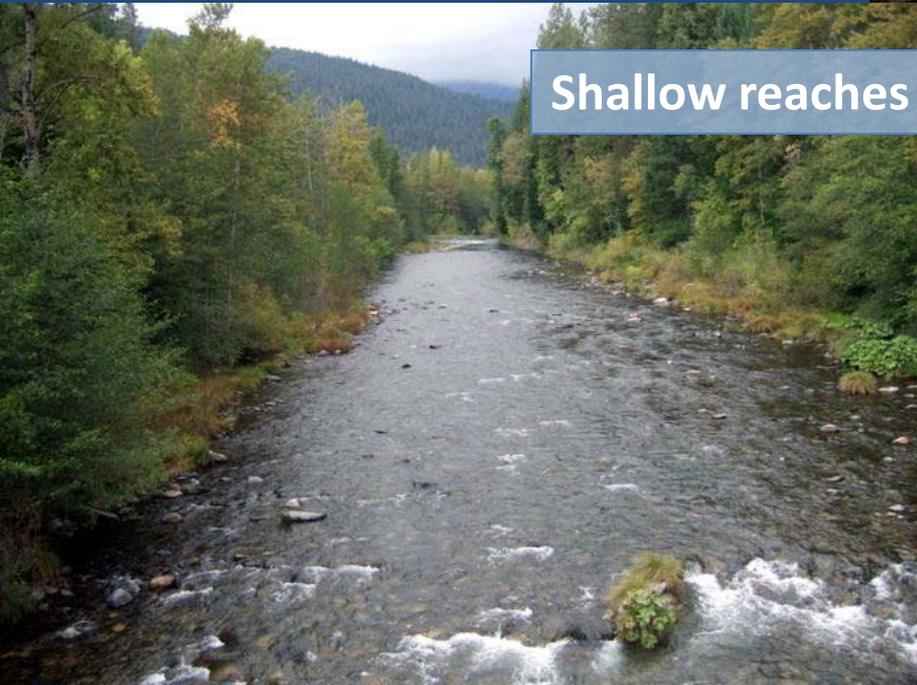


Half-mile reach with springs entering

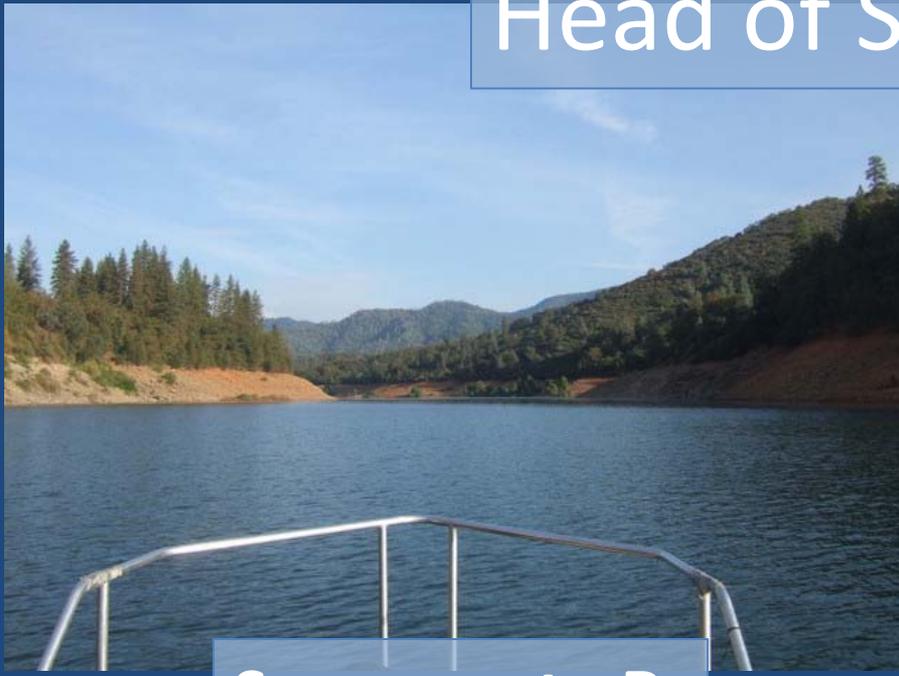


# Upper Sacramento River Habitat

Shallow reaches in upper river



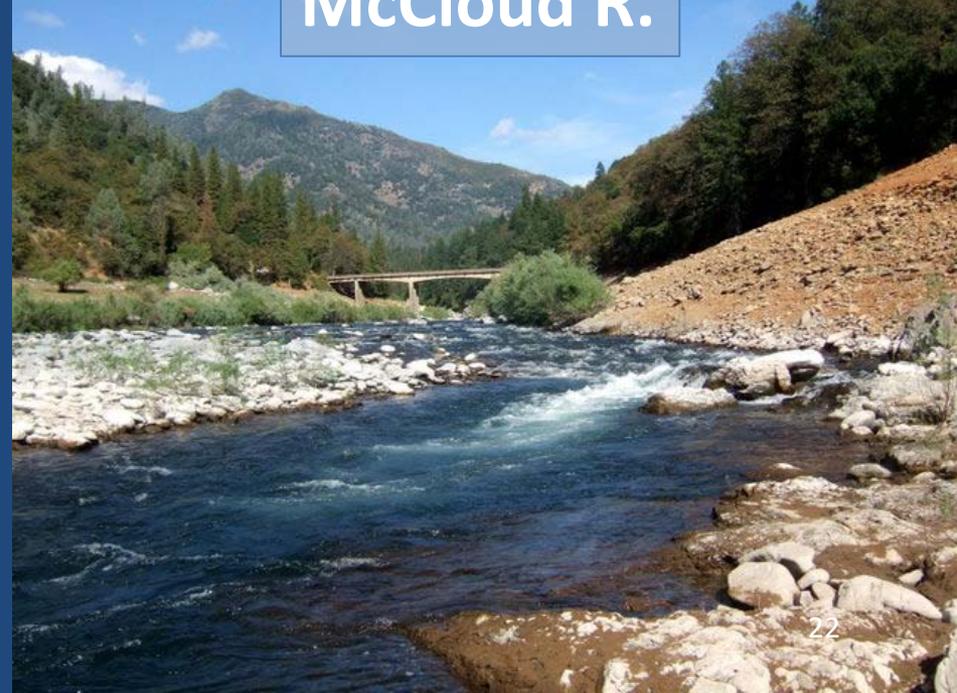
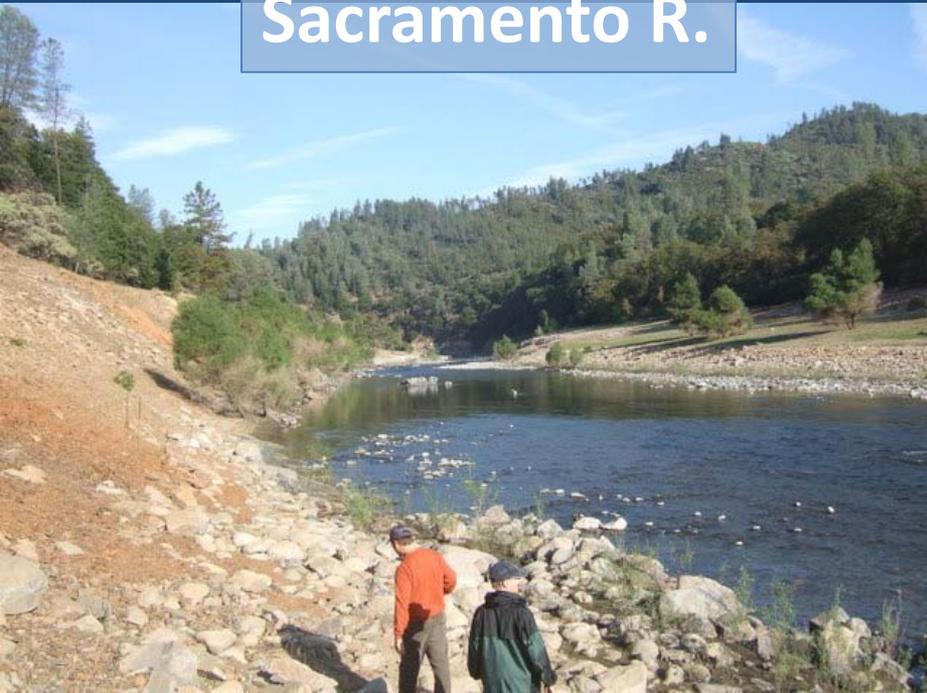
# Head of Shasta Reservoir



Sacramento R.



McCloud R.



# Reconnaissance Upstream of Shasta

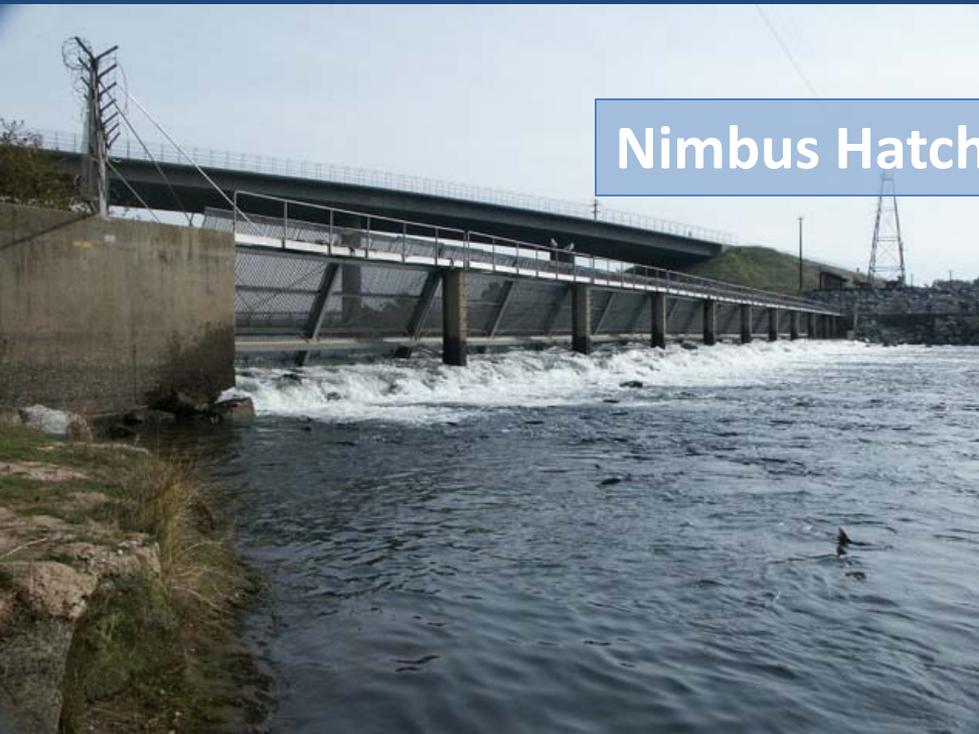
## Initial Impressions

- McCloud River
  - “Wilder” – high quality riparian habitat – accessibility challenges
  - Moderate gradients, large substrates
  - Offers cold water
- Sacramento River
  - Lower gradients, smaller substrates
  - Longer mainstem reach , higher elevations
  - Easy access
  - Need more water temperature data

# Keswick Adult Trap

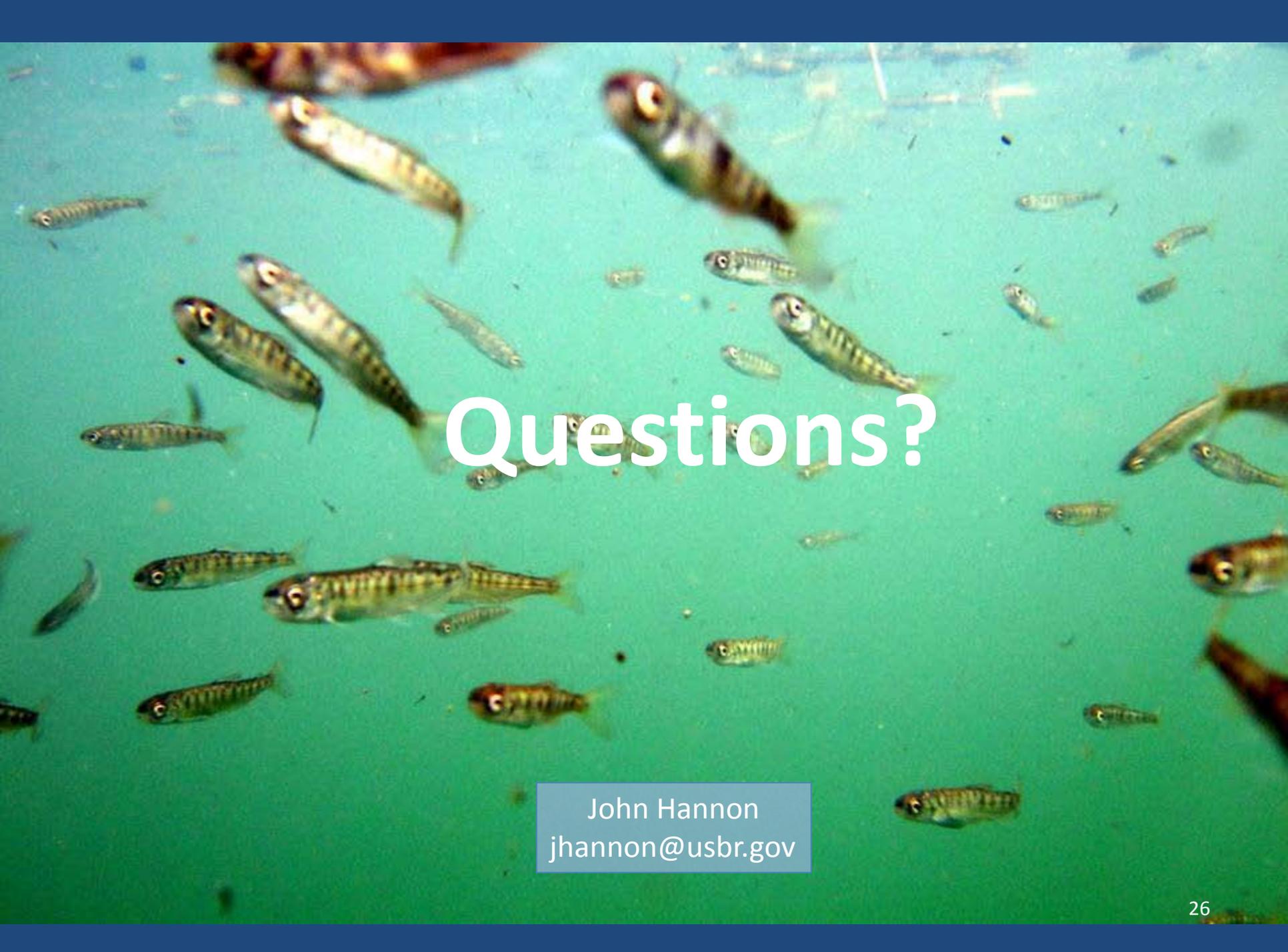


# American River Potential Adult Collection and Release Sites



Nimbus Hatchery Weir and Adult Raceway



A school of small, striped fish, possibly bluegill sunfish, swimming in clear, greenish water. The fish are scattered throughout the frame, with some in the foreground and others in the background. The word "Questions?" is overlaid in the center in a large, white, sans-serif font.

# Questions?

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