

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

Fish Passage Actions – Near Term

2010 - 2016

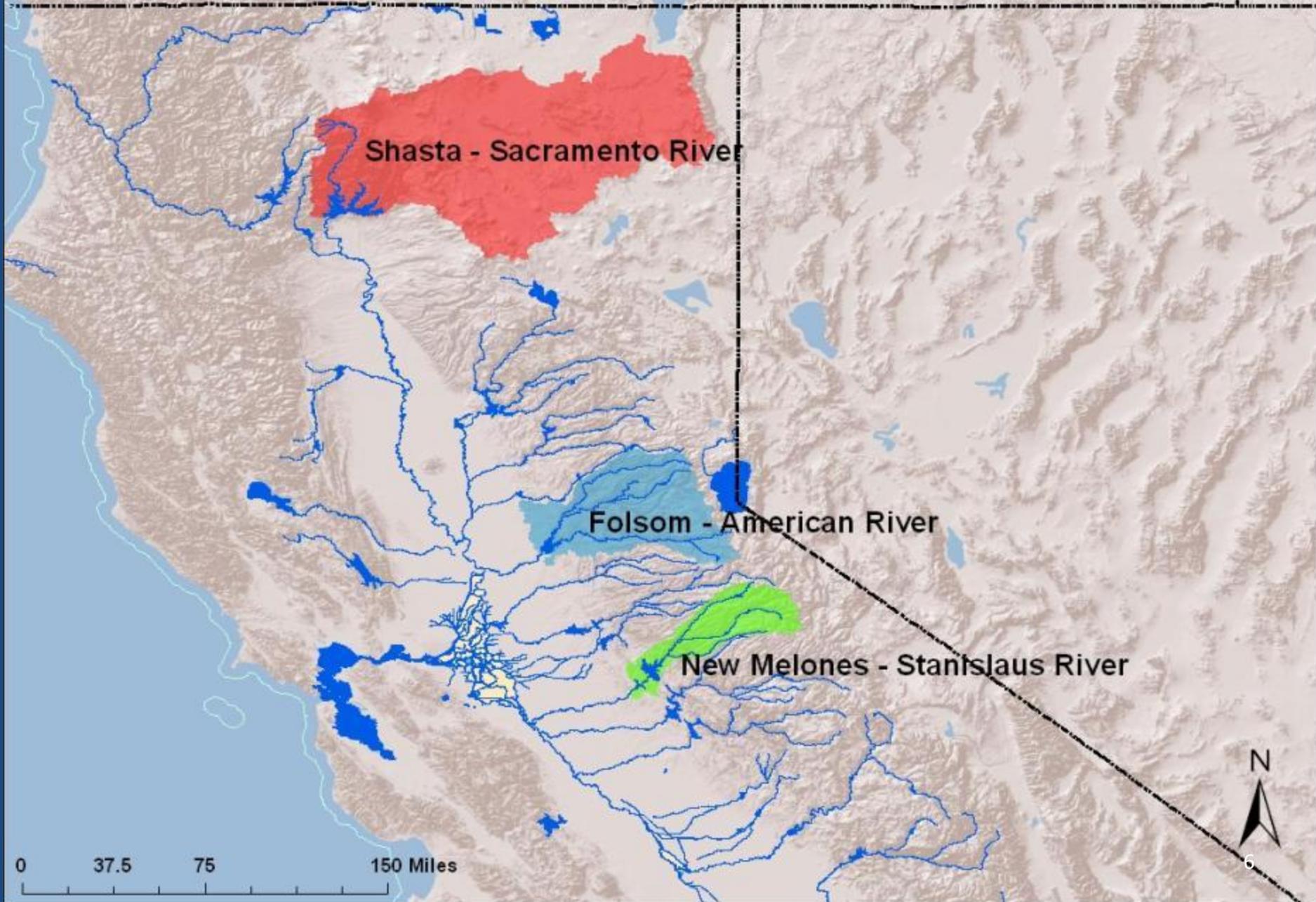
- NF1. Form Interagency Fish Passage Steering Committee
- NF2. Evaluate Habitat Above Dams
- NF3. Fish Passage Pilot Plan
- NF4. Pilot Reintroduction Program – Includes 7 actions
- NF5. Comprehensive Fish Passage Report

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

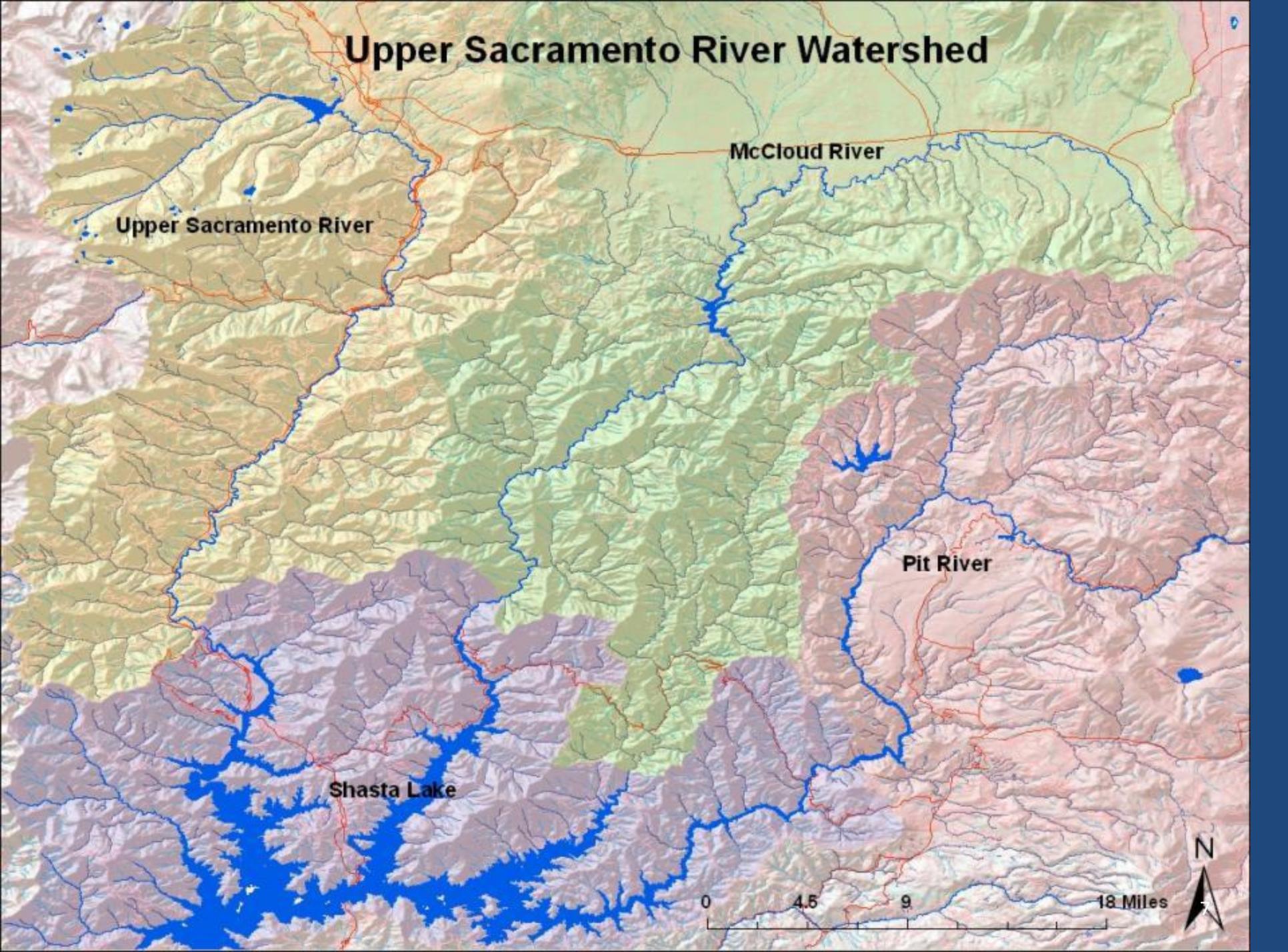
Upper Sacramento River

McCloud River

Pit River

Shasta Lake

0 4.5 9 18 Miles



American River Watershed

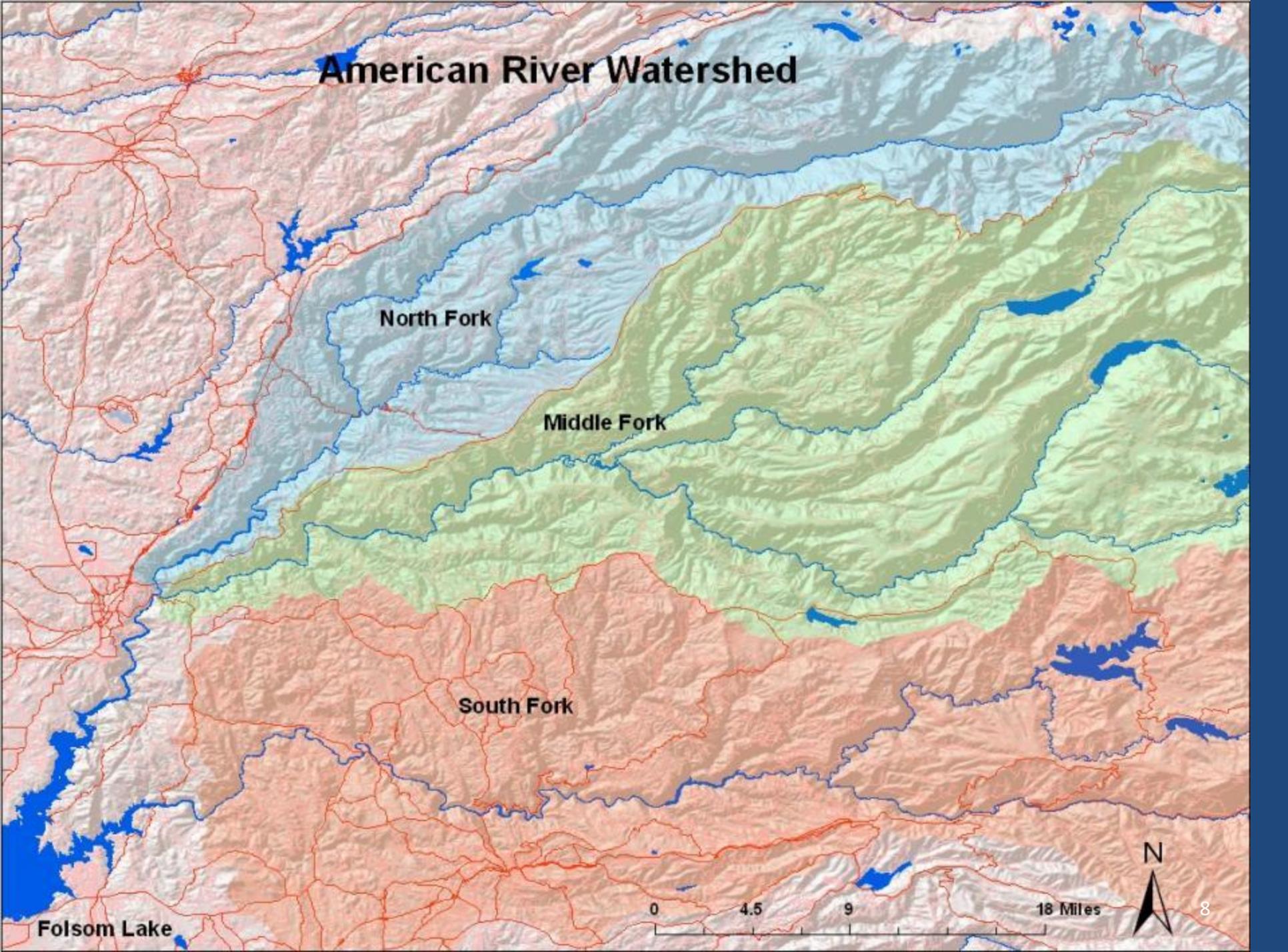
North Fork

Middle Fork

South Fork

Folsom Lake

0 4.5 9 18 Miles



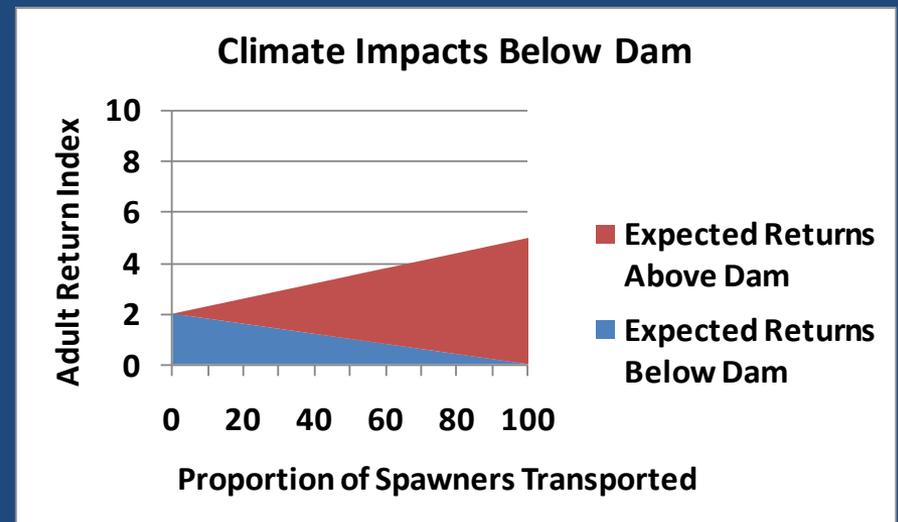
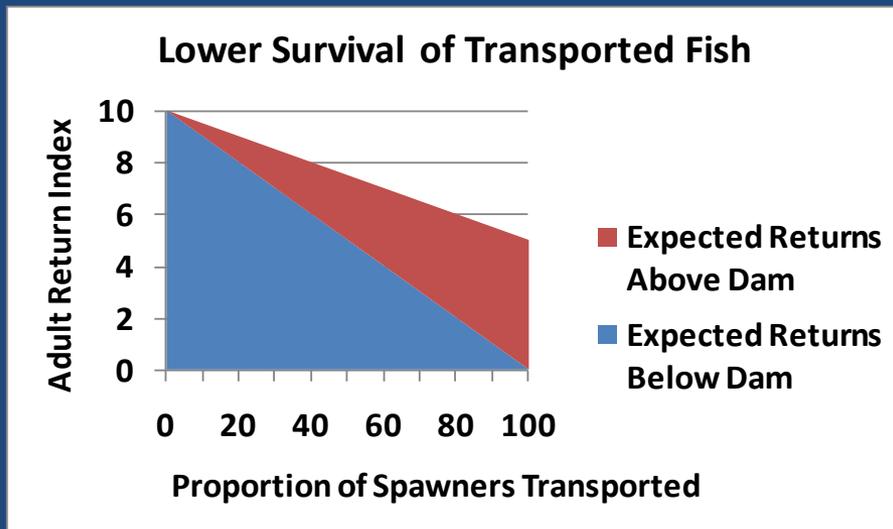
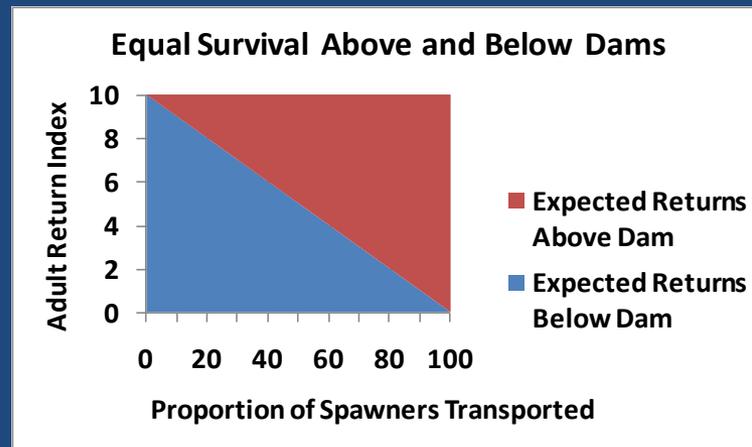
Upstream Habitat (mainstems)

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

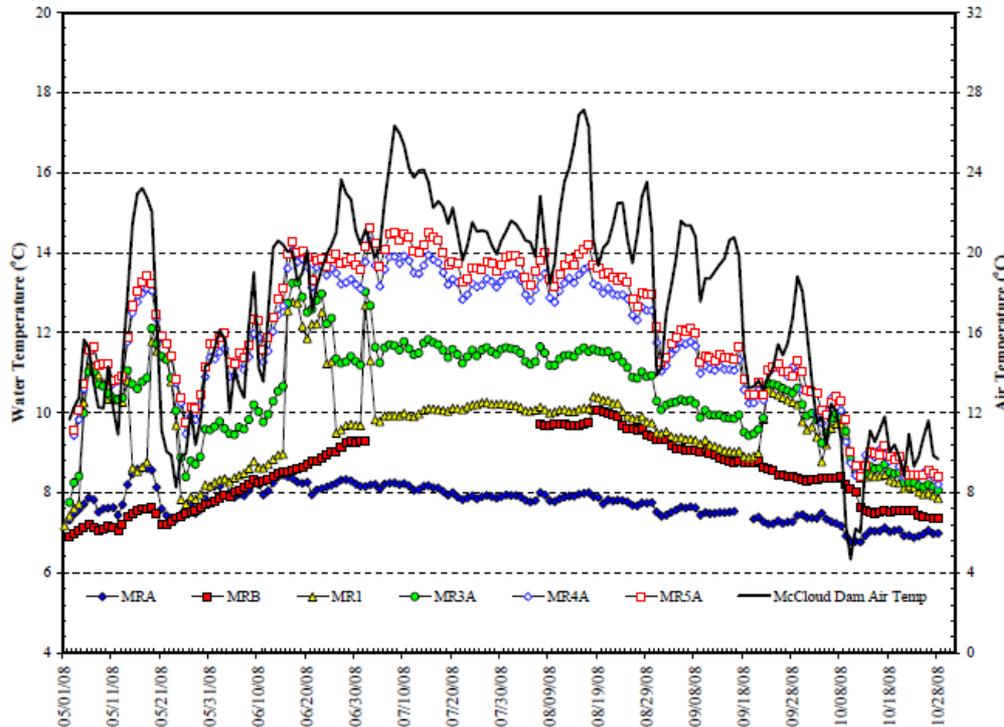
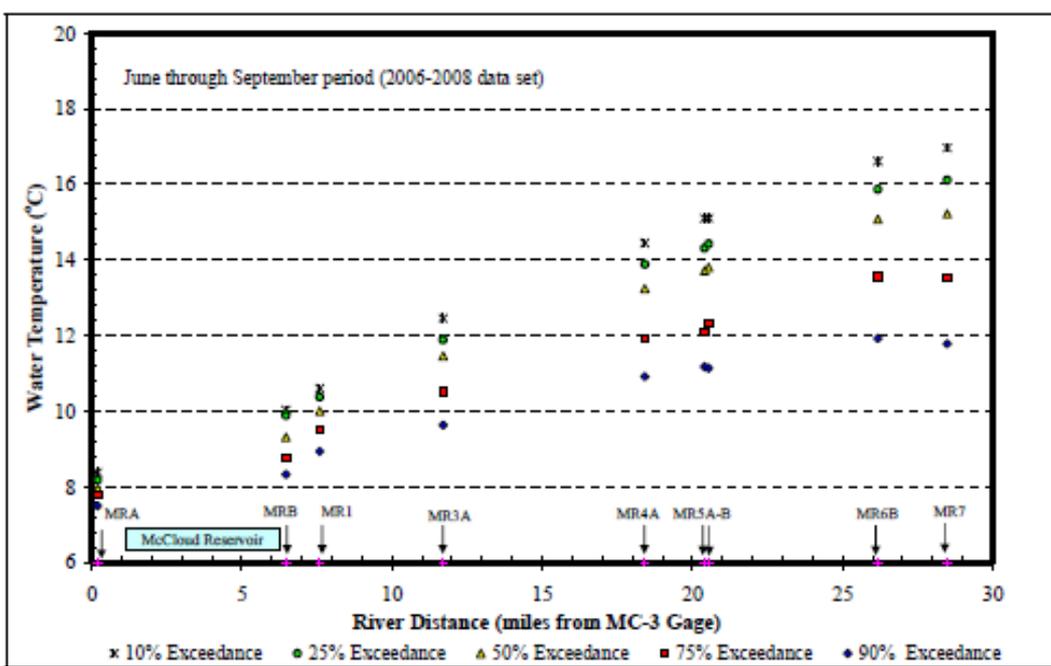




FIGURE 2. Baird Hatchery as reconstructed after the flood of 1881. Current wheel in foreground.

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

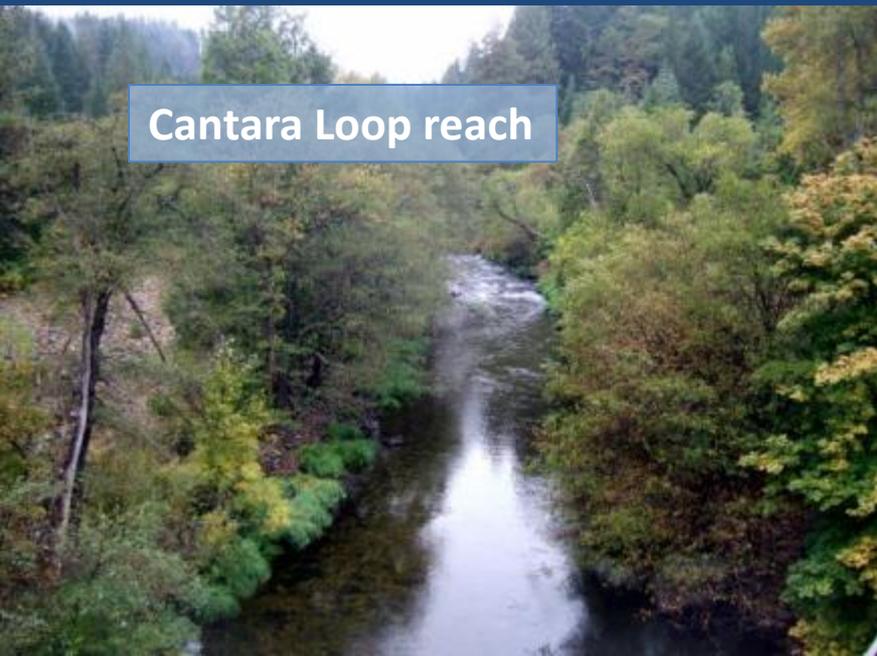
Spawning Habitat near Box Canyon Dam



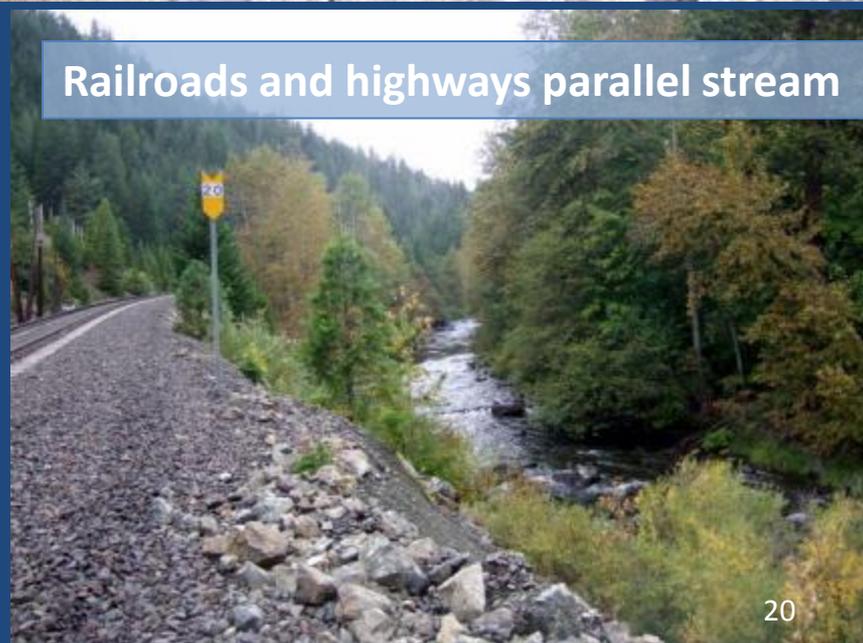
Sacramento River – Potential Adult Holding



Cantara Loop reach



Railroads and highways parallel stream



Half-mile reach with springs entering

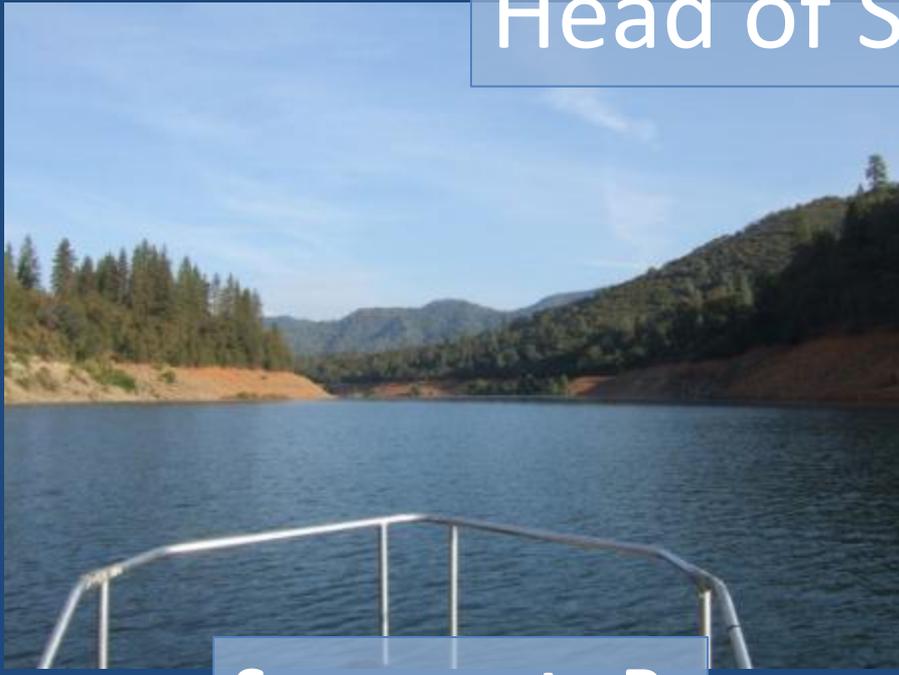


Upper Sacramento River Habitat

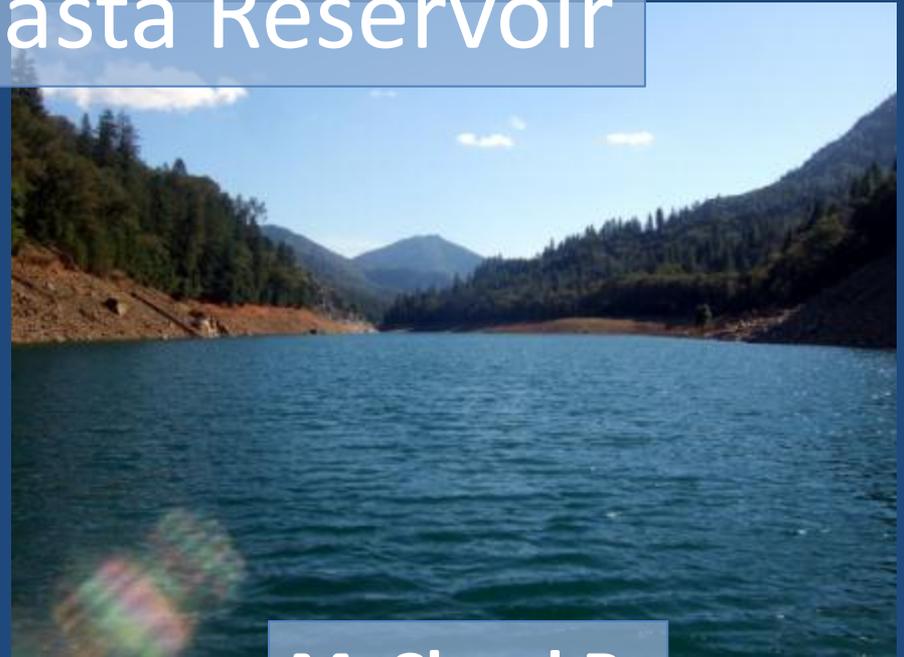
Shallow reaches in upper river



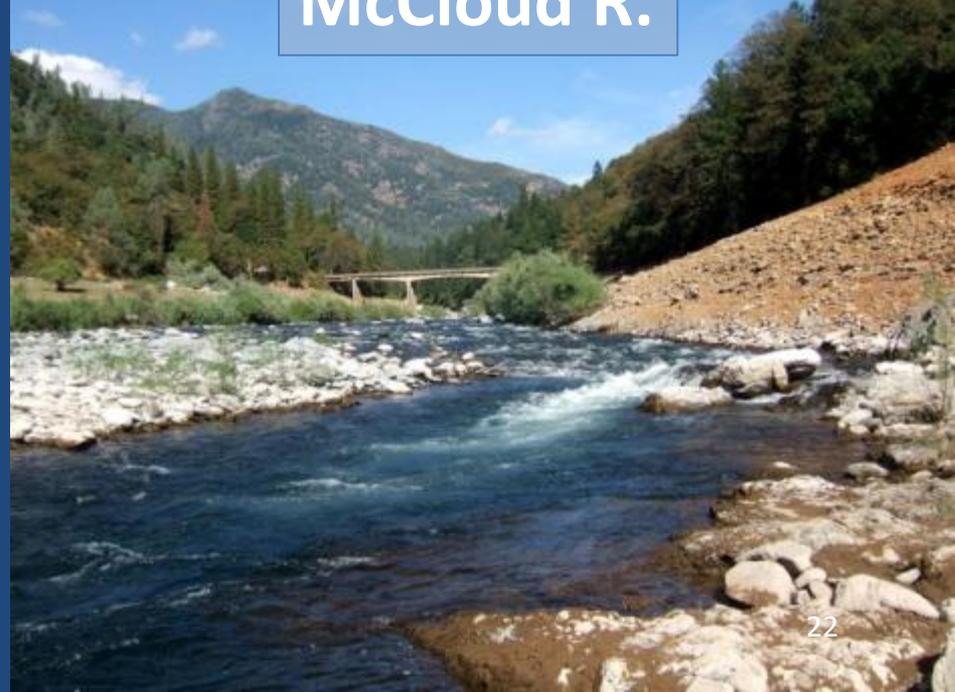
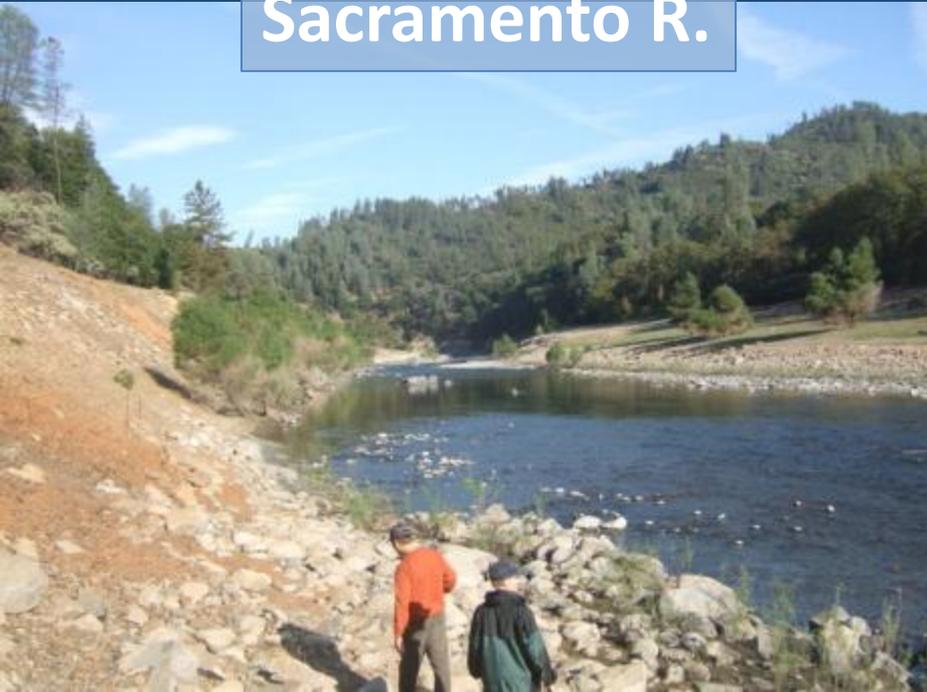
Head of Shasta Reservoir



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

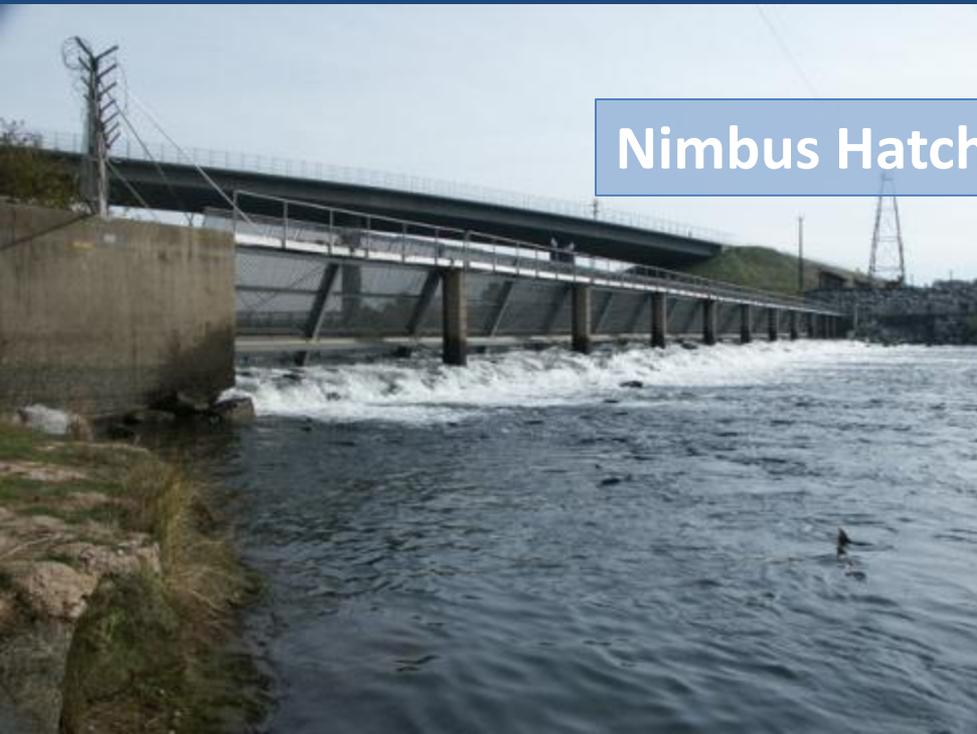
Keswick Adult Trap



American River Potential Adult Collection and Release Sites

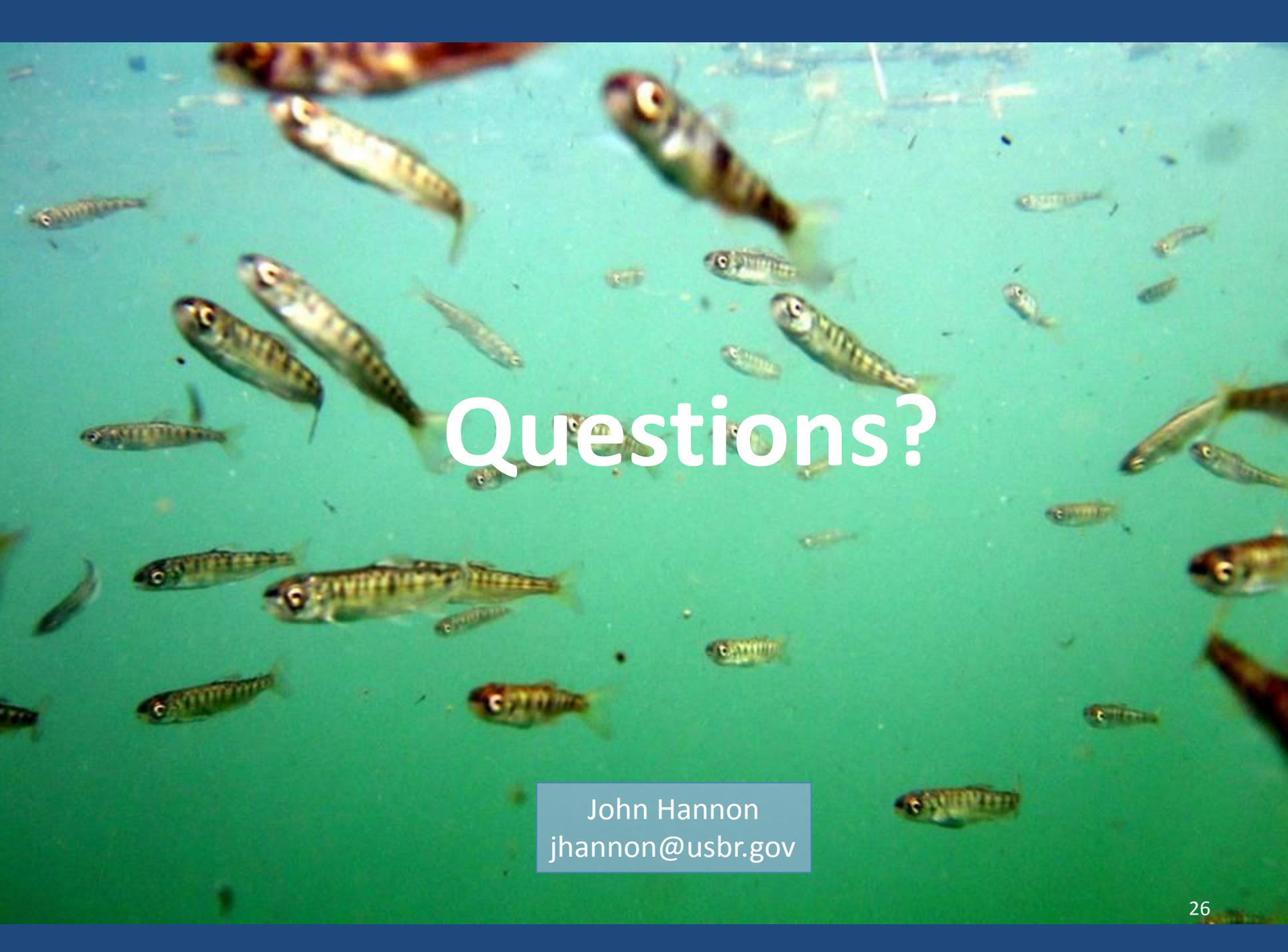


- North Fork/Middle Fork confluence



Nimbus Hatchery Weir and Adult Raceway



A school of small, striped fish, possibly bluegill fry, swimming in clear, greenish water. The fish are scattered throughout the frame, with some in the foreground and others in the background. The water has a slightly hazy, greenish tint.

Questions?

John Hannon
jhannon@usbr.gov