

Status of Summer Steelhead on Mainstem Redwood Creek

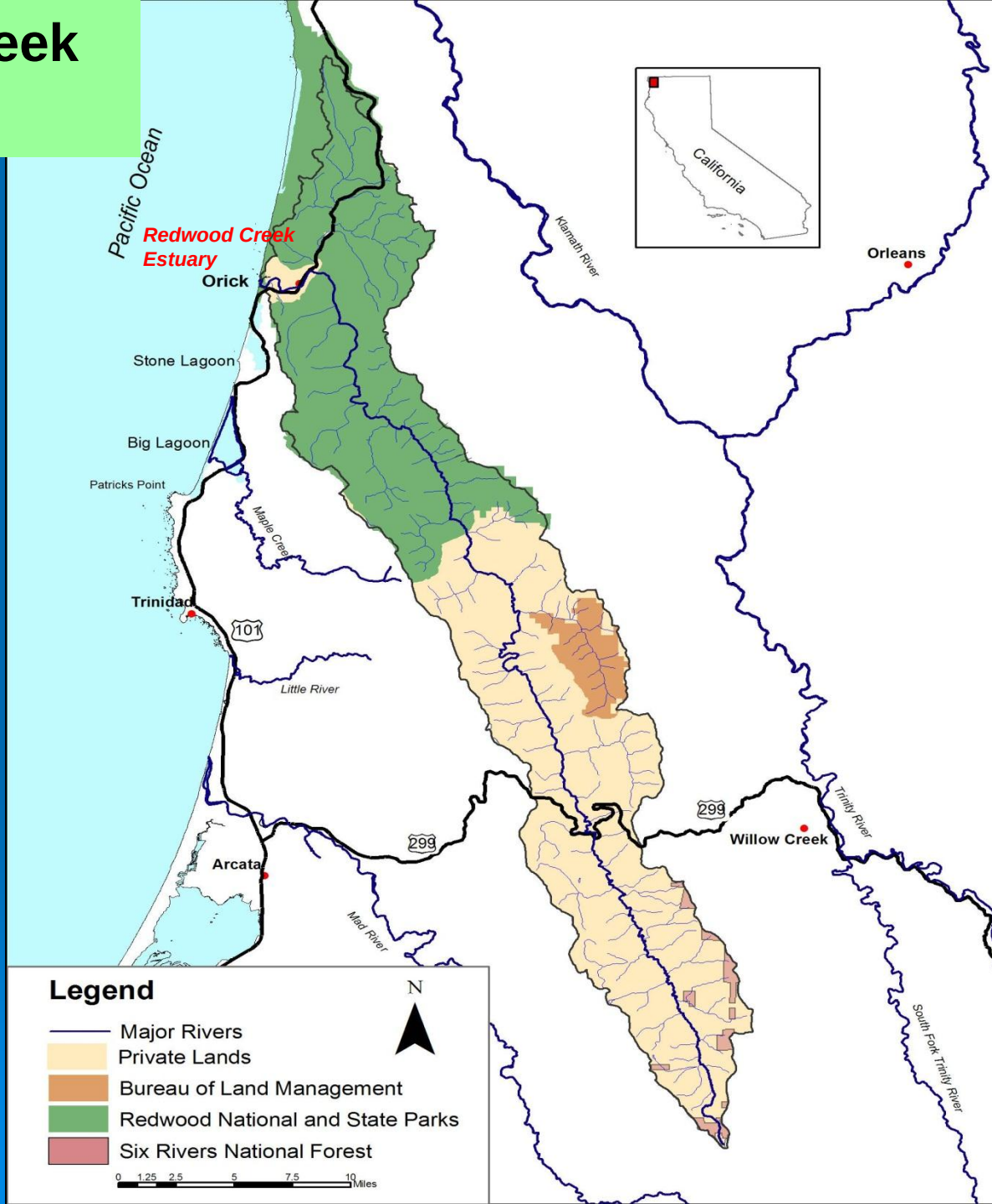


David G. Anderson
NPS Fishery Biologist

George Wright Society
April 1, 2015



Redwood Creek Watershed



Summer Steelhead

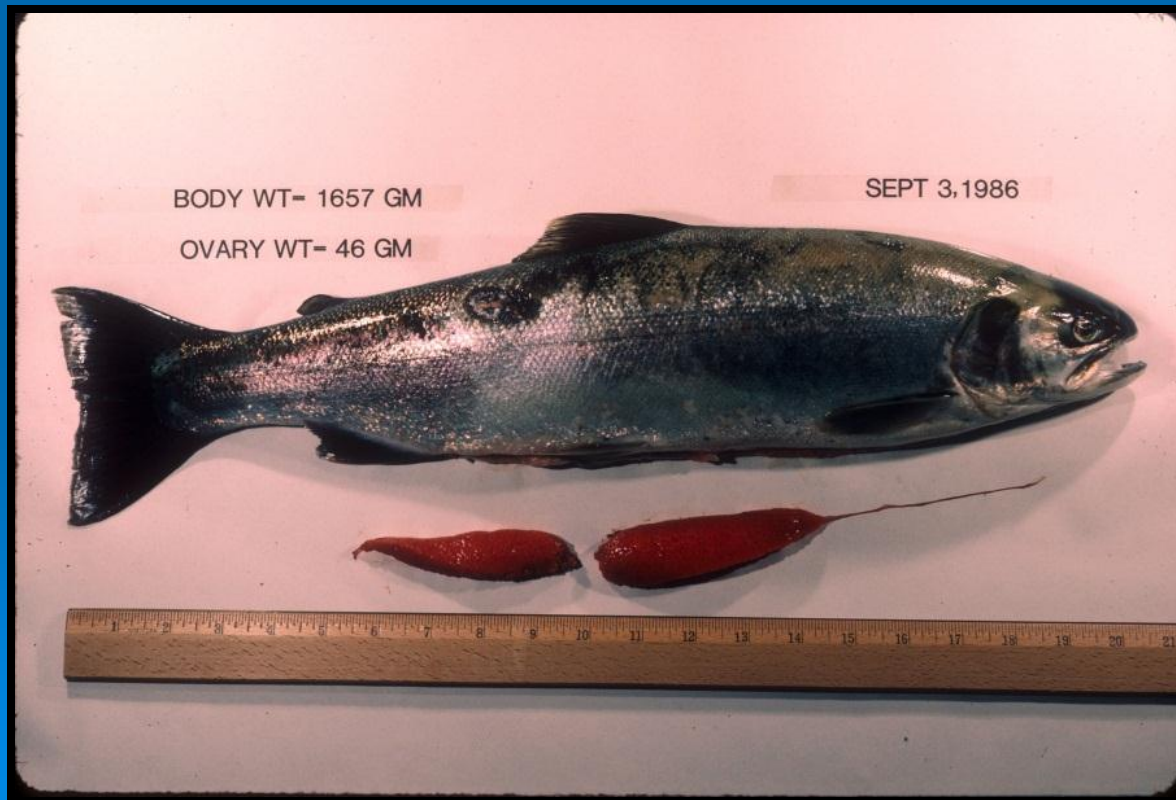
(Oncorhynchus mykiss)

- Federally listed as threatened in 2005
- Adults migrate upstream in Spring
- Hold in pools during Summer & Fall before spawning
- In pools associated with cooler tributary inflow and structure



Redwood Creek Summer Steelhead

- Determined to be Summer Steelhead, not runbacks
 - Based on summer ovary to total weight ratio



Redwood Creek Summer Steelhead



1968 Humboldt County Fishing Map

Monitoring

- Started in 1981
 - Continuing to the present
 - 34 years
- Snorkel Survey Reach
 - 38.9 km (24.1 miles)
 - 36% of mainstem Redwood Cr
 - Park (RNP) and Timber (Green Diamond) Lands
- Time - 7 days
 - Last week of July
 - First week of August



➤ Mainstem

Redwood Creek

- 'Rocky Gorge' area and above
 - Deeper pools
 - More gradient
- Lower river
 - Wider and shallower
 - Longer pools



➤ Snorkel Teams

- Mask and Snorkel
- 5/4 Surfsuits w/Hood
- Gloves
- Wading Boots
- Dive Weights
- Dry Bags



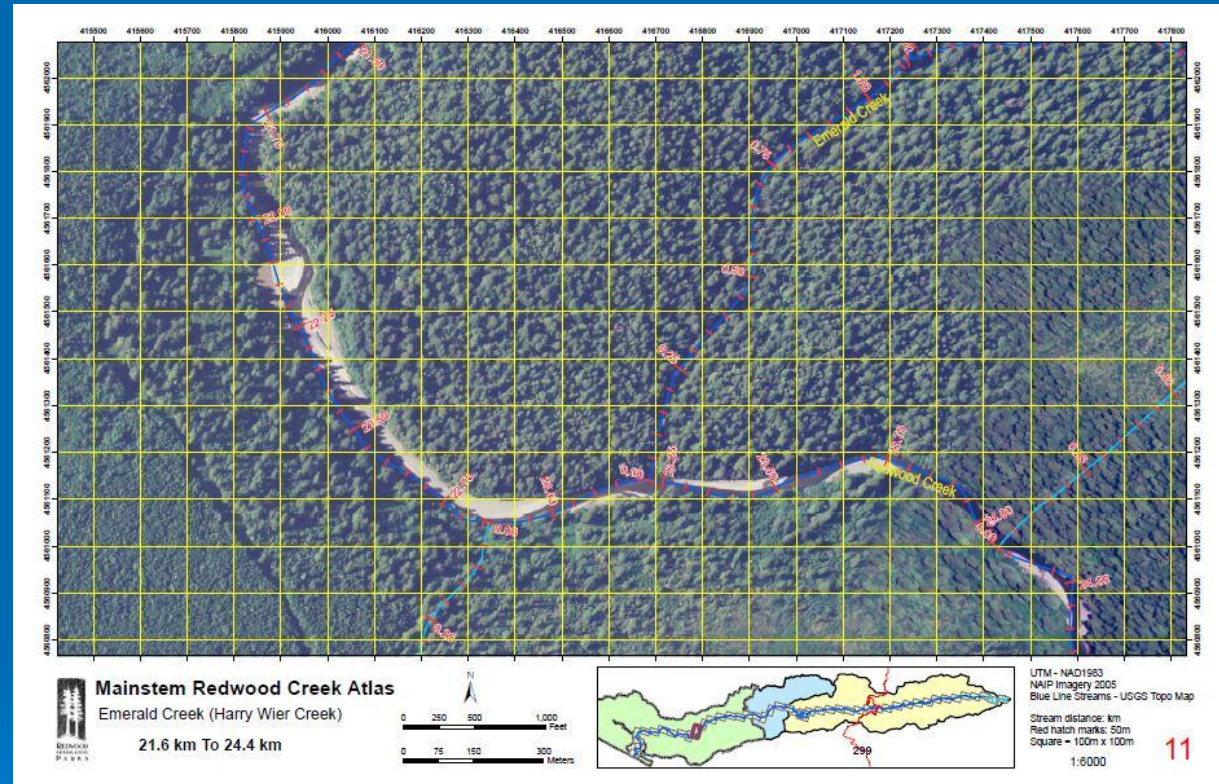
Data Collection

Stream Atlas Maps

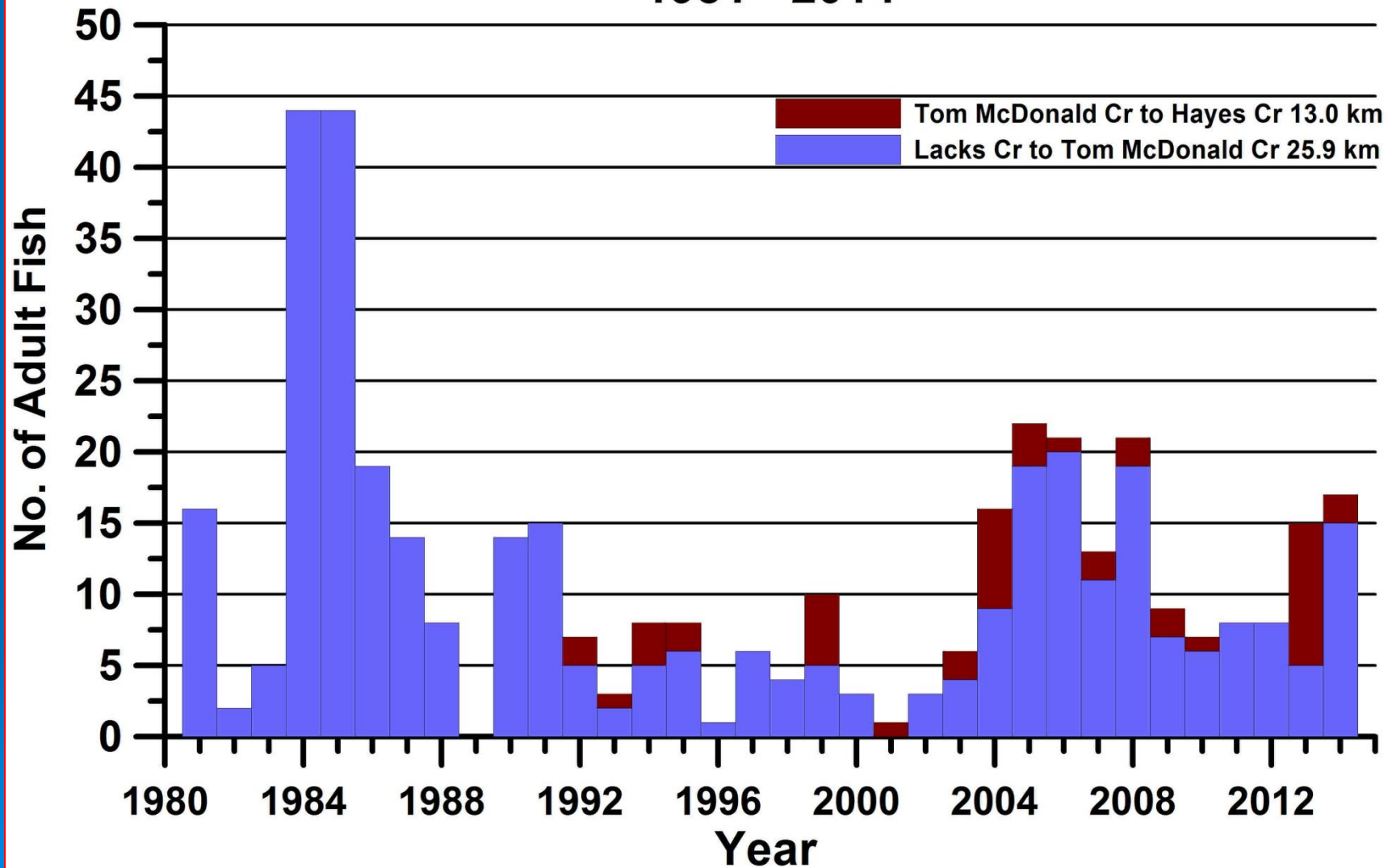
Maps marked at 50
meter intervals

UTM Grid – 100 meters

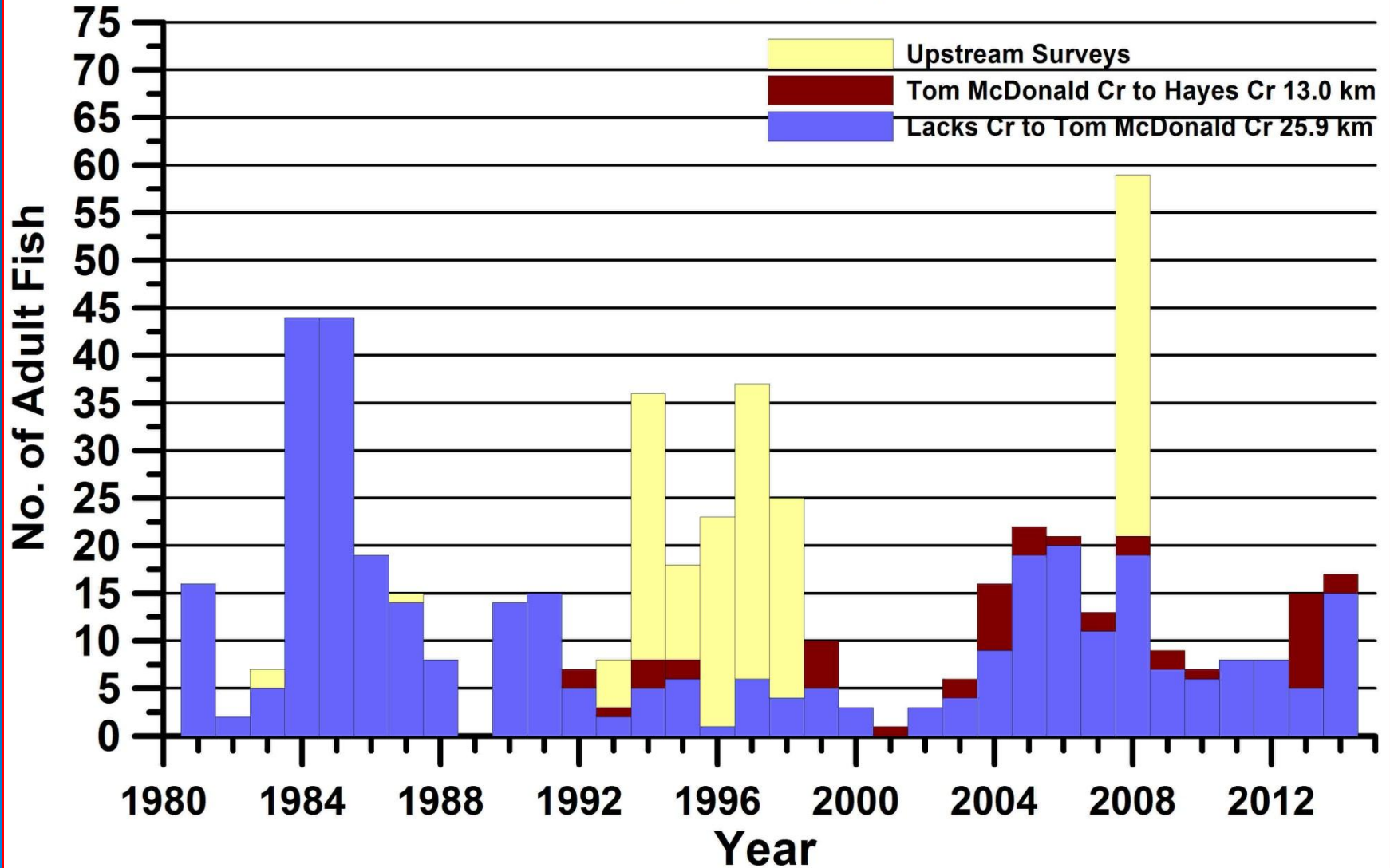
GPS – sometimes
spotty coverage and
not waterproof



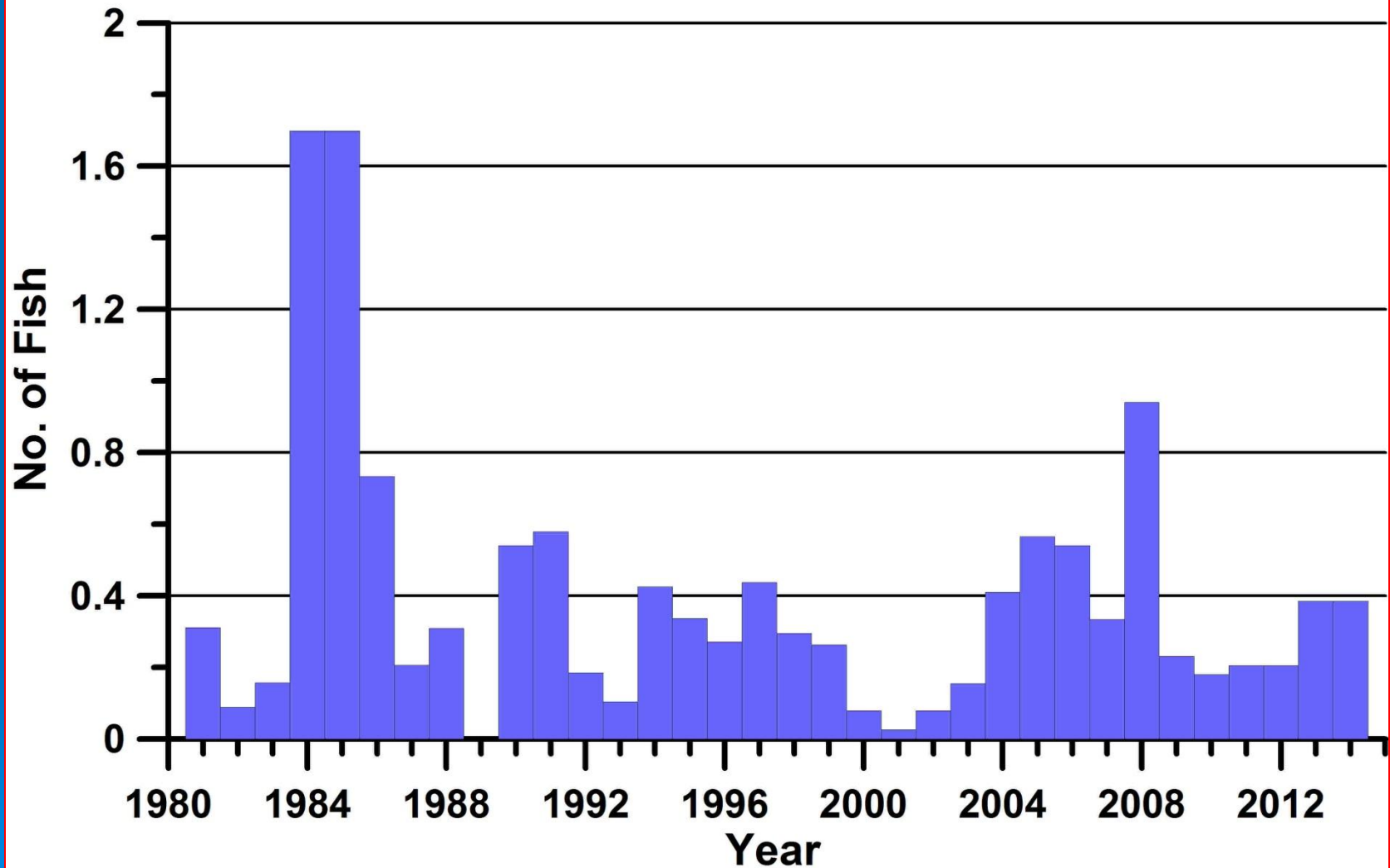
Redwood Creek Summer Steelhead Surveys 1981 - 2014



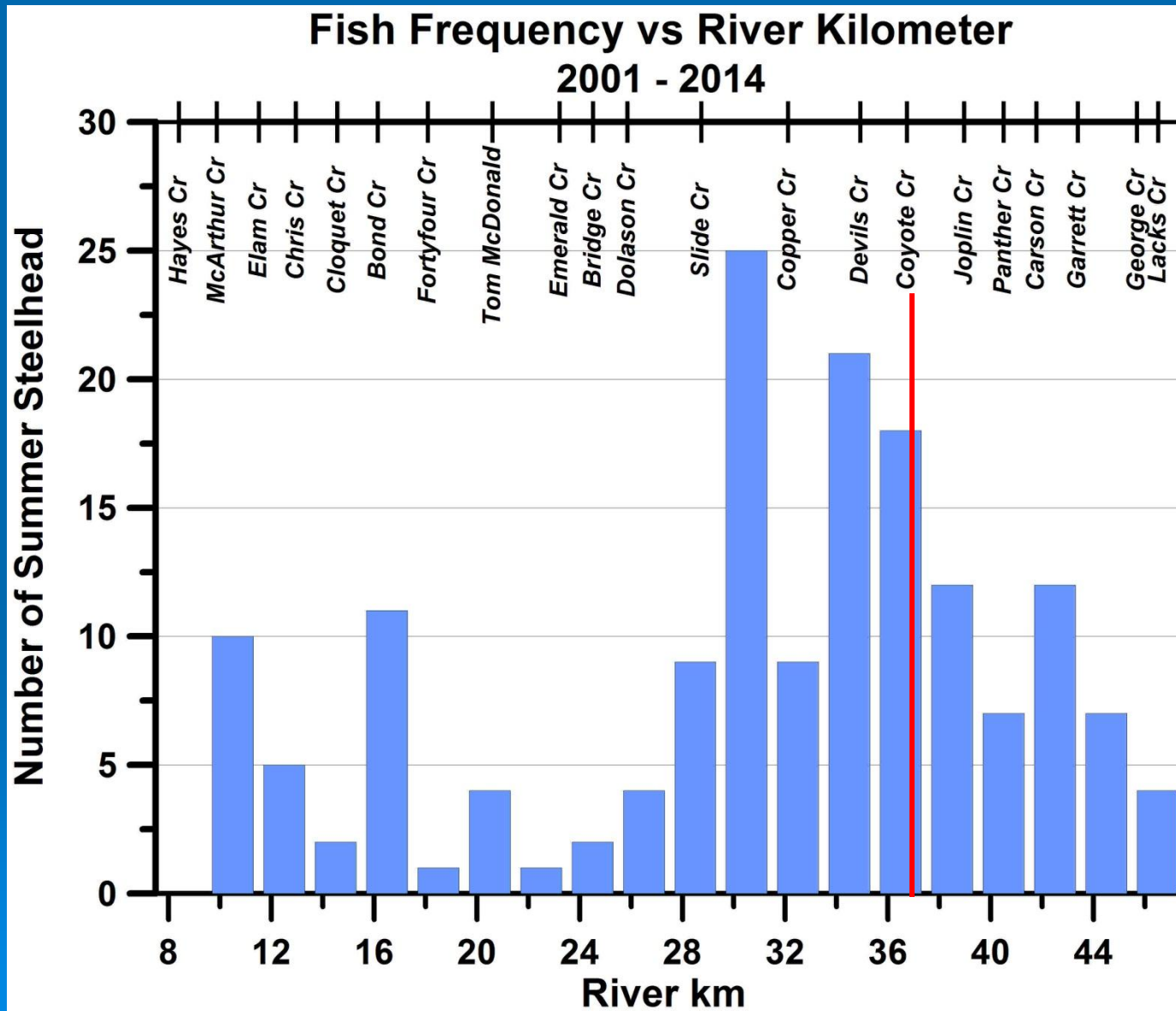
Redwood Creek Summer Steelhead Surveys 1981 - 2014



Redwood Creek Summer Steelhead per Kilometer All Surveys



Steelhead Distribution



Other Fish Observed

- Coastal Cutthroat Trout
- Juvenile Salmonids
 - Chinook
 - Steelhead
 - Coho
- Suckers, Sculpin, Threespine Stickleback
- Spring Chinook (1988)
- Sockeye (2005 & 2007)



Cutthroat Trout

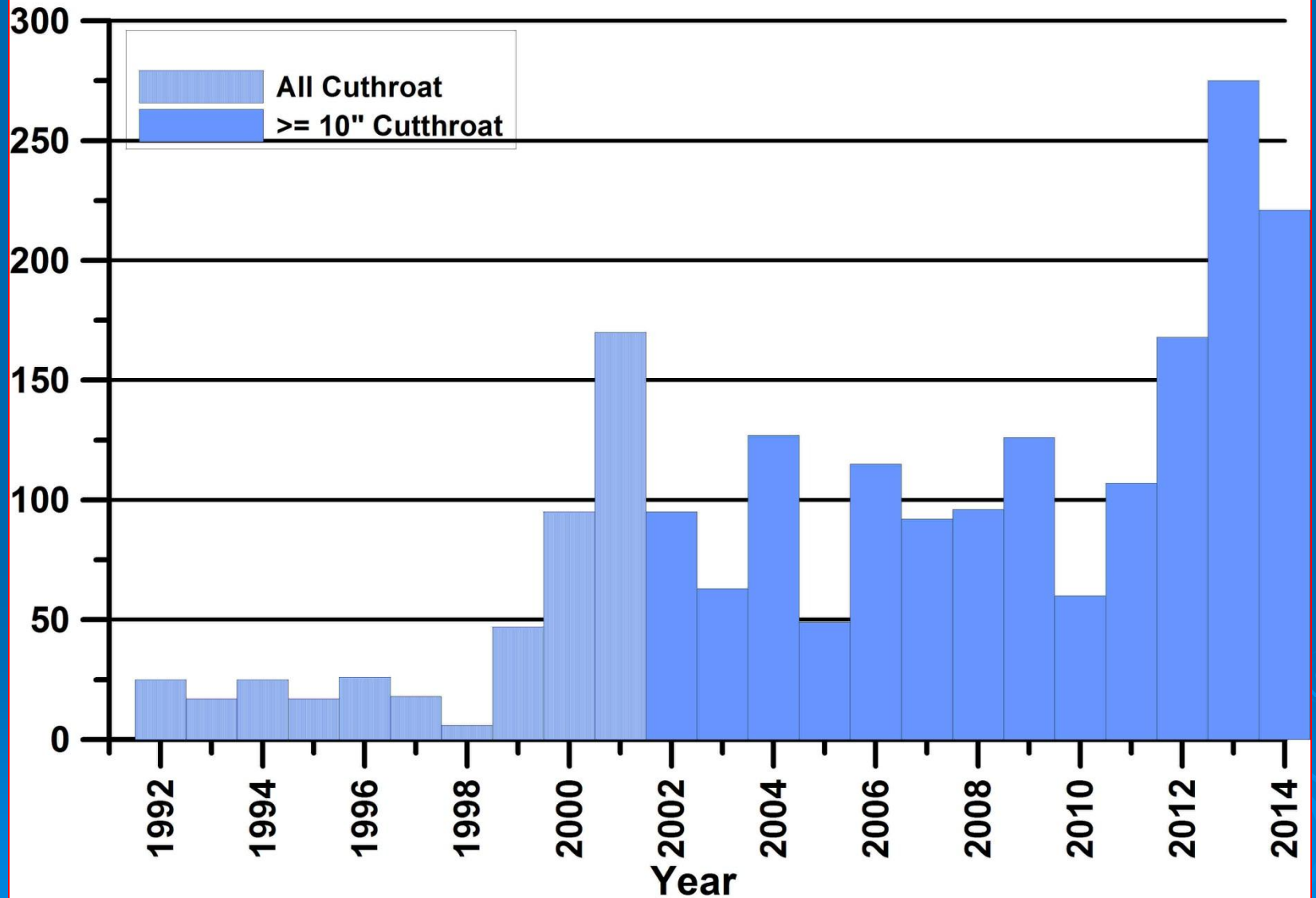


Sockeye Salmon



Schools of Suckers

Coastal Cutthroat Survey Numbers



Other Species Observed



Rough-skinned Newt

- Lamprey
 - redds
- Amphibians



Western Toad Tadpoles

Aquatic Mammals

- River Otters
- Beaver



Beaver Scat



Rare Species

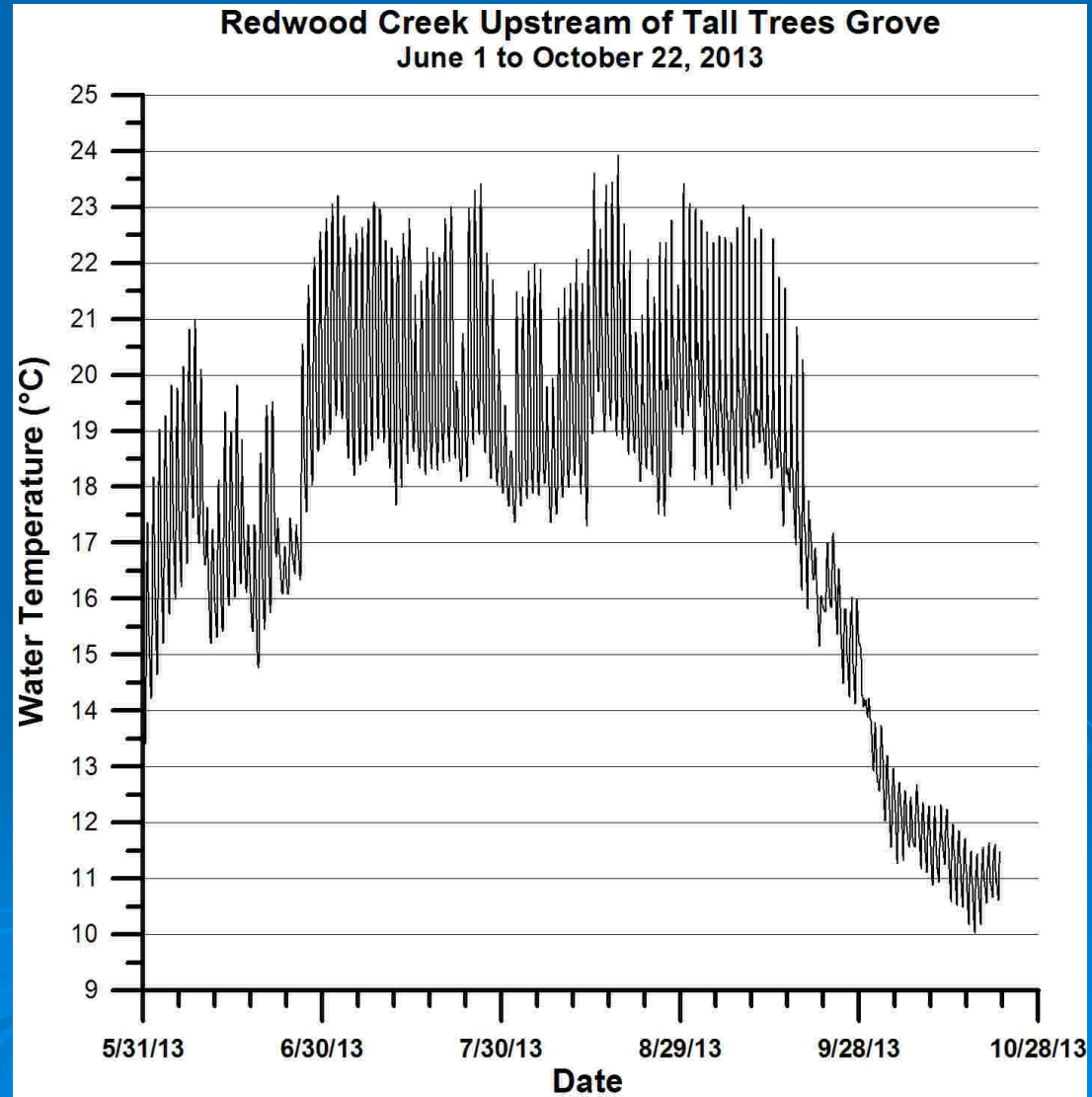
- Western Pearlshell Freshwater Mussels
 - Life span may exceed 100 years



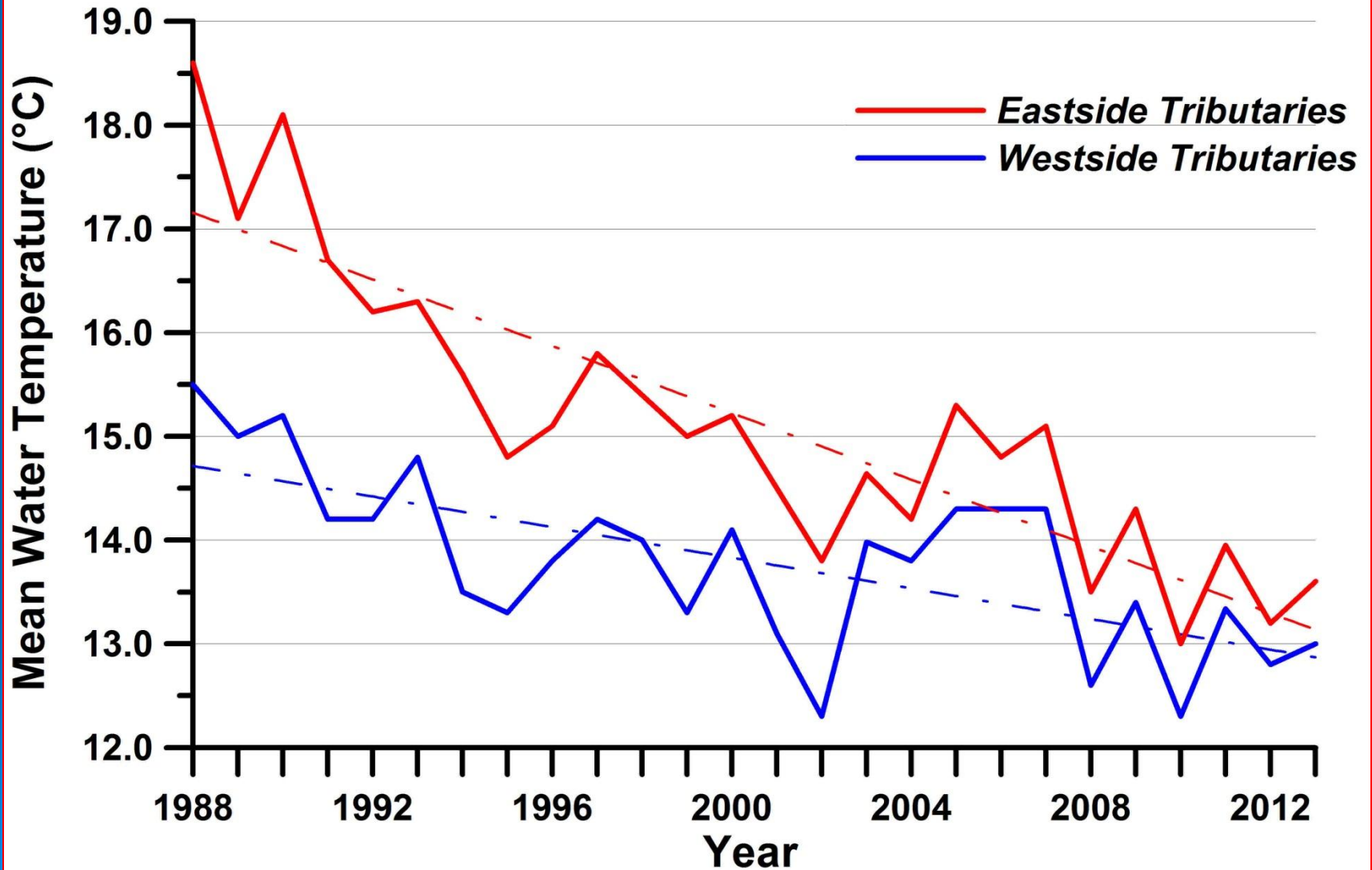
Mainstem Water Temperature

► July and August 2013

- Mean 19.9 °C
- $\geq 18^{\circ}\text{C}$ 94 % of time
- All tributaries are colder than the corresponding Redwood Creek temperature



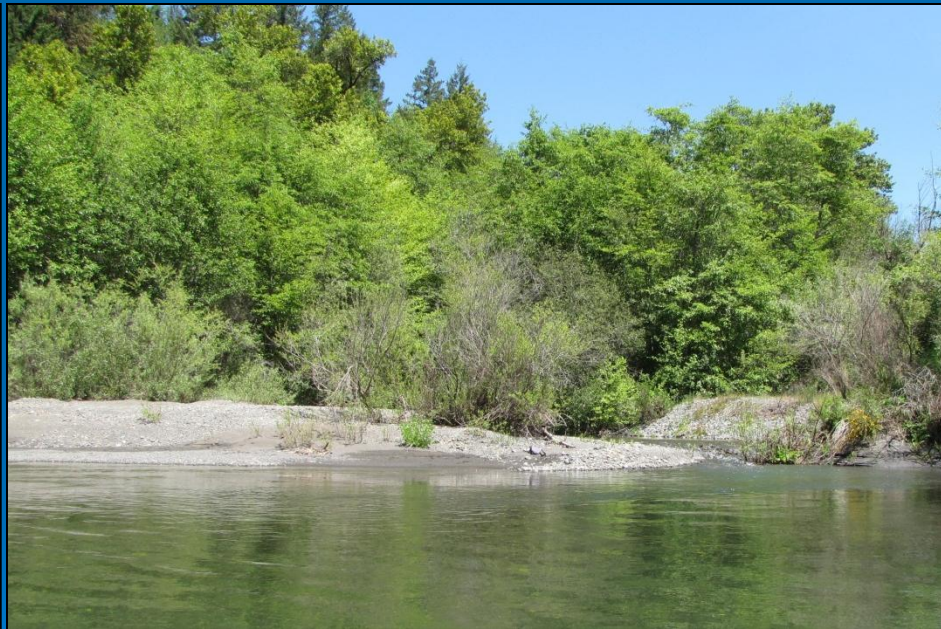
Redwood Creek Eastside Westside Tributary Temperatures



Riparian Recovery

1980

2014



Mouth of Lacks Creek

Prospects of Recovery

- Redwood Creek CWA
303(d) listed for
sediment/siltation and water
temperature
- Water Diversions

RESEARCH ARTICLE

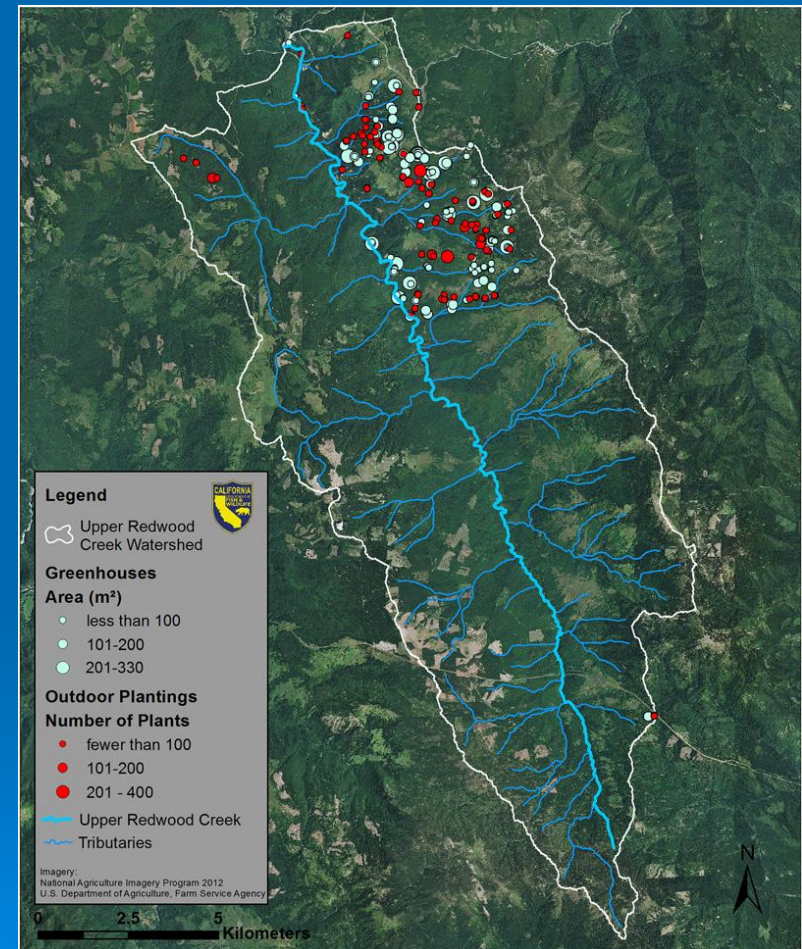
Impacts of Surface Water Diversions for Marijuana Cultivation on Aquatic Habitat in Four Northwestern California Watersheds

Scott Bauer¹*, Jennifer Olson¹, Adam Cockrill¹, Michael van Hattem¹, Linda Miller¹, Margaret Tauzer², Gordon Leppig¹

¹ California Department of Fish and Wildlife, Eureka, California, United States of America, ² National Marine Fisheries Service, Arcata, California, United States of America

PLOS ONE | DOI:10.1371/journal.pone.0120016 March 18, 2015

- Climate Change



Upper Redwood Creek

Watershed Legacy of Intensive Land Use



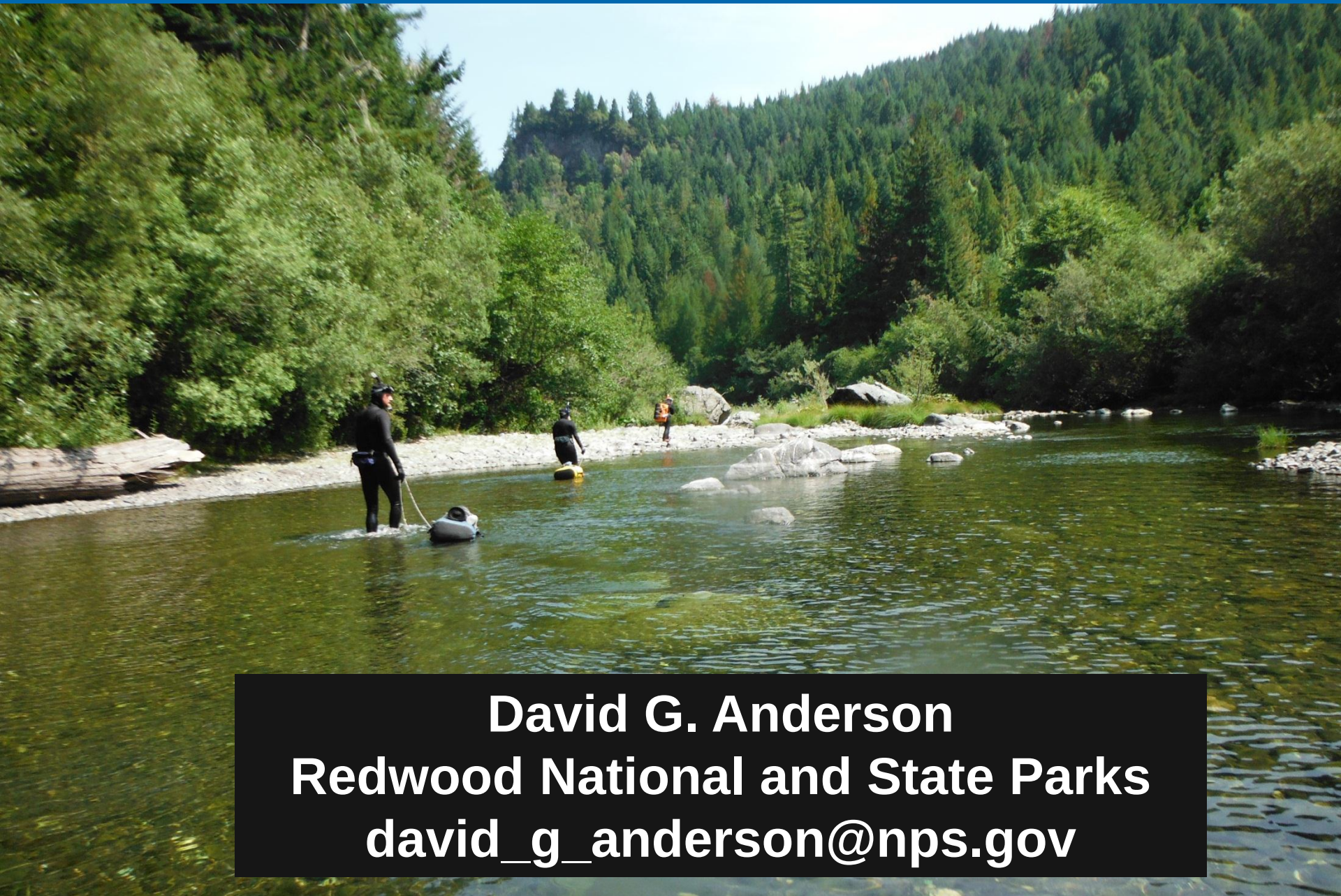
2011 NOAA Steelhead Status Update

- “Of continued concern is the depressed status of at least two of the remaining summer-run populations in the DPS, Redwood Creek and Mattole River. Although surveys within these watersheds do not typically encompass all available over-summering habitats, the chronically low numbers seen during surveys in these rivers suggest that both populations are likely at high risk of extinction.”



- STATUS REVIEW UPDATE FOR PACIFIC
SALMON AND STEELHEAD LISTED
UNDER THE ENDANGERED SPECIES
ACT: SOUTHWEST

- 20 May 2011



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