

A large fish, likely a steelhead, is swimming in a shallow, rocky stream. The water is clear, revealing the riverbed of smooth, grey and brown stones. The fish has a dark, mottled pattern on its back and a lighter, reddish-brown hue on its belly. The background shows a rocky bank with some green vegetation.

# Flow Matters

*Lessons Learned from 15+ Years  
of Fish Monitoring in the  
Napa River Watershed*

Jonathan Koehler

Napa County Resource Conservation District



# Napa River Watershed



# Napa River Fish Community



**Over 50 fish species in the Napa River and Estuary**

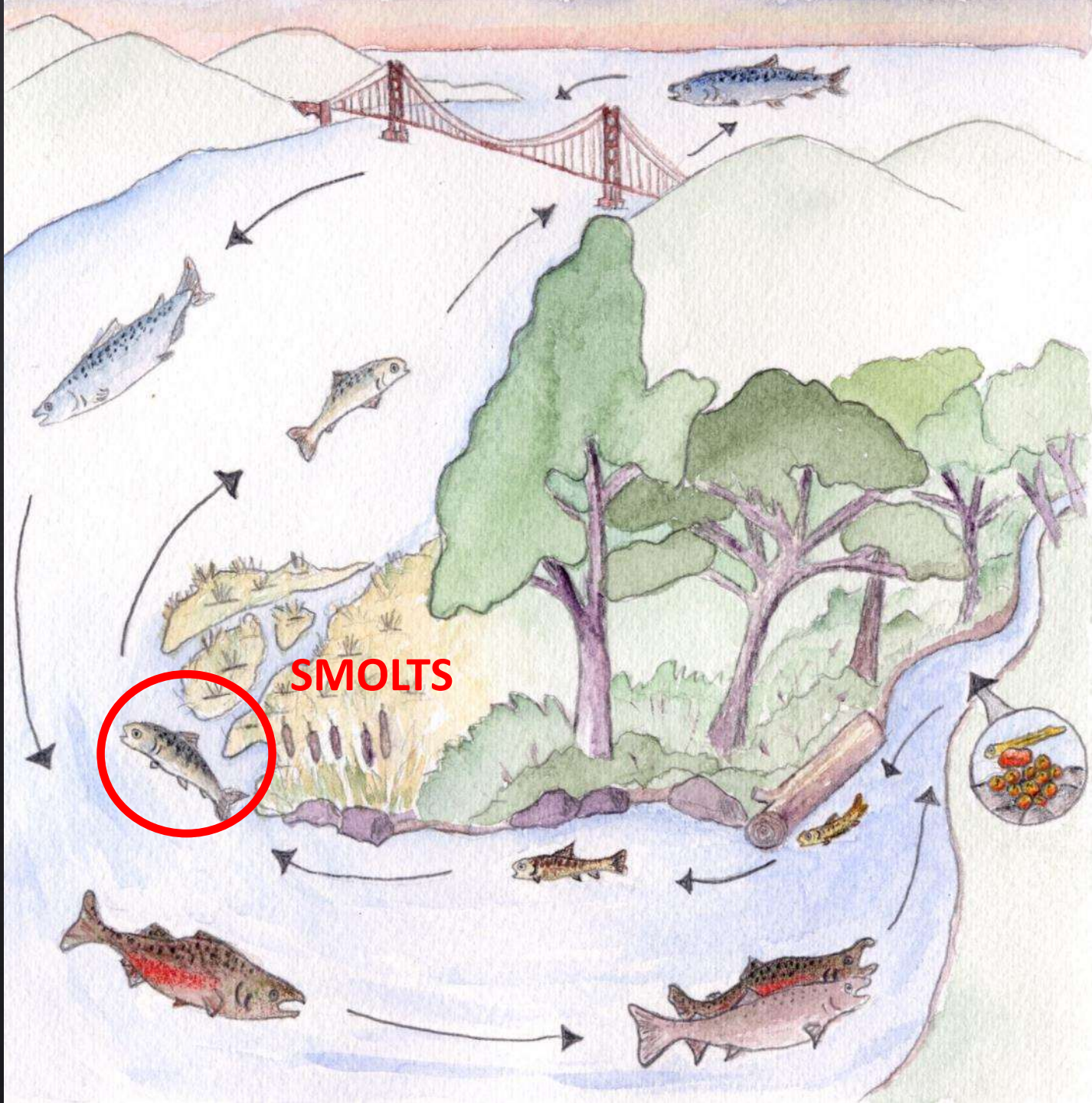
- **29 species in freshwater streams**
  - **15 natives**
    - **Salmonids**
      - **Steelhead**
      - **Chinook Salmon**
      - **Coho, Chum, Pink?**



# Adult Spawner Surveys







**SMOLTS**



# Smolt Trap



# Steelhead Smolt



# Chinook Smolt



# PIT Tagging



Napa River  
PIT Tag Antenna  
February 2018





# Steelhead

*Oncorhynchus mykiss*

- Listed as “Threatened” under the Federal Endangered Species Act
- Anadromous form of Rainbow Trout
- Young spend 1-4 years in freshwater





# Steelhead

*Oncorhynchus mykiss*





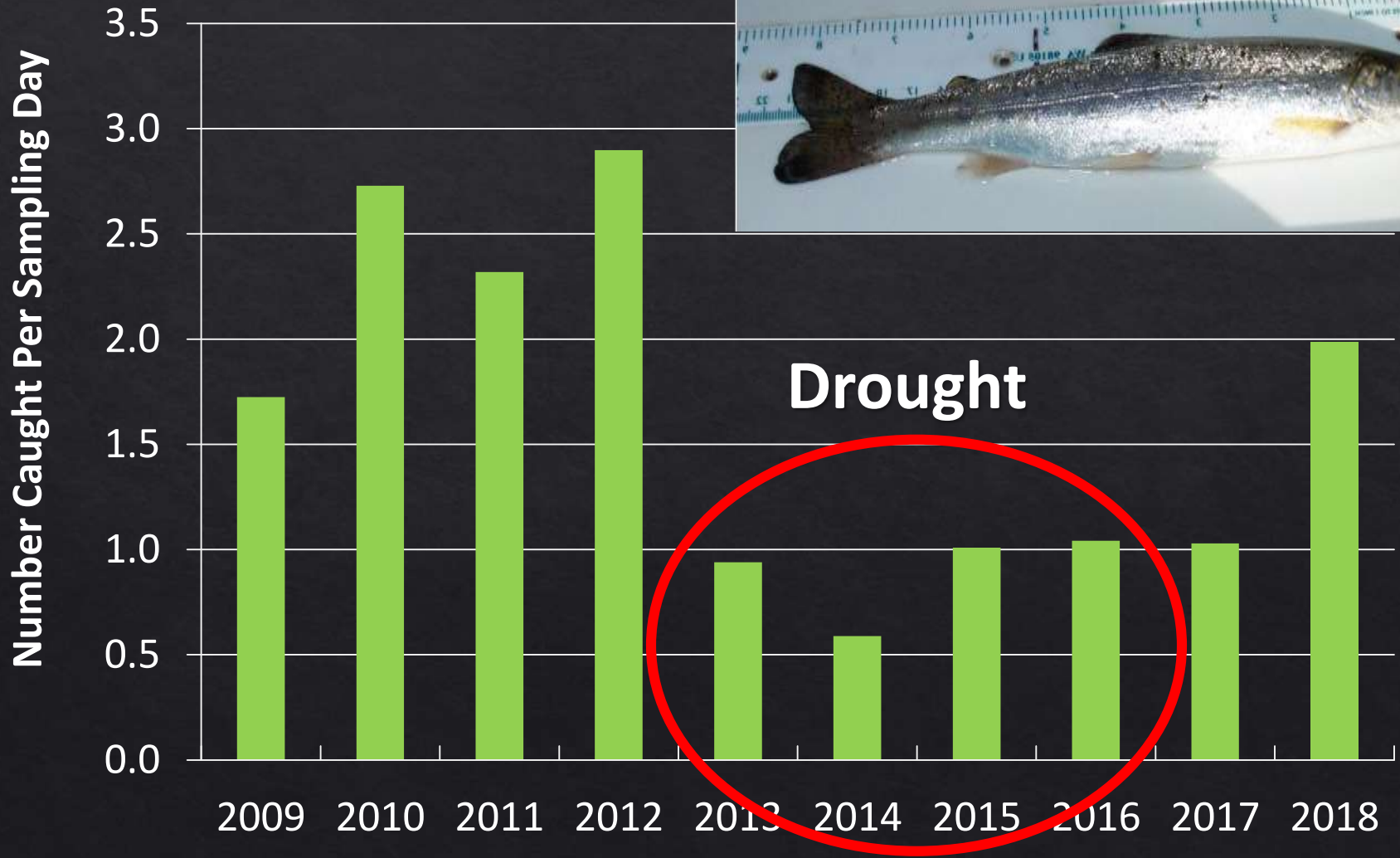
# Steelhead

*Oncorhynchus mykiss*





Steelhead smolts are being produced every year – even in very dry (drought) years





# Chinook Salmon

*Oncorhynchus tshawytscha*





# Chinook Salmon

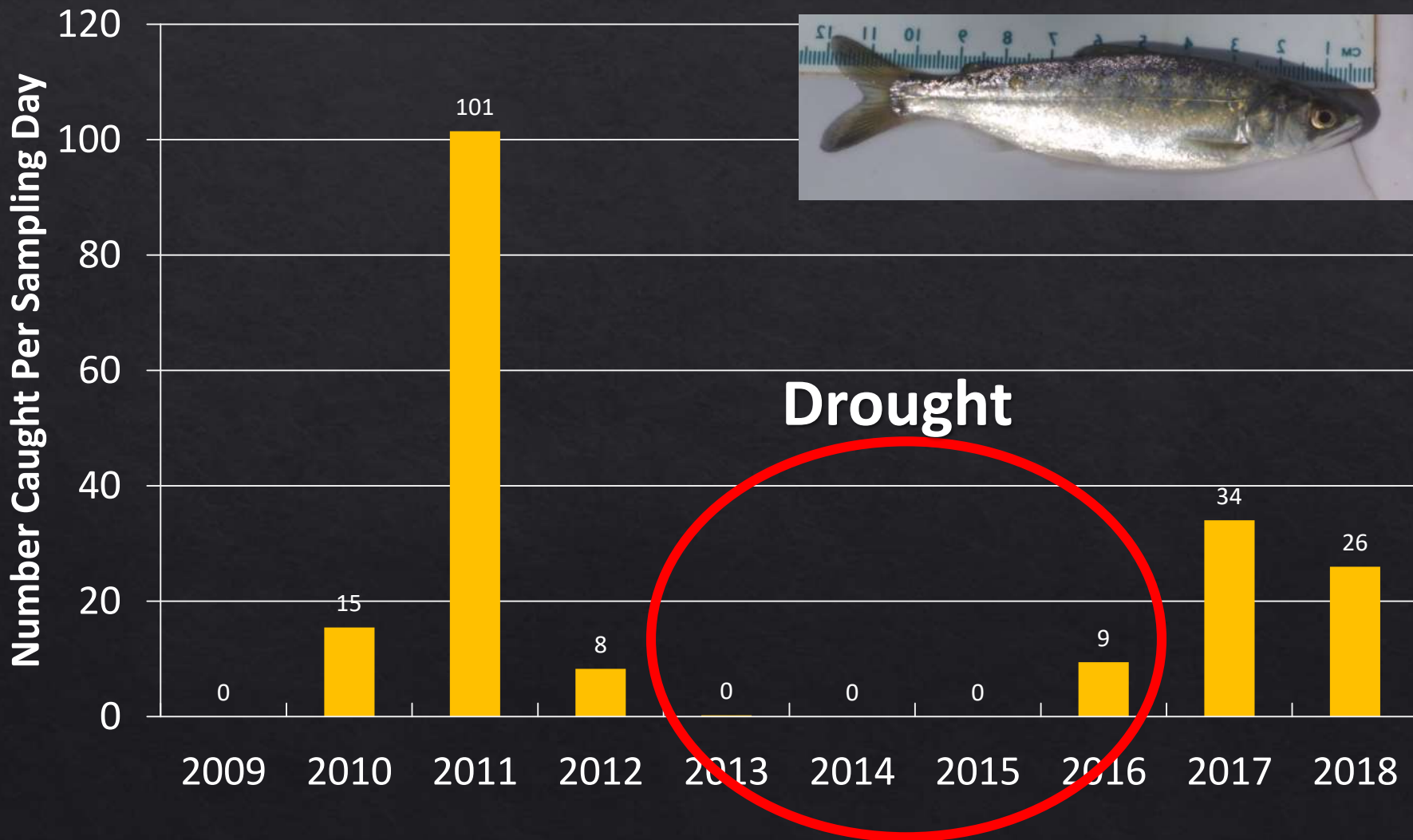
*Oncorhynchus tshawytscha*

- **Central Valley Fall-Run**
  - Species of Special Concern
- **Largest of all Pacific salmon**
- **Young migrate to the ocean soon after birth**





# Chinook smolts are being produced in most years





Lampreys!





# Napa River Watershed

CALISTOGA

ANGWIN

ST. HELENA

YOUNTVILLE

NAPA

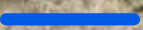
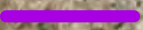
AMERICAN CANYON

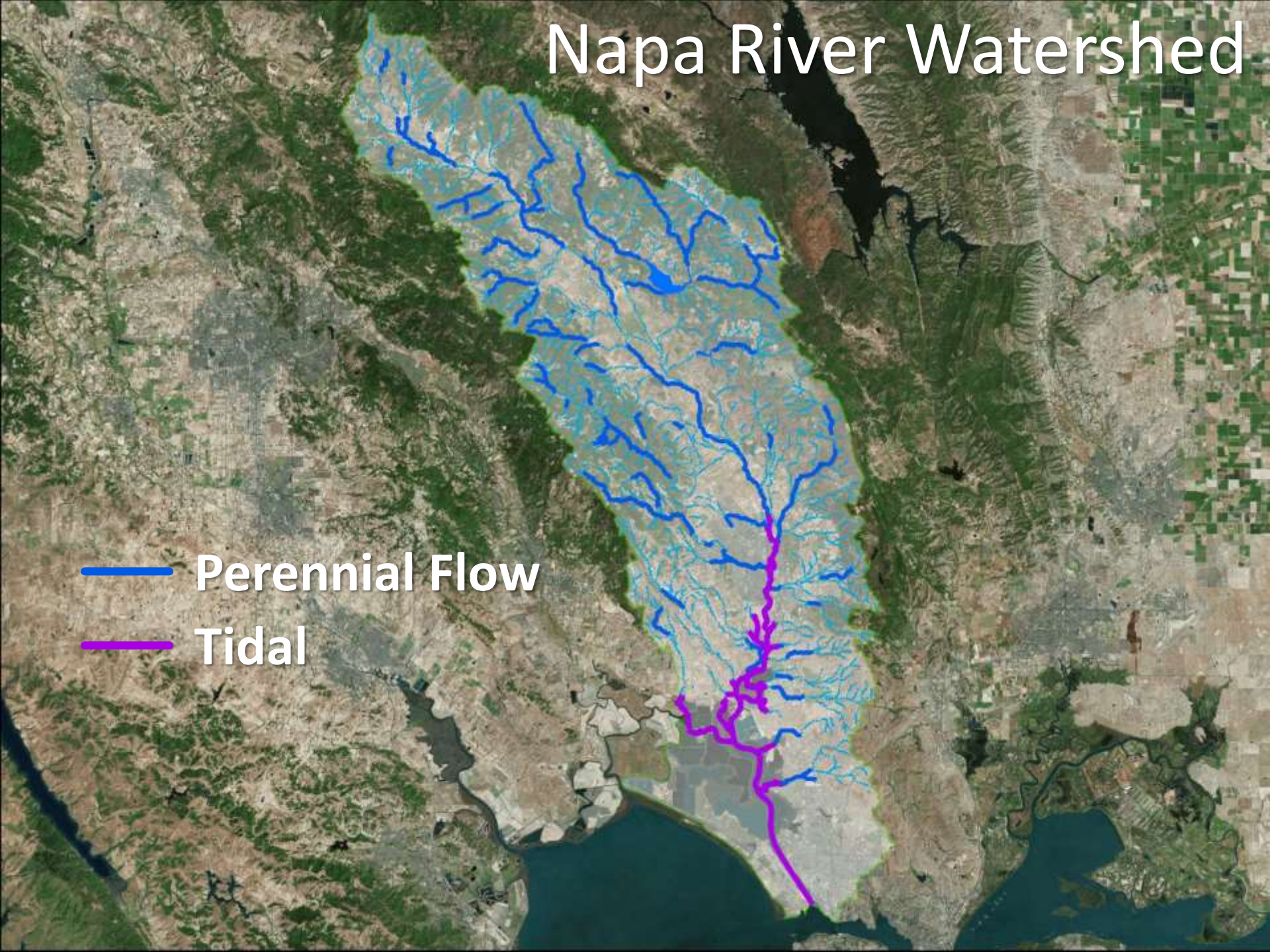
VALLEJO





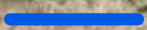
# Napa River Watershed

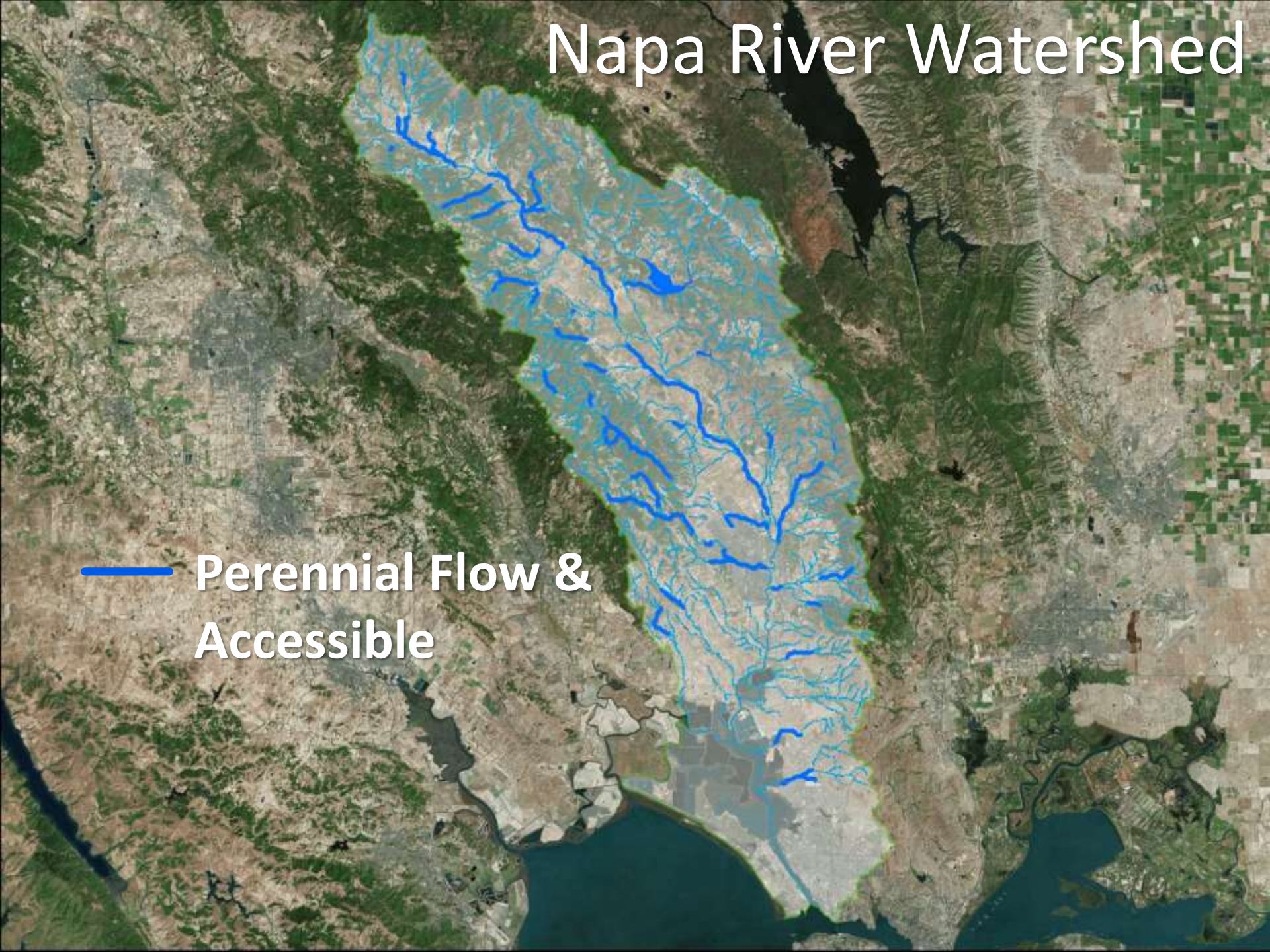
-  Perennial Flow
-  Tidal





# Napa River Watershed

 Perennial Flow & Accessible





# Mill Creek



# York Creek



# Redwood Creek



# Campbell Creek









**More information available at [www.naparcd.org](http://www.naparcd.org)**

**Thanks to our partners:**

- **Citizen Volunteers (too many to name – you know who you are!)**
- **California Department of Fish and Wildlife**
- **NOAA National Marine Fisheries Service**
- **California Coastal Conservancy**
- **Napa County Wildlife Conservation Commission**
- **Napa Valley Vintners**
- **The Gasser Foundation**
- **Napa County Flood Control & Water Conservation District**
- **Napa County**
- **Treasury Wine Estates**