



Lagunitas Creek Fisheries Monitoring and Tagging Update

Watershed Committee Meeting
June 15, 2023



Coho Salmon navigating the “Ink Wells” in San Geronimo Creek
(Photo Credit: Jaclyn Sherman)

State Water Board Order WR95-17

- *Lagunitas Creek Stewardship Plan* in 2011
 - Guiding document for Marin Water's monitoring and restoration efforts
 - Requires population monitoring of three protected species in Lagunitas Creek:

Coho Salmon

Endangered - State and Federal



Steelhead

Threatened - Federal



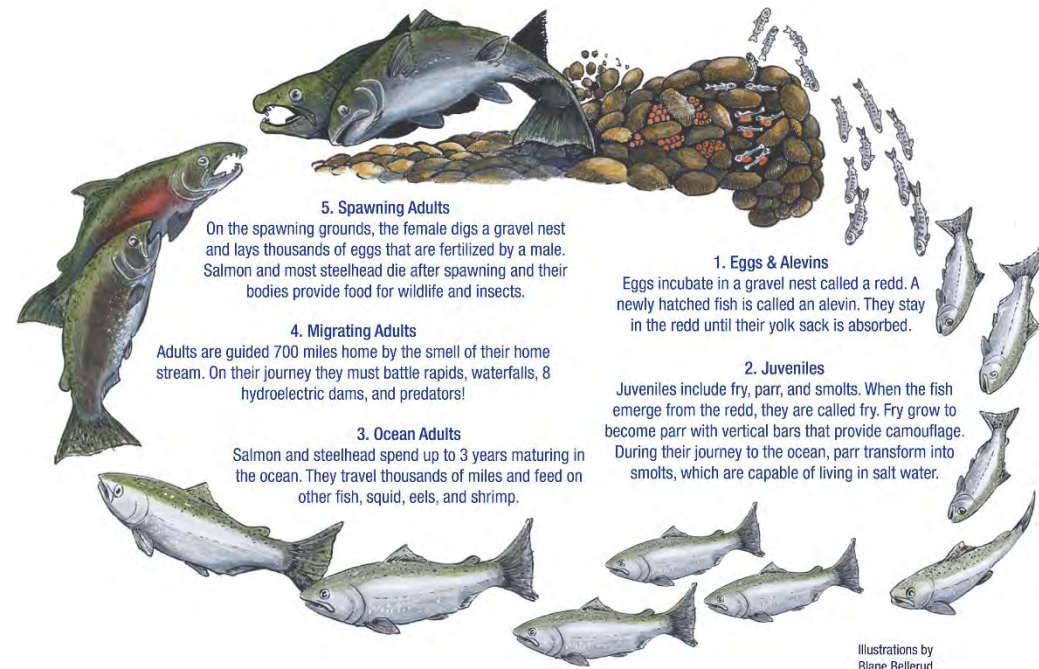
California Freshwater Shrimp

Endangered – State and Federal



Fisheries Monitoring

- Adult Spawning Surveys (Oct-Mar)
- Smolt Trapping (Mar-Jun)
- Juvenile Abundance Surveys (Jun-Oct)



Fish Tagging and Tracking



Tagging Coho Salmon and steelhead smolts in Lagunitas Creek

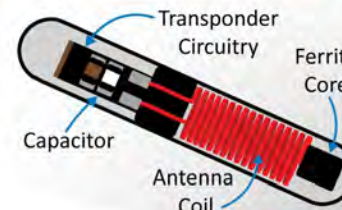
How do PIT tags work?



Passive Integrated Transponder (PIT) tags are the most commonly used tags for identifying individual fish

1 Tags:

- Choice of different sizes depending on animal / fish size and desired read range
- Contain unique 10-15 digit alphanumeric ID code
- Are not battery operated and last "forever," or the entire lifetime of the fish



Tags are inactive outside an antenna's electromagnetic field and fish are not detected



2 Injection Methods

Tags can be injected with a needle (left) or surgically implanted (right)



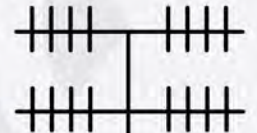
Antenna's electromagnetic field activates tags

Detection range influenced by:

- Frequency
- Antenna power
- Tag orientation
- Interference

Detection range usually 3-18 inches

Computer records detection time and unique tag number



3 Antenna

Can come in many sizes and shapes such as rings, rectangles, handheld wands, and mobile antennas



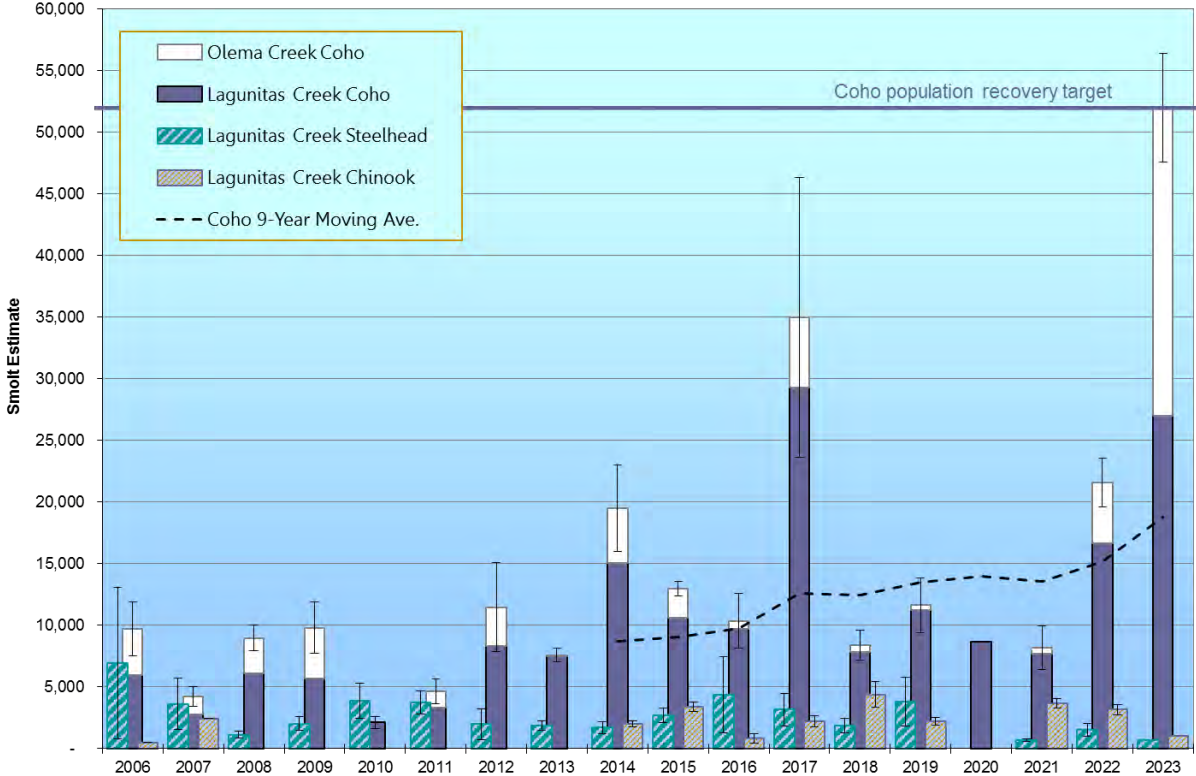
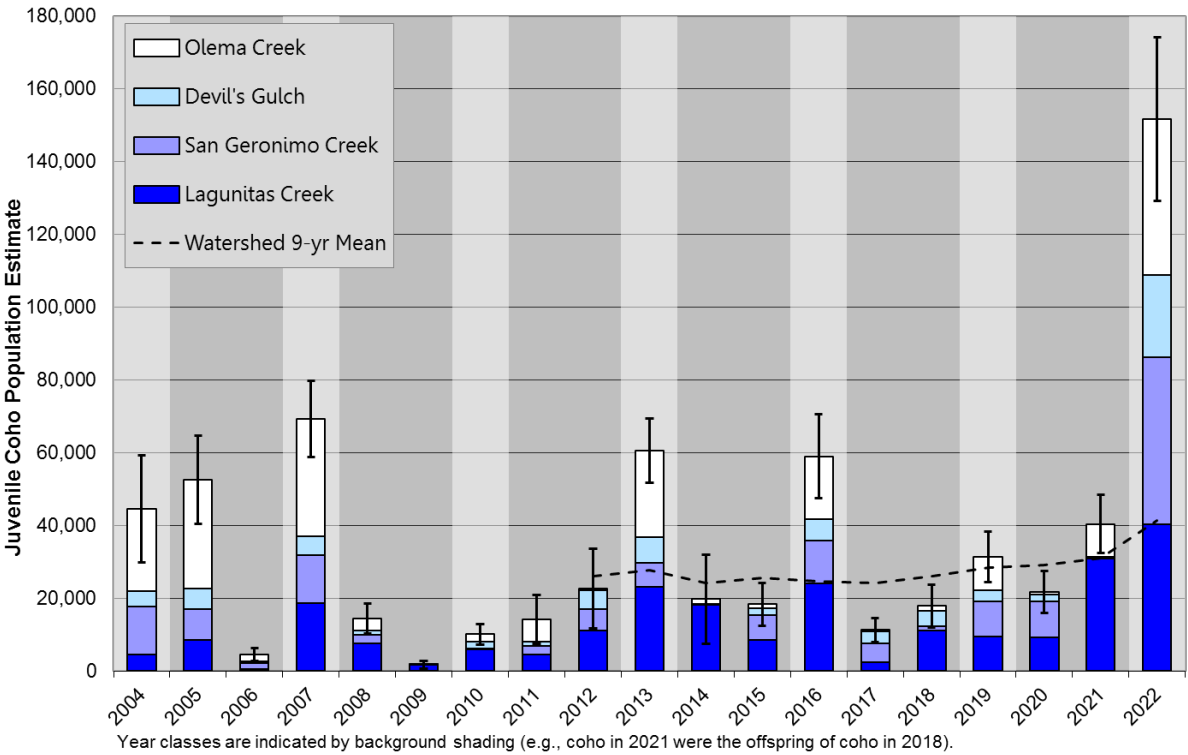
Learn more about PIT tags at FISHBIO.com

Estimating Population Size, Growth, and Survival

Juveniles tagged in summer 2022



Tagged smolts detected in spring 2023



PIT Tag Antenna Stations

Tag scanner and data logger on stream bank



San Geronimo Creek – single antenna



Lagunitas Creek – paired double antenna



PIT Tag Antenna Stations

Marin Water owns and operates three antennas:

- ① Lagunitas Cr. at Gallagher Ranch
- ② Devil's Gulch at confluence with Lagunitas Cr.
- ③ San Geronimo Cr. at San Geronimo Pump Station

Potential new antenna locations:

- ④ Lagunitas Cr. at Leo T. Cronin Fish Viewing Area
- ⑤ Lagunitas Cr. at Camp Taylor (Samuel P. Taylor State Park)
- ⑥ Lagunitas Cr. at Tocaloma Bridge
- ⑦ Lagunitas Cr. at Pt. Reyes Station (tidal interface)
- ⑧ Olema Cr. – collaboration with National Park Service

