

Russian River Salmon and Steelhead Monitoring



UNIVERSITY OF CALIFORNIA



UPDATE: Winter 2019/2020 - Summer 2020

For nearly two decades, California Sea Grant's Russian River Salmon and Steelhead Monitoring Program at the University of California has been monitoring endangered and threatened fish populations in order to provide science-based information to stakeholders and support species recovery efforts.

We are happy to report that we were able to adapt to the challenges presented by the pandemic and local wildfires to complete most of our monitoring activities this year. This update provides a brief overview of outcomes. Detailed seasonal reports are available at caseagrants.ucsd.edu/coho-reports.

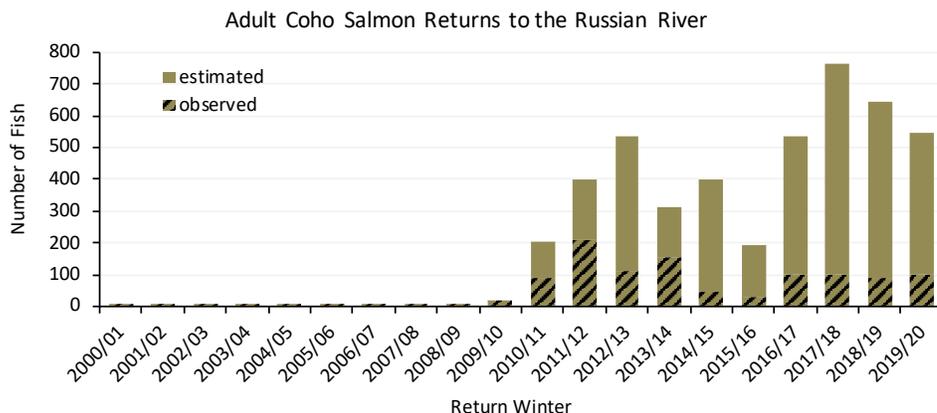
This work would not be possible without the support of our partners, including public resource agencies, non-profit organizations, and thousands of private landowners throughout the watershed. Special thanks to all the streamside landowners who grant us access permission!

Winter Adult Surveys

Winter 2019/20 conditions were generally good for spawning coho. Using data from PIT tag antennas, we estimated that 547 hatchery adult coho salmon returned to the Russian River watershed from December to February—the third highest number since monitoring began, and 75% were precocious two-year old fish. We collaborated with Sonoma Water to conduct over 700 spawner

surveys on 53 tributaries. Coho were seen in 16 of the 32 streams that provide suitable coho habitat and there were an estimated 102 total coho redds—27% less than the five-year average.

Adult steelhead returned in high numbers. Despite steelhead surveys being cut short due to COVID-19 restrictions, we saw



Estimated annual adult hatchery coho salmon returns to the Russian River, winter return seasons 2000/01-2019/20. Note that methods for estimating total number varied between years.

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Experience the journey of Russian River salmonids on:

Instagram: [@RussianRiverSalmon](https://www.instagram.com/RussianRiverSalmon)

Twitter: [@SeaGrantSalmon](https://twitter.com/SeaGrantSalmon)

Facebook: [@RussianRiverSalmon](https://www.facebook.com/RussianRiverSalmon)

YouTube: bit.ly/seagrantsalmon



A steelhead pair observed during a spawner survey. Photo: Will Boucher, California Sea Grant.

spawning activity in 30 streams, with a basinwide estimate of 1,606 redds—154% more than the five-year average. Unfortunately, the dry spring conditions caused some streams to disconnect prior to the end of steelhead spawning (which is later than the coho window), and some redds were stranded in dry streambeds.

Did you see spawning fish last winter? Test your ID skills at

caseagrants.ucsd.edu/salmon-guide



Sea Grant biologist Will Boucher and AmeriCorps Watershed Stewards member Shayda Abidi prepare to work up fish at the Willow Creek smolt trap site.



Sea Grant biologist Troy Cameron searches for fish during a snorkel survey on Gilliam Creek.

Spring Smolt Trapping

In the spring of 2020, we operated downstream migrant smolt traps in Mill Creek (Healdsburg), Willow Creek (Jenner), and Green Valley Creek (Forestville) to estimate coho salmon smolt (age-1 fish migrating to the ocean) abundance, migration timing, natural production, and freshwater survival and growth. The shelter-in-place caused by the pandemic shut down trapping for over a month between March 18 to April 25.

Coho smolt abundance estimates ranged from approximately 2,348 in Willow Creek to 12,113 in Green Valley Creek. Wild smolts were seen in all three streams in low numbers. Hatchery smolt abundance and wild fish counts were below the five-year average in all streams. While natural factors likely play a role, these numbers can also vary depending how many hatchery fish are stocked into each stream seasonally.

[Check out this video](#) for a glimpse of our smolt trapping on Willow Creek.

Join us for a webinar to learn more about our program and meet the team on February 24, 2021. [Details can be found on our website.](#)

Summer Snorkel Surveys

Last summer, we partnered with Sonoma Water to snorkel 43 Russian River tributaries to document the abundance and distribution of juvenile salmonids, as well as spawning success from the previous winter. Wild coho salmon young-of-the-year (yoy) were observed in 72% of all surveyed streams, with an expanded estimate of over 16,812 total fish. ***This is the highest number* since monitoring began in 2005!***

*Streams and number of reaches surveyed varied by year.

Though steelhead yoy were seen in 86% of surveyed streams, the expanded estimate of 25,544 fish was 49% lower than the five-year average. The low number of yoy in relation to the high number of returning spawners can likely be explained by the dry spring conditions.

Learn how many salmon and steelhead we counted in each stream.

Drought Conditions Threaten Fish

The Russian River watershed and much of Northwestern California experienced severe drought conditions in 2020. Streamflow was comparable to the peak of the last drought, causing widespread stream drying and fish mortality, which had devastating impacts on the 2020 cohort (hatch year) of local salmon and steelhead.

Water scarcity due to human demands and changing climatic patterns poses a significant threat to our native fish and other aquatic species. Visit [saveourwater.com](https://www.saveourwater.com) for water conservation tips, and [cohopartnership.org](https://www.cohopartnership.org) to learn how you can increase water security for yourself and the environment.

Thank you to our funders at the US Army Corps of Engineers, California Department of Fish and Wildlife, NOAA Fisheries, and Sonoma Water.