

# Russian River Coho Salmon and Steelhead Monitoring

Winter 2017/2018- Summer 2018



UNIVERSITY OF CALIFORNIA



For more than a decade, California Sea Grant's Russian River Salmon and Steelhead Monitoring Program at the University of California has been monitoring salmon and steelhead populations within the watershed to provide science-based information to everyone involved in the recovery of these critical native species. Our program supports the Russian River Coho Salmon Captive Broodstock Program, the statewide Coastal Monitoring Program, the Russian River Coho Water Resources Partnership, and other recovery efforts throughout the watershed.

This update provides an overview of our seasonal monitoring efforts. Complete reports for all monitoring seasons are available at: [caseagrants.ucsd.edu/coho-reports](http://caseagrants.ucsd.edu/coho-reports)

## ADULT SPAWNER SURVEYS

Last winter, our region received the lowest rainfall since winter 2013/2014, making it difficult for fish to access spawning habitat in the tributaries of the Russian River. Fortunately, late January storms brought relief and fish were able to spawn during the remaining few weeks of the spawner season.

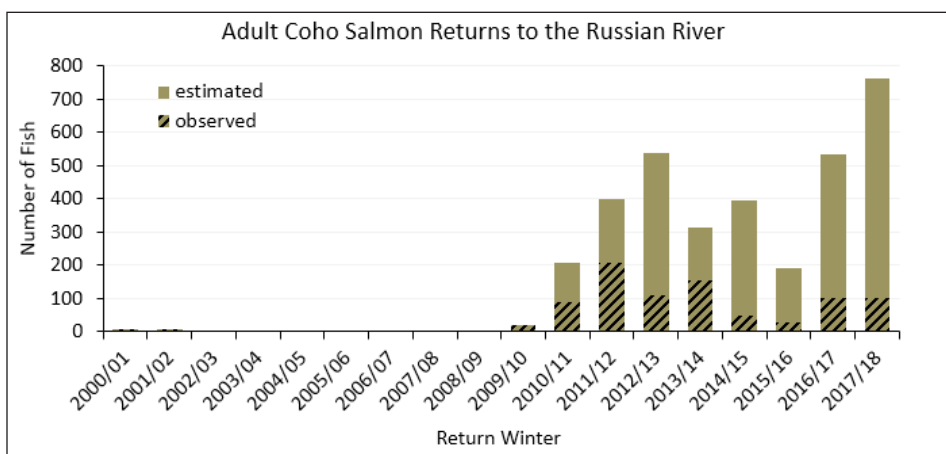
Over the winter of 2017/2018, we conducted dozens of spawner

surveys on 54 streams. This was the first year that we expanded beyond Sonoma County to include many Mendocino County streams, to better represent status and trends of salmon and steelhead throughout the entire Russian River Watershed. Winter surveys consist of two-person crews hiking defined sections of stream looking for individual adult fish and nests in the gravel called redds. We also maintained PIT tag antenna arrays that detected tagged fish movement around the clock.

From these data, we estimated that 763 hatchery adult coho salmon returned to the Russian River basin—the highest number of adult returns documented in recent years. A significant percentage of these fish were early-returning two-year-olds, which are typically males.

**Have you seen fish on your property?** Check out our new identification guide: [caseagrants.ucsd.edu/salmon-guide](http://caseagrants.ucsd.edu/salmon-guide)

Estimated annual adult hatchery coho salmon returns to the Russian River, return seasons 2000/01- 2017/18. Note that methods for estimating the number of returning salmon varied between years.



A coho jack (two-year old male) observed in Green Valley Creek. Note the black mouth and white gumlines, which is a great identifying characteristic.



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Biologists gather crucial data on Mill Creek with downstream migrant funnel traps that temporarily capture migrating juveniles.



A snorkeler counts juvenile steelhead trout in a beautiful pool in the upper Austin Creek watershed.



## DOWNSTREAM MIGRANT SMOLT TRAPPING

From March to June, we operated smolt traps in Mill Creek (Healdsburg), Willow Creek (Jenner), and Green Valley Creek (Forestville). Downstream migrant trapping allows us to estimate coho salmon smolt abundance and migration timing, natural production, and freshwater survival and growth.

Peak out-migration timing for coho salmon was similar in all three tributaries, ranging from the middle of April to the middle of May. Steelhead trout generally out-migrate during high winter flows before traps can be safely installed.

Our crews counted 5,817 smolts (9% wild) in Green Valley Creek, 1,271 (3% wild) in Mill Creek, and 3,448 (19% wild) in Willow Creek. We observed a total of 1,227 wild-origin smolts in 2018—more than twice as many as the 598 we counted in 2017. We hope to see the proportion of wild fish continue to increase each year. On average, smolts from all three sites were 4.5 inches in length and weighed a half of an ounce.

### SALMON 101

A **smolt** is the stage of the salmon life cycle when a young fish prepares to go out to sea.

### Other species

Although our target species is coho salmon, we observe many other species in our traps. Common native species include sculpin, California roach, Sacramento pikeminnow, Sacramento sucker, and three-spined stickleback. Green Valley Creek had the most non-native fish species. We also observed endangered California freshwater shrimp in Green Valley Creek, though fewer than in the previous two years.

### SNORKEL SURVEYS

Snorkel surveys allow us to document the abundance and distribution of juvenile salmonids, as well as spawning success rates from the previous winter.

Our biologists partnered with Sonoma Water to snorkel more than 120 miles of habitat in 40 Russian River tributaries. A total of 4,912 wild coho salmon young-of-the-year (yoy) were observed in 29 of the 40 tributaries surveyed. During surveys, we only snorkel every second pool, so we doubled our counts for an expanded estimate of 9,824 individuals—a similar number to the last three years. The expanded count of steelhead yoy was 40,626.

To see how many fish we counted in each stream, visit: [caseagrants.ucsd.edu/coho-juveniles](https://caseagrants.ucsd.edu/coho-juveniles)

### THANKS TO OUR PARTNERS

This work would not be possible without the support of our partners, including public resource agencies, non-profit organizations, and hundreds of private landowners who have graciously allowed us to access the streams that flow through their properties.