



## STEWARDS OF THE SALMON: LANDOWNERS APPLY CREATIVE SOLUTIONS TO BENEFIT NATIVE FISH

By Sarah Nossman Pierce, Research Assistant, UCCE/Sea Grant

What do two of the county's largest ag producers, a small water district, and a private landowner

have in common? When the going got tough for Russian River salmon and steelhead, they all pitched in to help prevent the imperiled fish from becoming stranded in drying streams.

As California residents, many of us have faced challenges with water security during the recent drought years, but perhaps none so much as the native fish who formed the cornerstone of our unique local heritage and earned the Russian River recognition as a world-class sport fishing destination throughout most of the last century. Endangered coho salmon and threatened steelhead trout and Chinook salmon populations in the Russian River have been hit especially hard over the past few years. These fish are keystone species—on which the health of our watershed depends—due to the role they play in importing much-needed nutrients from the ocean to feed our inland ecosystems. Yet, UCCE/Sea Grant's Russian River Salmon and Steelhead Monitoring Program (UC) estimates that fewer than 40% of all coho and steelhead fry (young of the year) observed in 14 high-priority streams surveyed in the summer of 2015 were living in locations that remained wet through the driest time of the year. Those lucky enough to have been spawned in the wettest areas still faced dangerously low water quality conditions as the summer wore on and stream flows fell to just hundredths of a cubic foot per second (ft<sup>3</sup>/s).

The Russian River Coho Water Resources Partnership has been working in five key streams within the watershed since 2009 to improve water supply reliability for communities and the environment. Partners, including the Gold Ridge Resource

Conservation District (RCD), the Sonoma RCD, Trout Unlimited, the Occidental Arts and Ecology Center's WATER Institute, and UC, work with landowners to develop and implement stream flow enhancement projects—things like irrigation efficiency, rainwater catchment tanks, off-channel storage ponds, and other solutions that reduce the impact of dry season water diversions from our streams. In order to address the effects of extreme drought conditions in 2015, members of the Partnership, the National Marine Fisheries Service, and CA Department of Fish and Wildlife approached streamside landowners about voluntarily releasing their water to augment stream flow in Dutch Bill and Green Valley creeks. The landowners enthusiastically agreed to participate so, in the summers of 2015 and 2016, three flow releases occurred to enhance instream habitat for fish. The Camp Meeker Recreation and Park District (CMRPD) implemented the continuous release of 0.1 ft<sup>3</sup>/s (45 gpm) from their municipal water source into Dutch Bill Creek, more than doubling the base summer flow. Jackson Family Wines and another concerned landowner, Chris Panym, each released approximately 0.05 ft<sup>3</sup>/s (22 gpm) of cold, clean water from the depths of their irrigation ponds into Green Valley Creek. All three releases ran from August through the first rains in October—the driest and most precarious time of year for fish and other aquatic wildlife in the Russian.

In the summer of 2016, UC and the Sonoma County Water Agency conducted a monitoring program to document the effects of these releases. Preliminary data show that surface flow and water quality conditions in some reaches downstream of the release sites improved noticeably within just a few days. Thanks to the altruistic actions of CMRPD, Jackson Family Wines, and Chris

Panym, these vulnerable fish were given a fighting chance at surviving the last two summers in Dutch Bill and Green Valley creeks, despite some of the worst drought conditions in recent history.

In nearby Porter Creek, E. & J. Gallo Winery has also been releasing water from a storage pond for the benefit of coho and steelhead. In addition to augmenting flows during the dry season, they released water in April 2015, when Porter Creek became cut off from the mainstem of the Russian River at the peak of the coho smolt migration. This release temporarily reconnected Porter Creek to the mainstem, allowing the smolts—one-year-old salmon migrating from freshwater to the ocean—to complete their journey downstream.

One challenge with flow release projects is determining the appropriate amount of water to release, and when to release it, in order to offer the greatest benefit to fish while using water as efficiently as possible. Over the next three years, a partnership including Gallo, Sonoma RCD, Trout Unlimited, and UC will be working together to answer this question by testing different flow release strategies on Porter Creek and documenting the effects on coho rearing in the stream. The results of this work

will provide guidance for similar efforts throughout the Russian River watershed.

Though small-scale water releases may not be the most practical or viable answer to protecting our salmon and steelhead for the long-term, creative solutions like this help to balance human needs with those of our native wildlife and may prove critical in helping sustain these species through the dry years. A very small amount of water—even just a few gallons per minute—repurposed to a stream can tip the scale in favor of survival while we strive to restore the long-term ecological conditions necessary for our native salmon and steelhead to thrive, once again.

In addition to directly benefitting salmon and steelhead recovery, acts of stewardship like this serve as great opportunities for ag producers to demonstrate their support for our local environment. If you have water that might be a potential source of life-saving, summertime flow for fish on Dutch Bill, Green Valley, Mill, or Mark West creeks and you are interested in exploring opportunities for flow releases or water conservation projects, please contact your local RCD at: [cohopartnership.org/contact.html](http://cohopartnership.org/contact.html).



Juvenile fish, like these coho salmon (front) and steelhead trout, are threatened by low summer stream flow in tributaries to the Russian River. Courtesy photo.

### UCCE Workshops, Seminars & Events

For complete details, visit: [CESonoma.UCANR.EDU](http://CESonoma.UCANR.EDU)



#### January:

- 5 Cultural Care- Pruning and Grafting of Fruit Trees, 6 p.m., Petaluma Seed Bank
- 7 Making Your Garden More Sustainable, 10:30 a.m. Rincon Valley Library
- 7 Planning Your Backyard Orchard, 10:30 a.m., Sebastopol Library
- 10 FARMING 101 - Heritage Grains, 6pm, UCCE Sonoma County
- 14 Rose Pruning, 10:30 a.m., Petaluma Library
- 21 Starting & Caring for Your Own Backyard Orchard, 10:30 a.m., Sonoma Valley Library

#### February:

- 2 Encouraging and Keeping Honeybees in Your Garden, 6p.m., Petaluma Seed Bank
- 8 GRAPE DAY, 8am, Luther Burbank Center for the Arts [ucanr.edu/SCgrapeday](http://ucanr.edu/SCgrapeday)
- 16 AGRITOURISM SUMMIT, 8:30am Petaluma Community Center [ucanr.edu/summits2017](http://ucanr.edu/summits2017)

#### Farming 101: Heritage Grains

Jan 10, 6pm at UCCE Sonoma County  
\$25 register online

A panel on marketing heritage grains, from the grower, to the processor, to the baker. Grow grains on fallow fields, replace some hay fields or double crop with vines. Learn more about marketing opportunities and register at [ucanr.edu/farming101](http://ucanr.edu/farming101)

#### Organic Growers Needed for Research Study

Participating farms will receive all test results for their farm for free, a summary report of the overall study, farm specific feedback to help minimize contamination of fresh produce and an incentive of \$700 upon completion of the 2-year study. Learn more at [ucanr.edu/OrganicStudy](http://ucanr.edu/OrganicStudy)

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