

Twice as many birds at Putah Creek after water restored

March 15 2018, by Kat Kerlin



Blue grosbeaks, such as this adult male, are neotropical migrants. They winter in Central America and return each spring to nest on the lower reaches of the creek. Credit: Andrew Engilis, Jr./ UC Davis Museum of Wildlife and Fish Biology

A small restored area is having a big impact on regional birds, fish and

animals, according to a study published in the journal *Ecological Restoration* by the University of California, Davis.

Just 4 miles west of UC Davis' main campus sits a sliver of wildness called Putah Creek Riparian Reserve. On a recent spring day, below a canopy of valley oaks and eucalyptus trees came a twittering of chirps, trills and quacks.

Two kingfishers crisscrossed the creek, calling to each other. Woodpeckers drilled into tree bark. A house wren assertively defended his nest box from any real estate competitors. In the distance, a train whistle blew, and an airplane took off—reminders of the urban world just up the road.

Just add water

About 20 years ago, this gem of a green oasis was largely a dry ditch, more likely to be used as a dumping ground for rusty car parts and washing machines than a haven for wildlife or humans. Then in 2000, a lawsuit brought about the Putah Creek Accord, which mandated year-round flows for the creek to help protect fish and habitat. When the water returned, so did the bugs, the fish and the [birds](#).

A lot of birds.

"Since 1999, the year before the water returned, the density of the breeding birds on lower Putah Creek has more than doubled," said lead author Kristen Dybala, a postdoctoral scholar at UC Davis during the time of the study and now a senior research ecologist with nonprofit Point Blue Conservation Science. "That's just kind of incredible to me."

For the study, researchers analyzed about 14 years of bird survey data collected along a 23-mile area of the creek. It found that the average

density of birds increased from roughly 30 birds per acre in 1999 to 84 birds per acre in 2012.

Riparian birds return

Those species aren't just the birds one would expect in urban environments, such as crows and scrub jays. Less common riparian and woodland birds, such as yellow warblers, spotted towhees and song sparrows are visiting in increasing numbers, which is a promising sign for the health of this ecosystem.

The researchers also found that the increase could not be explained by other regional factors or just by the addition of nest boxes along the creek.

"These are benefits specifically to riparian birds, which depend on this streamside habitat and have been less common along Putah Creek," Dybala said. "Some of them nest on the ground; some require tree cavities; some require shrubs. If you're looking at this whole group and they're all improving, then you have a better idea that the entire ecosystem is functioning well."

Beyond the water's edge

The creek is narrow, no wider than a two-lane highway at most. But while its footprint is small, its impact stretches well beyond the water's edge. Separate UC Davis research by graduate student Robert Walsh indicates that tree swallows up to a quarter mile away use Putah Creek as one of their favorite dining spots. Isotopic analysis of their diet showed that more than two-thirds of the insects they eat come from Putah Creek.

"The insects are an amazing food source around the creek," said this

study's senior author Melanie Truan, a staff research associate with the UC Davis Museum of Wildlife and Fish Biology. "It's the pulse of this insect life living along the creek—if you improve the instream environment, you improve it for both aquatic and terrestrial life."



Melanie Truan, a staff research associate with the UC Davis Museum of Wildlife and Fish Biology, has been conducting bird surveys along Putah Creek for about 20 years. Credit: Kat Kerlin/UC Davis

A model for neglected streams

The success at Putah Creek could be replicated at other neglected streams, the authors note. Such restoration efforts hold multiple benefits for people and wildlife.

Beyond the return of fish and birds, biologists conducting the survey have observed a host of other wildlife returning to the creek, from mink and beaver to river otters, bobcats, coyotes, and even an occasional bear.

The potential for groundwater recharge, carbon sequestration, erosion and flood control, improved water quality, and a revived community greenspace benefits humans, as well.

"Putah Creek is this little relic of what used to be in the valley. It's kind of amazing that it's still there. If it hadn't been for the people who fought to protect the water in it, it would just be a ditch," said Truan, noting the influence of the Putah Creek Council and its volunteers on its restoration. "When you step down into the reserve, you feel like you're in a whole different world. It really is a singularly unique place that engenders a lot of really wonderful feelings."

Room for improvement

The study notes that there is room for improvement. The downstream sites along Putah Creek are not attracting as much wildlife as the upstream sites, which mirrors trends in the fish community there. Cooler water entering the stream warms as it moves downstream, resulting in more invasive fish in those areas. More work is needed to connect existing patches of habitat together so that downstream sites can enjoy the same benefits to wildlife as the upstream sites.

More information: Kristen E. Dybala et al. Evaluating Riparian Restoration Success: Long-Term Responses of the Breeding Bird Community in California's Lower Putah Creek Watershed, *Ecological*

Restoration (2018). [DOI: 10.3368/er.36.1.76](https://doi.org/10.3368/er.36.1.76)

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