

## Nation uses technology to help salmon

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Recent storms along the Northern California coastline may have brought concerns about mudslides and scattered power outages, but for the adult Chinook Salmon and steelheads migrating from the ocean to the Smith River to reproduce - it's been like turning on the river's vacancy sign.

Thanks to some recently-installed sonar monitoring equipment courtesy of the Tolowa Dee-ni' Nation Fisheries Division, cameras are able to capture the moment. Or, at least, the migratory part of the more precarious task of the female burrowing her eggs into the riverbed - followed by the male who fertilizes them.

According to the Nation's Fisheries Program Manager, Jennifer Jacobs, funding from the Bureau of Indian Affairs to purchase the sonar monitoring equipment has already produced video quality images for use in its Lhuk Adult Enumeration Project. Images of which started rolling in two weeks ahead of schedule thanks to rainfall that started in September.

Over the first four weeks, over a thousand fish were observed passing through the site, which is located at the Del Norte County Boat Ramp off Fred Haight Drive.

“Knowing how many fish are returning to the river can be used to prioritize restoration, additional monitoring and a host of other watershed actions,” said Jacobs.

This is not the first time the migration of fish in the Smith River has been studied, but it is the most recent.

The Adaptive Resolution Imaging Sonar is similar to equipment that was used by Del Norte County in a 2010-2015 adult salmon count study that was funded by the California Department of Fish and Wildlife.

A repeat of that study, only a better one due to the possibility of using the higher-tech sonar equipment, was on track to begin last year. The Nation had secured funding through a grant for all aspects of the project, except for the technology. The Nation had hoped that the CDFW would loan to them its monitoring equipment, but the project was delayed after that arrangement fell through.

Then earlier this year, things started to look up.

The Bureau of Indian Affairs, which administers the Hatchery Maintenance Program - received a grant for \$181,000. That, in turn, allowed the Nation to purchase two of the sonar systems, which use sound to generate images from just under the water’s surface.

Jacobs said that some water bodies require only one unit, but due to the river’s size two were needed to monitor the full-width of the Smith River channel.

The sonar data is then recorded into video files, which Fisheries Division staff use to analyze daily counts of adults passing through. These daily counts are then combined across the migration season to estimate total run size.

The information, according to a recent press release, is crucial to gauging the relative health of the river's fisheries and evaluating the efficacy of current harvest regulations.

To the Tolowa Dee-ni' Nation, protecting the Chinook Salmon and steelheads also preserves important traditions of the tribe.

“All of our foods are sacred and we hold ceremonies, especially for salmon,” said Jacobs. “Lhuk Mii-naa~-li' (salmon ceremony), represents life and our infinite connections to all things.”