

Engineers get rare opportunity

Repairs to supply line give chance to study water flow

By Dana Nichols

Record Staff Writer

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Normally, the lower Calaveras River is dry and its waters pour instead down the throats of Stockton residents and onto their lawns.

That's all reversed this week and next during a rare alignment of the interests of scientists, fish and the Stockton East Water District.

Stockton East has its drinking-water plant on East Main Street shut down for repairs on its main supply line.

Stockton city wells and a few operated by Stockton East are pumping to keep faucets running.

Stockton East finds itself in the rare position of not needing any river water for its treatment plant but still wanting to keep trout alive on the stretch of the river between New Hogan Dam and Bellota, where the Calaveras normally disappears into pipes headed to the treatment plant.

So that means water dumped down the upper river will continue past Bellota down to Stockton.

And by dumping just a little extra water, Stockton East is providing a rare chance for engineers from the California Department of Water Resources to get into the river and measure the speed and depth of water flowing over various concrete and steel obstacles humans have built over the years.

Those obstacles often strand salmon and steelhead that try to come up the river to spawn. Stockton East is in the midst of developing a plan to manage fish habitat so steelhead and salmon will be able to survive on the river, and it is under pressure from state and federal authorities to do more to protect the fish.

One big problem for fish is flashboards and their fittings, said J.D. Wikert, a habitat restoration coordinator for the Stockton office of the U.S. Fish and Wildlife Service. Flashboards are temporary structures farmers use to back up the river so they can pump water during the summer.

"Even when the boards are out, there are concrete and fittings there," Wikert said.

Concrete bridge abutments also can create drops or flow problems that can block fish, Wikert said.

Kevin Faulkenberry is the senior engineer who headed the six-person crew that came to measure the river Wednesday and Thursday.

He said the crew visited seven sites -- clawing through tangled berry vines in the narrow channel of the original riverbed to the north, and scrambling up and down the steep riprap-covered banks of the Mormon Slough/Stockton Diverting Canal channel that serves as the main route for the lower Calaveras.

"Every site has its advantage and disadvantages," Faulkenberry said. "Some of them are fun, and some aren't,"

Faulkenberry said the group will use the measurements of the river channels and flow of the water to adjust a computer model of the river.

Among other things, that computer model will help show whether it's better for fish under various flows to send water down the old Calaveras channel or Mormon Slough.

It probably takes less water to float a fish up the narrow old channel, Wikert said. But at times when rain sends runoff down Mormon Slough, fish will want to go that way anyway, he said. So restoration of the river probably will mean having plans for using both routes.

Another use of the research: figuring out which obstacles can be fixed to help fish.

"We are waiting for the results of this study before we go into the planning mode where we say, 'OK, we are going to attack this problem first,' " Wikert said.

Stockton East General Manager Kevin Kauffman said this is a good time to let a little water run down to Stockton, because generous winter rains have filled New Hogan Reservoir just a smidge beyond its flood control capacity.

"There is water available to do this type of testing with," Kauffman told his board of directors earlier this week.

The flows were around 40 cubic feet per second in the old channel and 150 cubic feet per second in Mormon Slough this week.

Faulkenberry said that with recent rains, he and his crew encountered flows of up to 300 cubic feet per second.

Stockton East will release similar flows Monday and Tuesday, when Faulkenberry and his crew return to take more measurements.



WATER WORK: California Department of Water Resources employee Alex Begaliev, *above*, takes measurements, *left*, of Mormon Slough, west of Duncan Road near Indon.



Fish-flow study

The Stockton East Water District this week and next week is releasing water from New Hogan Reservoir and letting it go down both channels of the lower Calaveras River so that state engineers can measure the channel and calculate how much water it will take to let steelhead and salmon get upstream past barriers in the river. Many of the barriers are concrete and steel structures used in the summer by farmers to control water levels.



Sources: Stockton East Water District; California Dept. of Water Resources Record

Record photos by
DAVID FINCH