

Published in:

The Daily Triplicate
Del Norte County, California

High-tech fish count

Published: January 17, 2008

By Michelle Ma

Triplicate staff writer

Superior technology that can help count and observe fish behavior recently landed in local waters as part of a test demonstration for fisheries biologists and other interested groups.

The technology was placed in the Smith River in a Tuesday demonstration that drew nearly 60 top-level biologists and fisheries experts from around the region to Del Norte County.



Click this picture to view a larger image.

Peter Johnson, a senior research scientist for LGL Limited, positions a DIDSON unit in the Smith River during Tuesday's workshop demonstration. Close to 60 fisheries biologists and other interested groups attended the workshop that showed how sonar technology can be used to count fish.
The Daily Triplicate/Bryant Anderson

"It couldn't have gone better," said Zack Larson, Smith River watershed coordinator. "It was apparent everyone was excited about the technology."

Representatives from state and federal agencies, Indian tribes and conservation groups gathered along the Smith River to watch experts track underwater creatures using sonar that captured high-resolution images.

The workshop demonstration was sponsored by the Smith River Advisory Council and a California Department of Fish and Game program.

Dual Frequency Identification Sonar—known as DIDSON—technology is useful for a wide range of groups in identifying underwater objects. Along with fisheries biologists, officials with the U.S. Navy and U.S. Coast Guard use similar instruments to identify underwater threats.

More than 200 DIDSON units—built by Sound Metrics Corp. in Washington state—are currently used around the world.

Some use the technology to monitor salmon for commercial and sport fishing. In Alaska, close to 25 of these instruments are stationed in some of the state's rivers to help officials manage important fisheries.

In other places, the technology could be used most effectively as a research tool for fish behavior. Proponents of the technology have said it would be extremely useful for monitoring fish on the Smith River.

But the DIDSON units are expensive—each costs close to \$75,000. California Department of Fish and Game would be an ideal funding source, supporters said.

DIDSON technology can count fish and measure their lengths. It doesn't yet have species-identification capabilities, but seasoned fisheries biologists sometimes can identify fish by their shape and length as visible from sonar images.

The Smith River is known as the last major free-flowing river in California and acclaimed as a haven for anadromous, or migrating, fish. But fisheries biologists have no way to gather a total population estimate of fish returning to the Smith River watershed, said Chris Howard, project coordinator for the Mill Creek Fisheries Monitoring Program.

Howard, who attended Tuesday's workshop demonstration, said the sonar technology would greatly benefit fish throughout the entire watershed.

"I'm sure units like this would give us a great idea of what's returning to the Smith River watershed," Howard said. "It probably literally would count every fish going up the system."

The Mill Creek monitoring has been in place since 1994, Howard said, and though it consistently provides data on anadromous fish in the Mill Creek tributary, that data doesn't reflect the status or condition of fish in other parts of the watershed.

In addition to traditional monitoring programs such as that on Mill Creek, a DIDSON unit on the main stem of the Smith River could provide more information about the vast number of fish that thrive in the watershed, Howard said.

The sonar technology works well in turbid water. Units can withstand flooding and changes in water height, both of which characterize the Smith River.

Participants in Tuesday's workshop got to observe two DIDSON models, one that could reach out 30 meters and a long-range unit that captured images 90 meters away. The instruments are placed under water and shine like a flashlight across the river.

The creators of DIDSON technology initially were working to develop a product for U.S. Navy divers to use. But three engineers broke away and formed Sound Metrics Corp. to start manufacturing units for other purposes, such as fish monitoring, said Ed Belcher, one of the co-founders.

Since then, the technology has been implemented all around the world. Some units are used in California, but there are none in place on the North Coast.

"I think we're just at the beginning of this taking hold for monitoring our fisheries and giving us better research opportunities," said Larson, who contacted DIDSON specialists and organized the event.

"The bottom line is to protect our fishery for the future," he said.

Reach Michelle Ma at mma@triplicate.com.