

# Sensors report water content throughout Calif.

By Olga Kharif, Bloomberg

In February, six students on snowshoes battled as much as 12 feet of snow to penetrate into the heart of the American River basin.

Moving through dense forests and meadows, they mounted 90 iPhone-sized machines, designed to measure everything from soil moisture to temperature and relative humidity, onto 16-foot poles that beam data to researchers like Steven Glaser, a professor at UC Berkeley.

With additional trips this summer, Glaser hopes to create the world's largest sensor network, comprising 7,500 devices that will inform researchers and government agencies for the first time in detail how much water California has in its coffers – critical data for farmers and state planners.



Department of Water Resources customarily tests water content throughout the winter in the Sierra; now sensors can give real-time water info to officials.  
Photo/LTN file

The network will be among the largest tests of a new kind of sensor: one that feels as well as thinks, while using very little power – a D-cell battery can last years.

Glaser's gadgets come equipped with silicon from Linear Technology Corp. and Cypress Semiconductor Corp. that turns them into mini-computers. They're part of a generation of intelligent sensors whose sales may rise about 10 percent a year to reach \$6.9 billion in 2018, according to Transparency Market Research.

Unlike dumb predecessors that gathered data and passed it to a central server to analyze, these devices monitor the information's quality and perform advanced calculations.

"It's smart cities, smart buildings, smart water," said Susan Eustis, president of WinterGreen Research Inc. "It's enabling a world of things. It's going to grow unbelievably fast."

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