

Groundwater has increasing role in state water policy

Heather Hacking, Chico Enterprise-Record, 4-11-13

CHICO — The days of using merely water from snowpack, rivers and streams is over, said Jay Lund Tuesday in a talk about groundwater, as part of a lecture series at Chico State University.

Lund is a professor of environmental engineering at the Center for Watershed Sciences at UC Davis.

It's pretty clear from maps of California's water supply that 20 percent of the land in Northern California is the origin of two-thirds of the water in the state, he pointed out.

Other states have rains that come throughout the year, but California's climate creates a reliance on snowpack and winter runoff. And then, the water is needed in areas of the state that receive almost no natural runoff.

"This mismatch has made California a really wonderful place for water engineers," he said.

His presentation was very matter-of-fact. He works in water modeling, pointing out how things work, and how they could work if adjustments are made.

At one point, he quipped that there will be plenty of jobs for current students interested in working on water issues.

In the water systems that have evolved in California, groundwater will be a larger part of the equation.

If you just looked at storage, total surface water storage, if maximized, would be 42 million acre-feet of water.

But the amount of total surface water storage capacity is about 400 million acre-feet.

One acre-foot of water can provide for about two average California households, or cover one acre of land with one foot of water.

"We use groundwater as a drain," during times of heavy water flow, he said.

Groundwater also provides for the native ecosystem, providing water to plants that reach down to shallow water supply.

But overdraft of groundwater supplies and in many cases, groundwater pollution, is changing the game.

In the Tulare Basin, for example, about 1 million acre-feet more water is pumped than is returned to the aquifer each year, he noted. This leads to land subsidence, where the soil permanently compacts when the water is gone.

Over-pumping also leads to the accumulation of salt in the groundwater. But the economics of water use for agriculture means using more groundwater than is replenished continues, he said.

In his opinion, local control of groundwater will continue, and is probably best, he said.

But the systems are fragmented, and will need to work together more closely as the state grows.

This way, there won't be problems with county boundaries, when water does not follow these boundaries.

In the future, more thoughtful, integrated use of water will evolve, he said.

"Almost all this integration will be local. I don't believe the state can do it."

"Locals are more attentive and you don't have to go through Sacramento to get anything done."

Lund's talk was put on in part by the Association of Geology and Environmental Students at Chico State.

Among his recent work, Lund has worked on several books and reports on the Sacramento-San Joaquin Delta and California water policy with the Public Policy Institute of California.