

Edson wants county to cash in on snowpack

Posted: Tuesday, October 14, 2014 6:00 am

Managing forests for water yield could also reduce fire risk

Caring for the annual snowpack would become a core industry in Calaveras County under an economic development vision being championed by county Supervisor Cliff Edson of San Andreas.

The logic goes like this: Snow melts into water. Water is a precious resource in thirsty California. If water users pay to increase the yield from the snowpack, then crews in Calaveras County can do the required thinning of forests. Secondary benefits include electricity plants fueled by wood waste and payments to property owners who manage land to maximize water yield.

One huge side benefit: The kind of forest thinning that increases water yield would also greatly reduce the risk of catastrophic wildfires.

“I thought, OK, how could we make money on that?” Edson said.

Now, he’s putting together an ad-hoc coalition of water agencies, utilities, forest managers, property owners and others who have an interest in either the prosperity of Calaveras County or in increasing water yield.

The drought, he said, makes it clear that even a small gain in yield will have a dollar value.

“The ratepayers who are consuming the water – you ask them to pay for it,” Edson said, noting that Calaveras water flows through faucets in far-flung places like Oakland and Stockton, and spins turbines for Pacific Gas and Electric Co.

Scientists have known for at least a century that cutting or burning forests in a particular way can increase water yields. As early as 1914, published studies were describing the effects of forest openings on snow.

Many other studies since then have found that openings in forests allow snow to pile up more deeply, increasing potential water yield. But if the openings are too large, as in clearcuts, then sun in early summer speeds melting and causes the water to run off too quickly. If the openings are too small, then the snow is not as deep and the larger number of trees takes up water that then never runs off.

The ideal pattern is openings, or glades, that strike a balance, letting snow pile deeply and eliminating



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Thinning forests properly could both increase runoff in streams like this one and spread the flow over a longer summer melt season.

much of the vegetation that competes with people for the water, but leaving enough large trees to shade the snow and extend the melting season later into the summer.

Despite the sound logic, a leading researcher on managing Sierra snowpack says no one has been able to cut a deal so far in which downstream water users pay for the water yield benefits they receive when forests are properly managed.

“The investment in upstream watersheds has been more large agencies like Denver or New York investing for water quality reasons. I haven’t seen examples of investments for water quantity reasons,” said Roger Bales, a professor of engineering at University of California, Merced, and director of the Sierra Nevada Research Institute at UC Merced.

That means that if Edson succeeds, then Calaveras County would be pioneering an arrangement that offers economic benefits for rural mountain areas and increased water supplies for cities and farms.

“I’m asking to make Calaveras County a pilot program for the state,” Edson said.

Calaveras County sits astride three major watersheds feeding the Moke-lumne, Calaveras and Stanislaus rivers. Edson calculates that 5 million people drink the water that originates in those watersheds.

Add as little as \$3 to \$5 a month on each customer’s water bill, and suddenly there would be enough money to care for forests, Edson said.

Daunting obstacles would have to be overcome to consummate such a deal, Bales said.

“Implementing it is a challenge to work around the legal obstacles to first valuing and making the transfer payments,” Bales said. “The water users don’t own their watershed. So they can’t issue bonds or anything.”

Another challenge, Bales said, is putting a dollar value on the benefit to a water user of doing particular forest work.

Edson acknowledges the unknowns. His proposal is to put together a pilot program and to fund it with a state grant, possibly from a \$7.12 billion water bond on the November ballot here in California.

He says a three-year study could answer a lot of the questions, making it possible for water agencies and forest managers to cut deals. He said he’s had representatives of major players such as private timber land owner Sierra Pacific Industries and East Bay Municipal Utility District express interest.

And Edson said there would also be benefits at lower altitudes in the county. For example, if an electricity plant fueled with waste from forest thinning was placed next to a proposed biosolids (sewage) plant, then the ash from the electricity plant could be mixed with the biosolids to produce fertilizers to boost production of farms, vineyards and orchards.

“This program also includes a school. The school produces watershed managers that can manage land in a balanced way: economically and environmentally.”

One leading local environmentalists said he supports exploring Edson's proposal.

"The number of trees out there is far, far beyond anything that is natural. We are in agreement that aggressive ... treatments are beneficial," said John Buckley, executive director of the Central Sierra Environmental Resource Center.

But Buckley is also skeptical that Edson or anyone else can both come up with enough money and overcome all the bureaucratic hurdles to doing forest thinning on a sufficiently massive scale.

A recent report by the Sierra Nevada Conservancy, for example, said the current rate of forest maintenance needs to at least double or triple. And Buckley said that to maximize water yield from snowpack, forest openings would have to be recleared about every seven to 10 years.

Air pollution laws make it difficult to do controlled burning on a large enough scale, federal environmental laws put time-consuming hurdles in the way of thinning many parts of the forest, and the expense of hiring crews to cut and chip brush is huge, and may outstrip the benefit, Buckley said.

"It does make sense for Cliff and others to say, 'Let's try to find more areas to study this.' But it is going to be a hard sell when the study shows it is a relatively modest increase in water," Buckley said.

But in a time when the water coming out of the Sierra is worth more than the gold mined here, it makes sense to find a way for the region producing the water to benefit from it, Edson said.

"If we can do this, it'll produce jobs forever," he said.