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< As Rains Soak California, Farmers Test How To Store Water Underground

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KELLY MCEVERS, HOST:

Here in California, rivers are flooding after all the rain we've been getting in the past few days, and more rain is on its way. California has, of course, been in a drought for five years. And cities and farms could benefit from all this water if they could find a way to store it. There's a new idea that an alliance of farmers, water experts and environmentalists are trying out - storing the water underground. NPR's Dan Charles reports.

DAN CHARLES, BYLINE: Six years ago, farmer Don Cameron did something that seemed kind of crazy. It was wintertime. Nothing was growing. And even though his crops didn't need any water, Cameron went out to a nearby river which was running high because it had been raining a lot, and he opened an irrigation gate. Water rushed down a canal and flooded hundreds of acres of vineyards.

DON CAMERON: We started in February, and we flooded grapes continuously for the most part until May.

CHARLES: Cameron was doing this because for years, he and his neighbors

southwest of Fresno have been using wells, pumping water out of the ground to irrigate their crops, and that groundwater was running low.

CAMERON: We farmed out here for 35 years and have seen over time that the groundwater table had been declining. And I became really concerned about it.

CHARLES: So his idea was pretty simple - flood his fields and let gravity do the rest. Water would seep down into the ground, all the way to the aquifer. And in fact, it worked. These days, Cameron's crazy experiment is the hottest idea in California water management, especially this week, with rivers flooding all over the state.

CAMERON: This is going to be the future for California. If we don't store the water during flood periods, you know, we're not going to make it through the droughts.

CHARLES: Helen Dahlke, who's a water specialist at the University of California, Davis, is working with half a dozen farmers this year who are ready to flood their fields.

HELEN DAHLKE: We have test sites set up on almonds, pistachios, alfalfa just to test how these crops actually tolerate that water that we put on in the winter.

CHARLES: There are two big reasons for these experiments. The first is California's aquifers are depleted. It got really bad during the recent drought when farmers couldn't get much water from the state's surface reservoirs. They pumped so much groundwater that many wells ran dry. The water table in some areas dropped by 10, 20, even a hundred feet. Aquifers are especially depleted in the southern part of California's Central Valley, south of Fresno.

Flooding the fields could help a lot, but there's a second reason to put water underground. And it has to do with climate change. California's always counted on snow piling up in the Sierra Nevada Mountains as a kind of giant water reservoir. It

releases water gradually as it melts, but California now is getting less snow in winter and more rain. And wintertime rain just runs away into the ocean.

DAHLKE: So we really have to find new ways of storing and capturing rainfall in the winter when it's available.

CHARLES: There's no better place to store water than underground. In theory, California's aquifers could hold more than twice as much water as all of its dams and manmade lakes. And Peter Gleick, a water expert and co-founder of the Pacific Institute, says there is enough water runoff available after winter storms to recharge those groundwater aquifers. The hard part will be getting the state's farmers and irrigation managers to go along with the plan because it will require flooding hundreds of thousands of acres, maybe millions of acres.

PETER GLEICK: I'm cautiously optimistic that we could do this, but it's going to require a different way of thinking. It's going to require a lot of farmers and owners of ag. land to be willing to flood land when the water's available.

CHARLES: And Gleick says even if this does happen, it won't do enough by itself to protect the groundwater. There also will have to be strict limits on how much farmers can pump from aquifers. They'll have to be managed so the water is there when farmers really need it, when the rains don't fall. Dan Charles, NPR News.