



Shmuel Thaler/Sentinel

Natividad Perez sets a sprinkler near Watsonville, where water is a precious commodity.

Agriculture works to save water

By **TERESA JIMENEZ**
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WATSONVILLE — Roads flooded with water meant for agricultural fields tend to give people the wrong impression of farmers' efforts to conserve water, grower Brad Bennett said.

"It's the visual thing that gets people," Bennett said. "A flooded road is a drop in the bucket, but it's an eyesore."

Larry Galper, who grows strawberries off San Andreas Road, agreed.

"I have to water right now, and if it's windy and some of that water ends up on San Andreas, people are going to

think I'm wasting water," Galper said.

A farmer's obligation to reduce water use must go along with finding an alternative water source, said Mike Armstrong, manager for the Pajaro Valley Water Management Agency.

From drip irrigation systems used to water strawberries, to transplanting and laser-beam leveling, farmers have found new ways to use less, said Farm Bureau conservation committee consultant Ron Tyler.

Despite all their efforts to conserve, agriculture still uses about 78 percent of the groundwater supply in the

Pajaro Valley, compared with about 16 percent that goes for residential use.

In the last 20 to 30 years, agriculture's water use in the Pajaro Valley has increased as the farmers have gradually switched from apples to crops such as strawberries and lettuce, which need more water than apples.

The cost of water is an added incentive for farmers to cut back, Charles McNiesh, a water specialist with the PVWMA.

"It's expensive for farmers to use water," McNiesh said. "They have a finan-

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cial incentive not to overuse it. It also causes them problems if they over-water. If they go to other methods of irrigation, it's an advantage."

Galper said if he gives his strawberries too much water, he can ruin the whole crop. And Tyler said that what water farmers pull out of the ground is necessary for their livelihood.

"Farmers have got to pay their bills so they've got to use it," Tyler said.

Since farmers are going to use it, they're finding methods to use it more efficiently, Tyler said.

Laser-beam leveling makes sure land is flat so water flows evenly, Tyler said. It can save a farmer 15 percent in water use and increase a crop yield by 10-12 percent.

Dick and Bob Peixoto are the only laser levelers in the county, and have been saving farmers time, money and water since 1984.

Tyler said water-saving methods such as drip irrigation can only be used with strawberries, but farmers have also tried the method on vegetables such as broccoli and celery.

Transplanting crops — growing them under ideal conditions and then putting them in the ground — also saves water, Tyler said.

In the 1980s, a California Irrigation Management Information System was installed in various locations in the Pajaro Valley. The system calculates the amount of evapotranspiration, Tyler said, or the amount of water being released by the soil and crops.

The stations measure temperature, humidity, so-

lar radiation and wind speed to determine the best time for irrigation, McNiesh said.

"With that, you can see how much water is being used by the crop and you can put it back in," he said.

The PV Water Management Agency is also providing a mobile lab program to farmers, in which an expert does an audit of the irrigation system, McNiesh said. The technician will test the system to see how well it works, he said.

The report tells farmers how evenly their irrigation system is applying water, McNiesh said, helping the grower to get a better picture of the system.

"Is it getting water near the pump and furthest away? The technician and the farmer will discuss it and see if different nozzles, pressure regulators, or new tape for drip irrigation will help," McNiesh said.

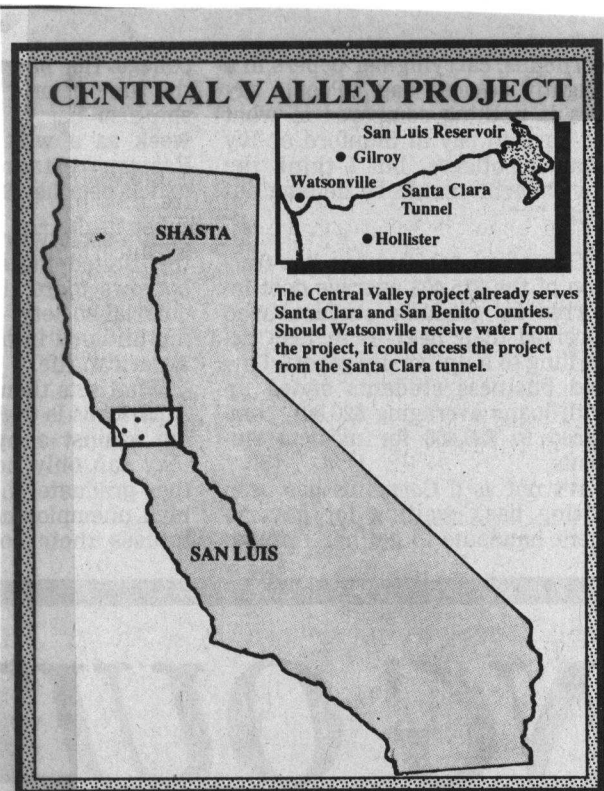
The PVWMA has also requested voluntary participation in a water conservation study. Growers were asked to complete a conservation plan for this year and indicate what measures they would be implementing.

"Our farmers do a good job, but we want to get them to do a better job," Armstrong said.

Only 25 percent of the surveys were returned, McNiesh said.

"It's not enough for the information to be really useful, but it's a start," McNiesh said.

The PVWMA has asked farmers in the valley to register their wells, McNiesh said, though not all have responded. Owners of large agricultural wells must state twice a year how much water has been pumped, he said.



years and doesn't have anything to show for it, he said.

But Armstrong said the PVWMA has been working with the Bureau of Reclamation to develop a study on water options for the Pajaro Valley. The problem, he said, is that Pajaro Valley's water plan is not a high priority project for the bureau, and it's taking longer than anticipated to put together.

That plan, called the Basin Management Plan, is similar to a city's general plan, Armstrong said, in that it looks at the water available in the county and the future demand for the resource. The plan will then examine the alternatives available for meeting the future demand, Armstrong said. The agency is aiming to complete the plan by the end of the year, he said.

Though logic would suggest that PVWMA act quickly and obtain the San Felipe water before the legislation restricting its use passes, Armstrong said that by law, the water agency cannot take action to bring water to the area without a plan in place.

In addition, any water imported to the area must be for agricultural use only, he said.

"We're working with (U.S. Rep. Leon) Panetta and staff," Armstrong said. We want language that will protect our current status. We're fearful that if the bill is approved there will be little we could do about it."

Panetta, D-Monterey, is hoping to amend the legislation, which has already passed in the House, to make sure that Pajaro Valley could get water from the project, his press secretary Barry Toiv said.

"The bottom line is, there's less water available. We're working to insure that Watsonville gets water with the understanding that everyone will get less," Panetta said.

Looking to conserve

Hope, president of the Salmonid Restoration Federation, said there's a difference between water use in the Central Valley, where the resource is plentiful thanks to the Central Valley Water Project, and water use in the Pajaro Valley, where farmers know the value of the groundwater.

Water abuses in the Central Valley may restrict the Pajaro Valley from getting the critically needed resource from the project, said Hope.

"There are quite a few lands that shouldn't be farmed in the Central Valley," Hope said. "They're abusing the land, salt is coming up, and they won't be able to farm it much longer."

instead of growing water-consuming crops, Hope said Central Valley farmers should look to crops like apple trees that can survive from average rainfall alone.

In addition, Hope said Central Valley farmers have created consortiums that allow them to get project water, and qualifies them to grow subsidized crops such as cotton and alfalfa.

"The land is not prime ag land, and the crops are high water users," Hope said. "They're going to tap the land out and then it will be gone."

Hope said 90 percent of the rivers and creeks from the 1950s are gone in the Sacramento area, and fisheries are going out of business.

"The project is wiping out all the fisheries and there won't be agriculture at the same time. To know this information makes it very hard to sleep at night," Hope said.

And since farmers pay for project water based on their ability to pay, they tend to use the resource liberally, Hope said. A higher price results in more careful use, he said.

According to the Bureau of Reclamation, water for agricultural use costs \$6 to \$32 per acre foot, but water agencies add their own fees on top of that.

Bennett said an acre foot costs him from \$45 to \$100. "If we look at the total basin, it really is everybody's problem," Tyler said of salt-water intrusion. "The fact that they're pumping more than what were getting in recharge will send it further and further inland. If farmers are hurt by it, so is the shipping industry, the fertilizer industry — anyone supplying to growers is going to be impacted."

The search for solutions

While there are numerous alternative water sources the PVWMA may consider to increase the valley's water supply, catches come with many of them.

With desalination, the cost of treating the water to get the salt out would be too much for farmers, said Mike Armstrong, manager for the PVWMA.

Monitoring how much water farmers pump out of the ground hits a sore spot with growers, who see another layer of regulation being placed on them.

The PVWMA has requested well registration, and Armstrong said nearly 3,000 are now recorded. Should construction money be needed for a pipeline, or a number of other alternative water sources, he said farmers would have to pay for the amount of water being used.

Water importation, such as the Central Valley Project, would require the construction of a water storage facility, and permits for its construction in environmentally sensitive areas would be difficult to obtain, Armstrong said.

"No one in California has built a water storage facility in over 20 years," Armstrong said. "It's getting harder and harder to get water for people."

And Tyler questioned whether the Central Valley Project can provide enough water for the Pajaro Valley in addition to the areas it already serves.

According to the federal Bureau of Reclamation, the six-year drought has lowered the water level in the reservoirs of the project to their lowest point since the drought in 1977.

Water reclamation, which would be compatible with the secondary wastewater treatment plant to be constructed in Watsonville, can only provide about 7,000 acre feet. The Pajaro Valley uses about 70,000 acre feet, Armstrong said. And an additional treatment plant, or tertiary treatment, needed to make the water suitable for agricultural use, would cost about \$30 million.

"From the feasibility standpoint, water reclamation is the easiest to achieve," Tyler said.

Tyler said treating waste water would only make up a portion of the solution, however.

Farmers, in the meantime, find themselves in the middle, often accused of abusing the resource that critics say is handed to them, either through an unlimited groundwater pumping or piped-in water.

But Bennett said the majority of farmers in the area practice conservative water use.

"There's no one thing that's going to solve the water problem," Bennett said. "It's a puzzle made up of different parts."