



United States Department of Agriculture
Natural Resources Conservation Service

helping people help the land

Excellent Stewards of California's Water

“I would not be able to survive any longer with flood irrigation. I now have the tools and know-how to conserve water and be a successful farmer.”

Sacramento Aguilar
Merced County Farmer

Almond grower Sacramento Aguilar is proud of the work he has done in his orchard but he is quick to point out that he is not done yet. With the recent installation

of micro-irrigation and cover crop plantings between his rows, the 13-acre property can already be considered a model of conservation in California's Central Valley.

“I cut my irrigation usage from seven acre feet to three acre feet but that isn't even the best part,” said Aguilar. “It is the reduced weeds that I don't have to worry about anymore that really makes this work worthwhile.”

Conservation Planning

These successes were made possible with the help of a conservation plan that Aguilar did in 2010, with help from the NRCS Merced Service Center. Conservation plans are a free tool available to farmers and ranchers to help them determine what management practices can be incorporated to protect and improve natural resources. In California's Central Valley, conserving irrigation water is priority number one due to California's ongoing drought.

While taking over the family's orchard caught him by surprise in 1997, with the passing of his father, Aguilar has made it his mission to run the operation as sustainably as possible. His father tried growing watermelons and tomatillos before finally settling on almonds. Aguilar continued to monitor yearly yield religiously and noticed a steady decline in tonnage through 2010. At that point, Aguilar looked for assistance.



Sacramento Aguilar (left) and NRCS Soil Conservationist Jenna Dunn discuss the cover crop varieties in Aguilar's seed mix.



Aguilar's Conservation Plan:

- Conversion from flood irrigation to micro-sprinkler system.
- Pollinator-friendly cover crop seed mix planted each spring.
- Water management skills to properly monitor if irrigation is needed and the right amount to apply.

Having been put in touch with staff from NRCS's Merced Service Center, Aguilar wanted to make the necessary changes to increase yield and reduce input costs. With a conservation plan in hand, Aguilar converted from flood irrigation to micro-irrigation and quickly noticed increasing yields.

"I really enjoy coming back and seeing how great Sacramento's orchard is doing," said Jenna Dunn, NRCS soil conservationist in Merced. "After we helped convert his irrigation system, we expanded his conservation plan to include cover crops and establishing pollinator habitat. Aguilar is very receptive to incorporating conservation practices on his farm, which in turn improves his farm's production and reduces his input costs."

Incorporating Cover Crops

California currently faces at least three looming challenges in agriculture: drought conditions, bee decline and protecting soil health. Planting pollinator-friendly cover crops helps overcome all three issues. Cover crops help trap moisture in the soil and improve soil organic matter. In addition, Aguilar's cover crop seed mix included phacelia and common vetch to attract pollinator to the property. Considering pollinators are essential to almond production, adding cover crops was an easy decision to make.

Looking Ahead

Aguilar intends to incorporate additional recommendations made in his conservation plan. He wants to install more than 500 feet of hedgerows along one fence. Hedgerows will attract pollinators, like native bees, and provide food and habitat to keep them around. Hedgerows have been a popular conservation practice because they improve pollinator populations and are aesthetically pleasing.

Aguilar also plans to install soil moisture sensors to have accurate information on when irrigation water is needed and how much to apply. Recognizing that California's drought will not go away anytime soon, irrigation efficiencies are essential for survival.

"NRCS saved my farm," concluded Aguilar. "I would not be able to survive any longer with flood irrigation. I now have the tools and know-how to conserve water and be a successful farmer."

Right: Aguilar plans to plant hedgerows along this barren fenceline. Hedgerows provide food and shelter for beneficial insects, and a mix of spring, summer and fall color.

