



CASE IN POINT

LOCATION:	Pine Meadow Ranch Sisters, Ore.
CHALLENGE:	<ul style="list-style-type: none">– New point of diversion for water route– Create new main line from creek to pivot– Protect fish route and irrigate field
DEPLOYMENT:	<ul style="list-style-type: none">– Eliminate dam– Create new water diversion– Employ pump from creek to sump with fish pipe, then pump to pivot– Create new mainlines for pivot and hand lines
EFFECT:	<ul style="list-style-type: none">– In compliance with Oregon water regulations– Improved fish migration route– Replaced wheel line irrigation with pivot– Consistent water supply for grass and hay



Change of Water Route Leads to First Experience with Pivot Irrigation

In the shadow of Three Sisters Mountains sits Pine Meadow Ranch. Over the years, the ranchers there have seen a lot of significant changes when it comes to water: managing their own dam, solving water and fish migration issues, creating a new point of water diversion, and replacing wheel line and flood irrigation methods with center pivot irrigation.

The History of the Ranch

In 1971, Dorro Sokol purchased Pine Meadow Ranch and managed it for 10 years, when her son Doug joined her. At this time, they grew peppermint and alfalfa, and leased the unused land to another rancher for his cattle to graze.

At the time, water was diverted to the ranch from nearby Whychus Creek by a dam built of timber, which offered a temporary and risky solution. Never one to do things halfway, Doug decided to replace it with a permanent concrete dam. In 1997, the dam was in place to divert water more than a mile via a ditch to a pond, which fully supplied the ranch with water.

In addition to those challenges, Pine Meadow Ranch used wheel line irrigation to water their land, which proved to be inefficient. Never happy with these irrigation methods, they wished for a better, more efficient way to water their land.

Unexpected Changes

In 2008, Doug suddenly passed away, leaving Dorro to manage the ranch herself. A year later, her daughter Cris Converse left her consulting job to come back to the ranch. Not long after she returned, Cris and Dorro were approached by the Upper Deschutes Watershed Council, who told them the dam interfered with fish migration and offered to work with them to resolve the issue.

"They were trying to find a way to help fish migrate past the dam to get to their spawning habitat," says Cris. "My first reaction was to tell them this was our water, and we can do what we want with it."

However, because of the constant maintenance of the dam and its ditch and periodic flooding of the creek, it became evident to Cris that it might be mutually beneficial to work with UDWC to find a solution.

"We knew things were going to change," Cris explains. "It was inevitable, so we thought it would be best to work together and be part of that change."

It took four years of negotiations and planning, but the group finally had a plan in place that worked for everyone involved.



The Project

Two significant events occurred during the first stage of the project: demolishing the dam and changing the point of diversion from Whychus Creek. Cris hired a consultant to work with the State of Oregon Water Resources Department, Fish and Wildlife and other state government agencies to gain permission to change the point so that a dam was no longer necessary to get the water to the ranch. Today, that point of diversion is now on the ranch itself – an improvement over the lengthy 1.5-mile trek from the creek.

Construction of the new diversion, pond and irrigation machine started in February 2014, and by the start of growing season Pine Meadow Ranch was irrigating with water from Whychus Creek, which is diverted into a 20-foot culvert, where a fish screen and an exit pipe protect migrating fish. From there, a 65-horsepower variable frequency drive (VFD) pump pushes water about 3/8 mile through a new, larger main line to their Valley® 8000 series center pivot.

Steve Frazier, Store Manager of Thompson Pump and Irrigation located in Madras, Ore., worked with Cris on the project. He says his team's biggest challenge, besides working with multiple government agencies to meet their criteria, was making the last span on the center pivot long enough to avoid a ditch.

"There are seven spans on the pivot, with a 100-foot overhang for clearance on the last span, which has an end gun," Frazier explains. "We came into the project after the new point of diversion was decided, so it was a pretty straightforward installation for us."

"The guys at Thompson Pump are absolutely the best," says Converse. "They're like old-time family ranchers who will work hard and do their best for you. I worked with them every day, and they trained me on everything I needed to know. They're very knowledgeable about their product, and they were a big part of our success on the project. They do Valley Irrigation proud."



The Results, So Far

Today, Pine Meadow Ranch is home to 176 head of cattle, and they're growing only grass under their center pivot. At some point, Cris expects to grow grass hay as well.

"We are really happy now that we've got a Valley pivot," says Converse. "We have a Select2 panel on it, so I can keep track of everything going on, which is important to me. The power bill is a bit higher now, but everything else is more efficient, so we come out ahead."

Pine Meadow Ranch has taken things a step further by conserving water. They have permission to use 3.2 cubic feet per second (CFS), but they have sold one CFS back to the state. This means that while they currently have more acres than water at their disposal, they have found that they don't need to use the entire allotted amount due to the efficient way center pivot irrigation uses water. In fact, Pine Meadow Ranch currently runs only 960 gallons per minute, and they're still experimenting with how many sprinklers they need to run at once.

"This project changed the way we operate. I do miss the pond from the dam, but this was the appropriate step to take. Besides, it's really fun watching that pivot from our house," Cris says. "It's the result of a ton of hard work and cooperation."

"My brother always wanted a pivot, and I really tried to honor him when I made a pivot part of the deal. I know he's smiling now when we're running it. It was his dream, and now it's come true."