

Ranchers install solar pump to eliminate hauling water and utilize more pasture

AT A GLANCE

Ranchers had considered drilling a well and installing a solar pump but were reluctant to do it. With the assistance of University of Idaho Extension, the project was completed.

The Situation

The East Fork Grazing Association was grazing their cattle on a high mountain pasture. Ranchers were making two twelve mile trips a day, up a rocky canyon road to haul water with a two-ton truck. This took a rancher approximately six to eight hours a day. This situation also made it, so the cattle were unable to fully utilize the upper mountain pastures, because of having to walk well over a mile to water. Cattle were spending most of their time lower in the canyon, which caused overgrazing of those areas and making grazing standards difficult to achieve with these conditions. The rangeland is a mixture of state lands, federal lands, tribal lands and private land. Failure to meet grazing standards carries penalties.

Our Response

UI Extension in Power County entered discussions with the grazing association and state land representatives to explore available funds for water development and determined that there were funds available from the prior year. The grazing association needed to put the costs and plans together to present to state land representatives. UI Extension researched the required equipment and its costs. The grazing association contacted a local well company to get an estimate for



Members of the East Fork Grazing Association install pump, panels and troughs. Photo by Terrell Sorensen.

drilling the well. They determined the well needed to be placed as high in elevation as possible so that gravity would help the water flow to the lower pastures. This information was then submitted to the state, and they gave their approval to go ahead with the project. Drilling permits were obtained from the Idaho Department of Water Resources, the drilling site was selected, and the well was drilled in May and June of 2018.

Upon completion of the well, a solar pump and various pump equipment were ordered and delivered. On July 17, 2018 UI Extension met with the grazing association and together installed the pump, panels, troughs and started pumping water that day.

Program Outcomes

The pump system worked exceptionally well. Providing enough water through a sweltering and dry July, August and September. It has continued to work well in 2019. Solar pump systems are usually problem free with very little maintenance. It has freed up one individual for other jobs since it's installation. The following are some of the cost savings found.

2018

Two trips per day (fuel for two months) — 12 miles round trip. Fuel costs = \$1,531

Labor savings (two months). = \$4,320

Depreciation on truck = \$216

Total savings = \$6,067

2019

Two trips per day (fuel for three months) — 12 miles round trip. Fuel costs = \$2,250

Labor savings for summer = \$6,480

Depreciation on truck = \$324

Total savings = \$8,954

Total savings for 2018 and 2019 was \$15,021

Total cost of the project was approximately \$15,500

The return on investment of the project was completed in two summers.

This does not include other benefits.

- More even grazing — and better utilization of the pastures which makes it easier to achieve grazing standards.
- Better gain on calves — due to less traveling for water. Studies have shown calves traveling over a mile for water will gain 10-20 percent less.
- Ability to develop other well and pump system in future years.
- Wear and tear on the truck was reduced.

The Future

In 2020, the plan is to develop more water sites to utilize the pasture better, reduce resources required and make the operation more profitable. Several other sites are suitable for solar pump systems. Other grazing associations in Power County are considering solar pump systems to be installed this year and next.

Cooperators and Co-Sponsors

- University of Idaho Extension, Power County
- East Fork Grazing Association
- Idaho Department of Lands.

FOR MORE INFORMATION

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