problem will be. Trespass was identified by both groups as being the most serious problem affecting hunter-rancher relationships. The solution to this problem, however, is identified differently by the two groups. Most ranchers indicated enforcement of trespass laws would solve the problem. The majority of the hunters indicated the problem could be alleviated by the availability of accurate land status maps that would provide identification of the private and public lands. Some of the hunter respondents also reported that this would be a way to prevent the illegal posting of the public lands. Both groups indicated a lack of respect of rights of others as a major cause of hunter-rancher problems.

One major obstacle between better hunter-rancher relationships is attitude. Some of the responses indicated ranchers and hunters think they are expected to feel some animosity towards each other. Occasionally respondents would answer questions in such an extreme direction that it was obvious their answer reflected a desire to influence biased results. In some cases the respondents would answer all the questions in the most negative manner possible. These respondents were obvious in the attempt to make the other group look irresponsible. It is probable that these types of attitudes are responsible for much of the strained hunterrancher relationships existing today.

Meetings between representatives of livestock and hunter groups have and should continue to be held. One of the main objectives of this survey was to indentify problems and solutions to problems. Only through a cooperative effort and more meetings between representatives can these solutions be implemented.

The most positive factor this study revealed is a strong desire by most hunters and ranchers to mend the differences that affect their relationships. Ranchers are sincerely concerned about activities that affect their livelihood and the use of the land entrusted to their care. Hunters are concerned about their ability to utilize lands and resources they have a legal and moral right to utilize. Both groups have a common desire to maintain the quality of these lands and to ensure the long-range uses of the resources provided. Only through cooperation and a sincere concern for the rights of others will the activities of hunters and ranchers be compatible.

Cooperative Projects Stretch Limited Range Improvement Funds

Thomas C. Roberts, Jr.

Clift Jordan, a cattle rancher from Kamas, Utah, and the Bureau of Land Management (BLM), in spite of depressed cattle prices and federal budget cutbacks, are putting in a well and pipeline. The pipeline starts at a well drilled by the BLM. Jordan has bought and installed the 1 1/2 miles of 1 1/2-inch black plastic pipe. The pipeline opens up country that was previously only grazed when there were puddles or snow for the cattle to use for water.

Jordan runs approximately 500 head of Hereford-Angus cross cattle on the Boulter Wash allotment in southeast Tooele County. He runs the cattle in a winter-spring season and feels they do well in the comparatively benevolent (compared to Kamas) climate.

When asked how his cattle did on the mixed sagebrushgrass allotment, Jordan replied, "These cattle winter better here than anywhere else; they have a good variety of feed." The allotment has not only the sagebrush grass community type but some salt desert shrub, pinyon-juniper, and some crested wheatgrass seedings. He felt that "the pipeline will distribute the water so the cattle will have to travel no further than a mile for water. The cattle are in excellent shape year around, with most of the cows calving in 30 days, all of them in 60 days." Another question was how he felt the pipeline (with three troughs along its length) would improve the watering of cows that already use snow to some extent, Jordan replied, "The water system will insure that they stay in good shape when there isn't snow available and will keep the utilization of the allotment even."

The fact that this is a winter allotment and the troughs which are being installed will need to have the ice melted has led to some innovative thinking. To overcome this problem, Clift and his son use a small propane catalytic burner. "Interestingly, when there is snow on the ground they drink very little water. It all depends upon the snow conditions," Jordan said.

This is one example of the cooperative planning and execution of a project that will lead to more even utilization of the forage resource and heavier calves. Wildlife will also benefit from this project. In exchange for some pipe, Jordan is going to install a pipeline spur for wildlife. The Bureau wildlife program has funded this aspect of the project and will continue to provide water for deer and possibly antelope in the future.

Across the valley, Cal Olsen and Bob Pehrson are putting in a fence with BLM supplied material. The fence will help implement an Allotment Management Plan (AMP) that they and the BLM have developed. Their allotment in eastern Tooele County includes some pinyon-juniper type that was

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Members of the Tooele Wildlife Federation building a fence around the wildlife water development in the Boulter Wash allotment.



Cal Olsen building his fence across the allotment. The prescribed burn is below him.

treated with a BLM-funded prescribed burn last August. Once it gets two years' rest, it will be a functioning part of the Allotment. Also benefiting from the burn will be the wildlife. In June of last year a pipeline was installed from a small spring. The pipeline supplied two drinking troughs and two wildlife seeps. The seeps consist of two 25-foot pieces of perforated pipe buried at a shallow depth in the ground that are allowed to drip, creating habitat for small game. Joelle Buffa, the area wildlife biologist, feels that, "The seep areas together with the succulent forage created by the burn will improve sage grouse brood rearing habitat. Sage grouse populations have been decreasing in the Tooele County and these cooperative efforts between the livestock permittees, the BLM, and the Tooele Wildlife Federation volunteers can help to reverse the trend and increase the sage grouse production. (The Tooele Wildlife Federation will construct the protection fence around the seeps.) The pipeline, burn, and seeps will also improve habitat conditions for mule deer which summer in the area." Again, the BLM will maintain the wildlife projects.

Both of these are examples where the BLM and the rancher (and wildlife interests, too) are cooperating to the benefit of each. With tightening budgets, resulting in decreased appropriations, this kind of cooperation is not only a nicety, but a necessity. Even in the best of times, this kind of cooperation can make money spread through more projects and can improve working relationships. In the next few years the money through BLM, Forest Service, and SCS will be very limited in most states for range and wildlife improvements. Already in the BLM the contributed funds or labor of a permittee is a consideration in rating the priority of a given project. It is a simple fact that there are more projects than

there is money. A side benefit is that the cooperative work leads to excellent working relationships between people because of better communication and understanding.

In conclusion, range improvement projects can be put in (implemented), even under budget cuts. Cooperation is going to help make them possible and frequently enjoyable.

Electric Fencing

Robert E. Steger

Many popular trade magazines have articles about economical grazing management programs and mention that several miles of electric powered fencing were used. Many people have had a previous bad exposure to early day electrical chargers. What is this new interest in electric powered fences? Do these successful managers have knowledge that is unknown?

-These questions are best answered by three facts about electric fences:

- They are effective.
- -They are relatively inexpensive.
- -They provide flexibility.

Effectiveness

A properly planned and constructed electric powered fence which utilizes the latest technology is effective. It is different from conventional fencing. An analogy might be drawn to be first exposure of the early day Hereford breeder to his first Brahman bull. Now, consider the current popularity of Bradford cattle.

Essential prior planning can significantly enhance the effectiveness of electric powered fences. Animals cross fences for two reasons—to get something to eat or to join other animals. Specially prepared training areas greatly increase the effectiveness of electric fences. Electric fencing effectiveness is due to the establishment of a mental barrier for the

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animal. Animals such as horses, bulls, and bison, which are difficult to contain with conventional physical barrier fences, are more easily contained with electric fences.

The question is often asked, "Are the new energizers ("New Zealand type") more effective than earlier day models ("weed chopper type")? The answer is a definite "yes." The "New Zealand type" have a high voltage and a low impedance. They operate at a voltage of 4500 to 6000 volts at a relatively high amperage as compared to other energizers. They are safe due to the short duration of the pulse, and some units are U.L. approved. This higher voltage and amperage is possible through larger capacitors and a pulsating current. The pulses occur at a rate of approximately 55 per minute. The end result is that much of the current passes through the wire, even under relatively heavy vegetational loads. Also, the continuous recurring pulses serve as a follow-through if the animal persists in touching the fence.

The safety feature of these electric currents lies with the short duration of the electric pulse; $\frac{.001}{300}$ second. Also, smooth wire is used instead of barbed wire so that animals can easily get away after being shocked.

The animal being controlled determines the amount of current needed in an electrical fencing program. Cattle, horses, and swine are quite easily contained with 2000 to 3000 volts. Sheep and goats, on the other hand, require 3000 to 4000 volts. Wildlife and predators usually require in excess of 4000 volts. The hollow hair of deer provides a degree of

