

Increasing Scab Land Production Thirty Times ...In the Pacific Northwest

LLOYD GIFT, Bonanza, Oregon as told to

RAY O. PETERSEN, County Extension Agent, Klamath Falls, Oregon

"Water is the key to a 30-fold increase in the grazing capacity of this sagebrush, juniper scab rock land" said Lloyd Gift, of Bonanza, Oregon, winner of the coveted honor "Pacific Northwest Grassman of the Year for 1955."

Water—stored during the season of run-off and applied to the land following the airplane seeding of adapted grasses—transformed this scab land with a grazing capacity of one head per 40 acres to land that supports one steer on each 1½ acres in a much better style of living.

An average of 252 pounds of beef per acre was secured with yearling steers during the past two grazing seasons.

Early Ranch Improvements

The Gift ranch, which now consists of 6,000 acres of land, was put together gradually from county-owned land taken for taxes, and from individuals who considered the land practically worthless.

Part of the ranch consisted of a flat bottom area that flooded every spring and later in the summer dried up. Lloyd started to develop a ranch by draining, leveling and reseeding the bottom land, but after completing this work he found it would not produce enough hay and pasture to make an economic unit for him and his family, and his son Martin, who is now a partner in the ranch operation.

The Gifts decided to see what they could do with the higher rocky scab land. The land was too rocky for cultivation. Lloyd points out the effect of erosion over the years on the area. Marks on rocks indicate the position the soil held on the area some years ago. Several inches of topsoil have been removed by erosion following deterioration of the native grasses.

Run-off records of the watershed showed an average spring run-off of 12,000 acre feet. In order to retain this and provide sufficient water for this land and for other land to be fully developed, it was necessary to construct two additional reservoirs, each holding 1,000 acre-feet of water. Also, in 1954, Gift decided to drain the original 3,600 acre-foot reservoir and with soil from the bottom of the structure increased the height of the dam to provide storage capacity for 9,000 acre-feet of water. This provides storage for a total of 11,000 acre-feet of water, which amounts to about two years' supply of water for the land now developed and that to be developed in the future.

Water Spreading

The first step in the development of this scab land was to install field ditches and contour ditches to spread the water over the irregular sloping land and to arrange for ways to pick up the run-off irrigation water and bring it back into the canal system farther down the field. As soon as the canals, field ditches, contour ditches, and all irrigation structures were installed the land was seeded to desirable grass mixtures by airplane. It was impossible to pull seeding equipment over the rocks scattered over the land. The ditches were made with a caterpillar tractor using a subsoil blade and a V-ditcher. After the seeding the land was irrigated; and although the soil is thin, excellent stands of grass resulted. During the past seven years Lloyd has continued to develop this rocky area until 1,000 acres of this kind of land is in fine pasture.

The development of the rocky scab areas started seven years ago. Here meadow foxtail, *Alta fescue*,



Lloyd Gift and his neighbor, Rex High (right), inspect the heavy growth of forage on scab land before livestock were turned in for late fall grazing.

timothy, brome, bluegrass, and white and Alsike clover were used. The bluegrass has been used to provide a tough sod to resist erosion on the slopes. Lloyd has noticed that meadow foxtail stands the frosts of the area better than any other grass. It starts earlier in the spring and grows later in the fall. The elevation is nearly one mile high and late spring frosts damage less hardy varieties. The cost of developing the scab rock area has been around \$20.00 per acre. This does not include cost for reservoir construction.

Value of Water Spreading

The value of the development of the rocky scab slopes can be seen by comparing the carrying capacity of the land before and after irrigation. It requires 40 acres of the rocky scab land to provide grazing for one mature animal for a grazing season. After irrigation and seeding have been completed the area will carry one animal for each 1½ acres. On two occasions the Gifts had an opportunity to check the pounds of beef produced per acre on these lands when part of the pasture was leased to other stockmen. One year the gains amounted to 241 pounds per acre and another 263 pounds. The grazing period in each case was May 1 to September 15. Additional grazing was secured after this date, but weight gains could not be determined. The gain in weight was formerly less than 10 pounds per acre.

Lloyd Gift, winner of the Pacific Northwest Grassman award for 1955, arrived in Klamath County, Oregon on a freight train in 1923. He went to work for the Bureau of Reclamation as a helper and later as the operator of a dragline until 1929. In 1926 Gift married Bobbie Tuttle who had ten head of Durham cattle and two horses. With this beginning and hard work and initiative they gradually acquired and developed the present cattle operation.

The remarkable thing about the improvement is that it was done on land considered so thin, rocky and steep as to be virtually worthless.

A 7-day grazing rotation is followed. The scab land is divided into fields so that cattle are removed during irrigation and the grass permitted to recover growth between grazing periods.

Efficient Use of Water

Lloyd is very conscious of the problem of soil erosion. He has kept erosion to a minimum on these rather steep slopes by providing good grass cover and by arranging his irrigation ditches in such a way that they are at a minimum grade and the runs are short. One contour ditch will then pick up runoff from one area and again spread it on another short run. This requires small heads of water and, consequently, provides for a minimum of washing of the soil. Irrigation water is used four different times on the ranch, and when

another 1,000 acres of land lying above the present development is put into pasture the water will be used five times. One irrigator remarked, "Gift uses his water so many times he wears it out and it isn't even wet any more."

Beginning at the extreme elevation, the water from the reservoir is placed on the land and the runoff which occurs is picked up, brought back into the canal and carried on down to the next area of land. This continues until it reaches the bottom land, which was developed first. Here it is pumped from the main ranch drainage and used to irrigate the bottom lands. The main ditch is provided with a dam so that the last bit of water can be held and pumped a height of forty-two feet to irrigate a hillside one-half mile away. This past summer no water actually left the ranch to enter the drainage system that served the Langell Valley area. Someone mentioned that there wasn't enough water leaving the Gift ranch to irrigate a garden.

The drainage water pick-up system makes it possible to properly irrigate the ranch with two acre feet of water. Most ranches in the area use five to six acre feet of water per acre during the season. The Gifts apply water according to the needs of the crop. Water is permitted to run only long enough to wet the root zone of the plant. Since only around 5 percent of the irrigated land is developed to grain crops and potatoes and the balance



One of the reservoirs constructed to impound runoff water for use in irrigating the scab rock land. The dike has been raised to increase storage capacity from 3,600 to 9,000 acre feet.



Cattle grazing on scab land after seeding and irrigation changed the carrying capacity from 40 to 1½ acres per steer. Many of the rocks are partially covered with grass.

of pasture and hay, the soil is given a maximum protection against erosion and also provides for a maximum build-up of organic matter in the soil.

Use of Private and Public Lands

To fully understand the operation and management of the Gift ranch it is necessary to consider both private and public land utilized as a unit. Besides the 6,000 acres of private land that consists of 1,750 acres of irrigated land and 4,250 acres of dry grazing land, the Gifts hold a 7,480-acre National Forest allotment and have a permit to graze 400 head of cattle on public land supervised by the Bureau of Land Management.

Lloyd's land improvement and conservation practices are extended beyond his privately owned land

to those lands managed by the Bureau of Land Management and the Forest Service. The Bureau of Land Management land is used in common with five other stockmen in this area. Like much public land it was severely overgrazed before it was brought under BLM supervision. Following the Taylor Grazing Act, the number of livestock was decreased greatly and the forage production improved throughout the area. On the National Forest allotment used by Mr. Gift a cooperative range improvement program is being conducted with the Forest Service. The area has been completely fenced and water spreading, water hole development, proper salting away from water, and grazing practices have combined to increase the amount of forage on the allotment to the point where the grazing officials of the

Forest Service have increased his grazing permit by 25 animal units. It is believed that the improvement program will eventually provide forage for a 100 percent increase in the cattle permit.

The ranch and the type of forage are best suited to beef production. Calves are dropped on the spring range and the yearlings and two-year-olds are wintered on forage produced on the ranch and are then carried on irrigated pasture during the summer. The breeding herd consists of 300 cows. Calves and yearlings bring the number up to 800 head. Two hundred sixty cattle belonging to three other stockmen were also grazed on the ranch. Aftermath from the hay fields is utilized by the cows and calves brought in from the National Forest allotment after the hay has been removed from the fields.