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The study that I'm going to be starting is sort of an offshoot of a program that we started last summer on range improvement. We fertilized 1200 acres of bighorn sheep and elk winter range in order to rejuvenate the range. The basis for this was a declining condition of some of these ranges due to either overuse by the native ungulates themselves or the ungulates in combination with heavy summer grazing by beef cattle.

The material we used in this program was a 34-0-18 fertilizer at an application rate of close to 200 pounds per acre which allowed for 66 pounds of nitrogen and 33 pounds of phosphorus. The method of application was by helicopter. We contracted it out to a company in Alberta called Agricopter. They used a Hiller H-12 helicopter equipped with a Pace agricultural seeding fertilizer bucket.

The helicopter flew laterally along the slopes, using men as markers, and overlapped the swaths. In 40 tests of the application rate we found an average of 190 pounds per acre, which is within 2 pounds of our sort of optimum rate and a maximum variation of 5 pounds per acre, so it's a fairly accurate method of fertilizer distribution and the only one possible under the conditions.

Most of the slopes we were looking at were 35-40 percent, and it would be pretty difficult to run a vehicle up and down them. The evaluation of that program is being carried on at one of the ranges we fertilized, which is a sheep range at Sheep River. We fertilized a much smaller area there, a total of 48 acres, and we're currently carrying on an evaluation of the change in range production and range quality. The latter, range quality, we're doing through analysis for protein, nitrogen, phosphorus, calcium, crude fiber and moisture.

My study, which is going to be commencing this year, is a little bit more extensive study of the use of three different types of fertilizer at three different application rates, the use of native and domestic grasses, seeding in addition to already established but poor cover range, and the use of spring and midsummer burning. I'll be carrying out both vegetative evaluation along the same lines as that which is going on in our present study, and also an animal evaluation in terms of choice preferences and nutritional work with the sheep.