

Study shows short, intense grazing benefits land

Updated: Tuesday, July 26, 2011 8:25 AM

By [SEAN ELLIS](#)

Capital Press

POCATELLO, Idaho -- A grazing study by Idaho State University researchers has shown that intense livestock grazing over a short period of time can benefit rangeland.

The study, "Effect of grazing on soil-water content in semi-arid rangelands of southeast Idaho," was published in the 2011 Journal of Arid Environments.

It showed that a study plot that featured intense, short-term grazing had 10 percent more soil moisture than two other sites that were either not grazed or grazed less intensively over a longer period of time.

The main lesson from the study "is to think creatively," said Keith Weber, director of ISU's GIS Training and Research Center, which conducted the research. "Livestock can be used as a management tool to improve rangelands."

Funded in part by a \$1.5 million grant from NASA, the study was conducted on three plots of land covering approximately 3,700 acres near McCammon in southeast Idaho. One plot was grazed by 300 head of cattle for 30 days; a second plot was not grazed; and a third, smaller plot was grazed by 125 head of cattle for six days.

The density of grazing in the smallest plot was six times greater than what occurred on the larger plot.

While all three plots ended up with about the same amount of shrub and grass cover, the difference was that the small plot that was grazed intensely for a short period had 10 percent greater soil moisture than the other two.

Weber said the smaller plot had significantly more litter in the form of trampled down dead grasses. That acted as a mulch for the soil and grasses.

"Without the high density of animals grazing in a small area, there is less litter, less mulch and drier soils," Weber said.

Ranchers lauded the research and said it confirms what they have instinctively known all along.

"I think it proves what ranchers have known for 100 years -- that grazing improves soil condition and plant growth on our rangeland," said Wyatt Prescott, executive vice president of the Idaho Cattle Association.

Weber said he got the idea for the study by reasoning that grazing similar to that done by the old bison herds

and African wildebeest can improve the land. However, he added, that idea is not accepted by the scientific community, which believes that if 500 head of cattle caused overgrazing when left in a pasture for one month, then using 100 head must be much better.

"The idea that using 1,000 head of cattle for only three, four or five days could actually improve rangelands is absolutely foreign to many of them," he said.

Until ISU's research, there was extremely sparse scientific literature available on the issue, Weber said, because few scientists would attempt the research because of the stigma attached to it.

"We set out to challenge this entire idea and to watch what really happened as objectively as possible," he said. "My surprise was, 'Aha, now I see how the holistic planned grazing helps rangelands. It begins by changing the soil-water content.'"

The experiment was conducted from 2006-2008 and published following extensive analysis and peer review.

Weber said the study could prove important in the semi-arid Intermountain West, where a small increase in soil moisture is significant.

"In the West, water is key, he said. "If we can capture and retain it by changing some grazing practices, it could really make a difference in range production and benefit the economy of rural Idaho."

He also said he is interested in studying whether improving soil moisture content could reduce some of the large fires common in the West.