

## **KEEPING CATTLE OUT OF STREAMS AND CREEKS: A LONG BRANCH DEMONSTRATION PROJECT**

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### **Bruce Lane**

Regional Livestock Specialist

### **Kent Shannon**

Extension Associate

### **Tom Marshall**

Professor, Truman State University

### **Tim Clapp**

USDA/NRCS

### **Kelly Nelson**

Research Agronomist

### **Pieter Los**

Research Specialist

### **K.C. Olson**

Commercial Ag Beef Specialist

Research conducted coast-to-coast demonstrates keeping cattle away from streams can dramatically reduce water pollution. Additional research shows good water quality enhances cattle performance and production. Studies in numerous states and Canada support the need for livestock producers to consider adopting management practices conducive to improving both cattle performance and the health of their waterways and riparian areas. Data from north Missouri supports other research from around the country and Canada.

A “demonstration project” was designed within the Long Branch Watershed in Macon County at the Kenneth Salsman Farm. Objectives of the project were to lure cattle away from creeks through the strategic placement and use of an “off-site” water source and to determine if this strategy would also improve cattle performance.

On June 27, 2003 twenty-one very uniform Angus heifers were randomly assigned to three pastures. 7 heifers were placed in a fescue/clover-based pasture with access to a creek only for water. 7 heifers were placed in a similar pasture but had access to the creek and an off-site water source located approximately 75 yards away from the creek. The off-site water source provided water from a farm pond and not the creek. The third group of 7 heifers were in an adjoining upland pasture with no creek access but access to the off-site waterer only. Both the off-site waterer and upland group water trough were fitted with a water meter to measure water use or intake. Cattle were also fitted with GPS collars as a means of determining their location in the pasture. Unfortunately, our cheaper GPS equipment proved inadequate and the one expensive collar we had purchased had to be returned to Scotland for necessary repairs. As such, we concluded this project without any GPS data.

Cattle were grazed in the 3 paddocks for 52 days. The following tables show differences in gain, forage quality (measured by forage sample analysis and also by fecal analyses), and the off-site waterer usage.

	<b>Stream Only</b>	<b>Stream + Off-Site Waterer</b>	<b>Off-Site Waterer Only</b>
<i>Number of Head</i>	7	7	7
<i>Group Weight 6/27/03</i>	3885	3840	3935
<i>Avg. Weight 6/27/03</i>	555	549	562
<i>Group Weight 8/18/03</i>	4420	4500	4360
<i>Avg. Weight 8/18/03</i>	631	642	623
<i>Group Gain – 52 Days</i>	535	660	425
<i>Avg. Daily Gain / head</i>	<b>1.46</b>	<b>1.79</b>	<b>1.17</b>

Only group weights were taken for this demonstration. Since treatments were not replicated on more than one site, it is impossible to say unequivocally the real cause of any performance differences. Forage samples, estimated dry matter yields, and fecal samples in each pasture were taken on 8/18/03 or 8/20/03.

It is believed the lower weight gains in the upper pasture (off-site water only) were largely the result of lower intake and may have been due to a combination of factors (i.e. forage species differences, forage palatability differences, available forage, etc.). Forage quality in the upland pasture was also lower in both protein and energy than the other two paddocks. The last 30 days or so of this 52-day period were without rain and forage quality on the Off-Site Water Only pasture deteriorated more quickly based on percentage of brown/green forage or vegetation, fecal and forage analyses. This pasture was located further from the creek and would be considered more upland pasture. The other two paddocks consisted of both riparian and upland type pasture and visually contained more clover. *Although various measurements were taken and recorded, the group in the upland pasture was used primarily to gauge water intake.*

(Note: Although fecal protein was lowest on the Off-Site Water Only cattle it should be noted some believe fecal samples to be notoriously difficult to make sense of for nutritional purposes since fecal protein is a mixture of microbial, dietary, and endogenous protein sources. In other words, low fecal protein may not necessarily mean low dietary protein and vice-versa).

	<b>Stream Only</b>	<b>Stream + Off-Site</b>	<b>Off-Site Only</b>
<i>Forage Analyses – Crude Protein and TDN</i>	CP – 14.06 TDN – 54.86	CP – 15.35 TDN – 56.41	CP – 11.62 TDN – 54.25
<i>Fecal Analyses – Crude Protein and TDN</i>	CP – 11.64 TDN – 64.09	CP – 11.70 TDN – 63.26	CP – 8.21 TDN – 61.02
<i>Water Use from Tank</i>	None	2,954 Gallons	3,056 Gallons

**Results:**

1. Cattle provided both stream and off-site water source consumed 97% of their water from the off-site source.
2. Stocker cattle weight gains may be improved through the practice of utilizing off-site waterers and off-site water source.
3. Off-site waterers can be used as an aid in cross-fencing and pasture rotations.
4. Off-site watering strategies can be cost effective given the potential of increased gains as shown in this demonstration.

**Project Contributors:**

- 1 – Bruce Lane, Regional Livestock Specialist, University of Missouri Extension
- 2 – Tim Clapp, Grasslands Conservationist, USDA/NRCS, Macon, Missouri
- 3 – Kent Shannon, Extension Associate / Assoc. Director MPAC, University of Missouri, Columbia, MO
- 4 – Dr. Kelly Nelson, Research Agronomist, Greenley Res. Center, University of Missouri, Novelty, MO
- 5 – Pieter Los, Research Specialist, MU CAFNR Agronomy, University of Missouri, Columbia, Missouri
- 6 – Dr. Tom Marshall, Professor of Animal Science, Truman State University, Kirksville, Missouri
- 7 – Dr. K.C. Olson, Commercial Ag Beef Specialist, University of Missouri, Columbia, Missouri