

CowCountry

Summer 2015

The official magazine of the Wyoming Stock Growers Association

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Study Evaluates Sage-Grouse Response to Sagebrush Treatments



Mowing sagebrush in winter 2014. Photo: Jason Carlisle.

Jeff Beck of the University of Wyoming initiated a cooperative study near Jeffrey City in spring 2011 to better understand how greater sage-grouse respond to vegetation treatments in Wyoming big sagebrush (*Artemisia tridentata wyomingensis*).

The study partners are the Wyoming Game and Fish Department, the Lander Field Office of the Bureau of Land Management, and livestock producers in Fremont and Natrona counties. The study evaluates whether sagebrush treatments elicit a positive, negative, or neutral response in rates of nesting success, brood survival, and adult female survival for sage-grouse.

Sagebrush has long been treated through chemical application, mechanical treatments, and prescribed burning to increase herbaceous forage species no longer in competition with sagebrush.

It is not clear whether these same techniques improve habitat conditions for wildlife species that depend on sagebrush, such as sage-grouse, particularly because Wyoming big sagebrush experiences slow regeneration (25 to 100-plus years to return to pre-treatment conditions) following treatments. Herbaceous cover and production typically return to pre-treatment conditions within one-to-five years post-treatment.

The study is designed to evaluate whether

sagebrush treatments elicit a positive, negative, or neutral response in rates of nesting success, brood survival, and adult female survival for sage-grouse. The team selected these benchmarks because they largely influence growth of sage-grouse populations.

The team is also evaluating other responses to sagebrush treatments:

1. nutritional quality of Wyoming big sagebrush,
2. dietary resources (forbs and insects) used by chick sage-grouse, and
3. habitat selection patterns of grouse exposed to treatments.

The team also established six grazing exclosures in each of our four treated study areas to investigate the effect of restricted and unrestricted cattle, wild horse, and wildlife grazing on post-treatment response in cover and production of herbaceous plants and sagebrush. Each exclosure includes treated and untreated sagebrush, compared to treated sagebrush outside exclosures.

The study uses data collected from a large sample (approximately 100 each year) of radio-marked female sage-grouse that use six treated study areas each year. These six study areas range from 4,201-15,073 acres within a larger (about 736,000 acres)

SAGEBRUSH CONTINUED ON PAGE 32 ►

study area. The team identified these study areas as important to nesting and brood-rearing sage-grouse during the pre-treatment phase of our study (2011-2013). There are two study areas each that were mowed, aerially applied with Spike 20P, or serve as untreated controls.

The team implemented on-the-ground mowing (1,208 total acres) and Spike 20P (1,500 total acres) treatments in winter and spring 2014 according to guidelines of the Wyoming Game and Fish Department Protocols for Treating Sagebrush to be Consistent with Wyoming Executive Order 2011-5; Greater Sage-Grouse Core Area Protection (7/8/2011; WGFD 2011).

The team will evaluate post-treatment response of female sage-grouse for five to 10 years (2014–2023) during the third phase of our study.

Associate professor Jeff Beck in the Department of Ecosystem Science and Management has advised a Ph.D. and a master’s student for the study. The research group is also collaborating with Anna Chalfoun, Assistant Unit Leader in the Wyoming Cooperative Fish and Wildlife Research Unit and Assistant Professor in the Department of Zoology and Physiology. She has been advising a Ph.D. student focusing field work on the response of other sagebrush obligate wildlife, particularly songbirds, to the habitat treatments. 🍷

FACEBOOK CONTINUED FROM PAGE 27

miles as if you were sitting on the porch with them, sharing a cold one and pushing the dog off your feet.

Those willing to open their lives up to friends on Facebook gain a network of support and become rounded and real to those keeping in touch with them. You are often surprised at learning of their favorite pastime, their trip to Australia, and the fact that they just celebrated their 50th wedding anniversary. Maybe you hadn’t realized that they moved to the mountain, bought a new swather, or ended up buying the Longhorn bull you sold last fall at the sale barn.

Let’s face it. There are probably plenty of people who find Facebook can be an overshare, and that’s why many don’t join Facebook. But the closeness of the ranching community is pretty much an open book to start with, and a good way to share with our less fortunate town friends.

I’m in your face, Facebook...and you’re in mine. 🍷

FIGURE 2. Total Per Acre and Per Hour Machine Costs

	DEPR	OPP COST	THI	REPAIRS	FUEL & OIL	TOTAL COST
WHEEL TRACTOR - 200 PTO HP CAB, AIR, STR, PWRSFT	\$0.49	\$0.25	\$0.08	\$0.41	\$3.42	\$4.65
Disc Harrow-30' working width folding with harrow	\$1.11	\$0.61	\$0.20	\$0.92	N/A	\$2.85
	-	-	-	-	-	-
Total Machine Cost PER ACRE:	\$1.60	\$0.86	\$0.29	\$1.33	\$3.42	\$7.50
Operating Inputs:						
Operator Labor:						\$1.72
Return to Management:						\$2.58
Total Field Operation Cost PER ACRE						\$11.80

ESTIMATED OPERATING COSTS PER HOUR OF OPERATION						
	DEPR	OPP COST	THI	REPAIRS	FUEL & OIL	TOTAL COST
WHEEL TRACTOR - 200 PTO HP CAB, AIR, STR, PWRSFT	\$5.73	\$2.93	\$0.98	\$4.73	\$39.78	\$54.15
Disc Harrow-30' working width folding with harrow	\$12.94	\$7.07	\$2.38	\$10.73	N/A	\$33.11
	-	-	-	-	-	-
Total Machine Cost PER HOUR:	\$18.67	\$10.00	\$3.36	\$15.46	\$39.78	\$87.26
Operating Inputs:						
Operator Labor:						\$20.00
Return to Management:						\$30.00
Total Field Operation Cost PER HOUR						\$137.26

around the “most likely” estimate. Results show total per acre costs ranging between \$10.70/acre (100 percent chance of landing above that) to \$12.78/acre (0 percent chance of rising above that), with a 50 percent probability of total costs settling around \$11.76/acre. These estimates can be very helpful to operators looking to make sure that they cover fluctuating expenses from several cost categories in their calculation of breakeven price or yield.

RESOURCES AVAILABLE FOR MORE INFO

The *Machinery Risk Calculator* tool is available by selecting “Risk Management Tools” at RightRisk.org under the “Resources” tab. A written guide to assist producers in evaluating their own costs, as well as a recent presentation on how to use the tool and resources for estimating the price of most brands of new equipment, are available on the supporting web page.

RightRisk.org has numerous risk management resources available; including the Enterprise Risk Analyzer, whole farm financial analysis, as well as many other tools, courses, and presentations.

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