

Science to Solutions

Reducing Cultivation of Grazing Lands Conserves Sage Grouse



Sustainable grazing conserves sage grouse and western ways of life. Photo: Linda Poole.

In Brief: In the northeast part of sage grouse range, 70% of the best habitat is privately owned – and the single greatest threat in this region is cultivation of native sagebrush grazing lands. Scientists assessed lands in eastern Montana, the western Dakotas, and northeast Wyoming to evaluate potential impacts to sage grouse if more land is converted from sagebrush to crops. They found that 96% of active leks today are surrounded by less than 15% cropland, and that a 50% increase in cultivation would decrease the region's populations by 5%. Scientists then found solutions by evaluating the roles of state and federal policies as well as conservation easements to mitigate risk to sage grouse. Together, the Sodsaver policy in the 2014 Farm Bill, proposed policies on state lands, and a \$146 million easement investment can reduce by 87% the bird losses that would have occurred without these conservation measures in place. Maps resulting from this science are now helping partners maximize their return on investment by placing easements in landscapes where they help grouse the most.

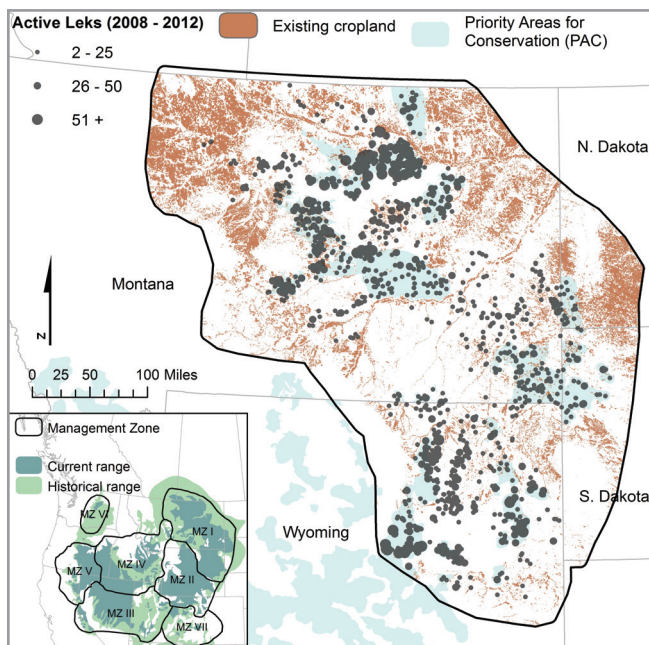
Cultivation of Grazing Lands in Sage Grouse Range

The northern Great Plains of Montana, Wyoming, and the Dakotas is cattle country. For generations, ranching families have grazed their cattle on large expanses of sagebrush grasslands. The region is cold and soils are marginal, so much of this landscape has avoided being plowed for crops. This has helped maintain a stronghold

for 20% of the global population of sage grouse. But the winds of change are blowing in this part of the country. Cultivation, or converting native sagebrush to crops, has increased substantially in recent years. The pressure is on for local cattlemen to transition their own properties to croplands to tap into the potential of high commodity prices.



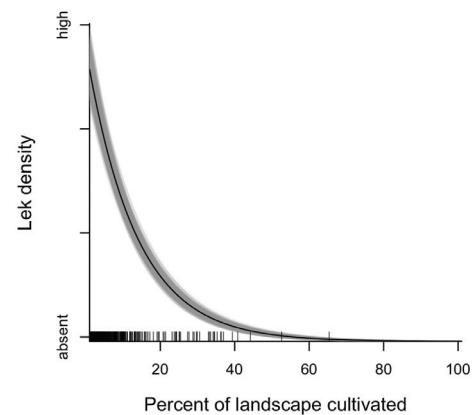
Cultivation for wheat production (foreground) impacts ranching and sage grouse. Photo: Conservation Media.



The area known as Management Zone I is 70% privately owned, and 8% of the region is currently in cropland. One other zone, Management Zone VI in eastern Washington, faces a similar threat except that much of the conversion has already occurred. Management efforts there focus more on restoration of sagebrush habitat rather than proactively preventing cultivation.

Assessing the Threat

To determine impacts on sage grouse populations, Joe Smith at University of Montana with co-authors from The Nature Conservancy assessed how much cropland affects the use of an area by breeding sage grouse, and how much of the population would be impacted by future cropland conversion. They found that 96% of active leks are located in landscapes with less than 15% cropland. For each ten percentage point increase in cropland, scientists anticipate an associated 54% decrease in lek density.



Rapid decline in active sage grouse leks is predicted with increasing amount of landscape in cultivation.

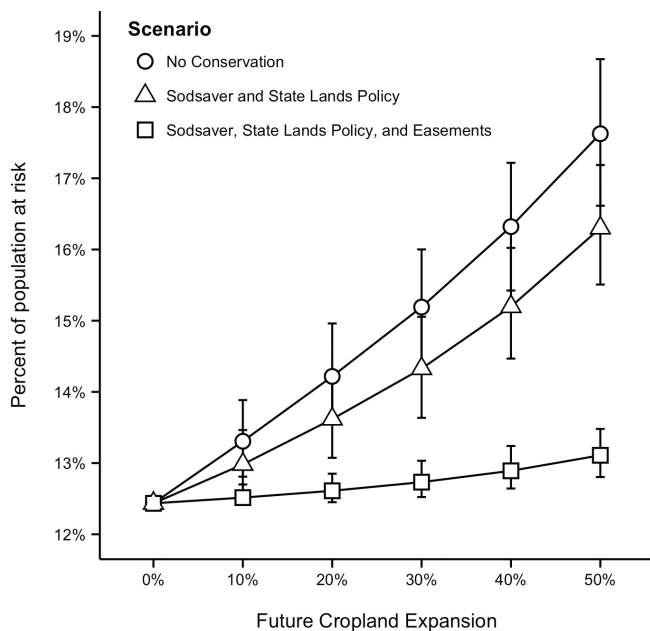
“Particularly striking to me is that one landowner converting a single square mile into new cropland negatively impacts sage grouse in a landscape twelve times that size.”

~Joe Smith, University of Montana

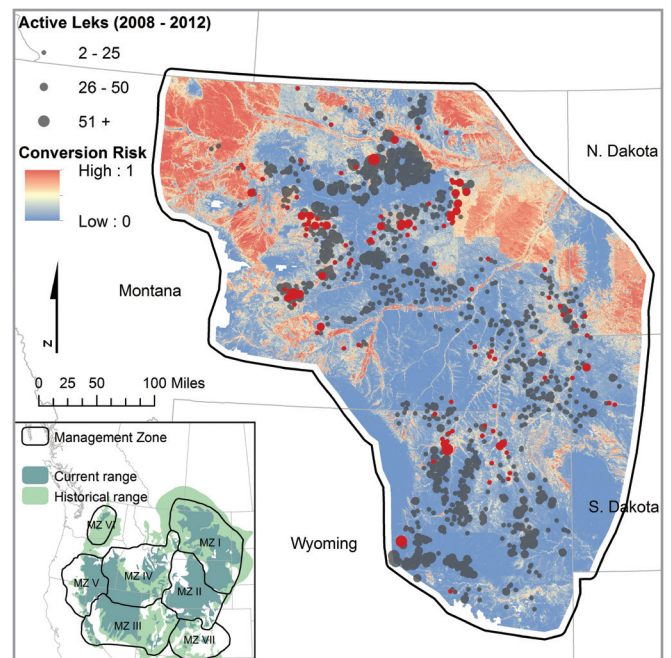
Reducing the Threat

Given the cultivation threat, scientists next sought out solutions by evaluating the potential for policies at federal and state levels to mitigate risk to sage grouse. The Sodsaver provision in the 2014 Farm Bill discourages producers from converting native rangeland to cropland by reducing federal crop insurance. In addition, pending state policy as part of the Montana Governor's Sage Grouse Executive Order would deter or prohibit future cultivation of sage grouse habitat on State Trust Lands. Findings show that these policies are effective in reducing part of the cultivation threat.

With policies in place to disincentivize cultivation, scientists asked what more could be done to further reduce the threat. Specifically, they evaluated whether a highly targeted and voluntary easement campaign could further reduce risk and if so, by how much and at what cost?



The systems approach of combining state and federal policies with voluntary conservation easements is highly effective, significantly reducing the sage grouse population at risk.



Crop Suitability Map - Cultivation risk in Management Zone I with at-risk sage grouse leks shown in red.

Scientists needed a technological breakthrough to identify on computer maps the locations of leks most vulnerable to cultivation. That breakthrough was provided by Jeff Evans, a co-author and spatial ecologist with The Nature Conservancy, who produced the first-ever Crop Suitability Map to predict where future breakout of new cultivation could occur based on soils, climate, and topography of existing croplands. When the Crop Suitability Map was compared with known sage grouse leks, scientists identified where to target future conservation based on the 109 leks most vulnerable to cropland expansion.

To protect the most vulnerable leks, it is estimated that policies and a \$146 million investment in conservation easements would reduce the future anticipated population losses by 87%.

The Sodsaver provision within the 2014 Farm Bill is intended to discourage producers from converting native vegetation to annually tilled crops. Sodsaver reduces federal crop insurance subsidies and non-insured crop disaster assistance if a producer breaks out new cropland from native habitat. The provision is for a limited region, but applies to landowners in Montana and both North and South Dakota.

Targeting Easements Key to Success

Results of this study provide partners working together on conservation easements with maps that maximize conservation outcomes by better targeting their actions. These conservation easements allow ranchers to continue to graze cattle sustainably on their property in perpetuity, while restricting various forms of development and preventing future cultivation in these sensitive areas. Working with willing landowners who are looking to conserve their way of life and maintain sustainable ranching, partners can now focus their limited conservation dollars on the areas that will have the greatest benefit on the ground. This confidence will ensure accountability that these limited resources are being used in the most important areas to achieve conservation goals.

In addition, identifying the anticipated cost of securing the easements allows partners to pool various funding resources toward these key properties. The Natural Resources Conservation Service's Agricultural Conservation Easement Program plays an important role in funding some easements. However, the program requires matching funding from partners. In a historic step forward, Montana Governor Steve Bullock signed the Greater Sage Grouse Stewardship Act into law in early 2015. This new law directs \$10 million for sage grouse conservation in the state, some of which will provide matching funds to secure conservation easements. A \$146 million easement campaign might seem like a lot to some folks, but \$147 million has already been invested in southwest Wyoming to reduce their subdivision threat, and partners are committed to finishing this \$250 million campaign (Outcomes Report 2015).

"With the advent of the Montana Sage Grouse Stewardship Fund, I believe we are now well positioned to focus on conserving key sage grouse habitat to ensure viability of the bird for generations to come, and keep management in state hands."

~Montana Governor Steve Bullock

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Joe Smith with the University of Montana led the research studying cropland conversion in Management Zone I and identifying potential conservation solutions for sage grouse.

Suggested Citation

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Sources

Smith, J.T., J. S. Evans, S. Baruch-Mordo, J. M. Kiesecker, and D. E. Naugle. 2015. In preparation. **Reducing cropland conversion risk to sage grouse through strategic conservation of working rangelands.**

NRCS. February 2015. Outcomes in Conservation: Sage Grouse Initiative. http://www.sagegrouseinitiative.com/wp-content/uploads/2015/02/NRCS_SGI_Report.pdf

Additional Resources

To learn more about sage grouse conservation and the Sage Grouse Initiative, visit the SGI website at <http://www.sagegrouseinitiative.com/>.

To read the Montana Governor's Sage Grouse Executive Order 10-2014, visit the State's website at https://governor.mt.gov/Portals/16/docs/2014EOs/EO_10_2014_SageGrouse.pdf.

To find your local NRCS Service Center, visit the NRCS website at <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/contact/local/>.

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