Study examines effectiveness of conservation investments and programs

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Texas A&M recently helped evaluate ongoing conservation practices on rangelands to determine their effectiveness. Credit: Texas A&M AgriLife photo by Dr. David Briske

Are conservation investments and programs achieving their intended goals on U.S. rangelands? A recently published paper in *Ecological Applications* determined the answer is no, and outlined ways to improve their effectiveness and outcomes.

The findings recommend developing a network that will create a more comprehensive and integrated platform to support evidence-based conservation and archive program results to better assess effectiveness.

Dr. David Briske, T.M. O'Connor Professor in the department of ecosystem science and management with Texas A&M University in College Station, recently authored the paper with experts from the U.S. Department of Agriculture-Agricultural Research Service, Utah State University and the University of Wyoming.

The paper, titled Assessment of USDA-NRCS Rangeland Conservation Programs: Recommendation for an Evidence-based Conservation Platform, examines the effectiveness of conservation practices on U.S. rangelands.

Briske, who conducts rangeland research through Texas A&M AgriLife Research, also served as academic coordinator and editor of an earlier study, Conservation Benefits of Rangeland Practices: Assessment, Recommendations and Knowledge Gaps, published in 2011.

The 2011 study resulted from a request by the Office of Management and Budget for the USDA Natural Resource Conservation Service to document the societal benefits anticipated from a major increase in conservation funding authorized by the 2002 Farm Bill.

Conservation funding in the Environmental Quality Incentive Program or EQIP, the primary program funding conservation practices, increased from $200 million in 1996 to $1.3 billion in the 2002 Farm Security and Rural Investment Act, with a goal to maximize the environmental benefits of conservation funding, he said.

Briske said the Conservation Effects Assessment Project, or CEAP, was created at that time to assess these future conservation benefits. CEAP produced an unprecedented assessment of rangeland conservation practices conducted by a team of 40 scientists, interacting with 30 NRCS partners.

They assessed the effectiveness of seven major conservation practices – prescribed grazing, prescribed burning, brush management, range planting, riparian herbaceous cover, upland wildlife habitat management and invasive plant management.

"These are the primary conservation practices on rangelands and have been implemented for decades, both with and without federal cost-share funding," he said. "Surprisingly, this comprehensive assessment of rangeland conservation practices was unable to determine if benefits had occurred because practice outcomes were seldom documented."

He said the paper recently published in *Ecological Applications* examines the underlying causes contributing to minimal documentation of the outcomes of federally funded conservation practices on U.S. rangelands as described in the initial assessment.

The authors concluded that existing conservation programs are insufficiently designed to support efficient, cost-effective and accountable conservation investments on rangelands. They further stated that modification of the standards used to implement these conservation practices alone will not achieve the goals explicitly requested by CEAP.

The problem, he said, is the practice standards are not sufficiently grounded in scientific evidence, relevant USDA databases or knowledge of production and environmental outcomes originating from conservation practices.

"There is no capacity to learn from the results of previously implemented practices so that this knowledge can be applied to future conservation activities," Briske said.

"We recommend that these conservation programs be restructured to establish a Conservation Programs Assessment Network to provide a

more comprehensive and integrated platform to support evidence-based conservation," he said.

The paper outlines the general structure of this conservation network, which would be based on collaborative monitoring of conservation practice outcomes among landowners, agency personnel and scientists to establish the missing information feedback loops between conservation practices and their agricultural and environmental outcomes.

"Monitoring would be selectively conducted on the most important conservation practices and in the major ecoregions where they are applied," Briske said.

He said the team concluded that restructuring conservation programs as recommended will directly address two major challenges confronting USDA-NRCS conservation programs.

The first is the need for collaborative management to provide site-specific information, learning and accountability as requested by CEAP, Briske said. Secondly, it will further advance efforts to balance delivery of agricultural production and environmental quality goals by documenting the tradeoffs that exists among them in conservation programs.

The goal, he said, is to archive evidence-based conservation information into this network so it can be made available to guide other related conservation programs in appropriate ecoregions.

More information: D. D. Briske et al. Assessment of USDA-NRCS Rangeland Conservation Programs: Recommendation for an Evidence-based Conservation Platform, *Ecological Applications* (2016). DOI: 10.1002/eap.1414

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