



SCIENCE TO SOLUTIONS

Defending Core Sagebrush Areas Is Synonymous With Bird Conservation

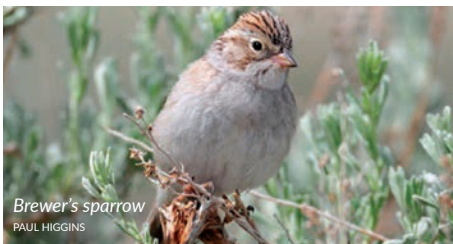
Three new studies show that defending intact sagebrush rangelands conserves populations of sage grouse and sagebrush songbirds.



Sagebrush sparrow
JULIO MILLERO



Sage thrasher
TOM KOERNER/USFWS



Brewer's sparrow
PAUL HIGGINS



Sage grouse
CONSERVATION MEDIA

In Brief

- Across the biome, greater sage-grouse populations are stable in core sagebrush areas despite plummeting populations in degraded areas.
- In addition, the three species of songbirds that rely on healthy sagebrush habitat are 3 to 10 times more abundant in core areas than in degraded areas.
- Along the California and Nevada border, the Bi-State population of sage grouse was predicted to be 37.4% more abundant after conservation efforts compared to if no conservation actions took place.

Conserving The Biome Saves Birds

Research illustrates the effectiveness of ecosystem-scale actions for sagebrush wildlife

The sagebrush biome is one of the most intact and least modified ecosystems in the world, on par with the Amazon or the Serengeti. As the largest contiguous open space in the Lower 48, this biome supports hundreds of wildlife species and powers rural economies.

But this biome is at risk. We are losing 1.3 million acres of core sagebrush each year to widespread threats, like invasive annual grasses and encroaching conifers. For the past 15 years, the Sage Grouse Initiative—the inaugural effort of USDA-NRCS Working Lands for Wildlife—has partnered with private agricultural landowners to conserve sagebrush rangelands to benefit the iconic sage grouse, an at-risk

upland bird, as well as more than 350 other species of sagebrush-dependent wildlife.

Three new studies detailed below underscore how defending and growing core sagebrush areas has positive impacts on wildlife. Conserving intact sagebrush landscapes directly increases the abundance of ecosystem indicator species like sage grouse, sage thrashers, and Brewer's sparrows.



Sage Grouse Stable in Core Areas

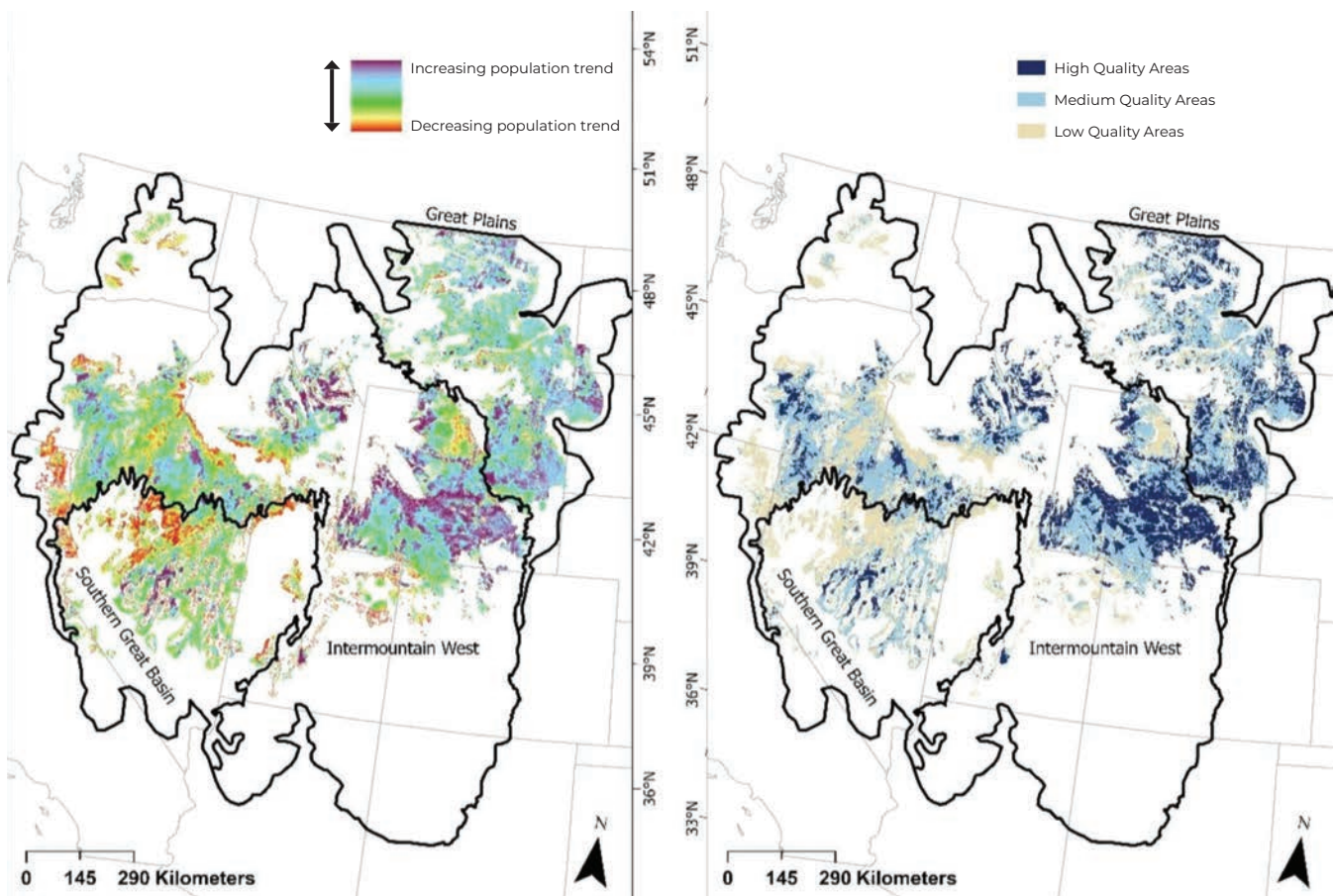


Scientists analyzed greater sage-grouse (*Centrocercus urophasianus*) population trends on leks across the biome from 1996–2021. They compared populations within three different categories of landscapes defined by the Sagebrush Conservation Design (SCD), a tool that ranks landscapes into core, growth, or degraded areas.

Sage grouse populations remain stable in sagebrush core areas and declined by 22% in growth areas. However, populations of these at-risk birds dropped by a staggering 64% in degraded rangelands. This shows that conserving core sagebrush areas is of vital importance for maintaining the West’s emblematic upland bird into the future.

Source: Prochazka, Brian G. et. al. 2024. [Evaluating the Sagebrush Conservation Design Strategy through the Performance of a Sagebrush Indicator Species](#). *Rangeland Ecology & Management*.

Estimate of Sage Grouse Population Trends Compared to Sage Grouse Habitat Quality (1996-2021)



“Our research indicates that protecting the core will, in essence, protect sage grouse populations.”

-Peter Coates, U.S. Geological Survey



Sagebrush Songbirds More Abundant In Core Areas

Researchers modeled the abundance of three species of sagebrush songbirds in core sagebrush areas compared to surrounding areas, as identified by the Sagebrush Conservation Design. The abundance of sage thrashers (*Oreoscoptes montanus*) is 10 times higher in core areas. Brewer's sparrows (*Spizella breweri*) are six times more abundant in core areas while sagebrush sparrows

(*Artemisiospiza nevadensis*) are three times more abundant.

The study also found that the abundance of these songbirds declines as sagebrush lands transition from core to degraded. In addition, results show that songbird abundance is highest where there is plenty of sagebrush cover and few to no trees.



Sage thrasher eggs
TOM KOERNER/USFWS

Source: Kumar, Alexander V. et. al. 2024. [Defend and Grow the Core for Birds: How a Sagebrush Conservation Strategy Benefits Rangeland Birds](#). *Rangeland Ecology & Management*.

“We’ve found that the best-of-the-best sagebrush areas have up to 10 times more sagebrush songbirds than other areas.”

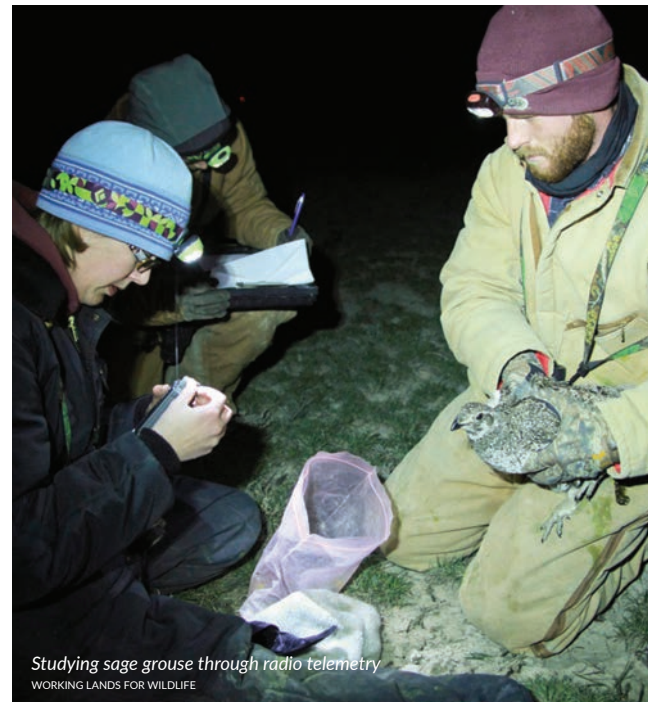
-Alex Kumar, U.S. Fish Wildlife Service

Bi-State Sage Grouse Get a Big Boost from Conservation

This study assessed whether cooperative sagebrush conservation efforts from 2012-2019 along the California/Nevada border had any effects on the abundance of the Bi-State Distinct Population Segment of greater sage-grouse. Researchers analyzed data from 57 sage grouse leks before and after 85 different conservation actions, such as treating weeds, restoring wet meadows, or removing conifers.

These targeted, landscape-scale conservation actions boosted the abundance of Bi-State sage grouse by an average of 4.4% annually, resulting in a predicted 37.4% cumulative increase since 2012, compared to if no conservation actions took place. While Bi-State sage grouse populations are declining over the long-term, this research indicates targeted, sustained conservation efforts that grow cores can help stabilize populations for this imperiled species.

Source: Coates, Peter S. et. al. 2024. [Cooperative Conservation Actions Improve Sage-Grouse Population Performance within the Bi-State Distinct Population Segment](#). *Rangeland Ecology & Management*.



Studying sage grouse through radio telemetry
WORKING LANDS FOR WILDLIFE



Tracking sage grouse
T. GETTELMAN



GPS transmitter on hen
ANDREW OLSEN

Science In Action

As part of Working Lands for Wildlife, the Sage Grouse Initiative tackles complex, ecosystem-wide problems that plague people and wildlife living in the biome. Along with our many conservation partners, we use tools like the Sagebrush Conservation Design to identify where to conserve intact sagebrush landscapes. This includes

treating invasive annual grasses, removing encroaching conifers, and preventing land fragmentation through conservation easements. By focusing our collective efforts on defending and growing core sagebrush areas, we can keep the West's rangelands intact for wildlife, rural communities, and ranchers alike long into the future.

Research Partners



Working Lands for Wildlife (WLFW) is the USDA Natural Resources Conservation Service's premier approach for conserving America's working lands to benefit people, wildlife, and rural communities. WLFW is putting Farm Bill resources to work by implementing science-backed conservation that improves agricultural productivity and enhances wildlife habitat.