ROCKY MOUNTAIN ELK FOUNDATION

BUGLE

ELK COUNTRY and the HUNT

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GOOD Stewards

SAVING THE Sagebrush Sea

by Kasey Rahm

The blue-green tint of sagebrush is just as much the color of elk country as golden aspen or dark, timbered woods—and every bit as vital.

Nineteen-year RMEF member Tim Griffiths knows he has an elk problem. "I'm a bowhunter. I've bowhunted elk for 30 years. It's a sickness," he says. "All my leave every year is spent in September, chasing elk."

Excitement creeps into his voice.

"The other 11 months, I'm scouting, training, preparing. It's a 365-day adventure for me."

He picks up speed, the words flowing faster now.

"I can't even tell you how much I love elk. They're just the coolest animal in the world. They inhabit the coolest places that you then have to explore to find them."

A long sigh full of the heavy weight of mid-July, a yearning for fall.

"And that time of year when you're bowhunting them, and the leaves are changing and the mornings are cool, it's a religious experience that just transforms you. I can't think of a thing I'd rather do than bowhunt elk in the fall out West."

When he's not hunting elk or thinking about hunting elk, Griffiths works to conserve some of those coolest places for them—well, technically mainly for sage grouse, but elk also call sage grouse country home. The blue-green tint of sagebrush is just as much the color of elk country as golden aspen or black timber—and every bit as vital.

Griffiths, based in Bozeman, Montana, is the Western coordinator for the Natural Resources Conservation Service's (NRCS) Working Lands for Wildlife partnership. What drives him is a deceptively simple goal: implementing conservation and stewardship that deliver maximum benefit to both agriculture and wildlife on the largest scale possible. When it works, people, cattle, elk and a seven-pound bird with one of the weirdest mating rituals in America all win.

Funded by the Farm Bill, NRCS spearheads the Sage Grouse Initiative (SGI for short), a massive effort to restore these birds. From an estimated 16 million birds when Lewis and Clark ventured west, this signature species of the sage has lost more than half its range and 98 percent of its population. Roughly 200,000 birds remain today. Almost 40 percent of current sage grouse range overlaps elk range and more than half of SGI's conservation easements lie in prime elk country. So it's only natural RMEF and SGI, which falls under the Working Lands for Wildlife umbrella, have

PHOTOS: TOM AND PAT LEESON / CHUCK AND GRACE BARTLETT








joined forces on dozens of projects to conserve vital habitat (See "Sage Grouse & Elk = Peanut Butter & Jelly" on page 104).

Elk and sage grouse share 40 million acres of sagebrush across the American West. It's no coincidence that the 11 states where sage grouse persist—California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington and Wyoming—are also home to some of the best elk hunting anywhere.

Sagebrush is a blanket term referring to at least 20 different bushy plants in the genus Artemisia, but the term also refers to the sagebrush ecosystem—sometimes called the sagebrush steppe—and all it encompasses. While the specifics of sagebrush country vary from place to place, it's generally a vast, open, arid landscape featuring a mix of native shrubs, grasses and forbs. Covering almost a third of the United States, it's usually treeless, and the wide-open-spaces vibe coupled with sagebrush's blue-green tint lends itself to poetic laments about the sagebrush sea.

"A lot of people as they fly over may just see a bunch of shrubs across millions of acres, but once you get into it you realize that it's an incredibly diverse ecosystem," says Griffiths.

Sagebrush country is dry—a cold desert in some places—but it is well adapted to make the most out of the water cards it's dealt. The result is surprisingly rich. Over 350 species of plants and animals inhabit and depend on the sagebrush ecosystem. Pronghorn dwell there year-round. Elk and mule deer rely on it in winter and relish it in the other seasons. A host of smaller mammals live here, from pygmy rabbits and sagebrush voles to badgers and coyotes. There are scales and fins from sagebrush lizards to redband trout. Birds, too—raptors down to Brewer's sparrows. Scores of species use sagebrush to meet seasonal habitat requirements. And some, like the sage grouse, inhabit sagebrush year-round and are wholly dependent on the ecosystem.

Despite all the unique life found here, sagebrush is one of the most imperiled ecosystems in North America. Two hundred years ago it covered over 240,000 square miles. Barely half of that remains.

"When our forefathers were settling this country they found there was a lot of fertile ground underneath all that sagebrush," Griffiths says. That led to a massive conversion of sagebrush to farmland around the turn of the century as settlers pushed west and provided food for a growing nation.

"Today there's not really any one threat that impacts the system," Griffiths says. "Rather it's death by a thousand cuts."

What those cuts are depends on which part of the sea you sail.

"In Montana, the number one threat is conversion of our native range to crop production. That's our issue we're dealing with, fragmentation of that larger landscape though crop production. If you were to say that to people in Oregon or Nevada, they'd look at you like were crazy," Griffiths says. "In their eyes, it's an invasion of the native sagebrush community by cheatgrass and medusa head." (See "Death by A Thousand Cuts" on page 102).

But all of the threats have one thing in common: they break up the landscape. They turn the vast sea into isolated potholes.

"The truth is anything that fragments that large, intact landscape ultimately ends up causing the demise of sage grouse and so many other species," Griffiths says.

Why should elk hunters care about keeping sagebrush intact? In a word, winter. Sage sustains countless herds through the toughest months. But even that undersells the sagebrush ecosystem. Come spring cow elk all across the West seek out sagebrush as an ideal place to give birth and hide young calves from predators during those critical first weeks. Many of the best remaining migratory corridors are made up largely of sagebrush. And as countless hunters can attest, elk are no strangers to sage from September through November, either.

"If we want wild, free ranging populations of elk, we have to have large, intact, connected landscapes. Period. You can't have one without the other," Griffiths says. "The scales of land that are in need of conservation far outstrip the supply of funds from any single organization or agency. We as hunters, as conservationists, as private landowners and government stewards, need to pool all resources and work together to ensure these landscapes are conserved for future generations."

CLOCKWISE FROM TOP RIGHT: KENARCHERPHOTOS.COM / KENARCHERPHOTOS.COM / CHUCK AND GRACE BARTLETT / CHUCK AND GRACE BARTLETT / DONALDMJONES.COM / KEITH CROWLEY / TOM AND PAT LEESON / CHUCK AND GRACE BARTLETT / KENARCHERPHOTOS.COM

Elk & Active Management

"We've always recognized the importance of sagebrush, not only to elk but to a lot of other species as well," says RMEF Director of Science and Planning Tom Toman. The Elk Foundation funded its first two habitat enhancement projects in the sagebrush steppe in 1987. RMEF contributed $1,000 to a prescribed burn in Montana's Elkhorn Mountains that treated 1,008 acres of sagebrush, grasslands and aspen to reduce conifer encroachment on the Helena National Forest. That same year, the Elk Foundation also contributed $3,000 to the Disappointment Valley Habitat Enhancement project, the first phase of a 10-year program to enhance habitat on key elk range and reduce ag/wildlife conflict on the San Juan National Forest in southwest Colorado. The funding helped treat 100 acres with prescribed fire, install two water guzzlers and close three miles of roads to stabilize soil and limit erosion.

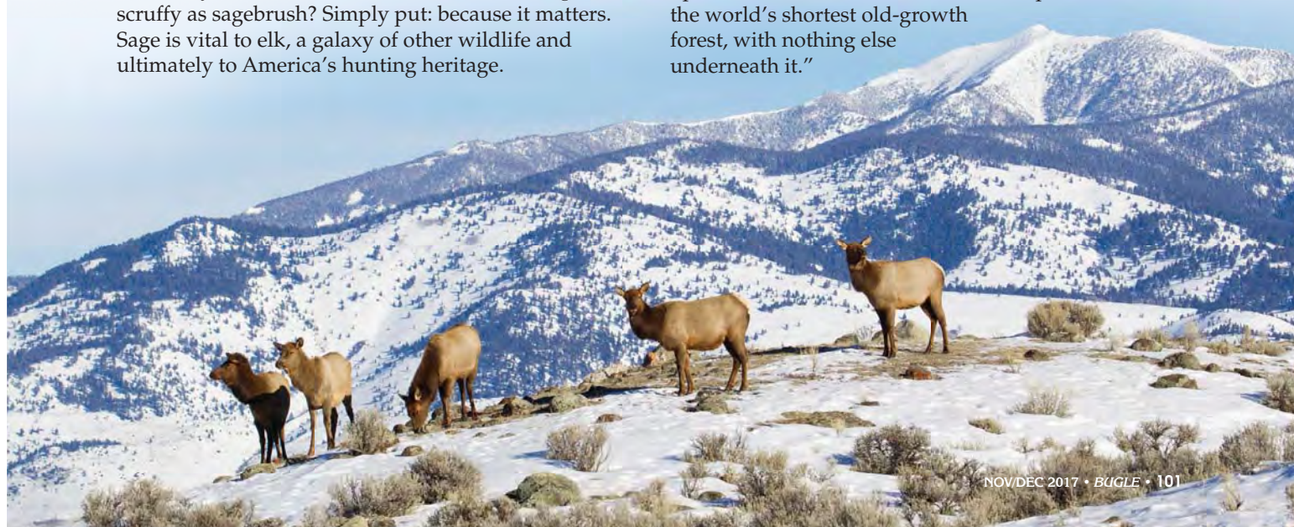
Since then, RMEF has contributed to over 500 habitat projects in sagebrush country, allocating more than $3.6 million that leveraged another $49 million in partner funds. On the ground, that translates to more than 550,000 acres of sagebrush ecosystem enhanced so far. On top of that, RMEF has forever protected another half a million acres of prime sagebrush elk country in 10 states.

Why invest this kind of effort in something as scruffy as sagebrush? Simply put: because it matters. Sage is vital to elk, a galaxy of other wildlife and ultimately to America's hunting heritage.

Toman is quick to point out that sagebrush is often the only plant protruding above the snowline, providing essential winter forage for elk, mule deer, pronghorn and other animals. It also absorbs sunlight. That in turn heats and softens the surrounding snow, allowing animals to break through to reach grasses at the base of the plants. At the same time, sagebrush holds snow in place, keeping moisture on the landscape longer into spring. Sage comes in handy in late summer, too, providing forage long after other plants have dried out.

RMEF supports sagebrush country by conserving the most crucial land through acquisitions and conservation easements and by funding habitat stewardship projects. Many of those projects focus on promoting diversity and resiliency in the sagebrush ecosystem by keeping the range young and productive. Just like people can't survive off a single food item (no matter how tempting eating just Oreos for the rest of your life may sound), elk and most other wildlife don't do well with a monoculture. That's why RMEF selects and funds work that creates diversity on the range by jumpstarting succession. Many projects aim to mimic natural disturbances, either through prescribed fire or mechanical treatments like dixie harrowing.

"Sagebrush goes into an old growth form, too," Toman says. "If you look under old sagebrush there's no grasses, no forbs and no new sagebrush coming up. It's a decadent situation. You end up with the world's shortest old-growth forest, with nothing else underneath it."



Boots on the Ground: Wyoming

Wyoming is the stronghold for sage grouse. Almost 40 percent of America's total population lives there. Not surprisingly, it's prime sagebrush country—and it's not a bad place for elk, either.

"I think the sagebrush ecosystem in Wyoming was historically undervalued," says Ian Tator, Wyoming Game and Fish Department's statewide terrestrial habitat manager. "What we've learned is that ecosystem is diverse and resilient and above all important to wildlife, from sage thrashers all the way up to elk. The investments we make now to conserve it will be expressed many times over in healthy and vibrant wildlife populations into the future."

Sagebrush stewardship in Wyoming is guided by the Sage Grouse Core Area strategy. That strategy recognizes large tracts of sagebrush habitat critical to sage grouse life cycles and important to lots of other wildlife, too. The state focuses management efforts there.

"Wyoming is lucky to have significant intact sagebrush communities," Tator says. "That said, the challenges to maintaining this ecosystem are real, and they're often complex and intertwined. So meeting the current and future needs of both wildlife and the people who depend on sagebrush requires significant coordination and buy-in."

The state does a lot of what Tator calls active conservation restoration work in sagebrush communities.

"In a lot of places we've got older stands of sagebrush that are less productive than they once were," he says. "So we'll do some sort of action that promotes sagebrush vigor to ensure it maintains itself over time."

On the ground, that equates to disturbance. Disturbance is a double-edged sword. A hot fire pushed by high winds through dry sagebrush can actually kill sagebrush or serve as a vector for weeds like cheatgrass. More often, though, fire offers sagebrush deliverance by promoting new growth of the entire tasty ecosystem. Disturbance is a threat, but also a tool. The key is to match the right tool to the right landscape. Luckily, there are a lot of different options in the toolbox.

Sometimes that means prescribed fire, especially in wetter areas where mountain big sagebrush is likely to respond well following the flames and in areas where cheatgrass is less of a concern.

In Wyoming, it more often means mowing. "There's a lot of ways to mow," Tator says. "Historically, folks used mowing as a tool to remove sagebrush. But we found that when you lift up the mower deck height, that action triggers those plants to put on vigorous leader growth and really stimulates them to come back."

While those practices have been put into action all across the state—and the country, for that matter—one good example is the Devil's Canyon area. Located on BLM land, Devil's Canyon encompasses 72,000 acres of rolling sagebrush range in the foothills of Wyoming's Bighorn Mountains. After Devil's Canyon Ranch owners closed the only road access to 20,000 acres of adjacent public land, the Trust for Public Land, RMEF and other partners purchased the 11,179-acre ranch in 2003 with key additional funding from the Land and Water Conservation Fund, turning it over to the BLM to become public land. RMEF continues to help enhance the area through prescribed burns, forest thinning, cheatgrass and other invasive weed treatments, and more.

"These sagebrush ecosystems are open country with beautiful views of mountains, canyons and buttes," says Destin Harrell, BLM wildlife biologist for the Cody field office. "Big game herds travel freely with great vantage points, able to see predators from miles away. The vegetation is diverse, with sagebrush giving structure to the habitat. Sagebrush shades and protects other plant species so they flourish."

Devil's Canyon is home to three distinct sagebrush communities: black sage on lower benchlands, Wyoming big sagebrush in the foothills, and, higher up, mountain sagebrush. Wyoming big sagebrush (not exclusive to Wyoming) is found on lower, drier sites. Roughly two to three feet tall, it is the plant that sage grouse depend on almost exclusively. Mountain sagebrush, on the other hand, is usually found higher up, in the areas most often frequented by elk. It grows faster and historically burned far more often—once every 30 years or more, and responds very well to prescribed fire, bouncing back quickly with a flush of grass and forbs.

There's also a healthy mix of wildlife and ag, with multiple grazing allotments practicing rotational grazing. To benefit both livestock and wildlife, the BLM's Cody field office does a lot of mowing, and they are in a constant battle against invasive cheatgrass, which they combat through aerial spraying. And then there's the conifer encroachment.

"We've seen historic photos of sagebrush benches that no longer have sagebrush. Twenty years ago, you start to see juniper encroaching in. Today, it's almost entirely choked with juniper," says Bryan McKenzie, BLM rangeland management and cave specialist based at the Cody field office. "We try to take a proactive approach before it gets so late successionally that it has a really hard time returning from disturbances like fire."

One treatment they use frequently is individual juniper burning.

"When the timing is right, we go into these areas when the sagebrush has a hard time burning but the juniper burns readily and light one tree at a time across a landscape. It takes a lot of time and manpower to cover the acres we want to do," McKenzie says. "Every juniper matters, whether it's 10 feet tall or knee-high. We try to get everything we can across these landscapes. We've really made a dent, and it looks really good in some of our treatment areas."

McKenzie adds, "The Elk Foundation has helped fund a lot of these. We've been partners with RMEF since the early '90s."

Thanks to these conservation efforts, hunters flock to the Bighorns every fall to chase elk and soak up the peace of the sagebrush steppe.

"Sagebrush holds the ecosystem together," Harrell says. "It's the thread that runs throughout the range."

Death by a Thousand Cuts

The threats to sagebrush vary by locale, but the most pressing can loosely be lumped into five categories.

1. EXPLOSIVE INVASION, EXPLOSIVE MEGAFIRES

Exotic invasive grasses, primarily cheatgrass and medusa head, are displacing native grasses at a staggering rate. The plants out-compete native grasses and forbs, stealing limited moisture and nutrients and providing little to no nutritional value to wildlife in return. Maybe even more terrifying, they green up early then die early. By the time early summer storms arrive, they're a tinderbox just waiting for a spark. That leads to massive, catastrophic wildfires out of sync with the natural fire system and on scales never seen historically—burning hundreds of thousands of acres in hours rather than years.

2. TREES WHERE NONE BELONG

While native to the West, junipers and pinyon pines historically grew far more sparsely on rocky outcroppings and pockets of shallow soil. But a hundred years of fire suppression combined with historical overgrazing left the range out of balance and vulnerable. Conifers now muscle across what for millennia were treeless landscapes. Each pinyon or juniper guzzles roughly 35 gallons of water per day, leaving little or no moisture for anything else. That makes for a landscape dominated by trees with nothing but bare dirt in between.

3. DEVELOPMENT: ENERGY & SUBDIVISION

The development threat is two-pronged. In some places, massive gas, oil and to some degree solar and wind fields—along with the attendant web of service roads—transform sagebrush. In others, the main threat is conversion of large ranches into ranchettes or outright subdivisions. The place where everyone wants 40 acres and a house looking at the mountains where they don't have to shovel the snow every day—that's sagebrush country.

4. CONVERSION TO CROPLAND

A century ago, settlers figured out there was good dirt below all that sagebrush. They plowed and tilled huge chunks of rangeland. In that cropland, an acre that was formerly home to more than a hundred species of native plants now holds as few as one exotic. Plowing these shrublands compounds the risk of erosion and soil loss. Also, most crops require irrigation, placing further demands on already scarce water supplies. Conversion to cultivation remains a real threat today.

5. LOSING WETLANDS

Have we mentioned water is a limited, vital resource in sagebrush country? The places that pulse with the most life on the sage steppe are the little green ribbons of year-round and seasonal streams, along with springs and wet meadows. These riparian resources are by far the most important and productive areas for both wildlife and livestock. Unfortunately, they have largely been degraded over the last century by all of the factors listed above.

PHOTO: KENARCHERPHOTO.COM

Sage Grouse & Elk = Peanut Butter & Jelly

The Sage Grouse Initiative has a saying: What's good for the bird is good for the herd. They mean cattle, but it holds every bit as true for elk.

Greater sage grouse are an icon of the sagebrush steppe—and fully dependent on the habitat. There were an estimated 16 million of them when Lewis and Clark ventured west. Since then, the species has lost more than half its range and 98 percent of its population. By 2010, prospects looked bleak enough that the U.S. Fish and Wildlife Service designated the bird as a candidate for protection under the Endangered Species Act. Given the implications that listing could have, the Fish and Wildlife Service built a long runway, saying they would make a decision on whether to formally list the species by 2015. Sage grouse inhabit 186 million acres in 11 western states. Much of that lies on federal public land, but private lands hold the lion's share of the most vital core habitat. No matter who owns it, almost every one of those acres is grazed by domestic livestock.

When NRCS took on the challenge of stabilizing and restoring sage grouse, they saw a grand opportunity to make a lasting difference by also helping to keep working ranches healthy and viable.

"The more we learned about the issue, we realized the threats facing sage grouse were the exact same threats as those impacting our Western ranches," says Tim Griffiths, western coordinator for the Working Lands for Wildlife partnership. "We decided to turn the threat into an opportunity, couple the threats facing ag and the bird, and then focus enough of the right practices in the right places to proactively conserve the species while increasing the productivity and sustainability of the Western ranching community."

What followed was a sweeping and collaborative conservation effort as the federal government, states, ranchers and nonprofits—RMEF included—came together in a grassroots-level movement spearheaded by the Sage Grouse Initiative. The goal was to save sage grouse without all the mandatory restrictions triggered when a species is listed as Threatened or Endangered. State and federal agencies went to work collaboratively implementing land use plans to conserve habitat on public lands, while SGI and other partners tackled the private land component.

"We went to work on a 100 percent voluntary, incentive-based approach with ranchers who were willing to implement beneficial practices. The response was overwhelming," Griffiths says. "Since 2010, we've worked with over 1,500 ranches in 11 western states and conserved 5.6 million acres—each acre customized to address the local needs that were identified for both wildlife and agriculture.

"This is a partnership in the truest sense of the word. No agency or individual or group owns it," Griffiths says. "Everybody does."

The Elk Foundation has partnered with SGI since 2011. Early on, SGI realized they needed more boots on the ground if they were going to make the collaborative work. Local NRCS field offices—one in every county—sometimes only had one employee. For the effort to succeed, they needed help, more range conservationists, biologists and other knowledgeable people. Instead of just hiring more federal employees, SGI reached out to partners to pool resources. The partner organizations supplied the employees and NRCS provided the field offices, the supplies, training and other support.

"RMEF was one of our very first investors in those shared positions," Griffiths says. The Elk Foundation funded a biologist field staffer in one of the places where elk would also benefit most—Craig, Colorado. The world's largest elk herd winters on sagebrush nearby.

RMEF and SGI have partnered on dozens of projects together—from conservation easements to land acquisitions to stewardship—with the mutual goals of protecting and enhancing large, intact pieces of habitat and keeping them that way. Our most recent collaboration was a conservation easement on Nevada's Wildhorse Ranch that forever protected 4,500 acres of prime habitat from subdivision and development and opened hunting access to another 19,000 acres of national forest beyond.

In 2015, the U.S. Department of the Interior announced the efforts had paid off and greater sage grouse did not require listing under the ESA.

Griffiths is also quick to credit arguably the most important partner of all. "Whether you're a sage grouse enthusiast, an elk nut or a mule deer fanatic, if you love wildlife, you should thank a Western rancher," he says. "They are really the conservation heroes in the story that are holding these large public/private mosaics together in a sustainable manner."

PHOTO: RMEF / INSET PHOTO: CLIFF REYNOLDS / GRAPH: JOE SMITH, SGI RESEARCH SCIENTIST

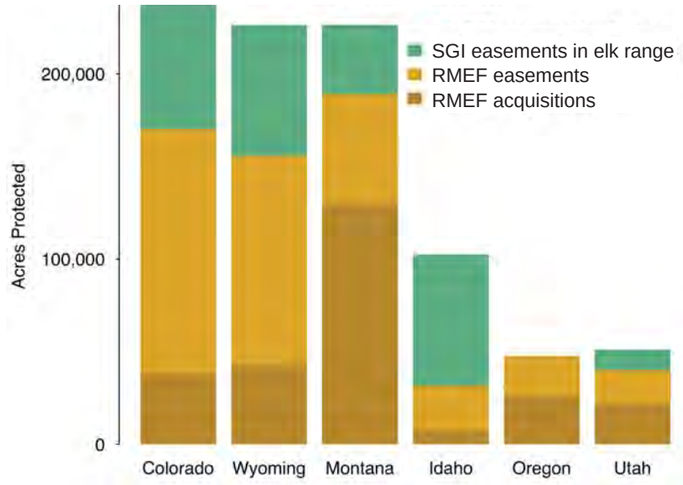
In the most recent sage grouse news, Secretary of the Interior Ryan Zinke issued an order in June for the Department of Interior's Sage Grouse Review Team to work with the states and reevaluate the sage grouse conservation strategy adopted by the BLM in 2015. The review team sent the Secretary its scoping report highlighting issues expressed by states and others about obstacles to energy development and options for addressing them. On August 4, Zinke issued a memo directing Interior officials to begin implementing recommendations listed in the report. While nothing much has happened just yet, several key elements of the federal plans have been targeted for modification or elimination. These include elimination of Sagebrush Focal Areas. These are important landscape blocks with high densities of sage grouse breeding populations and existing high-quality sagebrush habitat that anchors the conservation value of the landscape. Also included are changes to energy development buffer distances and variations to priority and general habitat management areas and mitigation standards. The report calls on the BLM to improve the overall compatibility of their federal 2015 Sage Grouse plans with the plans developed by each state that has populations of the grouse. It also identifies opportunities to improve coordination on fire, fuels and invasive species management.

The most controversial portions of the review pertained to language about captive breeding and population targets referenced in the original secretarial order. Some stakeholders feared that if population targets became the primary benchmark for recovery, habitat protections would be removed and instead captive breeding would be used to meet population objectives. While beyond the purview of federal land management agencies, captive breeding still appears to be on the table. Captive breeding has so far proven costly and ineffective for achieving sage grouse priorities. The review team determined that further research and work is needed before captive breeding can be fairly evaluated. They recommended the DOI continue to investigate new captive breeding efforts to improve effectiveness. Additionally, the team recommended pursuing the possibility of establishing a statewide or range-wide sage grouse population objective but cautioned that any population objective would have to reflect sage grouse's natural variability and be tied directly to habitat availability and quality.

SGI continues their work to protect sage grouse through the current Farm Bill—which expires in 2018—and continues addressing the largest threats to sagebrush and the wildlife and livestock that depend on it. Meanwhile, RMEF is committed to maintaining its long-standing support of collaborative, on-the-ground partnerships that improve habitat for elk, sage grouse and a wide variety of other wildlife, as well as cattle and the people whose livelihoods depend on this land.

"We've seen what we can accomplish together by focusing on these landscapes," Griffiths says. "We've made so much investment and so much progress. Now we need to continue to do that where the need is greatest, but also to maintain those landscapes where we've made so many gains."

SGI CONTRIBUTION TO ELK HABITAT PROTECTION IN TOP 6 ELK HARVEST STATES



Just as RMEF projects benefit other wildlife, Sage Grouse Initiative projects benefit elk. In fact 52 percent of SGI's conservation easement acreage falls within elk range, providing permanent habitat protection for grouse, elk and other species. This graph shows the acres RMEF and SGI have protected permanently through acquisitions and conservation easements in the six states with the top elk harvest rates in the country—all of which contain vital sagebrush-steppe.

Visit the Elk Network to learn more about elk in sagebrush and to watch videos of dancing sage grouse at **ElkNetwork.com/Bugle**