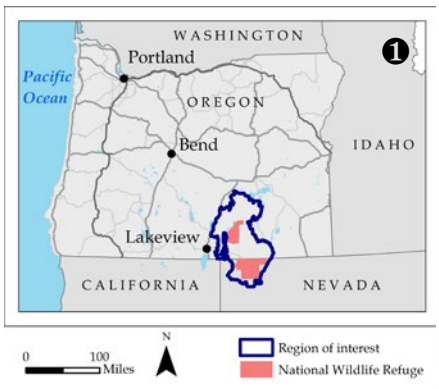
Creating a National Sagebrush-Ecosystem Conservation Area

The Greater Hart-Sheldon Landscape of Oregon and Nevada

At the edge of the Northern Great Basin in the high desert sagebrush steppe, an expansive and largely unfragmented ecosystem provides habitat for more than 300 species ranging from pronghorn to pygmy rabbit to greater sage-grouse. This vast landscape is anchored by two of the largest national wildlife refuges in the Lower 48, Hart Mountain National Antelope Refuge (278,000 acres), and Sheldon National Wildlife Refuge (575,000 acres), linked together by bordering BLM holdings, state lands, and private ranches that also rely on public land grazing allotments. [See Maps 1 and 2]

The Greater Hart-Sheldon ecosystem is one of the four or five highest-density breeding grounds for greater sage-grouse in the nation[1], and the dominance of federal land ownership offers the opportunity to create a collaborative conservation plan that could have rangewide significance. Conversely, if the greater sage-grouse is listed under the federal Endangered Species Act, the region's social and economic dynamics will be dramatically disrupted. Listing the sage-grouse, designation of critical habitat, requirement for Section 7 consultations, and likely reduction in grazing allotments and AUMs would have profoundly negative impacts on both the land managers and residents of the region, as well as the agencies.

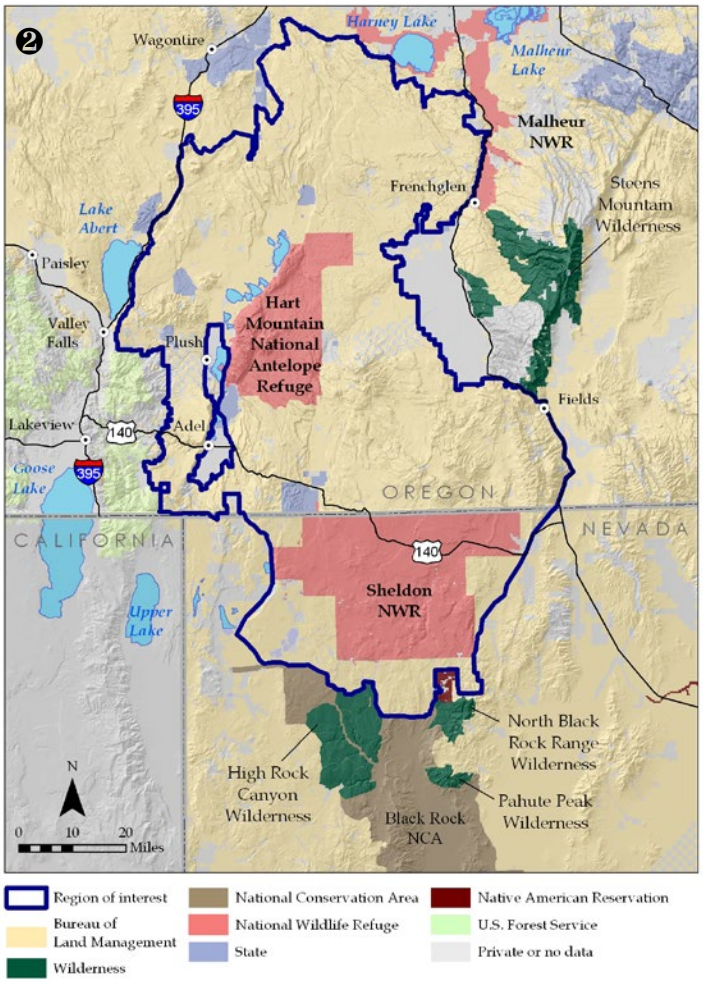
With a strategic investment of effort and resources, the Greater Hart-Sheldon region can make a positive contribution to the overall greater sage-grouse equation at both the state and national levels. Finding collaborative conservation solutions based on the common ground among local stakeholders is essential — and possible. To accomplish this, the U.S Fish and Wildlife Service, the Bureau of Land Management, Nevada and Oregon state agencies, local land managers and landowners, and user groups ranging from hunters to hikers and environmental interests must work together to use a variety of voluntary, incentive-based, administrative and regulatory tools to conserve the traditions and protect the future of the legendary sagebrush sea.

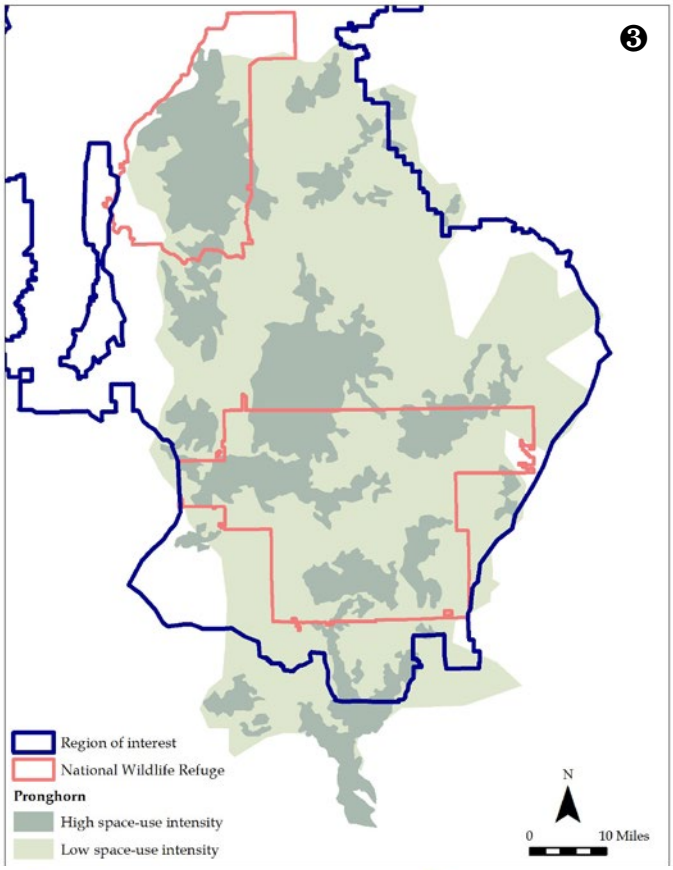


Hart to Sheldon — A Connected Landscape

Hart Mountain National Antelope Refuge and Sheldon National Wildlife Refuge were established in the 1930s for the purpose of protecting winter and summer range for pronghorn antelope, and there have been periodic efforts to connect the two refuges.

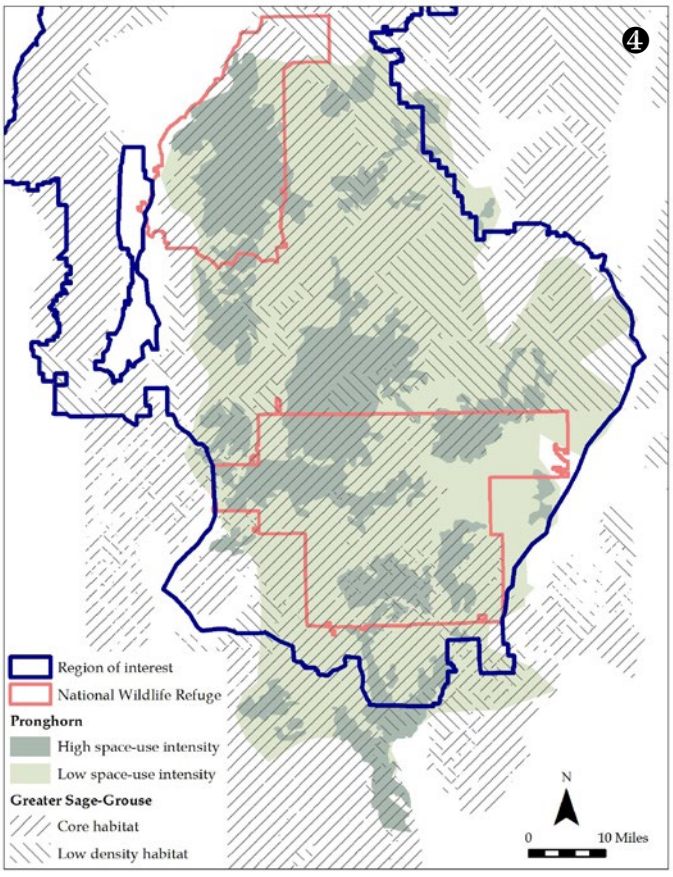
Today, preliminary data from recent U.S. Fish and Wildlife Service telemetry studies confirm that the migratory route between the two refuges is heavily used by pronghorn — and in fact show that pronghorn move far longer distances in all directions from the refuges than was previously recognized. The telemetry data make it clear that many animals from both refuges also winter extensively in surrounding areas managed by the BLM. One collared animal moved nearly 90 miles from the center of Hart Mountain NWR to wintering grounds in the Black Rock National Conservation Area south of Sheldon. [See Map 3]

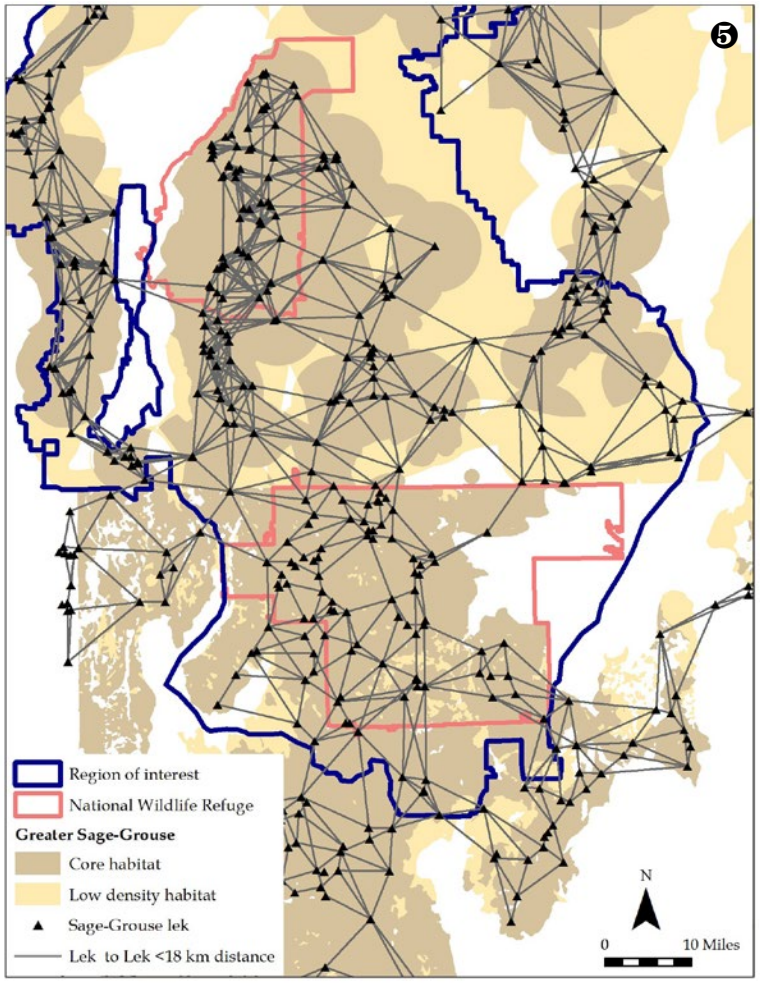




Similarly, results of sage-grouse telemetry studies indicate that the birds move much more expansively across the landscape than previously understood. For example, some birds that nested on Hart Mountain NAR and some that nested on Sheldon NWR both wintered in the Beatty Butte area lying between the two refuges. These wide-ranging species actively use the full matrix of FWS, BLM, state and private lands over the course of their life cycles and annual migrations.

Both Oregon and Nevada wildlife agencies have designated nearly the entire area on both refuges and the great majority of other public lands surrounding the two refuges as either core habitat or low-density habitat for sage-grouse. As revealed by recent telemetry studies of both pronghorn and sage-grouse, there is very high overlap in the areas used by these two species over the course of their annual cycles. [See Maps 4 and 5]





Significance of the Greater Hart-Sheldon Landscape as a Sagebrush Steppe Exemplar

Sagebrush (*Artemisia* spp.) historically covered approximately 155 million acres across western North America. Today, sagebrush steppe is one of North America's most imperiled ecosystems[2], reduced and fragmented by road networks, urbanization, crop production, livestock grazing, invasive species encroachment, wildfire, and in many places, energy development and resource extraction. Climate change will further exacerbate these stressors, and the compounding effects of multiple threats could push sagebrush communities beyond their capacity for resiliency.

More than 350 plant and animal species of conservation concern rely on sagebrush habitat.[3,4] In the Greater Hart-Sheldon landscape, notable species include the sagebrush sparrow, pygmy rabbit, and greater sage-grouse. The region contains one of the highest densities of greater sage-grouse in the nation and, in Oregon, represents 20% of the remaining sage-grouse habitat in the state.[5] Successful conservation of sage-grouse, often cited as an umbrella species[6] would have positive outcomes for many other species as well.

The Nevada Wildlife Action Plan prioritizes conservation of several sagebrush-obligate species that are found on Sheldon NWR (i.e., sage-grouse, pygmy rabbit, sage thrasher, Brewer's sparrow, sagebrush sparrow, and sagebrush vole) and sagebrush-associated species (i.e., loggerhead shrike, western burrowing owl, ferruginous hawk, dark kangaroo mouse, Merriam's shrew, Preble's shrew, long-nosed leopard lizard, desert horned lizard, and pygmy short-horned lizard), and Sheldon is identified as one of the focal areas in the plan.[7,8] Oregon's Wildlife Action Plan similarly identifies a number of priority sagebrush-associated species occurring on Hart Mountain NAR, including the greater sage-grouse, ferruginous hawk, loggerhead shrike, sagebrush sparrow, Brewer's sparrow, sagebrush lizard, and pygmy rabbit.[9,10]

Pronghorn antelope | Roger Burton

Threats to the Greater Hart-Sheldon Landscape

The Greater Hart-Sheldon Landscape remains relatively intact, with primary threats rising from the interplay between fire and invasive species, and impacts on native plant communities and stream degradation caused by both domestic livestock and feral horses and burros. Although the construction of the Ruby Pipeline was the subject of recent litigation, the threat of extensive oil and gas development is low. Growth pressure from wind and solar is far more likely. Nevertheless, the external threats are more manageable here than in other sagebrush-dominated landscapes and, with extensive scientific research available to guide solutions, could be addressed through coordinated and collaborative management investments.

In addition, while threats such as oil and gas development are not major concerns in this particular landscape, the pressure on sage-grouse exerted by such development elsewhere in its range underscores the need to strengthen protections for relatively intact communities, like the Greater Hart-Sheldon Landscape, where they still exist.

Fire

Fire regimes in sagebrush ecosystems have changed since European settlement. In particular, fire rotation in Wyoming big sagebrush was historically at much longer intervals, allowing large, contiguous tracts of mature, dense sagebrush. The more frequent occurrence of modern wildfires may be attributable to extensive cheatgrass establishment, human-set fires, and changing climatic conditions.[11] With sagebrush habitat already severely fragmented and diminished, these fires add significant pressure on wildlife like the greater sage-grouse that avoid burned areas.[12] During a two-month period in Summer 2012, three nearly contiguous wildfires, the Long Draw, Holloway and Miller Homestead fires, burned more than one million acres in southeastern

Oregon and northern Nevada; approximately 60% was core sage-grouse habitat, and an additional 27% was low-density sage-grouse habitat. Big sagebrush does not re-sprout after it has burned, and reestablishment is largely dependent on the dispersal of seeds from unburned habitat.[13] Post-fire restoration efforts of burned sagebrush communities in the Great Basin fail to provide suitable habitat for sage-grouse within the 20+ years that studies have been conducted following reseeding.[14]

Invasive Species

A suite of invasive species have been introduced to the Greater Hart-Sheldon Landscape and the larger sagebrush-steppe ecosystem. Non-native plants include rush skeleton-weed (*Chondrilla juncea*), medusahead wildrye (*Taeniatherum caput-medusae*), and most notably cheatgrass (*Bromus tectorum*).[15] Grazing and trampling by both domestic livestock and feral horses reduces cover of native grasses and increases the size and connectivity of gaps among native vegetation, thus freeing up space, water, and nutrients for invading cheatgrass.[16] The occurrence of a fire can trigger a fundamental transformation to cheatgrass-dominated grassland.[17] In turn, cheatgrass is highly flammable and heightens the risk of fire where it becomes dominant in the understory.[18]

Feral horses have altered habitat quality in a variety of ways, including reduction of plant cover, spread of invasive plants, and soil compaction.[19] Livestock grazing was removed from both Hart Mountain NAR and Sheldon NWR in 1990. However, feral horse populations increased greatly on Sheldon NWR in the early 2000s, causing extensive habitat degradation. Beginning in 2013, thanks to a public-private partnership involving the U.S. Fish and Wildlife Service and the Greater Hart-Sheldon Conservation Fund, feral horses and burros are being relocated from Sheldon National Wildlife Refuge.

Livestock Grazing

Livestock grazing since the late 1800s has had an undeniable impact on western ecosystems, affecting structure, composition, and processes in a variety of direct and indirect ways. Loss of native vegetation, destruction of biological soil crusts, soil compaction, changes in water and nutrient cycles, spread of invasive species, and altered fire and disturbance regimes stemming from grazing and trampling by livestock have not only reshaped the plant communities that make up sagebrush and riparian habitats, but also the diversity and abundance of wildlife.[20] In addition, management actions intended to improve forage for livestock

Sage-grouse | FWS

have included removing sagebrush and seeding with exotic grasses, as well as conducting prescribed burns or thinning treatments to reduce dense sagebrush cover and encourage growth of forbs and grasses.[21] Reducing, and in certain critical habitat areas eliminating, livestock grazing must be a component of long-term conservation management.

Greater Sage-Grouse — A Catalyst for Partnerships

The greater sage-grouse *(Centrocercus urophasianus)* is emblematic of the sagebrush steppe ecosystem, though its numbers have been in decline for decades.[22] Despite a broad distribution across eleven states in western North America, multiple threats continue to push the species along a downward trajectory. Stabilizing and increasing its numbers requires conserving large areas of mature sagebrush that support interconnected populations, are characterized by minimal human development,[23] and provide critically important riparian areas and wet meadows to support its full lifecycle.[24] The expansive scale of these habitat requirements not only contributed to sage-grouse decline, but also has made the species an effective surrogate for the conservation of other sagebrush-dependent wildlife.

In 2010, the greater sage-grouse was added to the list of candidate species warranting protection but precluded from receiving threatened or endangered status under the Endangered Species Act (ESA) due to the need to address other listing decisions. The species faces a possible listing under

the ESA pending a FWS determination due in 2015 — a requirement stemming from a 2011 court settlement.

While there is a school of thought that an ESA listing provides the framework for sage-grouse recovery, that framework would come at a severe political and economic cost. An ESA listing and subsequent designation of critical habitat would extend across an 11-state range, much of which is in public ownership under BLM multi-use management and subject to long-held grazing allotments and other special use permits.

Should the greater sage-grouse be listed, the U.S. Fish and Wildlife Service would be required under Section 7 of the Endangered Species Act to review all special use permit requests on public land — and under this scenario agencies could deny permits that include grazing allotments operated for generations, on which families have built their livelihoods. In other cases, both extractive and renewable energy development permits might be denied on public land, or would require substantial mitigation if on private land.

While the removal of grazing and energy development would certainly improve habitat conditions for sage-grouse, the political and economic reverberations could be explosive and widespread across the western states. Some have compared the impending controversy to conflicts over the spotted owl in the Pacific Northwest combined with a new Sagebrush Rebellion.

Instead, there is an opportunity to use the incentive of avoiding a listing to bring partners and efforts together. The Bureau of Land Management, the Natural Resources Conservation Service, state wildlife agencies and the Western Association of Fish and Wildlife Agencies, the Western Governors Association, and multiple joint ventures have devoted unprecedented time and resources to seeking conservation solutions to prevent a listing of greater sage-grouse. Similarly, ranchers, land managers and certain energy interests are also devoting significant efforts to finding collaborative, incentive-based, and voluntary solutions for greater sage-grouse.

Seizing the Moment for the Greater Hart-Sheldon Ecosystem

In the Greater Hart-Sheldon landscape, almost 3 million acres of core sagebrush steppe habitat is federally owned, managed by the Bureau of Land Management (2 million acres, of which 665,000 acres is currently designated as Wilderness Study Area) and the U.S. Fish and Wildlife Service (nearly 1 million acres combined at Hart Mountain National Antelope Refuge and Sheldon NWR). As such, the Department of the Interior has both the ability and the responsibility to lead a sagebrush conservation initiative.

Further, as the U.S. Fish and Wildlife Service's land base, the National Wildlife Refuge System has a central role to play in: (1) gold standard management of candidate, threatened, and endangered species; (2) preventing candidate species from addition to the endangered species list, and, to these ends, (3) providing leadership and momentum for landscape-scale conservation and habitat management efforts beyond refuge boundaries.

While the authority exists for the Department of the Interior to take administrative action to protect sagebrush steppe habitat, a successful outcome relies on the agencies' engagement with state and local agencies and the private landowners and land managers that depend on this land in a long tradition of public land ranching through grazing allotments. Though there is comparatively little private land in the region, the remaining private ranches play a large role in the local cultural dynamic, and their participation in a collaborative vision will be an important component of the overall political balance.

Using lessons from the creation of the Dakota Grasslands Conservation Area, the Crown of the Continent, and the Flint Hills Legacy Conservation Area, a Greater Hart-Sheldon Conservation Area can embody a new paradigm of collaborative, flexible, results-oriented conservation partnerships spanning federal, state and local agencies, private landowners, and nongovernment organizations. Uniquely, in the Hart-Sheldon landscape, very little private land or easement acquisition would be required to secure significant habitat — rather there could be investment in habitat improvement in partnership with allotment holders, changes in designations under existing bureau management, or transfers of land from one bureau to another to better suit management goals and objectives.

Creating a mutually understood collaborative vision for the Greater Hart-Sheldon landscape requires:

Department of the Interior and State Agencies: Bringing together U.S. Fish and Wildlife Service programs (National Wildlife Refuge System, Partners for Fish and Wildlife program, and Ecological Services), the Bureau of Land Management, and state wildlife agencies to create a

coordinated plan to secure greater sage-grouse and other sagebrush-steppe species habitat. This coordination needs to occur at national, regional, state and district/station leadership levels.

Public Agencies/Private Lands: The Natural Resources Conservation Service (NRCS) and its Sage-Grouse Initiative, along with joint ventures and independent groups like Partners for Conservation, could complement Interior agency programs with conservation actions on private lands that provide significant stream and wet-meadow habitat essential to the bird's life cycle.

Nongovernment organizations: A range of NGOs, associations and community groups can play an important role in engaging the broader constituencies that are invested in the future of this landscape. Partners would include sportsmen's groups, grazing associations, conservation and recreation groups.

Several administrative and planning efforts are recently complete and ready for implementation, or are in progress. These frameworks offer the foundation for creating an integrated collaborative landscape-scale vision for sagebrush steppe conservation.

These include:

- The revision of BLM Resource Management Plans (RMPs) and Sage-Grouse Environmental Impact Statements (EIS) drafts;
- Western Governors Association/Western Association of Fish and Wildlife Agencies and Oregon/Nevada statements of sage-grouse conservation goals;
- Pending update of the Hart Mountain National Antelope Refuge Comprehensive Conservation Plan (CCP);
- Implementation of the 2012-approved Sheldon National Wildlife Refuge CCP, which includes the current operation to completely remove feral horses and burros from the refuge.

All of the above, however, are ingredients. To find the collaborative conservation recipe that will work in the Greater Hart-Sheldon will require coordination among agencies and partners, an open dialogue, agreement to seek to identify the 80% of conservation goals that all parties can agree on and sidebar the 20% that are divisive issues; and an examination of all of the resources and tools available in this landscape with the necessary changes in emphasis, priority, and implementation that may be needed.

For example, increasing conservation status on BLM lands might include using the BLM Area of Critical Environmental Concern (ACEC) model but enhancing its permanence and management rigor, designating Wilderness Study Areas as Wilderness, or undertaking transfers of land from BLM management as additions to the National Wildlife Refuge System, or a combination of all of the above. Similarly, enhancing conservation on private lands might include guiding NRCS programs to expand beyond juniper removal to include a range of other habitat improvement needs and, as has been piloted elsewhere in Nevada, allowing the use of NRCS funds on BLM grazing allotments, or buying out and permanently retiring certain grazing allotments, or considering various grass banking scenarios, or again, all of the above.

RECOMMENDATIONS

Land managers have the tools to make meaningful progress toward conserving sage-grouse habitat in the Hart-Sheldon region and thereby contribute substantively to efforts to avoid an ESA listing. We recommend that the agencies move swiftly to implement one or several of the following near-term opportunities:

- **Expansion of the Hart Mountain and Sheldon Refuges** to encompass lands critical to the long-term survival of greater sage-grouse and other shrub-steppe species through the current Hart Mountain CCP process or a USFWS-led creation of a Landscape Conservation Area in the model of other recent large-landscape collaborative efforts;
- **Creation of a National Conservation Area (NCA)** to conserve BLM-managed lands between and surrounding the Hart Mountain and Sheldon Refuges as a greater sage-grouse population reserve, while also accommodating sustainable uses and activities that promote the natural, cultural, and recreational values of the landscape.
- **Establishment of a Greater Hart-Sheldon Sagebrush Steppe National Monument** via Presidential proclamation under the Antiquities Act of 1906. This is not a preferred strategy, as it reduces the community and agency self-determination that can be included in a more collaborative effort and does not necessarily carry the management rigor that other tools can, however the need to recognize and elevate the status of this landscape could justify a National Monument designation.

Notes

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