

Opportunities to Increase Private and Public Investment in Conservation Across Federal Lands in the Sagebrush Sea

by Bryan Leonard

Context:

The sagebrush sea—a vast landscape of grasses, wildflowers, and sagebrush that spans 13 western states and supports over 350 rare, threatened, or endangered species—is a critically important, and rapidly disappearing, landscape. Advancing conservation in sagebrush country will necessarily implicate the Bureau of Land Management (BLM), which manages nearly 80 million acres of this ecosystem for multiple, and sometimes competing, uses. Across these lands, a variety of opportunities exist for new investment in public land by government entities and private parties that value healthy, well-managed public lands and the ecosystem services they provide.

Conclusions:

There are a variety of opportunities for win-win arrangements that provide benefits and payments to existing resource users while also enhancing conservation outcomes on federal land. Projects that address overgrazing, invasive species, degradation from other uses, and climate change may include reconfiguring existing land uses, restoring habitat and riparian corridors, and removing harmful species and infrastructure from the landscape. Barriers to investment in these solutions include a lack of formal mechanisms to safeguard conservation investments, insufficient administrative capacity, and a governance structure that can create conflict between conservation and existing uses. Private land conservation offers examples of arrangements that might address these barriers.

Implications:

Current governance structures are tailored to the needs of historical users who extract resources from the land, generating significant uncertainty about whether conservation investments will endure. However, payment for ecosystem service markets and offset markets, both of which function robustly on private land, offer models for win-win collaborations that provide more security for conservation investments while also protecting and benefitting existing users. Reducing red tape and administrative burden can also help facilitate greater public and private investment on federal lands in the sagebrush sea.

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Background

Perhaps the most ubiquitous landscape in the western federal estate is the massive span of shrub and grassland often referred to as the sagebrush sea. Characterized by a mix of grasses, wildflowers, and sagebrush, the ecosystem supports over 350 rare, threatened, or endangered species and is one of the most overlooked and threatened ecosystems in North America. Roughly 1.3 million acres of sagebrush are lost to land conversion for agriculture and development each year, and the remaining land faces challenges from invasive species, wildfire, overgrazing, and more.

The BLM manages roughly 78 million acres of the sagebrush sea to support a variety of sometimes competing uses, including grazing, mineral extraction, renewable energy, recreation, and the preservation of culturally important sites, endangered species habitat, and biodiversity. Guided by historical laws that emphasized development of the nation's natural resources during westward expansion, the BLM's management approach has historically favored active, productive uses of federal lands that have contributed to the loss and degradation of sagebrush on federal land, for example by allowing unsustainable levels of grazing and failing to address invasive weeds and grasses.

The need for restoration and protection of this critical ecosystem creates a variety of opportunities for new investment in public land by governments and private parties. Federal agencies, environmental NGOs, local activists, and recreational tourists have all demonstrated an increasing appreciation for the value associated with well-managed public lands and in many cases, a willingness to pay. This brief outlines some of the key opportunities where investments could generate the most value, discusses the barriers that make such investment difficult under the status quo, and explores several options for unlocking greater investment in the future.

Specific needs and opportunities

An exhaustive inventory of all the resource management and environmental needs across the sagebrush sea is beyond the scope of this brief. However, key challenges include the loss of sage grouse habitat, threats to migration corridors, increased wildfire risk, and watershed degradation. These challenges arise from a handful of common causes including overgrazing, invasive species like cheatgrass, and historical production practices and patterns. Climate change exacerbates many of these challenges, often increasing the urgency of pursuing solutions. Opportunities for addressing these and other conservation needs on federal land span three broad categories of action: reduction and reconfiguration, restoration, and removal.

Reduction and reconfiguration of historical production patterns

Many BLM lands have been severely degraded over the past century. As of 2022, over 54 million acres managed by the BLM are not meeting the agency's land health standards for grazing, and over half of the land has yet to be assessed. This degradation creates a variety of challenges including the loss of ecological function in riparian areas, destruction of sage grouse habitat leading to population declines, and reduced forage for big game species that share the landscape.

Reducing and reconfiguring historical production patterns could go a long way in helping to preserve and restore the sagebrush sea. Even small changes—such as modifying grazing rotations or adjusting the timing of energy development—can help minimize impacts, particularly in sensitive breeding areas and migratory stopover sites, while still allowing production to continue.

While efforts to advance conservation often rely on existing resource users to adopt practices that reduce further degradation, NGOs and government agencies can help ease this transition by providing support, incentives, and resources to maximize impact. These include mapping efforts to better characterize spatial distribution of sensitive areas like sage grouse leks and migratory stopover sites, and simple but labor-intensive projects like marking fences with small tags to reduce sage grouse collisions or installing wildlife friendly fencing that reduces mortality for migratory species like pronghorn.

Restoration of degraded landscapes

Proactive restoration efforts are also needed to reverse the degradation of the sagebrush sea. These include reseeding native grasses once invasive species have been removed, restoring sage grouse habitat, stream bank restoration and reconfiguration, and installing beaver dam analogs to mediate streamflow. Restoration projects run the gamut from labor-intensive seeding efforts backed by cutting edge research to bolster native seeds' resilience, to capital-intensive engineering projects associated with streambed restoration. Many projects create win-win opportunities that restore ecosystem function while also benefiting land users, for example, reestablishing native grasses and shrubs that improve forage quality for livestock. Projects could be completed by existing users, NGOs, or federal land managers, depending on the scope and context.

Removal of undesirable elements

Finally, a range of removal projects can help reduce disturbances across the sagebrush sea, particularly in the fight against invasive annual grasses. While complete eradication of these persistent species may be unrealistic, targeted removal efforts can lower wildfire risk, promote the recovery of native grasses, and improve forage quality for wildlife and livestock alike. Similarly, reducing fuels buildup through mechanical thinning and prescribed burns can help mitigate the growing wildfire risk driven by climate change. Removal of barbed wire fencing could also facilitate migrations, reduce sage grouse impacts, and better enable the restoration of riparian areas. Although some fences are still critical to grazing operations, others have been in place for nearly a century and likely no longer reflect optimal grazing patterns. These removal projects benefit local ecosystems and existing resource users by reducing fire risk, optimizing forage, and replacing outdated infrastructure. They also could be completed by a combination of existing users, NGOs, and federal agencies.

Barriers to investment

Despite the significant need for conservation and restoration on public lands across the sagebrush sea, private and public investment in these areas is limited, even as NGOs, private firms, and the federal government make significant investments on nearby private lands. One major barrier is that there is currently no legal mechanism to safeguard conservation investments on public land. Unlike other dominant land uses—such as grazing, timber harvest, mining, and recreation—conservation efforts are not backed by leases or permits that establish clear rights, responsibilities, and legal protections. As a result, conservation investors face unique vulnerabilities that other land users do not. While industries like grazing and mining operate under structured agreements that provide stability and recourse, conservation investments remain subject to shifts in field office leadership, presidential administrations, land management plans, and funding priorities, all of which can abruptly alter or even undo conservation gains.

Administrative capacity also creates constraints that stymie potential conservation and restoration projects on federal land. Acquiring the necessary approval and complying with National Environmental Policy Act (NEPA) regulations can create significant delays, even for projects with clear net positive environmental impacts. For example, the time from initial scoping to the beginning of field work for fuels on Forest Service land averages 3.6 years for mechanical thinning and 4.2 years for prescribed burns. Hence, the NEPA process can cause the planning for a single project to span multiple president administrations and associated staff turnovers. Even once projects are approved, many field offices lack sufficient staff to oversee, monitor, and support restoration efforts on top of their duties associated with other uses of federal land.

Finally, the structure of federal land management governance often creates conflict between conservation efforts and existing land users. The primary way that federal agencies address multiple uses is through the land management planning process, which tends to designate specific areas of each field office's jurisdiction to different uses. For example, a land management plan may designate certain areas for oil and gas leasing while restricting others through closures or “no surface occupancy” provisions. This process often creates a zero-sum dynamic, where conservation interests and existing land users compete for favorable designations rather than seeking collaborative solutions. As a result, conservation investments not only face legal and institutional hurdles but also significant opposition from existing users who may perceive them as a threat to their established land uses. This adversarial framework limits opportunities for integrated approaches that could benefit both conservation and resource-dependent communities.

Potential solutions

The BLM's 2024 Conservation and Landscape Health Rule, known as the Public Lands Rule, contains provisions to address some of the barriers identified above. By allowing the BLM to issue mitigation and restoration leases, the rule creates a specific legal mechanism to generate greater certainty around investments in conservation on public land. Specifically, it creates a framework for mitigation and restoration leasing that would afford conservation and restoration activities the same legal rights as existing uses of federal land.

The Public Lands Rule is one attempt at implementing several broad principles that could help reduce key barriers conservation investment. These principles—voluntary exchange, making existing users whole, and tapping into market forces to advance conservation—seek to bring the successes of private land conservation to federal lands, and could help facilitate greater investment in the sagebrush sea regardless of the future policy landscape. Tools and strategies exist that employ these principles but are unrelated to the Public Lands Rule and are broadly consistent with priorities outlined in recent executive orders.

Contractual agreements with existing users

A hallmark of payment for ecosystem services markets on private lands is conservationists paying producers to engage in conservation-friendly practices without entirely curtailing their output. The Public Lands Rule makes provisions for stacking mitigation leases on top of existing leases and permits and so could, in principle, enable similar agreements between conservationists and existing permit holders. This approach could address multiple barriers at once—offering conservationists greater security through a formal lease while reducing conflicts with existing users by financially incentivizing practices that mitigate environmental impacts.

Offset markets

One of the primary drivers of private investment in conservation is the ability to generate offsets or credits, which allow developers to compensate for environmental impacts in one area by funding conservation efforts elsewhere. While offset markets exist for carbon, habitat, and wetlands, they are primarily limited to private lands.

Mitigation leasing could expand these opportunities to public lands by allowing existing permit and leaseholders, as well as new investors, to develop offset projects. This approach would provide financial incentives for land users to adopt conservation-friendly practices that reduce degradation and promote restoration while offering conservationists a formal pathway to invest in public land conservation. Additionally, the BLM could collect revenue by assessing a fee for each offset generated, helping to address administrative capacity challenges within field offices.

Permitting reform

A key barrier not addressed by the Public Lands Rule is the lengthy permitting delays for completing projects on federal land. Although there are many sources of bureaucratic delay, NEPA looms large in this regard, which could be addressed in several ways. One possibility would be to create categorical exclusions for certain types of projects, allowing them to automatically forgo the NEPA process and potentially shaving years off permitting. A current example of this is certain Forest Service fuels treatments that qualify for categorical exclusions; these projects move from planning to implementation in less than half the time of projects where a full Environmental Impact Statement is required.

Certainly, there are no guarantees of conservation success for projects on private or public land. Resource values change, land is sold, and funding streams dry up. And yet, there is much more robust investment in conservation on private land in the form of conservation easements, federal programs like the Department of Agriculture's Environmental Quality Incentives Program, and privately funded payment for ecosystem services markets. The key difference lies in the policy-driven costs and uncertainty associated with projects on public land. Public land restoration projects often face local backlash, permitting delays, and uncertain long-run prospects. Addressing these barriers by encouraging win-win collaborations, leveraging market incentives, and reducing red tape can help facilitate great conservation and restoration work on federal lands in the sagebrush sea.