RANGE STUDENT RUNDOWN

SRM Student Conclave **April 2025 Edition**

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New Bill Aims to Boost Grazing as a Wildfire Tool

A new bipartisan bill introduced in Congress could reshape how grazing is used to reduce wildfire risk on public rangelands

Image by Steve Buissinne from pixabay

A new bipartisan bill introduced in Congress could reshape how grazing is used to reduce wildfire risk on public rangelands. The Grazing for Wildfire Risk Reduction Act (H.R.1110), introduced in March 2025, directs the U.S. Forest Service to create a comprehensive national strategy for using livestock—such as cattle, sheep, and goats—to strategically manage excess vegetation and fine fuels in high-risk fire areas. This includes identifying priority landscapes where targeted grazing can be deployed as a preventative measure, outlining best practices for herd movement and intensity, and developing monitoring systems to evaluate the effectiveness of grazing treatments over time. The strategy is also expected to provide guidance on aligning grazing with local ecological goals and fire behavior models.

This strategy would allow temporary grazing permits on vacant or unused allotments during periods of elevated fire risk or drought. It also encourages targeted grazing to reduce fast-burning invasive grasses like cheatgrass and red brome, which are fueling larger and more frequent fires across the West.

The bill has gained support from both conservation-minded land managers and ranching advocates, who see grazing as a practical tool for fuel reduction when done strategically. It also requires the Forest Service to coordinate with state agencies, tribal governments, and permit holders to implement grazing plans that support wildfire resilience.

Importantly, the bill would establish demonstration sites to test fuel reduction methods, including rotational grazing and post-fire grazing for restoration. Supporters argue this data-driven approach could improve rangeland health and reduce the costs of wildfire suppression in the long run.

For students preparing for careers in rangeland management, this legislation presents a real-time example of how ecological science, livestock production, and land policy intersect in applied settings. It highlights the growing need for professionals who can navigate both environmental and regulatory complexities, particularly as climate change intensifies wildfire seasons across the West. Understanding the role of grazing not just as a livestock practice but as a land stewardship tool will be essential for tomorrow's rangeland specialists. Moreover, this legislation reflects a growing emphasis on multi-use land strategies and climate adaptation. If passed, it could create new career opportunities in fire ecology, grazing planning, and public land coordination.

While it remains to be seen whether the bill will pass both chambers, its introduction signals a wider policy shift toward integrating grazing more intentionally into wildfire mitigation efforts—especially in dry, fire-prone landscapes of the western U.S.

Want to Learn More?

- Congressional Summary of H.R.1110

Fun Fact!

Goats can eat up to 6 pounds of vegetation per day, making them surprisingly effective firefighters! In places like California and Colorado, herds of goats are already being hired to clear brush in residential areas to create firebreaks—and now Congress is considering expanding that idea to federal lands.

New Grasslands Conservation Act Targets North America's Disappearing Prairies

Grasslands are vanishing faster than any other ecosystem in North America—but a new bill in Congress aims to change that.

Image by Phillip Roulain from pixabay

In October 2024, a bipartisan group of lawmakers introduced the North American Grasslands Conservation Act to help reverse the rapid loss of prairie and sagebrush ecosystems across the continent. Inspired by the success of the North American Wetlands Conservation Act (NAWCA), the proposed legislation would create a new grant program that supports voluntary, incentive-based conservation for private landowners, Tribes, farmers, and ranchers.

Over 70% of native grasslands in the U.S. have already been lost to development, fragmentation, and unsustainable land use. As a result, grassland birds have declined by more than 40% since 1966, and species like monarch butterflies, bobwhite quail, and prairie elk are losing critical habitat.

The proposed bill would fund efforts like habitat restoration, prescribed fire, native plant seeding, and invasive species removal. It also emphasizes carbon sequestration and climate resilience through soil health and grassland regeneration. This approach aligns with larger federal goals for climate-smart agriculture and nature-based climate solutions.

For landowners and producers, the act would provide technical and financial assistance without mandating specific land-use changes. This voluntary framework has won praise from agricultural groups, which see it as a balanced way to support both working lands and wildlife habitat.

Support for the bill is growing across sectors. More than 45 organizations—including Quail Forever, the Theodore Roosevelt Conservation Partnership (TRCP), and several state wildlife agencies—are backing the proposal.

The bill is also being promoted through the "Act for Grasslands" campaign, a coalition effort aimed at educating the public and lawmakers about grasslands' importance.

For students in rangeland management, this legislation is a real-world example of how science, policy, and land stewardship intersect. It also illustrates the increasingly collaborative nature of conservation, where biologists, ranchers, Indigenous communities, and lawmakers work side by side to address complex ecological challenges. If passed, the act could bring new funding, job opportunities, educational programming, and long-term conservation partnerships to rural communities across North America—many of which rely on healthy grasslands for economic stability, ecological resilience, and cultural heritage.

Want to Learn More?

- Act for Grasslands Campaign
- TRCP News Release
- Quail Forever Announcement

Fun Fact!

Despite covering less than 40% of the planet's surface, grasslands support nearly 80% of all agricultural land used for livestock production—making them one of the most productive ecosystems for food and fiber!

Canada Recognizes Five New Conserved Areas to Boost Biodiversity

In a major step toward its goal of protecting 30% of its lands and waters by 2030, Canada has designated five new sites as Other Effective Area-Based Conservation Measures (OECMs)

Image by ElasticComputeFarm from pixabay

Announced on March 6, 2025, by Minister of Environment and Climate Change Steven Guilbeault, the newly recognized OECMs include:

1. Rideau Canal National Historic Site (Ontario)
2. Navy Island National Historic Site (Ontario)
3. Fort George National Historic Site (Ontario)
4. Grosse-Île and the Irish Memorial National Historic Site (Quebec)
5. Ya Ha Tinda Ranch (Alberta)

OECMs differ from traditional protected areas like national parks because their primary function isn't conservation—but their land management practices still result in significant environmental benefits. The addition of these five sites will contribute to the long-term preservation of natural habitats, wildlife corridors, and culturally significant landscapes, reinforcing Canada's efforts to combat biodiversity loss and mitigate climate change impacts.

The Ya Ha Tinda Ranch in Alberta, for example, is home to important grassland ecosystems and supports a federally managed horse program used for backcountry conservation work. Similarly, sites like Rideau Canal and Fort George help maintain natural shorelines and wetlands that provide crucial wildlife habitat.

Canada's 30x30 conservation goal aligns with international commitments to halt and reverse biodiversity loss, particularly as species face increased pressure from climate change, habitat fragmentation, and human activity. While national parks and wildlife reserves serve as core conservation areas, the recognition of OECMs highlights an expanded approach—one that acknowledges the importance of working landscapes, cultural sites, and privately managed lands in sustaining biodiversity.

This approach also strengthens partnerships with Indigenous communities, many of whom have been stewards of these lands for generations. Indigenous-led conservation efforts continue to be an essential part of Canada's environmental strategy, and collaborative management agreements for OECMs help ensure that traditional ecological knowledge is incorporated into conservation planning.

By recognizing these areas, Canada strengthens its global leadership in conservation while working alongside conservation groups, local governments, and private landowners to expand protected lands. This designation highlights the importance of integrating conservation into existing landscapes, ensuring that biodiversity is safeguarded even in areas primarily used for recreation, cultural heritage, or resource management.

As Canada moves toward its 30% protection target, the integration of conservation into diverse landscapes will be critical in addressing the interconnected challenges of habitat loss, climate change, and ecosystem degradation.

Want to Learn More?

Canada Parks Conservation Announcement

Colorado Moves to Protect Wild Bison as Big Game

Colorado is taking major steps to protect one of North America's most iconic native species—by giving wild bison the legal recognition they deserve.

Image by WikiImages from pixabay

In January 2025, Colorado lawmakers introduced Senate Bill 25-053 (SB25-053), aiming to reclassify wild bison as big game wildlife, aligning their status with species like elk and bighorn sheep. This legislative move seeks to provide greater protection to wild bison, making it illegal to hunt or take them without authorization from the Colorado Parks and Wildlife Commission

Historically, bison played a pivotal role in North American ecosystems, significantly influencing grassland habitats and supporting biodiversity. Their grazing patterns help maintain healthy prairie ecosystems, promoting plant diversity and providing habitats for numerous other species. However, due to overhunting and habitat loss in the 19th century, bison populations plummeted, leading to their near extinction in the wild.

The proposed reclassification in Colorado is not only a step toward rectifying past ecological missteps but also acknowledges the cultural significance of bison to Indigenous communities. Andrew Gallegos of the Southern Ute Indian Tribal Council emphasized, "These are more than just animals. They're kin, providers, a cornerstone of our very existence."

By granting wild bison big game status, the bill aims to facilitate better management and conservation strategies. This includes potential measures such as habitat restoration, population monitoring, and regulated hunting to ensure sustainable herd sizes. Moreover, the reclassification could enhance genetic diversity by encouraging the natural movement of bison across state lines, fostering healthier populations.

For students and professionals in rangeland management, SB25-053 underscores the importance of integrating ecological knowledge with policy-making. It highlights the need for collaborative efforts among wildlife managers, policymakers, and Indigenous groups to achieve conservation goals that are both ecologically sound and culturally respectful.

As of March 20, 2025, the bill has passed the Senate Agriculture & Natural Resources Committee and awaits further deliberation in the Appropriations Committee.

Want to Learn More?

- Colorado General Assembly - SB25-053
- CPR News Article on SB25-053
- Environment America Press Release

Fun Fact!

Bison are the largest land mammals in North America, with adult bulls weighing up to 2,000 pounds—yet they can run at speeds over 35 miles per hour and jump fences nearly 6 feet high!

Invasive Grasses and Wildfires Slash Rangeland Carbon Storage by 50%

A new study published in Communications Earth & Environment has revealed that invasive annual grasses and wildfires are causing significant carbon loss in North America's sagebrush steppe ecosystems.

Photo By/Credit: Jennifer Strickland/USFWS

The study highlights how the spread of invasive grasses like cheatgrass (Bromus tectorum) fuels more frequent and intense wildfires, which in turn further promote grass invasion. This grass-fire cycle transforms deep-rooted native shrubland into fire-prone, shallow-rooted annual grasslands, reducing the ability of these ecosystems to store carbon. Unlike native sagebrush and perennial grasses, which sequester carbon over decades, annual grasses decompose rapidly, leaving behind dry, flammable fuel that exacerbates fire risk

The researchers conducted direct soil carbon measurements from 1,174 samples across different landscapes in the sagebrush steppe. Their findings show that most carbon loss occurs in deeper soil layers (60–100 cm), which are crucial for long-term carbon storage. This contradicts previous assumptions that topsoil carbon is most vulnerable to disturbance and suggests that wildfires and invasive species are destabilizing deep soil carbon stocks as well

What This Means for Rangeland Management

The study's authors emphasize that without intervention, the sagebrush steppe—one of the largest carbon reservoirs in North America's drylands—could shift from a carbon sink to a carbon source by 2050. This would amplify climate change impacts by increasing atmospheric-carbon levels. To mitigate further carbon loss, researchers suggest that maintaining and restoring native perennial plant communities is one of the most effective strategies. Protecting intact sagebrush-steppe rangelands from invasion and fire could prevent millions of tons of carbon from being released annually, making rangeland conservation a critical component of natural climate solutions

A Soil Carbon "Floor"?

One unexpected finding was that soil carbon levels did not continue to decline indefinitely. Instead, disturbed soils seemed to reach a "resistant base level" of carbon, below which further loss was unlikely. This suggests that once soil carbon reaches this floor, restoration efforts would need to rebuild lost carbon from the ground up, rather than simply preventing further depletion

With millions of acres already converted from sagebrush to invasive grasslands, rangeland managers, conservationists, and policymakers face a critical challenge: preventing further degradation while finding effective ways to restore lost carbon storage. The study underscores the importance of fire prevention, invasive species control, and sustainable grazing practices to maintain the carbon-storing potential of western U.S. rangelands.

The Paper

Maxwell, T. M., Quicke, H. E., Price, S. J., & Germino, M. J. (2024). Annual grass invasions and wildfire deplete ecosystem carbon storage by >50% to resistant base levels. Communications Earth & Environment, 5(1). https://doi.org/10.1038/s43247-024-01795-9

If you have something you want shared in The Range Student Run Down, Email the Student Concalve at:

student_conclave@rangelands.org

Study Finds Grass-Fed Beef Is No Climate Savior

Grass-fed beef has long been touted as the more sustainable alternative—but a new study suggests the reality isn't so simple.

Image by Truong Hoàng Huy Ngân from pixabay

A new study published in the Proceedings of the National Academy of Sciences (PNAS) in March 2025 challenges the common perception that grass-fed beef is better for the environment than feedlot beef. Researchers found that even under optimistic assumptions about soil carbon sequestration, grass-fed beef remains as carbon intensive as feedlot beef—and often more so.

The study used a herd simulation model and empirical data to calculate total greenhouse gas emissions, including methane, nitrous oxide, and carbon dioxide. Even when accounting for possible carbon gains from improved soil health, grass-fed beef emits 270–410 kg of CO_2 equivalents per kg of protein, compared to 180–220 kg for industrial beef. In contrast, plant-based and other animal proteins like pork and poultry produce only 10–70 kg of CO_2 equivalents per kg of protein.

One surprising result is that methane emissions from grass-fed herds are often higher, due to cattle consuming lower-energy forage for longer periods. This slower growth rate means cattle spend more time emitting methane. On richer pastures, fossil fuel use increases from supplemental feeds and management inputs, negating some methane gains.

Soil carbon sequestration was not enough to offset the difference. The researchers found that typical grazing systems would need to sequester 240–740 kg of carbon per hectare per year to achieve carbon parity with feedlot beef—an unrealistic target on most U.S. rangelands.

For rangeland managers and students, the takeaway is that management intensity matters, but the beef sector overall faces steep climate challenges

Improving rotational grazing or soil practices may help—but they are not a silver bullet. This research invites a more critical look at sustainability claims tied to beef labeling and encourages exploration of truly climate-smart alternatives.

The Paper

Eshel, G., Flamholz, A. I., Shepon, A. A., & Milo, R. (2025). US grass-fed beef is as carbon intensive as industrial beef and ≈10-fold more intensive than common protein-dense alternatives. Proceedings of the National Academy of Sciences, 122(12). https://doi.org/10.1073/pnas.2404329122

Want to Learn More?

- Washington Post Coverage

TLDR:

A major new study finds that grass-fed beef isn't the climate solution it's often claimed to be. Even with optimistic soil carbon estimates, it's just as—or more—carbon intensive than feedlot beef, and far more so than plant-based alternatives.

Range Student student job board

Kofa Biological Technician: Arizona Conservation Corps

Apply By Date: N/A

Location: Yuma, AZ

Apply Here

Natural Resource Summer Internship at Crystal Cove Conservancy

Apply By Date: April 13th 2025

Location: California USA.

Apply Here

Plant Ecology Intern: Smithsonian's National Zoo and Conservation Biology Institute

Apply By Date: April 1st 2025

Location: Front Royal, VA

Send letter of interest, resume (including list of references), and unofficial transcripts as a single document to William McShea by April 1 (mcsheaw@si.edu).

Conservation Interns and Fellows: Montana Conservation Corps

Apply By Date: May 1st 2025

Location: Montana USA.

Apply Here

Land Stewardship Intern: The Westervelt Company

Apply By Date: April 8th 2025

Location: Golden, CO

Apply Here

Youth in Natural Resources: ECO Canada

Apply By Date: N/A

Location: Multiple Locals

Apply Here

Cartography/GIS Intern: Washington State Department of Natural Resources

Apply By Date: April 16th 2025

Location: Colville, WA

Apply Here