



# Rangeland Issues Forum

May 2011

## Sustainable Rangelands

Rangelands cover about 1/3 of the United States, as grasslands, savannas, shrublands, tundra, alpine meadows, deserts and wetlands. These lands have a rich history tied to commodity and amenity values, including contributions to clean energy, forage for cattle and sheep, a way of life for rangeland-dependent communities, recreation opportunities, open space, and wildlife habitat. More than half of U.S. rangelands are privately owned, with the remainder managed by government entities.

The complexity of rangeland ecosystems coupled with mixed ownership and management boundaries has made it challenging to develop comprehensive, consistent assessments of social, ecological and economic elements of rangeland sustainability. However, as population increases and human development and use of rangeland resources grows, impacts upon rangelands are likely to intensify. Conflicts among uses and users are also probable.

Since 2001, the Sustainable Rangelands Roundtable (SRR) has convened stakeholders interested in these issues to identify suitable metrics of rangeland sustainability. Participants have explored vegetation, soils, water, animals, productive capacities, and the social, economic, legal and institutional arrangements that characterize long-term sustainability of US rangelands.

Efforts to expedite implementation of a national rangeland survey and periodic rangeland sustainability reporting continue as SRR works with agencies, industry, and non-governmental organizations. Emerging issues such as accelerated development of solar, wind, and biofuels for energy; open space conservation and habitat quality for wildlife; and extant demands for production agriculture to ensure food security highlight the importance of reliable, consistent rangeland resource information.

Better data supports more balanced dialogue and discussion, culminating in stronger decisions. As financial resources become more scarce, the need intensifies for more efficient and effective land management.

## Ecosystems, Energy and the Rangeland Resource

The 20th century was marked by abundant, low-cost energy, primarily from fossil fuels that made up approximately 90% of energy sources. The remainder of energy generation came through hydropower and nuclear sources with renewable sources providing less than 1%. Progression towards “energy independence” must include both renewable and non-renewable resources. Moreover, sustainable development of these resources is crucial to resolving many of society’s most difficult challenges (i.e. food & water shortage, poverty, etc.).

In addition to energy resources, rangelands represent a significant source of other ecosystem goods and services. To an extent,

technology can buffer society against environmental changes. However, ultimately, the continued flow of ecosystem goods and services requires proper functioning ecosystems. The provision of rangeland ecosystem goods and services is tied directly to the “health” of the systems.

The recommendation to develop unconventional domestic fuels has ramifications for the continued delivery of rangeland ecosystem services. Since rangelands cover extensive areas and contain a large proportion of untapped energy sources, developing them will have direct and indirect effects on the biophysical attributes and integrity of these ecosystems. Assessment of the extent of these impacts is further complicated by intricate interactions between biophysical and socioeconomic factors affecting ecosystem services. Ensuring availability of consistent resource information is a necessary first step toward useful assessments to inform decision-making and evaluate trade-offs.



Photo courtesy CIRES

## Key Points:

- Rangeland resources have tremendous potential to provide both renewable and non-renewable energy for current and future generations.
- Assessing impacts of energy development on rangelands is critical to inform decision-making about trade-offs between energy resources and other ecosystem goods and services.
- Consistent assessment information will provide a basis for dialogue and debate regarding impacts of energy development.
- Optimizing rangeland management to produce both energy resources and ecosystem goods and services would benefit from consistent, periodic assessment of rangelands.



## Rangeland Open Space and Wildlife Habitat: The Greater Sage-grouse

In the mid-19th century, early settlers and frontiersmen discovered the wide open spaces of Western rangelands. In the early 20th century, those seeking rugged recreation experiences also explored the West. Wildlife populations were numerous and ornithologist John Townsend recalled flushing hundreds of grouse from the sagebrush while riding in Wyoming's Green River Valley. Similarly, naturalist George Grinnell reported grouse flocks filling the skies near Casper, WY.

However, by 1906, population assessments showed that Wyoming's sage grouse were declining. That trend is mirrored across the West. The Greater Sage-grouse now occupies about half of its pre-settlement range, and Wyoming rangelands are home to about half of North America's Greater Sage-grouse.

When Greater Sage-grouse were petitioned for listing under the Endangered Species Act, Wyoming began a proactive process. Starting in 2000, a multi-disciplinary panel spent three years developing management recommendations leading to a state-wide conservation plan and locally focused efforts. In 2007, an-

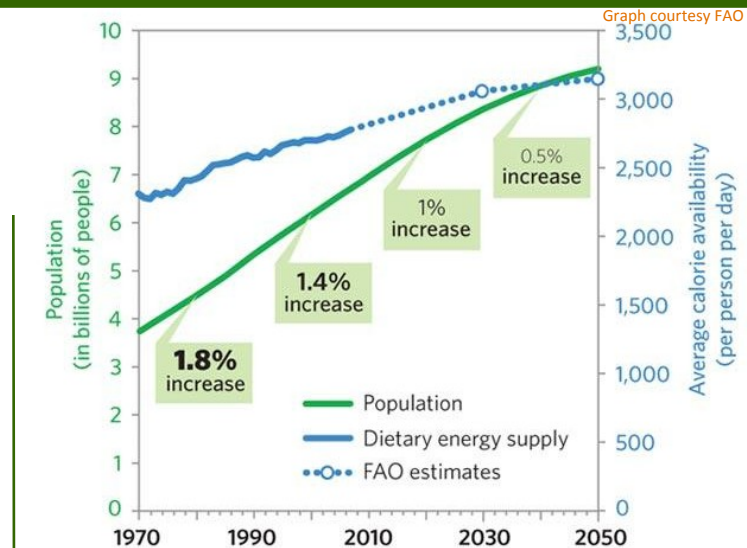


Photo courtesy NPS

other multi-disciplinary group recommended additional actions that consider the species' natural history, habitat ecology, and economic concerns of industry, local government, and others.

This foundation has given rise to an expanding user partnership focused on enhancing Greater Sage-grouse habitat while recognizing economic needs of agriculture, industry and local communities. Since research suggests that what harms the sage grouse may depend on where it lives, monitoring resource conditions is considered in parity with economic concerns. Greater Sage-grouse population assessments to track progress are ongoing.

Key partners include federal agencies that manage habitats, species, and provide technical service and financial incentives. For example, this year the Natural Resources Conservation Service (NRCS) will use \$23 million for programs to protect approximately 49,000 acres of sagebrush rangeland. The NRCS and the Bureau of Land Management (BLM) have also signed an inter-agency agreement whereby NRCS staff will collect resource data on BLM lands to assist BLM in evaluation of their management practices for Greater Sage-grouse and other rangeland resources.



## Rangeland Production, Ranching and Food Security

Historically, ranching has been a profitable use for rangelands. Ranchers today must address challenges including lucrative land use conversions, an aging producer population, and decreases in revenue from meat production. A 1910 rancher received 40 cents of each \$1 spent on beef, in 2009 that figure was 11 cents.

Idaho's Soulen Livestock Co. runs a sheep and cattle operation, providing an excellent example of the intermingled nature and interdependence of private and public lands. Soulen Livestock Co. has base property of about 50,000 acres, used in conjunction with state, BLM, Forest Service and private land leases.

Over three generations, the family has recognized a need to develop public support and understanding for ranching and livestock production. Their operational challenges as they continue to produce food and fiber include: impacts from urban sprawl, labor availability, predator management, global markets and exchange rates, endangered species, fire management, bighorn/domestic sheep interactions, and invasive species.

To adequately appreciate contributions of rangeland resources and ranching to food security, food production from rangelands must be quantified. Numbers and value of cattle, sheep, goats, bison, and huntable wildlife that graze on rangelands can be extracted from existing data. By analyzing that data in conjunction with resource conditions, impacts of large scale environmental changes, and management policy, shifts in food supply may be estimated. This information will become increasingly important as human populations grow and demand for meat rises.



Photo courtesy ARS