

## Global Warming And U.S. Public Lands

*America's Wildlands are Under Threat and Will Play Key Role in Any Climate Change Solution*



The Red Desert in Wyoming.

By Mike McClure

Climate change represents the most important environmental challenge facing humanity. Forest loss is a primary cause of global warming, second only to fossil fuel emissions. If properly conserved and managed, forests are major contributors to solving the global warming crisis. If left unprotected, forests and humanity become victims of a warming climate. There is a brief and important window of opportunity for meaningful action on climate change. Derived from both science (experts agree that significant reductions in greenhouse gas emissions are needed soon if we are to avoid dangerous ecological “tipping points”) and the political landscape (the international community, Congress and the White House are setting the stage for meaningful action on climate change) this window may not last long.

### **Our Heritage**

America’s public lands—over 620 million acres of land and 150,000 square miles of protected waters—are the birthright of every citizen and the legacy we hold in trust for generations to come. Global warming poses an unprecedented threat to the nation’s iconic landscapes—our national parks, forests, wilderness areas, and wildlife refuges. At the same time, protecting these natural places is more important now than ever before. Our country’s public lands store carbon and offer one of our best hopes for sustaining the plants, animals, birds, clean water and air, and recreational opportunities that are important to our heritage.

### **The Threat**

Dramatic and rapidly occurring transformations to our lands and waters are well documented. Glaciers are receding. Beaches and coastal wetlands are eroding as sea levels rise. Inland lakes and wetlands are drying up. Droughts and severe storms are more frequent as precipitation patterns shift. Invasive species are gaining a foothold and native plants are struggling. Wildland fires are increasing in frequency and intensity. Wildlife that depend on these habitats are increasingly stressed—more so as urban sprawl, energy development, and motorized recreation encroaches on the very habitats set aside to protect them.

These threats have wide-ranging impacts on human communities as well. Wildlands support the pollinators on which our crops depend and feed the watersheds that supply our drinking water. They also afford opportunities for hunting and recreation. Protected coastal wetlands buffer homes and property from damaging storms. What happens to these lands ultimately affects us all.

### **Economic Impacts**

To put a conservative price tag on our investment in public lands, the economic benefits derived from biodiversity in the United States reach more than \$400 billion annually (in 2008 dollars).<sup>1</sup> Among these services to the public, water is paramount. For example, in anticipation of a 25 percent reduction in water access by 2050, California's state government proposed a \$4.9 billion package designed to increase water storage. However, many of the ecosystem services threatened by climate change are literally irreplaceable. We simply have no affordable alternative to letting nature do its work. It is not cost-effective, practical, or in many cases possible to find another means to provide the nation with clean air, clean water, waste treatment, and good health. Managing for a changing climate will allow for the natural adaptation of these resources and keep the services they provide and on which we rely strong. Agency decision makers must account for changing risk levels over the lifetime of a land management decision by incorporating climate change considerations into planning processes to avoid significant economic loss. Incorporating the threats of climate change into our land management decisions is an economic necessity.

### **The Solution**

We need to follow a simple principle—polluters should pay for the pollution they cause. Today, power plant operators, for example, freely emit greenhouse gas pollution into the atmosphere, forcing others to bear the costs. Called the greatest market failure in history, this practice now threatens the future of the planet. To correct this market failure, the United States needs to place a steadily declining limit on this pollution and force the polluters to make the changes needed to comply with the cap. By allowing the polluters to trade allowances among each other, they can adapt most efficiently while staying below the cap. This is called “cap-and-trade,” an approach that worked well to reduce acid rain emissions in the 1990s. Both near and long-term emission reduction targets must match what science tells us is necessary to avoid dangerous “tipping points.” This requires strict 2020 targets and at least an 80% reduction from current emission levels by 2050.

In addition, preventing deforestation and maintaining healthy, intact ecosystems will be our best option for helping wildlands and the species that depend on them adapt to climate change while also sequestering carbon emissions. Deforestation is one of the primary causes of global warming, and preventing further loss and restoring healthy landscapes should be one of the primary solutions after curbing industrial emissions.

America's public lands are managed by the Department of Interior (principally the Bureau of Land Management lands, the National Parks, and the national Wildlife Refuges) and the Department of Agriculture (principally the National Forests). This includes 107 million acres of pristine wilderness and some of the nation's most diverse ecosystems. The American people have protected these landscapes for more than 100 years since the first national parks, refuges, and monuments were created. But we are losing 6,000 acres of open space every day, or about four acres per minute, as a result of unsustainable policies adopted before the current consensus on the looming threat of global warming. Now, we must do better to protect what we can no longer afford to lose. This requires a new approach to land-use policy that rewards “smart growth” and provides incentives to protect forests, grasslands and other ecosystems. First and foremost, stewards of our public lands must alter land management plans to account for climate change. This will require a message from the top, through an executive order or other similar mechanism, that turns the bureaucracy toward accounting for the climate services provided by natural systems and preserving them.

In addition, the value now placed on carbon storage has resulted in the development of carbon markets, both voluntary and mandatory, that can help compensate for private land management decisions favoring carbon sequestration. These new market forces need to be aligned to reward real, verifiable, additional forest and wildland projects that provide permanent new carbon storage to fight global warming. To ensure that promised climate benefits are realized, however, proper regulations and rigorous accounting practices must be part of any carbon market. In short, we can not let the pursuit of carbon credits lead to market manipulation and the destruction of the wildlands we seek to protect. The “carbon sink” potential of our nation’s wildlands has yet to be fully developed—and doing so will require innovative policies that value this ecosystem service over unsustainable development priorities.

Furthermore, we must plan for the effects of global warming caused by heat-trapping gases currently in the atmosphere. The past 100 years or more of accumulated global warming pollution is already causing, and will continue to cause, significant adverse impacts to the United States and the world. Cap-and-trade legislation must address not only the causes of worsening global warming, but also the effects of the unavoidable global warming we already face. This must include new dedicated resources to protect and restore the natural environment, including fish, wildlife, and their habitat, on which all human health and economic vitality depends.

Federal land management agencies must also gather the best scientific information and be required to manage the lands in their care to adapt to climate change. They must integrate “climate thinking” into their practices and ensure climate change is analyzed and addressed in policy planning and decision making. In particular, land managers must restore and better manage public lands where global warming’s impacts will be felt most severely while working to set aside additional lands to assure that key ecosystems and wildlife corridors are protected. These necessary activities can and should be supported by funds raised through the auctioning of pollution permits issued under a new cap-and-trade system. If these resources are made available quickly, our nation’s lands will be protected, and also will help to protect us from the ravages of climate change.

**Therefore, any comprehensive climate legislation must include:**

***1. Dedicated Annual Funding Based on an Auction System.*** A carbon cap-and-trade emissions limitation bill should include an auction system for the distribution of emissions allowances. Proceeds from this auction system should be devoted to confronting the climate change challenge, including actions to address the harmful impacts of climate change on the natural environment.

***2. Auction Proceeds for Protecting Wildlands and Natural Ecosystems.*** A significant share of the allowance value generated from any cap-and-trade program should be dedicated to protecting and restoring the natural environment, including wildlands, fish and wildlife habitat and the natural ecosystems on which human health depends. Protecting the habitats of fish and wildlife, including terrestrial, freshwater aquatic, estuarine, coastal and marine species, serves all Americans by protecting the clean water, clean air, biodiversity, open space and working natural landscapes that define our quality of life and are the foundation for a strong economy.

***3. Broad Authority for Ecosystem and Wildland Protection.*** Auction proceeds under this bill should provide dedicated funding, not subject to annual appropriations, for climate-related ecosystem protection that ensures federal, state, and tribal resource agencies and their partners can meet the new challenge of conserving land, water and habitat in the face of an altered and rapidly changing climate. Eligible activities may include conservation, restoration, land acquisition, fish and wildlife protection, habitat

enhancement, planning, research, monitoring, and education activities that are carried out pursuant to comprehensive ecosystem climate adaptation strategies.

**4. Eligible Resource Agencies.** Agencies eligible for auction proceeds are those federal, state, and tribal agencies with authority and responsibility for programs and resources important to helping fish, wildlife and ecosystems survive climate change.

**5. Federal Multi-Agency Comprehensive National Strategy.** The activities of the federal resource agencies needed to restore and protect the land, fish, wildlife and ecosystems against the impacts of climate change should be directed and coordinated through a comprehensive national strategy, developed in close consultation with the states, tribes, and other stakeholders, and with advice from the National Academy of Sciences and a science advisory board.

**6. State Comprehensive Strategies.** The activities of the state resource agencies should be directed and coordinated through individual state comprehensive strategies for fish and wildlife adaptation to climate change that are approved by the Secretary of the Interior and integrated into state wildlife action plans, state coastal zone management plans, and other state wildlife species or habitat plans. Opportunities should be provided for scientific and public input during the development and implementation of these strategies.

**7. Cost-Share Requirements.** In order to ensure full and effective utilization of funds under this program, required cost-share contributions by states and other nonfederal entities receiving auction proceeds, should be capped at relatively modest levels for climate-related conservation actions. This cost-share requirement should supersede existing cost-share requirements in the programs through which the adaptation strategy is delivered.

**8. Enhanced Scientific Capacity.** The scientific capacity of the federal resource agencies to evaluate and address the impacts of climate change on fish, wildlife, and ecosystems should be enhanced through, among other things, the establishment of national climate change and fish and wildlife science centers, housed within agencies such as the U.S. Geological Survey and the National Oceanic and Atmospheric Administration.

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<sup>1</sup> Pimental et al. 1997. Economic and environmental benefits of biodiversity. *BioScience* 47:11, (December).