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TARGET GLOBAL WARMING in Montana

Hunters & Anglers Can Change the Forecast

With its majestic mountains, vast open space and abundant waters, Montana is renowned for its world-class fishing and hunting. But global warming is threatening the state's sporting legacy. Hunters and anglers already are witnessing the effects of a changing climate, including reduced snowpack, warmer and shorter winters, receding glaciers, extreme heat waves and more drought and wildfires. In fact, rising temperatures are rapidly melting glaciers in Glacier National Park, which now boasts less than 30 glaciers compared to 150 at the time of the park's creation in 1910. Unless action is taken now, scientists estimate that by 2100, Montana's average summer temperatures could increase between 7 to 9 degrees, leaving Glacier National Park without a single example of its namesake. These conditions have enormous implications for the viability of fish and wildlife, the recreation and tourism industries they support and the hunters and anglers who treasure Big Sky Country.

"I value the time I spend on the water fishing with my grandson, and like other hunters and anglers, I see firsthand how global warming is compromising the health of fish, wildlife and wild spaces, threatening to undo decades of conservation progress. It is imperative that we work together now to change the forecast for wildlife to preserve our cherished sporting traditions for the legacy of our children and generations beyond."

— Larry Schweiger

President & CEO

NATIONAL WILDLIFE FEDERATION

Montana Wildlife and Habitat at Risk

Trout • Global warming will have a devastating effect on Montana's "blue ribbon" trout fishing. Warmer water temperatures—a continuing trend in the West—will diminish viable habitat for these cold-water fish, including the state's native lake, rainbow, cutthroat and bull trout as well as the introduced brown and brook trout. Projected temperature increases could eliminate up to 30 percent of Montana's existing cold-water fish habitat as warmer temperature zones move northward. As waters temperatures rise, bass are likely to displace trout. Increased frequency of extreme weather patterns, such as downpours followed by long dry spells, will also disrupt fish habitat.

Western Shrublands • Sagebrush areas in the West are essential habitat for sage grouse and pronghorn. Scientists predict that global warming will reduce vast areas of sagebrush habitat across the West to a fraction of their current abundance due to increased drought, rising temperatures and more frequent wildfires. Montana could in fact see a five-fold increase in acreage burned each summer by the end of the century. Global warming will dramatically change western shrublands, ultimately changing these critical ecosystems, with a likely increase in invasive grasses.



PHOTO: USFWS

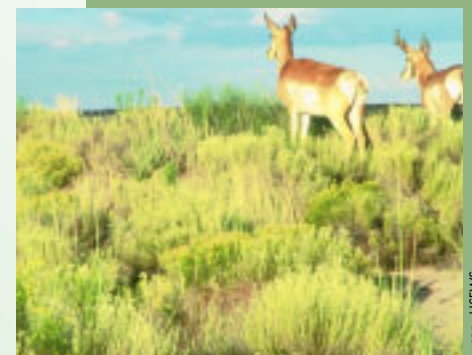


PHOTO: USFWS



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PHOTO: USFWS

Waterfowl • Warmer and late-arriving winters are increasing waterfowl hunting opportunities in Montana and other northern states as waterfowl find it unnecessary to fly as far south to find food and open water. However, by the century's end, warmer weather could shrink up to 90 percent of wetlands habitat in the Prairie Pothole Region, which includes parts of Montana. While this northern Great Plains area represents only 10 percent of the wetlands in the lower-48 states, these important waterfowl breeding grounds produce 50 percent of the continent's ducks, including some birds that migrate to and through Montana as well as all of the lower-48 states. Combined with the expansion of invasive plant species that degrade waterfowl habitat, global warming could mean significant declines in overall duck populations.

Moose • Montana's moose range may change as warmer temperatures shift their southern boundaries northward. Moose need cool temperatures to thrive and have had difficulty adapting to warming temperatures in their historic ranges. Stressed by heat, moose feed less and are more vulnerable to parasites, factors that contribute to a decline in overall health.

Hunting and Angling Recreation Counts in Montana

Take Action!

• **Write or call Governor Schweitzer**

and urge him to protect wildlife, hunting and fishing in Montana by taking strong action to reduce global warming pollution.

Governor Brian A. Schweitzer
Office of the Governor
Montana State Capitol Building
P.O. Box 200801
Helena MT 59620-0801
406-444-3111

• **For more information, contact:**

Montana Wildlife Federation
mwf@mtwf.org
406-458-0227
800-517-7256
www.montanawildlife.com

Montana sportsmen need to be concerned about global warming not just because of the impacts on wildlife and habitat, but also because hunting and angling recreational opportunities generate revenues and support jobs in the state. Loss of wildlife and habitat could mean a loss of important tourism dollars.

Tourism & Economic Benefits	Montana	United States
Hunting, angling & wildlife viewing participants	871 thousand	47 million
Annual expenditure	\$943 million	\$56 billion
Jobs supported	23 thousand	1.6 million

Source: 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; US Fish & Wildlife Service.

Montana's Solutions to Global Warming

Montana has the potential to be a leader in developing global warming solutions that cut greenhouse gasses and other pollutants, reduce fuel prices and fossil fuel dependence, and help create new jobs in the state.

- **Montana's exceptional wind resources offer key locations for large-scale wind installations near the transmission grid. In fact, Montana's wind resources alone could power the entire state more than 70 times over. To protect wildlife it will be essential to properly site wind facilities.**
- **Montana has significant solar potential. Installing just one 200-acre solar system could generate enough electricity to power 2,800 homes. Montana is also a prime area for use of passive solar in homes, due to the high number of sunny days.**
- **Montana provides property tax exemptions for buildings that use renewable energy to generate their electricity needs. Residents can receive tax credits for installing renewable energy generating systems in their homes.**
- **A 2005 state law requires Northwestern Energy to generate at least 15 percent of its power from renewable sources by 2015.**

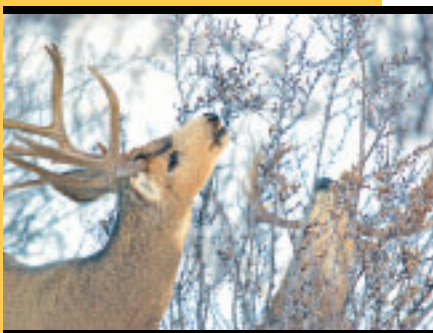


PHOTO: Stephen C. Tarbit, NWF

Global Warming Impacts on the Nation's Fish and Wildlife

America's conservation ethic is rooted in the traditions of hunting, fishing and wildlife-associated recreation. Sportsmen and women, working closely with government, have historically been driving forces to ensure sustainability of our natural resources and wildlife. Now we face our most challenging threat; Global warming, as it will affect hunters and anglers over the long run more than any other single environmental factor.

The average annual temperature in the US is projected to rise from about 7 to 9 degrees Fahrenheit by the end of the century, altering nature's fundamental balance in ways we are only beginning to understand. This outlook translates into especially milder winter and night time temperatures, but also more intense summers and heat waves, and more frequent and severe weather events such as droughts, storms and floods. Altogether, these changes forecast an unpredictable future for America's wildlife. Hunters and anglers already are observing some of these devastating changes, which are expected to include:

- Higher freshwater temperatures and changes in stream flow patterns that reduce the abundance of trout, salmon, steelhead, and other cold water species;
- Up to a 90 percent decline in the vast Prairie Pothole wetlands of the upper Midwest and south-central Canada that will reduce the numbers of breeding waterfowl, including gadwall, blue-winged teal, northern pintails, canvasbacks, redheads and ruddy ducks;

- Up to a 59 percent decline in sagebrush habitats throughout the western US, with devastating consequences for sage grouse, mule deer and pronghorn;
- Sea level rise and warmer ocean temperatures that will degrade the Atlantic coast's coral reefs, near-shore fish nurseries, coastal wetlands and popular saltwater game fish;
- Less ice formation in the winter, which will inhibit the natural fall southern migration of waterfowl and reduce access to ice fishing opportunities;
- An increase in catastrophic fires that will dramatically alter the ecology of affected areas as soils left inert and infertile prevent future habitat regeneration.



PHOTO: John McColgan, BLM, Alaska Fire Service

What is Global Warming?

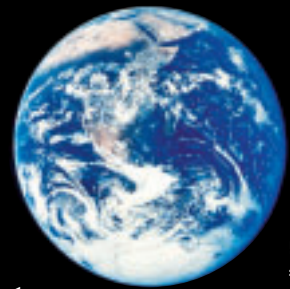


PHOTO: NASA Apollo 17

When we burn fossil fuels such as coal, gas and oil, they produce carbon dioxide and other greenhouse gases that build up in the atmosphere and retain the sun's heat. Much of the global warming emissions released today will remain in the atmosphere beyond 100 years, continuing to trap heat on Earth. The world's top scientists are confident that greenhouse gas emissions from human activities are causing most of the Earth's warming.

Since the mid-1880s, carbon dioxide emissions have increased by more than 30 percent, causing a global temperature rise of 1.3 degrees Fahrenheit in the last century. While seemingly trivial, Earth has not experienced such a rapid temperature change in hundreds of thousands of years.

Unless we implement policies to curb global warming now, temperatures could climb between 4 and 11 degrees this century, according to the 2007 report by the Intergovernmental Panel on Climate Change, which is comprised of climate scientists from around the world. Such a rapid temperature rise would fundamentally reshape the planet's climate, forever altering the landscape and water resources upon which people and wildlife so greatly depend.

Hunters and Anglers Observe Changes in Climate

A majority of sportsmen and women agree with scientists that global warming is real and threatening the wildlife and traditions they cherish. The National Wildlife Federation conducted a nationwide survey of hunters and anglers in 2006 that revealed three out of four survey participants have observed changes associated with global warming. Nearly 45 percent of respondents are very concerned that wildlife and fish populations will decrease significantly due to climate change. Hunters and anglers are unusually qualified to form these opinions because they pay more attention to wildlife behavior, nature's movements and timing, and the start and end of the seasons than any other large public group. Many survey participants have observed:

Earlier springs	Unusual drought
Earlier bloom times	Less snow
Hotter summers	More intense storms, including hurricanes
Warmer or shorter winters	Decreasing bird, fish or wildlife populations

Your Actions Will Make the Difference for Wildlife

Together, hunters, anglers and other outdoor enthusiasts can help change the forecast for wildlife. You can help make a difference.

- Restore habitat where you live. Planting trees and restoring wetlands helps capture global warming pollution and helps wildlife cope with climate stresses.
- Next time you buy a boat or a car look for one that cuts emissions and gets better fuel economy.
 - For outboard motors, a low emission, four-stroke motor pollutes only one-sixth the amount of older two-stroke engines.
 - Buying a car or truck that gets better fuel economy saves money at the pump and cuts thousands of pounds of carbon dioxide pollution each year.
 - Save money at the gas pump by keeping your tires properly inflated and your engine tuned up (boat engines too).
- The next time a lightbulb burns out, replace the bulb with a compact fluorescent. One bulb will save 500 pounds of coal. Recycling and insulating at home and at the office can also save large amounts of energy.



PHOTO: NWF



PHOTO: Ford Motor Co.



PHOTO: Mercury

PHOTO: EPA



The 2 Percent Solution to Global Warming Pollution

Scientists tell us that a 2 percent annual reduction in greenhouse gas emissions for 40 years will overcome the challenge of global warming. But, our leaders must act now. It is extremely important to contact your elected officials to ask for policies that improve energy efficiency and promote cleaner, smarter energy technologies.

- To contact a member of the US House of Representatives or Senate, please call 202-224-3121 or visit www.house.gov and www.senate.gov
- Visit www.targetglobalwarming.com for more information.

For more information, contact:

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