

# ENERGY, WILDLIFE, AND CLIMATE CHANGE

**The climate has always been changing; there is a place in North Mississippi, 275 feet above sea level and 250 miles from the Gulf of Mexico, where I regularly find oyster shells and shark teeth that are millions of years old. Approximately 10,000 years ago, my state's climate was much colder, and the forests consisted of spruce and fir. It is now mostly hardwoods and pine. However, the Earth's climate is changing more rapidly than it historically has. For example, this past summer the world's oceans were the hottest ever recorded. This acceleration is caused by increases in greenhouse gas emissions, mostly carbon dioxide. These gasses trap heat like an insulated hunting coat.**

Buildings and their construction account for the largest amount of carbon emissions at 39 percent. Of that, 28 percent comes from the energy needed to heat, cool, and power buildings. The remaining 11 percent comes from building construction. Industry represents the second largest source at 30 percent, transportation 22 percent, while the remaining 9 percent is from other sources.

Hunters are attuned to fluctuations in—and stresses on—wildlife populations and habitats. We see the negative effects on our farms and forests, prairies and grasslands, rivers and streams, estuaries, and coastlines. We witness stronger tropical storms, more intense rainfall and tornadoes, more damaging floods, rising seas, increasing temperatures, shifts in wildlife populations, and longer droughts. Mississippi was hit this past spring with an EF-4 tornado 1.4 miles

wide at the base. It made a direct hit on my family's home, offices, and farm. While we had tremendous damage—including the loss of over 700 acres of hardwoods and pine—we consider ourselves lucky compared to the 23 Mississippians who lost their lives and those in our small town of Amory, where 1,476 homes were significantly damaged or destroyed.

My first recognition of wildlife's reaction to climate change occurred 30 years ago. Duck hunters in the Lower Mississippi River Valley were concerned about the duck season ending in mid-January when most birds were just arriving on their wintering grounds. In the Deep South, there are three things one doesn't mess with: somebody's spouse, somebody's dog, and duck season—and not necessarily in that order. As a result, the ending date of duck season was extended.

## A THOUGHTFUL APPROACH

The consequences of a changing climate could harm homeowners, landowners, farmers, businesses, and, ultimately, the world's economy. On the other hand, moving too quickly to reduce carbon emissions can also have a significant negative impact.

COVID-19, which has killed more than one million Americans and crushed the U.S. economy, resulted in a drop in carbon emissions worldwide—but at great cost.

Billions of people stayed home during the pandemic, driving less and producing less pollution. Office buildings were empty, and factories and businesses were shut down. This decline in economic activity cut carbon emissions by approximately 8 percent worldwide.

But this large drop in emissions is about what most scientists say needs to occur to stop temperatures from rising more than 2.5 degrees Fahrenheit, a level above which would worsen climate disruptions. Unfortunately, the reduction in carbon emissions caused by the severe worldwide economic contraction also caused painful humanitarian issues. We must find less painful ways—even ways that strengthen the economy rather than harm it—to address climate change. The goal should be to avoid and minimize carbon emissions while mitigating for emissions that can't be avoided.

Carbon is a basic building block of life. Plants absorb carbon dioxide. They release oxygen and store carbon. A huge percentage of carbon is stored in plants, especially trees, and the products produced by them. About 50 percent of the dry weight of a tree is carbon. That carbon is only released when wood rots or burns. When trees are harvested, the sequestered carbon is preserved. For example, an acre of bottomland hardwoods sequesters approximately 300 tons of carbon over its life. A



**James L. Cummins**  
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typical 2,000-square-foot wood-framed home sequesters about 25 tons of carbon in its structure, which is the equivalent to the carbon emissions from driving five passenger cars for a year or burning about 3,000 gallons of gasoline.

## STARTING STATESIDE

North America is well-positioned to employ natural climate solutions and help mitigate for unavoidable emissions. According to the United Nations, grasslands, forests, and farms could store 30 percent or more of needed carbon reductions. Forests are critical because their carbon sequestration potential far exceeds other habitat types. U.S. forests currently offset 11 percent of our country's carbon emissions. Replanting forests, planting new forests, avoiding conversion, and improving forest management each deliver substantial carbon savings. Healthy forests store more carbon than overstocked forests and have less risk of turning into catastrophic wildfires that release many tons of carbon into the atmosphere. Sustainable management of forests would significantly benefit the climate and restore millions of acres of wildlife habitat. According to the International Panel on

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Climate Change, “In the long-term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual, sustained yield of timber, fiber, or energy from the forest, will generate the largest, sustained mitigation benefit.”

Electric utilities have long recognized the value of sequestering carbon in forests. A number of companies formed two cooperatives, Utilitree Carbon Company in 1996 and PowerTree Carbon Company in 2003. I have worked with them on reforestation and carbon sequestration projects on national wildlife refuges, their own lands, and elsewhere. Planting more trees is an obvious solution, especially on marginal agricultural land with low economic yields (and repeated crop insurance and disaster claims) and in urban areas to help lower energy usage and reduce utility bills from the cooling of structures.

We also have to control deforestation in the United States and other areas, such as South America and Africa. Deforestation is responsible for 8 percent of the world’s carbon emissions in carbon-rich tropical forests. The Boone and Crockett Club has taken steps to curtail the loss of tropical forests, particularly from illegal logging. In 1900, Club member and Congressman John F. Lacey pushed through Congress a law making it a federal offense to transport illegally taken game across state lines. In 2008, the Club helped push through Congress an amendment to the Lacey Act that expanded its protection to plants, including illegally harvested wood. As a result, it became a federal offense to import illegally harvested wood into the United States.

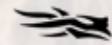
In addition to conserving forests, we should use more forest products in construction. The use of forest products as the main

structural material in buildings can have a dramatic impact. It is already in use in Europe, the United Kingdom, and Canada. Governments should require the use of innovative forest products in new public building construction.

The United States can also excel at producing clean, renewable energy from woody biomass. Europe and parts of Asia import millions of tons of wood pellets to produce electricity. The International Panel on Climate Change and other climate change experts have determined that producing energy from biomass (wood and agricultural products) is considered carbon neutral. However, we need to ensure that wood used for fuel comes from sustainably managed lands.

Clean energy technology can benefit the economy while reducing carbon emissions. It will require more investment in applied research for disruptive

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Read more about John F. Lacey on page 26.

technology advancements, including renewable energy sources, storage, and next-generation nuclear energy. Tackling carbon emissions while sustaining economic growth requires clean energy technology to be scaled up and deployed at an affordable price.

Solar energy is important, too, but not in the wrong place. I recently learned of a project that clearcut 3,000 acres of carbon-sequestering forests to install a solar field. Placing these projects in areas with minimal wildlife impacts, such as former industrial sites, rooftops, parking lots, landfills, abandoned mines, and brownfields, should be chosen wherever possible.

### IMPACTS TO WILDLIFE

We must also understand impacts to wildlife caused by renewable and traditional energy development. In planning for all forms of energy development, we need to require early consideration of the effects on habitat, wildlife, and water to balance energy and wildlife. For example, data from collared pronghorn have helped us better understand the risks wind turbine infrastructure poses on this species. Wind

turbines can cause direct mortality to bats and birds and produce artificial electromagnetic fields that can affect the migratory patterns of many species. We should fund research to develop guidelines for the location and operation of energy projects that avoid, minimize, or mitigate negative impacts on wildlife. We should direct a portion of federal revenue from renewable energy development to wildlife agencies to mitigate losses of fish, wildlife, and their habitats from energy development, just like we do with fossil fuels.

Energy development sites, as well as pipelines and electrical transmission lines, can fragment habitats, disrupt wildlife movements, and impair water quality and quantity. The current scale of development exacerbates this problem for many populations of local species and, in at least one case, for an entire species: the greater sage-grouse. Infrastructure and transmission lines often conflict with wildlife, including imperiled species like the lesser prairie-chicken.

These problems can be addressed by government agencies and energy companies working together. For example, when the sage

grouse was petitioned to be listed under the Endangered Species Act, agencies and stakeholders responded with a plan for conserving the bird in and around energy and infrastructure projects. Involving 11 western states, this was one of the largest coordinated conservation planning efforts in our nation's history. However, such efforts would be easier and more effective if undertaken at the beginning of planned developments.

Smarter transportation of goods in ways that lessen carbon emissions is important. For example, transportation of goods by water utilizing tow boats emits less carbon than by transporting goods by truck. Transporting crude oil by pipelines emits less carbon than by railroads or trucks and is safer. Carpooling and public transportation also result in less carbon emissions.

We must be aware of unintended consequences of climate policies. I joined several other Boone and Crockett Club members a few years ago to go after sailfish in Guatemala. They had a "new" coal plant that had been torn down in the U.S. and moved there to supply power. That resulted in greater carbon

emissions—not less—as their clean air regulations are not as stringent as in the U.S. Government mandates to include corn ethanol and soy biodiesel in fuel supplies have driven the conversion of millions of acres of grasslands and wetlands to agriculture. This has eliminated habitat for pheasants, ducks, and other gamebirds and reduced important carbon sinks.

### LEADING THE WAY

The U.S. can't address climate change alone. India and China, among other nations, are also investing heavily in coal-burning power plants. China emits about 30 percent of the world's carbon, and that nation's emissions have increased by more than 350 percent since 1990. U.S. carbon emissions represent about 14 percent of the world's output, increasing by only 0.4 percent since 1990. Combating climate change will require citizens, governments, and businesses worldwide to work together.

The U.S. has some of the world's strongest regulations regarding clean air, thanks to the Clean Air Act. Having more manufacturing at home—while providing jobs for more of our citizens—will result in cleaner air worldwide. The U.S. also has another tool: buying power, or the supply chain. This market-based incentive can be utilized to the benefit of change.

A thriving economy is not sustainable if it undermines conservation—just as effective conservation is more likely to last when it works in synergy with economic forces. Conservation and economic interests must work together to find lasting solutions. We should lead to ensure actions are taken worldwide to reduce carbon emissions in an economically friendly manner. ■



A trio of pronghorn walk past spinning wind turbines as they travel across the hilly plains of Pawnee National Grasslands in northern Colorado.