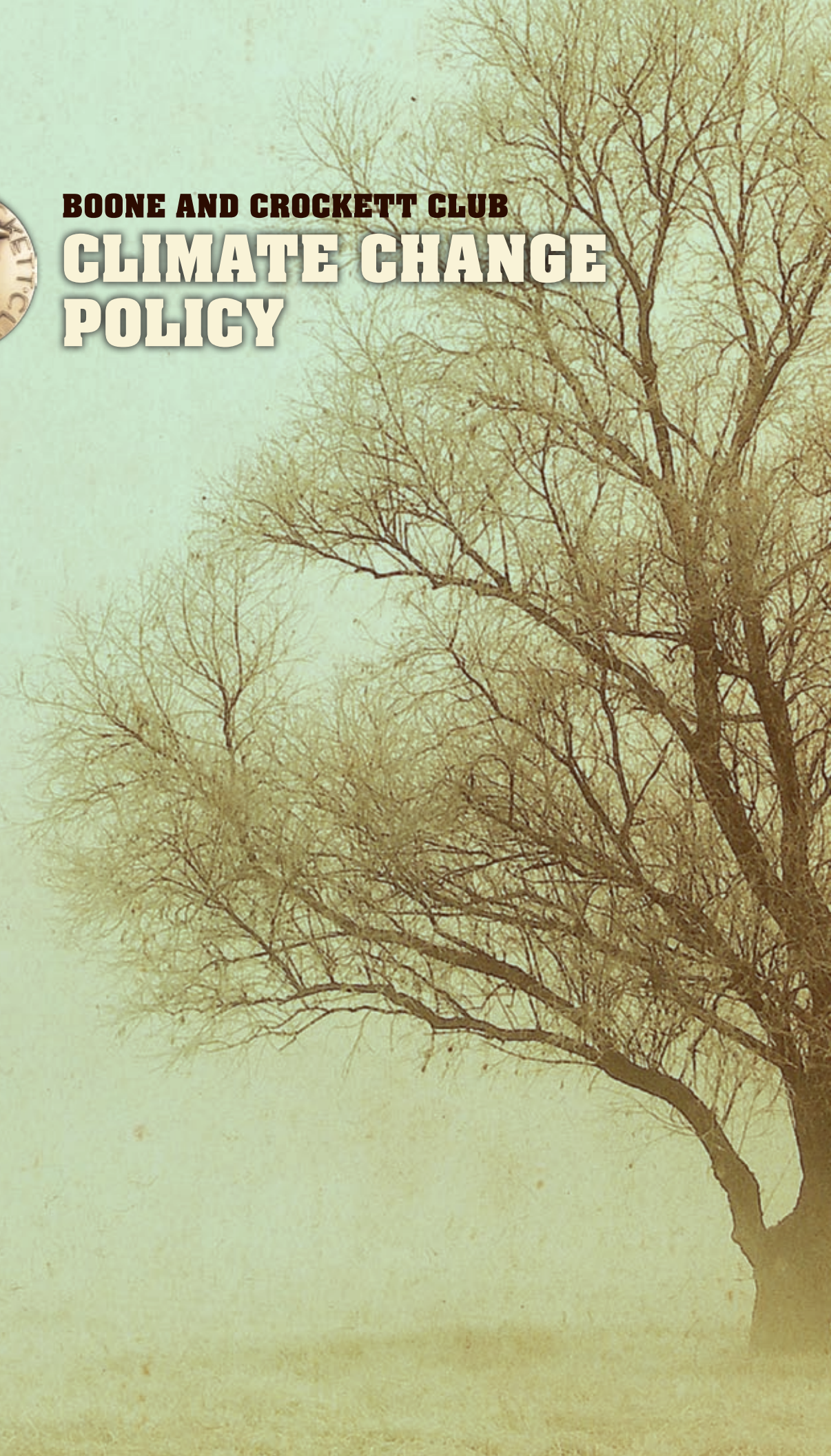
BOONE AND CROCKETT CLUB

CLIMATE CHANGE POLICY



Mission Statement

It is the policy of the Boone and Crockett Club to promote the guardianship and provident management of big game and associated wildlife in north america and maintain the highest standards of fair chase and sportsmanship in all aspects of big game hunting, in order that this resource of all the people may survive and prosper in its natural habitats. Consistent with this objective, the club supports the use and enjoyment of our wildlife heritage to the fullest extent by this and future generations.

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As a leader in conservation for over 100 years, the Boone and Crockett Club has supported far-reaching conservation policy. Our Nation has benefited from the foresight of great leaders of conservation such as Theodore Roosevelt, Gifford Pinchot, and Aldo Leopold – all of whom were Club members. Through the Club, we have built a system of conservation in North America that has restored wildlife populations and habitat, and is a model for the entire world. In this tradition, the Club seeks a climate change policy that protects and builds on America's investment in wildlife and habitat, addresses forest and rangeland health, and maintains a strong economy while reducing greenhouse gases.

Therefore, while the Club has not endorsed specific climate change legislation, the following principles must underlie any final legislation.

In principle, climate change policy should:

- Fund habitat mitigation and wildlife population adaptation;
- Accelerate conservation and restoration of forests and rangelands (including grasslands and native prairie) to sequester carbon and prevent uncharacteristic wildfires;
- Invest in energy conservation and technologies that reduce emissions into the atmosphere; and
- Maintain affordable energy sources; ensure that private land fragmentation does not result from higher input costs.

Congress Should Fund and Enhance Habitat Management

Adaptation

While there are many potential uses of funds derived from a climate change regulatory protocol, there are few if any of these uses that will deliver as many significant public benefits as natural resources adaptation programs. In short, well-functioning ecosystems provide services in the form of clean water, clear air, and other benefits that ensure the quality of human life. Ecosystems can significantly capture carbon through sequestration, thus being part of the solution to reducing carbon levels. In addition, functioning ecosystems provide quality habitat for sustaining fish and wildlife, and provide billions of dollars in direct economic benefits. We thus urge Congress to dedicate sufficient climate-derived revenues to state and federal natural resource adaptation planning and programs to meet these goals.

Congress Should Include Funding for Rangeland and Forest Carbon Sequestration and Restoration Activities

Carbon Offsets

Healthy growing forests and rangelands (including grasslands and native prairie) are highly effective at sequestering carbon and converting it to biomass. Restoring forest and rangeland ecosystems to sequester carbon is cost-effective, and is a superb tool to maintain biodiversity and achieve resource goals, such as improving water quality and habitat, reducing soil loss, and enhancing outdoor recreation. Congress should broadly allow the forestry and agriculture sectors to provide carbon offsets in climate legislation.

Forest and Rangeland Health Imperative

Today's forest and rangeland fires are both larger and hotter than ever. Insect epidemics, and invasives, are killing millions of acres of trees. The carbon emission implications are staggering. For instance, recent studies show that large wildfires in a western or southeastern state can release carbon equal to 50% of a state's total fossil fuel emissions. Improving forest and rangeland health and reducing the risk of uncharacteristic wildfires and insect epidemics, therefore, should be an essential component of climate change policy. Improved stewardship contracts and decision processes, including assessments of comparative risks of restoration management versus inaction, will accelerate large projects.

Congress Should Broadly Support Clean Energy

Conservation

Energy conservation is essential to keeping habitat intact. Energy conservation reduces baseload demand, which in turn reduces the demand for more natural gas and coal extraction—the primary sources of baseload energy. In less densely-populated areas of the nation, it can be difficult to implement energy conservation cost-effectively. Mandates that prove expensive in rural zones can lead to more land conversion that will degrade habitat. Climate legislation should provide economic incentives for energy conservation.

New Energy Supplies

Higher energy costs in rural America raise the cost of land ownership, leading to conversion on the margin, and accelerating land fragmentation. Controlling these costs can reduce habitat declines. With overall US electricity demand expected to increase significantly—about 50%—between now and 2050, Congress needs to ensure that new demand is met by both reliable and renewable sources that are cost-effective and compatible with habitat both in terms of siting and production. New nuclear generation, funding for research of clean coal technology and carbon capture and storage, inclusion of forest biomass, and faster and better regulatory approval processes, will meet this challenge.

Biomass

Federal forest biomass should count as a source towards a renewable electricity and fuels standards. This will create a strong financial incentive to increase biomass harvesting from public and private forests and contribute to forest health restoration/fire risk reduction programs and efforts.

APPENDIX ONE
Fund Wildlife Habitat Mitigation and Population Adaptation.

Revenue raised through climate policy should fund programs that achieve the goals of climate policy, such as reducing effects of climate change and adapting to change.

Adaptation

Federal and state fish and wildlife managers know what needs to be done to sustain species. They have a successful track record for successfully managing species and habitat restoration programs. Appropriately, state and federal agencies are approaching fish and wildlife conservation increasingly from a landscape perspective. Initiatives like the Western Governors Association Wildlife Corridors Initiative; State Wildlife Action Plans; Migratory Bird Joint Ventures; Conservation Reserve Program; Wetlands Reserve Program; Joint Venture; NAWCA; and National Fish Habitat Action Plan Partnerships are examples of how state and federal natural resource agencies and the conservation community understand and apply the need to manage across landscapes. The confluence of all these efforts can significantly inform our responses to climate affected habitats and systems, as we manage for resiliency to ensure the functionality and vitality of these systems. It will take a dedicated investment from climate derived revenue. The investment is small compared to the long-term dividends it will pay for the future quality of life for our citizens through delivery of ecosystem services and natural products, fish and wildlife habitat, and the security of our Nation.

A new fund should also be dedicated for use by the Secretaries of the Interior and Agriculture to pay the costs of uncharacteristic wildland fire suppression and insect infestation separately from appropriations based on predicted needs for these purposes.

New authority is necessary also to accelerate approvals for restoration projects in those forests and rangelands at highest risk of burning and with greatest potential for large carbon dioxide emission pulses. Furthermore, new policy should authorize balancing of short and long-term effects in environmental and species conservation analyses.

The ecosystems that produce clean water, clear air, and other necessities of human life and wildlife are subject to change and some climate-related changes are already measurable. Snowpacks in the West, for example, are smaller, spring runoffs are earlier, and there is less fresh water in estuaries. Wildfires are releasing huge carbon emissions in greater frequency and severity. Drought conditions have increased the difficulty of game and non-game management. Biologists have documented tropical birds now occurring in the southern U.S., and migratory birds arriving on different seasonal schedules than the availability of their food sources such as butterflies and budding plants. In these ways climate change threatens to hinder or disrupt ecosystems; naturally, climate policy must, in part, keep conservation programs in step with the new challenges both to reduce effects where possible and to adapt.

The Federal and state fish and wildlife managers who conserve these resources know how to restore and sustain species and have a track record for doing so. Their programs listed above are examples of how state and federal natural resource agencies and the conservation community understand and apply the need to mange across landscapes.

APPENDIX TWO
Accelerate Active Conservation and Restoration of Forests and Rangelands to Sequester Carbon and Prevent Uncharacteristic Wildfires.

Carbon Offsets

Healthy growing forests and rangelands are highly effective at sequestering carbon and converting it to biomass. Protection and restoration of existing rangelands and native grasslands at risk of conversion are equally as effective at sequestering and maintaining carbon in the soil and biomass. For example, over a 70-year period, one acre of bottomland hardwood forest sequesters roughly 400 more tons of atmospheric carbon than one acre of cropland. No new technology needs to be refined, and the marginal cost of converting land back to native ecosystems is low—thus, biomass offsets are cost-effective. Millions of acres of forestland and native grasslands have been developed, but the acreage that can be restored is vast—thus, biomass and soil offsets are abundant in the United States.

Restoring forest and rangeland ecosystems to sequester carbon is not only cost-effective, but is a superb tool to maintain biodiversity and achieve resource goals, such as improving water quality

and habitat, reducing soil loss, and enhancing outdoor recreation. Utilizing carbon offsets to restore functioning ecosystems and improve biodiversity should play a large and necessary role in mitigating climate change while pricing for bold new technologies remains uncompetitive.

To date, several companies have taken early action to obtain offsets through restored bottomland hardwood forests. In the South, 90,000 acres of National Wildlife Refuge and State Wildlife Management Area bottomland hardwood forest have been restored, which will sequester an estimated 36 million tons of carbon while providing significant wildlife habitat and reducing the restoration costs of these respective state and federal agencies. Early actors should be given credit under climate change legislation, provided that the sequestration is effective.

Utilizing carbon offsets to restore functioning ecosystems and improve biodiversity should play a large and necessary role in mitigating climate change during the time that bold new technologies such as carbon capture and storage mechanisms for coal-fired power plants are fully operational. The positive impact of restoring functioning ecosystems is disproportionately large regarding both climate change mitigation and reducing the ultimate capitalization costs for the implementation of advanced low-carbon technology.

Forest and Rangeland Health Imperative

Today's forest and rangeland fires are both larger and hotter than ever. The carbon emission implications are staggering. Insect epidemics are killing millions of trees. For instance, recent studies show that large wildfires in a western or southeastern state can pump as much carbon dioxide into the atmosphere in a few weeks as the state's entire vehicle traffic does in a year. Large fire years may release carbon equal to 50% of a state's total fossil fuel emissions. Improving forest and rangeland health and reducing the risk of uncharacteristic wildfires, therefore, should be an essential component of U.S. climate change policy.

In the last decade, fires average about twice the size of fires in previous decades. Many of the large fires of historical time were large but ground based with low flame length which resulted in light burns leaving much live and unburned forest and fuel behind. Current fires are very different. They tend to have long flame lengths and burn in the crowns of the forest canopy killing most trees and in many cases consuming much of the fuel (Agee 2002). These "lethal" or "stand replacing" fires are often referred to as "uncharacteristic" wildfires because they are occurring in settings where they were unknown before (Mealey and Thomas 2002).

Several alternative explanations for the rise in large high-severity wildfires and the accompanying change in fire regime from low-severity to high-severity include climate shifts and warming, less-aggressive fire-suppression policies, forest and rangeland composition change and fuel buildup at landscape levels (Westerling et. al. 2006, Menakis et al. 2004, Agee 2002) and increased vegetation mortality from insect epidemics. Undoubtedly all of these explanations alone and in combination are contributing factors. Regardless of the cause or causes, the present trend of dramatic increases in large high-severity wildfires will at least continue and more likely increase.

Westerling et. al. (2006) have commented on the implications of this trend for carbon balance:

> *"...in the western United States an increased frequency of large wildfires will lead to changes in forest composition and reduced tree densities, thus affecting carbon pools. Current estimates indicate that western U.S. forests are responsible for 20 to 40% of total carbon sequestration. If wildfire trends continue, at least initially, this biomass burning will result in carbon release, suggesting that the forests of the western United States may become a source of increased atmospheric carbon dioxide rather than a sink, even under a relatively modest temperature-increase scenario."*

In fact, Wiedinmyer and Neff (2007) of the National Center for Atmospheric Research and the University of Colorado respectively estimate that wildfires in the contiguous U.S. and Alaska release about 290 million metric tons of carbon dioxide a year, which is the equivalent of 4-6% of the nation's carbon dioxide emissions from fossil fuel burning. However they found that wildfires contribute a much higher proportion of carbon dioxide in several western and southeastern states, including Alaska, Idaho, Oregon, Montana, Washington, Arkansas, Mississippi, and Arizona with particularly large fires releasing enormous pulses of carbon dioxide rapidly into the atmosphere.

In 2003, the United States Congress passed the Healthy Forests Restoration Act (P.L. 108-148) which contains a variety of provisions to expedite hazardous-fuel reduction and forest-restoration projects on specific types of federal land that are at risk of wildland fire or insect and disease epidemics. This initiative and others at the federal, state and local levels are based on the fact that many silvicultural tools such as prescribed fire, thinning including removing trees over a wide range of sizes and ages, salvage harvesting, timber harvesting, planting, and use of approved chemicals including fertilizers

and pesticides, can be used effectively to restore and maintain healthy forests and reduce the risks of uncharacteristic wildfire.

Recent "forest health" initiatives have been limited in their ability to significantly reduce "at risk" habitat by conflicting policies and controversies over the following:

- Protecting endangered and threatened species;
- Protecting water and air quality; and,
- Timber management tools including commercial timber harvest, and cutting larger trees on public lands.

The Forest Service and BLM are deterred from full-scale active management of unhealthy, fire-prone forests. Altered funding formulas, reduced budgets, and reduced professional staffing have limited the ability of agencies to plan and implement both pre-commercial and commercial thinning and other treatments to address forest health concerns. Newer policies and funding limitations have created additional barriers to active management by reducing access through road closures and regulatory or procedural inflexibility (WSSAF 2008).

The following are specific opportunities to advance forest restoration and reduce wildfire carbon emissions through climate change policy:

1. Update and fully fund the Healthy Forests Restoration Act (P.L. 108-148); updates should include:
    a. Expanding authorized projects in Sec. 102 to Condition Class 3 Federal land beyond those authorized in Section 102(a) to include those with greatest potential for large carbon dioxide emission pulses;
    b. Expand the requirement for "Balancing of Short and Long-Term Effects" in Sec. 106(c)(3) to Sec. 104 as well, except the requirement should be for environmental analysis only and not for judicial review. By requiring an assessment of comparative risks of management and inaction, the long and short term risk to listed species of not undertaking forest restoration can be considered, which would facilitate more active forest and rangeland management. (Mealey et. al 2005).
    c. Fix stewardship contracting authority so that large scale projects happen without funding or procurement problems.
2. Pass the FLAME Act (H.R. 1404). This Act "fixes" fire suppression funding problems for the FS and DOI and makes more dollars available for on-the-ground forest restoration/fire risk reduction projects.

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APPENDIX THREE
Invest in Energy Conservation and Technologies that Reduce Emissions into the Atmosphere.

The Club acknowledges that to sustain any policy of controlling emissions, the US must transform the portfolio of energy sources and technology of producing and delivering energy. No current fuel source should be discarded during or after the transition to a cleaner energy economy. Furthermore, the US should protect progress by continuing to leverage commensurate progress in other countries.

The U.S. currently relies on coal and other hydrocarbons, uses some nuclear and hydropower, and has growing prospects for solar, wind, biomass, and other new sources of energy. The near zero carbon emission sources, especially those that provide baseload capacity, must increase and the high-emission sources decrease in order to sustain any policy requiring lower emissions.

The rates and proportions by which the energy portfolio alters can present another trade-off between effectiveness of new policy and its costs and consequences. Higher energy input costs in rural America will lead to accelerated land fragmentation. Habitat declines across the nation will continue without a cost-effective approach to meeting new energy demands.

New Demand

With overall US electricity demand expected to increase significantly—about 50%—between now and 2050, Congress needs to ensure that the majority of new demand is met by sources other than natural gas. New nuclear generation, which has almost no carbon contribution and a tiny footprint on habitat, must be significantly increased. Because nuclear energy provides reliable baseload electricity supply, it directly reduces the need for natural gas-derived electricity and thereby may reduce the impact of extraction on habitat in the Rocky Mountain west. Coal, which is plentiful in the US, must remain a viable energy source through the implementation of carbon capture and storage. Biomass should provide a growing share of electricity. Regulatory siting processes for nuclear, wind and solar must be streamlined so that they also provide a steadily larger share of electricity, while ensuring that habitat is protected. Legislation that fails to clearly promote nuclear, clean coal, biomass, wind and solar energy sources can result in higher natural gas prices, and dramatically higher energy and agriculture input costs in rural America.

Conservation

Energy conservation is also essential to protecting habitat intact. Nearly all energy sources have some impact on habitat. Energy conservation usually directly reduces baseload demand, which in turn reduces the demand for more natural gas and coal extraction—the primary sources of baseload energy. In less densely-populated areas of the nation, however, it can be difficult to implement energy conservation cost-effectively. Climate legislation should provide economic incentives for energy conservation. Mandates that prove expensive in rural zones will lead to more land conversion and will degrade habitat.

Biomass

Federal lands can provide biomass for both renewable fuel (cellulosic ethanol) and renewable electricity. Congress already appropriates about $300 million annually to reduce fuel loads on our National Forests and BLM lands, yet Congress precludes using that same waste biomass from being converted to cellulosic ethanol and counting towards the renewable fuel mandate. This should be fixed. Likewise, federal land biomass should be counted in any mandate for renewable electricity. Federal land biomass converted to ethanol or green electricity creates jobs in rural America, improves habitat by restoring forest health, and saves the taxpayers by creating market incentives to do the same activity funded through appropriations currently.

Biomass on private lands that sequesters carbon, such as forests and switchgrass, should be included in any offset regime so that private land owners gain financial incentives to sequester carbon and keep their lands intact.

APPENDIX FOUR
Maintain Affordable Energy Sources to Ensure that Private Land Fragmentation Does Not Results From Higher Input Costs.

Reducing Landscape Fragmentation

Policy that invests in land management and controls energy costs in the transition to a clean-energy sources helps reduce fragmentation and conversion of wild lands to suburban and urban development. Fragmentation and conversion are leading causes of habitat loss or degradation across the United States. The fragmentation of land has many negative effects, sometimes irreversible, including water quality, biodiversity and increased flooding (Shaker and Ehlinger 2007; Alberti 2005). Although energy input costs to agriculture have reduced as an overall percentage since the 1970s, it remains at about 15% of direct and indirect costs. Fertilizers embody the most energy among production inputs because natural gas is the primary input (70-90% of the cost of producing nitrogen fertilizer). (Shoemaker et. al. 2006) Rural households are more greatly affected by rising fuel costs than urban households due to longer travel distances and more or larger vehicles and equipment. (Shoemaker et. al. 2006) Electricity price increases more greatly affect agriculture in regions where irrigation is indispensable, particularly west of the Mississippi. Livestock producers are affected by increases in the cost of feed, which varies in part on price swings in the cost of natural gas due to natural gas/fertilizer inputs. When input costs shrink profit margins on private land operations—agriculture and livestock—pressure grows to find a higher economic use such as conversion to development. For that reason, it is imperative to avoid cost of living increases in rural America, which would have the affect of accelerating land conversion. Energy costs are a major input to the rural area cost of living. Instead, climate legislation should increase economic opportunities on land in habitat-rich areas of the nation—through biomass opportunities, forest health actions, and carbon sequestration.

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Economic Importance of Sportsmen and Open Space Habitat

Economic consequences of climate change policy concern sportsmen because our pursuits both depend on it and contribute to it, and because a strong economy is required to drive public and private investments in clean energy technology.

Natural resources provide enormous contributions to our national, state and local economies. If outdoor recreation activities such as fishing, hunting, hiking, camping and other wildlife – dependent recreation were combined into one business, it would rank in the top 10 Fortune 500 companies.

One out of every 20 jobs in this country is related to fishing, hunting and wildlife – related activities, goods and services, and these activities stimulate 8% of all consumer spending. The 2006 National Survey of Fishing, Hunting and Wildlife – Associated Recreation found that over 87 million Americans pursued outdoor recreation in 2006 and spent $120 billion that year on those activities. Climate change has the potential to disrupt this economic engine.

Protecting fish, wildlife and natural resources employs our citizens and protects our economy through shovel-ready jobs. Activities such as native habitat restoration increases ecosystem resiliency, maximizes carbon sequestration and ensures forest resiliency, a challenge which will only grow with climate change. Other activities such as removing invasive species and restoring impaired watersheds provide green jobs and improve the environment.

TRAILBLAZERS IN CONSERVATION, FAIR CHASE IN HUNTING, AND SHARED USE OF NATURAL RESOURCES

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