Testimony for
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The Role of Forests in Climate Change

Chairmen Costa and Grijalva, Ranking Members Pearce and Bishop, and Members of the Committee on Natural Resources, I am Michael Goergen, Executive Vice President and CEO of the Society of American Foresters (SAF). The Society has 15,000 members who are forest managers, consultants, academics, and researchers and promotes sustainable forest management for balanced and diverse values.

Many SAF members are working on climate change issues through their respective universities, agencies, organizations or companies and have already begun to inform the dialogue concerning the essential role of forests and forest management in offsetting greenhouse gas emissions (GHG).

They, and others, have uncovered a number of factors that mandate a prominent role for forests in any comprehensive solution addressing climate change. Forests globally, above ground and in the soil, store fifty percent more carbon than is in the atmosphere. Forests in the United States sequester approximately from 200 to 280 million tons of carbon per year, offsetting 10 to 20 percent of our country's emissions from fossil fuels. In addition, forest biomass can be used to generate energy and could provide as much as 30 percent of the nation's renewable energy supply. Given today's improved technologies, analyses have shown that for every bone dry ton of biomass used to generate power, there is a net reduction of approximately one ton of greenhouse gasses. At worst, energy derived from woody biomass is carbon neutral. This is also the case for biomass converted into biofuels such as cellulosic ethanol or biodiesel, which are decidedly better alternatives than corn, which when converted into bioethanol is a net GHG emitter.

So forests are not ***the*** solution to controlling GHG, but they are certainly an important part of a broad set of strategies. Recognizing this introduces a number of policy implications for forests and forest management. I'll review a few of those today.

First and foremost, it will be critical to stabilize the nation's forestland base, reducing forest loss from conversion to other land uses. Fortunately, the total number of forested acres in the US has remained relatively stable for nearly one hundred years; however, we are starting to see an increase in the loss of forestland to development, now occurring at a rate of 1 million acres per year. Since 57 percent of our forests are owned privately, and most of those are in the hands of small, non-industrial, family landowners, economics plays a large role in decisions to convert forestland. The development of carbon markets, that provide income to landowners for sequestering carbon, could have a major affect on reducing forest conversion. Matt Smith and Steven Ruddell, both members of SAF, have

recently published articles in SAF publications on carbon markets. They are very informative and are attached to my testimony. I respectfully request that they be submitted for the record. In summary of their findings: most carbon markets do not currently recognize carbon from managed forests, those that do, such as the California Climate Action Registry, are currently establishing rules and standards for participation. As these protocols are implemented and the markets mature, it is likely that they will provide a significant investment and cash flow opportunity for owners of sustainably managed forests.

Another important forest policy implication concerns wildfire and forest health. As this Committee is well aware, catastrophic wildfires are on the increase in this country for a variety of reasons but largely as a result of the increase of hazardous woody debris in our forests, a direct result of overstocking and insect-caused mortality, together with increased human development in the wildland-urban interface. On our federal lands alone there are approximately 180 million acres at an unnaturally high risk of catastrophic fire. A wildfire on these lands can emit up to 100 tons of greenhouse gasses, aerosols and particulates per acre. One study of the 2002 Hayman Fire in Colorado found that more GHGs were emitted from that event than from all the automobiles in the state that year. So it is incredibly important to increase management activities on these lands, mostly in the form of thinnings, for treating hazardous fuels and reducing the threat from uncontrolled wildfire. This, of course, was the purpose behind passage of the Healthy Forests Restoration Act of 2003. Even though the amount of funding and the number of acres treated has quadrupled in recent years, the amount of work being done is still inadequate---a major constraint being available funding. As stated above, new markets in the form of woody biomass for renewable energy and biofuels could provide significant revenues that could help pay for or reduce the costs of fuels treatments.

In order to help develop renewable energy from the biomass obtained from forest treatments, one issue, in particular, must be addressed. Currently the Section 45 Production Tax Credit (PTC) for wind and geothermal energy is twice the rate available for biomass energy investments. If investment in a broad array of renewable energy is to be encouraged, Congress must provide a level playing field for all renewable energy sources, including forest biomass. Fortunately, Representatives Meeks and Herger have introduced HR 1924 to provide tax parity for renewables. I encourage your support for this legislation.

Finally concerning wildfire, given the huge amount of forestland with unnatural accumulations of hazardous fuels, even if we greatly increase the number of acres treated, we will still continue to see some large landscape scale fires for decades to come. Since young, growing forests sequester carbon in significant amounts, it is important to insure prompt assessment of needed remediation measures and rapid regeneration through planting following many of these fires, in order to establish a new forest as quickly as possible. This not only helps sequester carbon, it also insures prompt restoration of watersheds and water quality, wildlife and fisheries habitats, and public recreational opportunities. Another significant forest policy consideration concerns the use of wood products. The dais in front of you is a form of sequestered carbon. Though wood products

do not provide permanent sequestration, it is well documented that they do store carbon for long periods of time. For example, consider that many towns in the original thirteen colonies still preserve and feature as tourist attractions wood frame homes that were built during the earliest days of our settlement as a nation. Many are older than three hundred years. In addition, life cycle assessments of various building materials show that using wood framing for construction and housing consumes up to **250 percent less energy** in its manufacture and installation than alternatives such as aluminum, steel, concrete or plastic. Besides being obtained from a renewable resource, the use of wood products over other construction alternatives substantially allows us to reduce our carbon footprint. When it comes to climate change, wood products obtained from sustainably managed forests are a very wise preference, particularly when combined with effective recycling.

On the other hand, wood obtained from international sources has diverse implications. The world is currently experiencing a net loss of about 45 million acres of forestland per year. Most of this is from conversion to cropland, but some is the result of inappropriate or illegal logging and unsustainable forest practices in developing countries. There is much that could be said on the many issues related to international forest management, but for the sake of time today, I'll just say that aid to foreign countries in the form of education and technology should be an important priority, and technical assistance for reforestation and forest management could pay major dividends in helping manage carbon internationally. Ultimately, however, it is probably most important that we continue to improve upon forest practices in our own country where we can have the most effect on insuring sustainable management, energy independence and in providing the many goods and services that come from healthy, well-managed, and diverse forests.

Implementing appropriate forest practices and applying the best available science is probably more important now than ever, given the increases in atmospheric temperature that we are witnessing. Forests will be affected by this trend in various ways---affecting forest insects, disease, wildfire, tree species composition, and a host of other variables. Forests have changed with climate through the millennia and will continue to do so, but as we rely on forests for many values and amenities, we recognize that well managed and functioning forests are the most resilient to drought, insects, disease, invasive species, and changing temperatures.

For example, a cool wet climatic phase coupled with the effects of human fire suppression and other land management practices has led to a forest condition across the Inland Northwest (Montana, Idaho, eastern Washington and Eastern Oregon) that is characterized by homogeneous dense forests comprised largely of shade tolerant and fire intolerant conifers. Scientific analysis of past climatic events indicates that historical warm dry phases resulted in severe large landscape wildfires. Forests historically survived these warm dry periods because they consisted of patchy mosaics of different ages and species distributions. All of the best science with regard to future climates indicates that we are in a warm dry phase, exacerbated by greenhouse gases creating a climatic shift of a magnitude that significantly exceeds the warm dry phases that occurred over the past several thousand years. Given these conditions, current and extensive ecological research indicates that active forest management that converts homogenous

forest landscapes into patchy mosaics of age classes and species will increase the resilience of these forests. It must also be stressed that forests across the Inland Northwest must be managed for future climatic conditions and that a policy of restoring forests to a condition that reflects the climate of 200 years ago may not be facilitating the survival of these forests for future conditions. Since we have the ability to predict the future climatic conditions with some degree of accuracy we also have the ability to moderate the effects of predicted global warming on our forests.

Forestry has been the source of much debate in this country for a number of years, particularly in relation to management of our national forests and other federal lands, and though that tension has lessened as science and forest practices have continued to improve and as groups and individuals are learning to work together to find common ground, there still exist unfortunate lingering effects from those old battles. Almost everyone in the forestry community supports some protections for old growth, roadless areas and wilderness, but we also recognize the importance and value of maintaining a full array and diversity of forest types, age classes and management regimes. Hopefully, the old “us verses them” rhetoric will not obscure the positive dialogue that is now being generated among conservation groups, forest industry, scientists, government agencies and others on the essential role of forests and forest management in accomplishing carbon sequestration and mitigating global warming. Forests are the only form of sequestering and offsetting carbon that also provide many other benefits such as clean water, wildlife habitat, biodiversity, wood products and aesthetics—all necessary for the successful functioning of society. We cannot afford to miss or neglect this important opportunity.