Testimony of Mike Dombeck
Senate ENR Hearing February 6, 2014

Thank you for inviting me to testify today on S. 1966, the National Forest Jobs and Management Act of 2014. I greatly appreciate this Committee's important role in the oversight and protection of our nation's precious natural resources and public lands. I'm very familiar with this hearing room, having testified here many times as Chief of the Forest Service and as the acting-Director of the Bureau of Land Management. I am here today on my own behalf, and also as a Board member of Trout Unlimited—an organization with a strong knowledge of, and mission interest in, management of our National Forests.

The public ownership of land is rooted in the founding of the United States. The original 13 colonies—the eastern states—ceded their ownership of western lands to the federal government. In exchange for extensive land grants within their territories, western territories relinquished claims to the unappropriated lands inside their boundaries. Congress required that these agreements be reflected in each new state's constitution as "ordinances irrevocable." The Public Lands belong to all citizens of the United States.

Disposition, allocation and management of public lands have always been very important and controversial work. As this nation matures, the population increases, and more land is urbanized and developed, how we manage our public land becomes even more important. Recall the old Will Rogers' cliché, "buy land, they ain't making it anymore."

For nearly the past half century the public lands managed by the Forest Service and Bureau of Land Management, have been managed for multiple uses as mandated by law. However, translating multiple-use on the ground is no easy task. Every constituency—forest products, grazing, mining, recreation, wilderness, and so on—pushes to maximize its interest. Couple this with constantly changing economic needs and social values, and the challenge gets even messier.

The most important recommendation I have for this Committee, the Congress and the Executive Branch is focus on is how to maintain the long term health and productivity of the land. The challenge as defined by Gifford Pinchot is to manage for the "greatest good for the greatest number for the longest time." Water was a basic value, and watershed protection and restoration a basic concern that led to the establishment of the National Forests in both the eastern and western United States. The critical role forests play in the carbon cycle and moderating climate change is perhaps the most recent value we must take seriously. The severe drought in California and parts of the West and other extreme weather patterns are reminders that maintaining and protecting forests and their sound management is of the utmost importance.

I appreciate Senator Barrasso's interest in the need for properly managing multiple-use on our public forests. From World War II to the 1980's, an era of different values, the Forest Service focused primarily on timber harvest. The all-time high was reached in the 1980's with harvests approaching 12 billion board feet per year. Since 1990, the agency has struggled to cut two billion board feet per year. Nearly everyone agrees that 12 billion was unsustainable—way too high—and most agree that we can do better than the 2.5 billion board feet being harvested today.

No longer do we look at National Forests as bread-baskets of timber to be brought to market. They are managed for forest health, water supplies, hunting and angling, and yes, timber production, among many other multiple use values. But the truth is that the Forest Service is in its 24th year of transition, and we need to model new approaches to help the agency meet its multiple-use objectives including, but not limited to, cutting more timber from public lands.

The guiding principle of my testimony is the need to manage for the long-term health and sustainable productivity of the land. And therein lays my primary concern with S. 1966. Rather than making the long-term health of the land, or even improving multiple-use management of the land its objective, this bill would make timber production from a portion of our publicly-owned forests the primary objective. Keep in mind the many long, protracted controversies of the past. Let's not repeat them by pushing the pendulum back so far and making one use dominant.

In the spirit of offering solutions, I offer the Committee seven principles to consider as it debates how to help the Forest Service manage our public lands for land health while also achieving its multiple-use mandate.

One, collaboration and collaborative stewardship work. This committee has discussed several bills that model new approaches to help the Forest Service achieve its mandates. The Forest Jobs and Recreation Act introduced by Senator Tester is a good example of bringing conservation interests and timber interests together to protect wilderness quality lands; promote hazardous fuels treatments; and ensure more stability in timber management from certain forests in Montana.

I encourage this committee to increase its support of science and local community-based collaborative groups, such as has been done by Chairman Wyden in Oregon and Senator Crapo in Idaho, and was led by former Chairman Bingaman and his support to for the Collaborative Forest Landscape Restoration Program. We also need to support Forest Service efforts to implement the new forest planning rule, allowing for greater collaborative participation by all communities with forest interests.

In my home state of Wisconsin there is a grassroots effort beginning to take shape called the North East Wisconsin Collaborative. It brings together a diverse group of stakeholders from conservation, loggers, Tribal members, and forest industry representatives to find ways to accelerate the sustainable management of the Chequamegon-Nicolet National Forest. This effort is being modeled from the many Collaborative Forest Landscape Restoration Program projects (CFLRP) that have been establish across the country, predominately around National Forests impacted by large scale wildfire. While wildfire typically isn't a the threat in the Great Lakes States as it is in the West, the effort in Wisconsin is aiming to promote the health of watersheds that drain into the Great Lakes while producing timber and jobs. Established CFLRP projects have shown that when diverse stakeholders come together significant progress can be made and should be extended to the National Forests east of the 100th Meridian.

Two, protect roadless areas, riparian areas, and old growth forests. Any new National Forest policy should recognize the exceptional value of roadless areas and old growth forests. These aren't simply "more green lands" on the map. In a very real way, they are the crucible on which the character of this nation was forged, and they should be protected and held in trust for the benefit and use of present and future generations. Old growth forests are essentially absent from private lands; the last place you can find them in this country is on public forests. Who would deprive a child of experiencing that wonder, a scientist of learning from them?

Roadless areas remained roadless for a reason. These remaining wild places are typically difficult and expensive to get into for resource extraction, and in the past often resulted in below cost timber sales. Should we really consider putting roads into roadless areas when the Forest Service is running a multibillion dollar backlog on maintenance of its existing road system?

Although roadless areas represent less than two percent of the American landscape, more than 25 percent of all endangered species are dependent on roadless areas. The table below, from a Trout Unlimited report, shows the value of roadless areas in Idaho to trout and salmon.

SPECIES	LOST HISTORIC HABITAT IN IDAHO	CURRENT DISTRIBUTION IN ROADLESS AREAS
Bull Trout	46% of historic range	68% of current habitat is in roadless areas
Chinook Salmon	65% of historic range	74% of current habitat is in roadless areas
Steelhead	61% of historic range	74% of current habitat is in roadless areas
Westslope Cutthroat Trout	16% of historic range	58% of current habitat is in roadless areas

Nearly a quarter of Americans drink water that flows across roadless areas. To not recognize their social and ecological values in legislation would be a

tremendous lost opportunity. I have attached a section of the preamble to the 2001 Roadless Rule which details the full range of social, economic and ecological values of these lands. More recently science pointed out the role of forests and old growth in the carbon cycle and mitigating the effects of climate change.

When it comes to riparian areas, the Forest Service itself has pioneered methods such as the Aquatic Conservation Strategy, Pacfish, and Infish that protect streamside areas in the forests on the westside of the Cascades, other anadromous fish habitats in the National Forest System, and important inland trout habitat, respectively. Riparian areas in the West, in particular, have an outsized conservation value. Although they represent only two percent of the western landscape, more than 75 percent of all wildlife species are dependent on them.

Three, focus timber harvest and forest management to restore and improve forest health and reduce fire risk. Focus on the interface of forests and human communities. The fact is that our greatest forest management needs are not in backcountry areas, or areas with the biggest and oldest trees, they are in places where public forests run up against private lands and communities. Wildfires can be a huge problem in such areas, especially in wildfire-dependent landscapes that have had fire suppressed for decades. We should follow the models of collaborative stewardship that allow for the protection of backcountry areas while also allowing communities to create defensible spaces in areas adjacent to their forest-bordering homes.

I note, for example, that the first person to litigate the 2001 Roadless Area Conservation Rule was then Lieutenant-Governor James Risch of Idaho. But he didn't stop there. As Governor, he brought all of the people who had an interest in roadless management—the state, counties, environmental and commodity interests—together, and forged a made-in-Idaho agreement that allows for urban-wildland communities to take proactive actions to protect communities from wildfires while still also protecting roadless areas. Importantly, groups such as Trout Unlimited who participated in its development, argue that the Idaho Roadless Rule's conservation measures as strong or stronger than the 2001 national roadless rule. Colorado followed a similar process.

I commend Senator Risch for his work, and the Idaho example in seeking ways to protect roadless areas and their values while also protecting wildland-urban communities from the effects of wildfire.

Four, solicit ideas from a broad range of interests on ways to overcome obstacles to sustainable management activities. History teaches us that real progress is made when communities of place and interest come together to find solutions on the land. As Congress and the Forest Service look at ways to plan and implement projects more efficiently, they would be well served to solicit the

ideas of a broad range of stakeholders. The issues that S. 1966 seeks to address have been around for a while, and a lot of thinking has gone into solutions—one example being the Healthy Forest Restoration Act. By bringing a broad spectrum of interests together to think about ways to make Forest Service processes more efficient, members of this Committee could come up with approaches that better accomplish balanced multiple use management. Senator Barrasso is to be commended for offering ideas to fix a problem of concern to many. We should be as diligent in protecting the interests of people who have invested in collaborative stewardship as we are at ensuring that all interests have a voice in the management of National Forests.

Five, move away from reliance on the traditional timber sale contract. I realize that my recommendation runs contrary to this bill, but it is time to move away from sole reliance the timber sale contract as the prime vehicle for national forest management. This bill would require the use of timber sale contracts for all timber management. (Note that 25 percent of all timber receipts are returned to states and counties for schools and roads.)

It is time that we move away from fundamental need to educate our children with revenues from timber harvest of public forests. No other country in the world bases the quality of their children's education on how much timber they cut. It is not sustainable over the long haul for either the forest or local schools.

The Forest Service should rapidly accelerate the use of stewardship contracting. Stewardship contracting allows the Forest Service to apply the revenues generated from timber sales to other priorities such as road and culvert maintenance, forest health, stream improvement projects, and other hard-to-fund work that can help to make forests more resilient to the effects of climate change. I am delighted the current Farm Bill Conference Report recognized this and provides the Forest Service with permanent authority for Stewardship contracting.

Six, treat the Forest Service like every other federal agency that has to deal with natural disasters. In FY 1991, fire spending accounted for roughly 13 percent of the total Forest Service budget, while in FY13 fire spending ate up more than 40% of the budget. The agency has lost $500 million dollars from programs that help to improve forest health, keep drinking water clean, suppress invasive species, promote hunting and fishing, get kids outdoors, improve access to forests, and so on by diverting resources for fire-fighting.

Truly, this is an inefficient way to run an agency, and it is time Congress fixed the problem. Simply stated, Congress should treat the Forest Service the same as any other federal agency with funding responsibilities for natural disasters. No other single agency within the entire federal government must fund disaster response—which is what fighting fires can amount to—from discretionary budgets. This is one issue that all currently retired Forest Service Chiefs are in

complete agreement on and we have written the Congress about on numerous occasions

I commend Senators Wyden, Crapo and their colleagues, including my own home State Senator Baldwin, for their efforts and bipartisan approach to fix this funding issue which has literally hamstrung the Forest Service's capacity in all forest management activities. Additionally, it will take constant vigilance to see that investments are made up-front that will reduce fire danger and costs in the long run. This will produce timber and jobs in the process.

Seven, and perhaps most important, national forest policy should make making forests more resilient to the effects of climate change and their capacity to produce clean water. The Forest Service is a leader among federal agencies in preparing for climate change. Managing public lands so they are better able to withstand the effects of climate change benefits human communities and fish and wildlife, too. For example, protecting roadless areas minimizes downstream drinking water filtration costs. Reconnecting rivers to floodplains helps to reduce the energy of devastating floods. Restoring fire dependent forests can provide tens of thousands of well-paying, family wage jobs.

One note of caution: while thinning trees is an important aspect of forest restoration, it does not and should not define restoration. The February, 2012 Forest Service report, "Increasing the Pace of Restoration and Job Creation on Our National Forests" does a good job of describing how to accelerate thinning. But cutting trees alone will not restore our forests. Unsustainable timber harvest and development of other resources in the past have left many Forest Service lands in need of a wide range of restoration actions. Restoration must be approached by looking at how best to recover ecological processes that keep the land healthy. Closing or relocating roads; fixing culverts; removing unneeded small dams and fixing obsolete water diversions; ensuring adequate flows of water; and thinning are all part of an integrated forest restoration strategy. The temptation for the Forest Service and Congress will be to try and cut our way to healthy forests.

One example of a strong restoration effort comes from Montana's Middle Clark Fork basin where historic placer mining and other resource extraction badly damaged tributary streams that provide important spawning and rearing habitat for bull trout and cutthroat trout. One of these tributaries is Ninemile Creek, where the Forest Service and its partners improved 12 miles of instream habitat, reclaimed 100 miles of unused logging roads, planted 10,000 trees and shrubs, upgraded or removed 70 culverts and incorporated 3,000 volunteer hours into watershed restoration planning and implementation. After the completion of these projects, cutthroat trout were able to migrate up Ninemile Creek for the first time in 70 years. The outpouring of volunteer hours and matching funding contributions to the restoration of the Middle Clark Fork is a testament to the

public's desire to improve and restore our national forests. This example is a useful reminder that cutting certain trees may be an important aspect of restoration, but it is only one small part of an integrated restoration strategy.

These integrated approaches to forest restoration, combined with fixing the fire funding issues, provide the best opportunity I've seen to move beyond the current frustration and make a real difference on the land. I applaud the Forest Service for developing a categorical exclusion for certain restoration projects to enable them to move forward more efficiently. And I encourage Congress to maximize these opportunities by providing the Forest Service with adequate appropriations to plan and implement restoration projects, and by improving the agency's fire funding system. These steps will result in real progress while stakeholders consider ways to efficiently implement ecologically based forest management activities on the land.

Integrated National Forest restoration can bring benefits to many communities with great value, including water, tourism, timber, and jobs as well as the remarkable legacy of having public places without "no trespassing" signs where kids growing up can connect with nature. Our national forests are places to recreate, hunt, fish, hike, experience solitude and wild places, the places to restore human health and spirit while enjoying the great outdoors

Thank you for the opportunity to testify today. I would be pleased to answer any questions.

Appendix: Preamble to 2001 Roadless Area Conservation Rule

Roadless Area Values and Characteristics

Inventoried roadless areas considered in this rule constitute roughly one-third of all National Forest System lands, or approximately 58.5 million acres. Although the inventoried roadless areas comprise only 2% of the land base in the continental United States, they are found within 661 of the over 2,000 major watersheds in the nation (FEIS Vol. 1, 3-50) and provide many social and ecological benefits.

As urban areas grow, undeveloped private lands continue to be converted to urban and developed areas, and rural infrastructure (such as roads, airports, and railways). An average of 3.2 million acres per year of forest, wetland, farmland, and open space were converted to more urban uses between 1992 and 1997. In comparison, 1.4 million acres per year were developed between 1982 and 1992. The rate of land development and urbanization between 1992 and 1997 was more than twice that of the previous decade, while the population growth rate remained fairly constant (FEIS Vol. 1, 3-12). In an increasingly developed landscape, large unfragmented tracts of land become more important. For example, from 1978 to 1994, the proportion of private forest ownerships of less than 50 acres nearly doubled (Birch, T.W. 1996. Private forest-land owners of the United States, 1994. Resource Bulletin NE-134. Radnor, PA: USDA Forest Service, Northeastern Experiment Station. 183

p). Subdivision and other diminishment of tract size of these lands can discourage long-term stewardship and conservation.

Inventoried roadless areas provide clean drinking water and function as biological strongholds for populations of threatened and endangered species. They provide large, relatively undisturbed landscapes that are important to biological diversity and the long-term survival of many at risk species. Inventoried roadless areas provide opportunities for dispersed outdoor recreation, opportunities that diminish as open space and natural settings are developed elsewhere. They also serve as bulwarks against the spread of non-native invasive plant species and provide reference areas for study and research (FEIS Vol. 1, 1-1 to 1-4).

The following values or features often characterize inventoried roadless areas (FEIS Vol. 1, 3-3 to 3-7):

High quality or undisturbed soil, water, and air. These three key resources are the foundation upon which other resource values and outputs depend. Healthy watersheds catch, store, and safely release water over time, protecting downstream communities from flooding; providing clean water for domestic, agricultural, and industrial uses; helping maintain abundant and healthy fish and wildlife populations; and are the basis for many forms of outdoor recreation.

Sources of public drinking water. National Forest System lands contain watersheds that are important sources of public drinking water. Roadless areas within the National Forest System contain all or portions of 354 municipal watersheds contributing drinking water to millions of citizens. Maintaining these areas in a relatively undisturbed condition saves downstream communities millions of dollars in water filtration costs. Careful management of these watersheds is crucial in maintaining the flow and affordability of clean water to a growing population.

Diversity of plant and animal communities. Roadless areas are more likely than roaded areas to support greater ecosystem health, including the diversity of native and desired nonnative plant and animal communities due to the absence of disturbances caused by roads and accompanying activities. Inventoried roadless areas also conserve native biodiversity by serving as a bulwark against the spread of nonnative invasive species.

Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land. Roadless areas function as biological strongholds and refuges for many species. Of the nation's species currently listed as threatened, endangered, or proposed for listing under the Endangered Species Act, approximately 25% of animal species and 13% of plant species are likely to have habitat within inventoried roadless areas on National Forest System lands. Roadless areas support a diversity of aquatic habitats and communities, providing or affecting habitat for more than 280 threatened, endangered, proposed, and sensitive species. More than 65% of all Forest Service sensitive species are directly or indirectly affected by inventoried roadless areas. This percentage is composed of birds (82%), amphibians (84%), mammals (81%), plants (72%), fish (56%), reptiles (49%), and invertebrates (36%).

Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized classes of dispersed recreation. Roadless areas often provide outstanding dispersed recreation opportunities such as hiking, camping, picnicking, wildlife viewing, hunting, fishing, cross-country skiing, and canoeing. While they may have many Wilderness-like attributes, unlike Wilderness the use of mountain bikes, and other mechanized means

of travel is often allowed. These areas can also take pressure off heavily used wilderness areas by providing solitude and quiet, and dispersed recreation opportunities.

Reference landscapes. The body of knowledge about the effects of management activities over long periods of time and on large landscapes is very limited. Reference landscapes of relatively undisturbed areas serve as a barometer to measure the effects of development on other parts of the landscape.

Natural appearing landscapes with high scenic quality. High quality scenery, especially scenery with natural-appearing landscapes, is a primary reason that people choose to recreate. In addition, quality scenery contributes directly to real estate values in nearby communities and residential areas.

Traditional cultural properties and sacred sites. Traditional cultural properties are places, sites, structures, art, or objects that have played an important role in the cultural history of a group. Sacred sites are places that have special religious significance to a group. Traditional cultural properties and sacred sites may be eligible for protection under the National Historic Preservation Act. However, many of them have not yet been inventoried, especially those that occur in inventoried roadless areas.

Other locally identified unique characteristics. Inventoried roadless areas may offer other locally identified unique characteristics and values. Examples include uncommon geological formations, which are valued for their scientific and scenic qualities, or unique wetland complexes. Unique social, cultural, or historical characteristics may also depend on the roadless character of the landscape. Examples include ceremonial sites, places for local events, areas prized for collection of non-timber forest products, or exceptional hunting and fishing opportunities.

Fiscal Considerations

The Department is also concerned about building new roads in inventoried roadless areas, when there presently exists a backlog of about $8.4 billion in deferred maintenance and reconstruction on the more than 386,000 miles of roads in the Forest Transportation System. The agency

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estimates that at least 60,000 miles of additional unauthorized roads exist across National Forest System lands.

The agency receives less than 20% of the funds needed annually to maintain the existing road infrastructure. As funding needs remain unmet, the cost of fixing deteriorating roads increases exponentially every year. Failure to maintain existing roads can also lead to erosion and water quality degradation and other environmental problems and potential threats to human safety. It makes little fiscal or environmental sense to build additional roads in inventoried roadless areas that have irretrievable values at risk when the agency is struggling to maintain its existing extensive road system (FEIS Vol. 1, 1-5 and 3-22). The National Forest System was founded more than 100 years ago to protect drinking water supplies and furnish a sustainable supply of timber. Neither objective is fully achievable given the present condition of the existing road system. The risks inherent in building new roads in presently roadless areas threaten environmental,

social, and economic values.

Development activities in inventoried roadless areas often cost more to plan and implement than on other National Forest System lands. Some planned timber sales in inventoried roadless areas are likely to cost more to prepare and sell than they realize in revenues received. Because of the level of public controversy and analytical complexity, projects in roadless areas often require development of costly environmental impact statements for most resource development activities, including timber harvesting, in inventoried roadless areas. In some cases, road construction costs are higher due to rugged terrain or sensitive ecological factors. Many development projects in inventoried roadless areas are appealed or litigated. These factors contribute to generally higher costs for the agency to plan and implement development activities in inventoried roadless areas.

National Direction vs. Local Decisionmaking

At the national level, Forest Service officials have the responsibility to consider the ``whole picture'' regarding the management of the National Forest System, including inventoried roadless areas. Local land management planning efforts may not always recognize the national significance of inventoried roadless areas and the values they represent in an increasingly developed landscape. If management decisions for these areas were made on a case-by-case basis at a forest or regional level, inventoried roadless areas and their ecological characteristics and social values could be incrementally reduced through road construction and certain forms of timber harvest. Added together, the nation-wide results of these reductions could be a substantial loss of quality and quantity of roadless area values and characteristics over time.

In 1972, the Forest Service initiated a review of National Forest System roadless areas generally larger than 5,000 acres to determine their suitability for inclusion in the National Wilderness Preservation System. A second review process completed in 1979, known as Roadless Area Review and Evaluation II (RARE II), resulted in another nationwide inventory of roadless areas. In the more than 20 years since the completion of RARE II, Congress has designated some of these areas as Wilderness. Additional reviews have been conducted through the land management planning process and other large-scale assessments. The 58.5 million acres of inventoried roadless areas used as the basis for this analysis were identified from the most recent analysis for each national forest or grassland, including RARE II, land and resource management planning, or other large-scale assessments such as the Southern Appalachian Assessment.

Of the 58.5 million acres of inventoried roadless areas considered in the FEIS, approximately 34.3 million acres have prescriptions that allow road construction and reconstruction. The remaining 24.2 million acres are currently allocated to management prescriptions that prohibit road construction; however, protections in these existing plans may change after future forest plan amendments or revisions.

Over the past 20 years, roads have been constructed in an estimated 2.8 million of those 34.3 million acres of inventoried roadless areas. The agency anticipates that the trend of building roads in inventoried roadless areas will gradually decrease in the future even without this rule due to economic and ecological factors already discussed, changes in agency policy, increasing controversy and litigation, and potential listings under the Endangered Species Act. While these anticipated

changes may reduce some of the impact to inventoried roadless areas, they would not eliminate the future threat to roadless area values (FEIS Vol. 1, 1-14 to 1-15).

On many national forests and grasslands, roadless area management has been a major point of conflict in land management planning. The controversy continues today, particularly on most proposals to harvest timber, build roads, or otherwise develop inventoried roadless areas. The large number of appeals and lawsuits, and the extensive amount of congressional debate over the last 20 years, illustrates the need for national direction and resolution and the importance many Americans attach to the remaining inventoried roadless areas on National Forest System lands (FEIS Vol. 1, 1-16). These disputes are costly in terms of both fiscal resources and agency relationships with communities of place and communities of interest. Based on these factors, the agency decided that the best means to reduce this conflict is through a national level rule.

Importance of Watershed Protection

Watershed protection is one of the primary reasons Congress reserved or authorized the purchase of National Forest System lands. Watershed health and restoration is also one of four emphasis areas in the agency's Natural Resource Agenda. Protecting the remaining healthy components of a watershed provides multiple benefits and a strong base to anchor future restoration in unprotected portions of these watersheds. Rivers, streams, lakes, and wetlands within a watershed are the circulatory system of ecosystems, and water is the vital fluid for inhabitants of these ecosystems, including people (FEIS Vol. 1, 1-1).

Inventoried roadless areas comprise a small fraction of the national landscape, representing less than 2% of the land base of the continental United States. They are, however, disproportionately important to the small percentage of the land base they occupy. Overall, National Forest System watersheds provide about 14% of the total water flow of the nation, about 33% of water in the West (FEIS Vol. 1, 3-46). Of the watersheds on National Forest System land, 661 contain inventoried roadless areas and 354 of those watersheds serve as source areas of drinking water used by millions of people across the nation. Therefore, the health of these watersheds is important to people's health throughout the United States.

Roads have long been recognized as one of the primary human-caused sources of soil and water disturbances in forested environments (FEIS Vol. 1, 3-44). For example, while landslides are a natural process, extensive research and other investigations in the West have closely associated land management activities, particularly roading and timber harvest, with accelerated incidence of landslides by several orders of magnitude (FEIS Vol.

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1, 3-58). A joint study by the Forest Service and Bureau of Land Management in Oregon and Washington found that of 1,290 landslides reviewed in 41 sub-watersheds, 52% were related to roads, 31% to timber harvest, and 17% occurred in undisturbed forest (FEIS Vol. 1, 3-59). Another evaluation of landslides initiated by the Siuslaw National Forest found that roads were the source of 41% of landslides, harvest units less than 20 years old were the source of 36%, while natural forest processes accounted for the remaining 23%. Without the

disturbance caused by roads and associated activities, stream channels are more likely to function naturally (FEIS Vol. 1, 3-54). Current road construction and timber harvest practices reduce the potential for damage associated with the use of earlier and less sophisticated techniques. However, even with today's improved design standards for road construction and timber harvest, these activities can still result in adverse effects to watersheds. These effects include pollution, changes to water temperatures and nutrient cycles, and increased sediment from storm or runoff events that exceed road design standards (FEIS Vol. 1, 3-45 to 3-50).

Improving Ecosystem Health

Inventoried roadless areas provide large, relatively undisturbed blocks of important habitat for a variety of terrestrial and aquatic wildlife and plants, including hundreds of threatened, endangered, and sensitive species. In addition to their ecological contributions to healthy watersheds, many inventoried roadless areas function as biological strongholds and refuges for a number of species and play a key role in maintaining native plant and animal communities and biological diversity (FEIS Vol. 1, 3-123 to 3-124). For example, about 60% of unroaded or very low road density sub watersheds within the Interior Columbia Basin Ecosystem Management Project (ICBEMP) assessment area are aquatic strongholds for salmonid populations (FEIS Vol. 1, 3-161). Inventoried roadless areas are key to recovery of salmon and steelhead stocks in decline, providing habitat to protect species until longer-term solutions can be developed for migration, passage, hatchery, and harvest problems associated with the decline of anadromous fish.

Species richness and native biodiversity are more likely to be effectively conserved in larger undisturbed landscapes, such as inventoried roadless areas (FEIS Vol. 1, 3-142). For example, inventoried roadless areas cover approximately 21% of the centers of biodiversity for animals and 10% for plants identified in ICBEMP (FEIS Vol. 1, 3-144 and 3-173). Inventoried roadless areas also provide reference landscapes that managers can use to gauge the health and condition of other land areas.

Road construction, reconstruction, and timber harvesting activities can result in fragmentation of ecosystems, the introduction of non-native invasive species, and other adverse consequences to the health and integrity of inventoried roadless areas (FEIS Vol. 1, 3-128 to 3-136). As human-caused fragmentation increases, the amount of core wildlife habitat decreases. This fragmentation results in decreased connectivity of wildlife habitat and wildlife movement, isolating some species and increasing the risk of local extirpations or extinctions (FEIS Vol. 1, 3-133). The value of inventoried roadless areas as habitat for threatened, endangered, and sensitive species and as biological strongholds can also be diminished due to these activities. For example, 220 species that are listed as threatened, endangered, or proposed for listing under the Endangered Species Act and 1,930 agency-identified sensitive species rely on habitat within inventoried roadless areas (FEIS Vol. 1, 3-180). The Department of Agriculture believes that the risks associated with certain development activities in inventoried roadless areas should be minimized and that these areas should be conserved for present and future generations.

Need for Action

Promulgating this rule is necessary to protect the social and ecological values and characteristics of inventoried roadless areas from road construction and reconstruction and certain timber harvesting activities. Without immediate action, these development activities may adversely affect watershed values and ecosystem health in the short and long term, expand the road maintenance backlog which would increase the financial burden associated with road maintenance, and perpetuate public controversy and debate over the management of these areas. The new planning rules provide for review of other activities and allow for additional protection of roadless areas, if warranted. Adoption of this final rule ensures that inventoried roadless areas will be managed in a manner that sustains their values now and for future generations.