IMPORTANCE OF INVENTORIED ROADLESS AREAS AND UNROADED LANDS TO OREGON'S NATURAL HERITAGE (COMMENTS ON OREGON'S ROADLESS PETITION TO THE BUSH ADMINISTRATION)

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Oregon Inventoried Roadless Areas (IRA) attributes – national forest roadless areas are irreplaceable reserves of wildlife and fisheries habitat that perform many valuable ecosystem services used by all Americans (Strittholt and DellaSala 2001, DeVelice and Martin 2001, Loucks et al. 2003, Gelbard and Harrison 2005). In Oregon, these wild areas play an esteemed role in the state's public lands conservation (Strittholt et al. 2006a). Oregon's IRAs cover nearly 2 million acres (13%) of national forest lands representing five different natural regions (geographic areas sharing common climate, terrain, geology, and biological communities – see Strittholt et al. 2006a – http://www.consbio.org/cbi/pubs/index.htm). These areas provide numerous conservation benefits to the citizens of Oregon. Besides providing unspoiled reference areas for conservation and land management research and important protections for historic and cultural areas, IRAs in Oregon contain (as summarized from Strittholt et al. 2006a):

- over 800,000 acres of old-growth forests;
- significant amounts of natural communities, including forests, grasslands, and shrublands, especially in the Cascades, Klamath, and Blue Mountains;
- important habitat for many mammals, including black bear, elk, fisher, marten, and many other species;
- important habitat for numerous birds, including threatened species such as the northern spotted owl and marbled murrelet, and several woodpeckers and numerous gamebirds;
- habitat for many of the state's threatened salmonids and other aquatic resources, including 643,000 acres in 58 "Key Watersheds," 242,000 acres in 19 "salmon

strongholds," and 1.1 million acres in "aquatic diversity areas" as defined by federal agencies (FEMAT 1993, ICBMP 1997) and professional societies (American Fisheries Society);

- refuge for many rare plant and animal species;
- clean drinking water for hundreds of thousands of Oregonians that derive water supplies from municipal watersheds that overlap with one-quarter of the state's IRAs, especially the cities of Bend, Ashland, and Pendelton where drinking water supplies are either exclusively or at least partially contained within IRAs; and
- a wide variety of outdoor recreation opportunities, including hiking, camping, hunting, and angling (with revenues estimated annually at nearly $1 billion dollars for all state lands (http://www.census.gov/prod/2003pubs/01fhw/fhw01-or.pdf).

Salmon conservation and IRAs - the importance of salmon to the Pacific Northwest economically, recreationally, and symbolically is especially significant and greater than any other species in the region. In Oregon, millions of dollars are spent on the Oregon Plan for salmon conservation. Roadless areas long have been recognized as vital to the conservation of salmon, steelhead and other aquatic species as unroaded lands provide aquatic habitat strongholds that are protected from road-related degradation, an impact to which both aquatic habitats and fishes are particularly susceptible (Gibbons and Salo 1973, Meehan 1991, Henjum et al. 1994, Frissell et al. 1996, Kessler et al. 2001, Trombulak and Frissell 2001). Roadless areas provide a critical anchor for aquatic habitat restoration and salmon recovery efforts. Based on GIS analysis, Strittholt et al. (2006a) reported that 643,000 acres of IRAs are found within 58 different Key Watersheds (FEMAT 1993) and an additional 242,000 acres are found in 19 different salmon strongholds (ICBMP 1997), many of which are at the headwaters of these systems. Additionally, over 1.1 million acres of IRAs (over ½ the total IRAs) occur within mapped Aquatic Diversity Areas (as defined by the American Fisheries Society – see Henjum et al. 1994) with the majority concentrated in IRAs within the Blue and Klamath Mountains.

Drinking water and IRAs - over 500,000 acres (25%) of IRAs overlap with municipal drinking watersheds. Examples include a large portion of the Ashland Creek watershed, which is occupied by the McDonald Peak Roadless Area, and is the source of drinking water for the City of Ashland (population ~20,000 residents). The City of Bend (which has grown from 20,000 in 1990 to over 65,000 today) derives high-quality drinking water from Tumalo Creek, which is entirely contained within the Bend Watershed Roadless Area. And Pendelton (population 16,000), which obtains its water from the Umatilla River, is partially protected by the Hellhole Roadless Area (Strittholt et al. 2006a).

Unroaded Lands – Oregon has an additional 2.6 million acres of unroaded but uninventoried areas that contain many of the same ecological attributes of IRAs. While the Roadless Conservation Rule (2001) acknowledged the importance of unroaded lands, the Forest Service has yet to inventory them for possible inclusion in roadless protections. We provide a case study from the Klamath-Siskiyou ecoregion in southwest Oregon where significant amounts of unroaded but uninventoried lands remain. We have focused on this ecoregion because it has long been recognized as among the most diverse temperate forests in the world (DellaSala et al. 1999).

Klamath-Siskiyou case study - approximately 233,770 acres of unroaded lands occur in the Oregon portion of the Klamath-Siskiyou ecoregion (Strittholt and DellaSala 2001). When combined with IRAs, unroaded lands contribute to a regional conservation strategy by providing:

- significant amounts of intact, mature and old-growth forests;
- essential habitat for species of conservation concern (i.e. those listed on the state Heritage database);
- elevation and habitat representation;
- overall landscape connectivity (i.e. “stepping stones”) for species such as Pacific fisher that require blocks of interconnected habitat for dispersal and reproduction;

- additional aquatic strongholds for salmon and native trout (Kessler et al. 2001); and
- critical wintering habitat for deer and elk

These results are consistent elsewhere in Oregon as well (Strittholt et al. 2006a).

Key recommendations – the governor should request protection for all ~2 million acres of IRAs and further should call for the federal government to “officially” inventory and promptly protect the additional unroaded lands under their jurisdiction, which total 2.6 million acres in Oregon. Unroaded lands adjacent to IRAs and those that overlap with drinking water municipalities should be given first priority. We suggest that in addition to the ecological benefits accruing from roadless and unroaded areas, the governor also could emphasize in his petition the importance of IRAs and unroaded lands to protecting the quality of Oregon’s drinking water. This benefit is particularly important, as water will become increasingly scarce in quantity and quality due to explosive demand across the state (especially in drought prone regions of eastern Oregon and the Klamath province) and climate change effects on future snow pack levels.

IMPACTS OF ROADS ON ECOSYSTEM PROCESSES AND OREGON’S BIODIVERSITY

Roads and the maintenance of roads impact natural environments in many ways. Roads increase air and water pollution, promote the spread of invasive exotics, reduce watershed integrity, compromise fish and fish habitat, increase surface erosion and landslide potential, and are associated with declines in wildlife numbers (see reviews by Andrews 1990, Furniss et al. 1991, Reed et al. 1996, Spellerberg 1998, Trombulak and Frissell 2000).

Increased air and water pollution – roads increase water pollution through increased sedimentation, applied road chemicals (Furniss et al. 1991, Rhodes et al. 1994), and toxic spills (Furniss et al. 1991).

Spread of invasive exotic species - roads and associated forest cutting often enhance invasion by a wide range of exotic species as numerous weedy plant species encroach on natural habitats (Amor and Stevens 1976, Schowalter 1988) transforming them indefinitely (see Usher 1988). There has been considerable concern expressed about the spread of invasive exotic species into existing nature reserves (Usher 1988), and the spread of alien species has been highlighted as one of the most significant threats to native biodiversity (Wilcove et al. 1998). In the Pacific Northwest, an exotic root-rot disease (*Phytophorus lateralis*) continues to infect and kill Port Orford cedar, a conifer endemic to the Klamath-Siskiyou. This tree is particularly important to the health and functionality of aquatic ecosystems as it is a riparian keystone species (DellaSala et al. 1999). The fungal disease is waterborne and is easily spread by vehicular traffic along roads. Conversely, roadless areas have been commonly found to be less invaded than habitats near roads (Gelbard and Harrison 2005) and this appears to be the case for root-rot invasions of Port Orford cedar as well (Strittholt and DellaSala 2001). Roads also provide avenues for illegal stocking of non-native fishes (Lee et al. 1997).

Reduce watershed integrity – roads intercept surface and subsurface water flow and concentrate and divert it into roadside ditches and channels. As a result roads directly affect natural sediment and hydrologic regimes (Lee et al. 1997). They alter streamflow (Furniss et al. 1991, Wemple et al. 1996), sediment loading, transport and deposition (Meehan 1991), channel morphology and stability (Heede 1980, Montgomery 1994, Forman and Hersperger 1996), substrate composition, stream temperatures (Beschta et al. 1987, Hicks et al. 1991), water quality (Furniss et al. 1991, Rhodes et al. 1994), and riparian conditions within a watershed.

When roads cross a stream, inadequate culvert size, location, or number often cause a higher and lower water table upslope and downslope, respectively (Stoeckeler 1965). Furthermore, plugged culverts frequently lead to fill slope failures that produce catastrophic increases in stream channel sediment (Weaver et al. 1987, Donald et al. 1997, Furniss et al. 1997). Roads also greatly increase an area's susceptibility to surface erosion and increase the frequency of landslides, debris flow and other mass movements (Burroughts et al. 1976, Dunne and Leopold 1978, Clayton 1983, Hammond et al. 1988, Furniss et al. 1991, Megahan et al. 1992, Weaver and Hagans 1996).

Compromise fish and fish habitat – the road-related changes to watershed integrity discussed above have serious consequences for the quality of fish habitat, degrading a watershed's capacity to support salmon, steelhead, and other fishes. In the Pacific Northwest and northern Rocky Mountains, roads play a significant role in regional declines of many fish species, especially salmonids (see Henjum et al. 1994; Frissell et al. 1996). Increased sedimentation from road construction, improper drainage, and landslides contributes to declines in overall aquatic habitat integrity (Sidle et al. 1985; Montgomery 1994). The increased amounts of fine sediment in a stream system associated with roads limits hatching success and reduce the number, frequency and size of pools (Jackson and Beschta 1984, Madej 1982, Lee et al. 1997), a critical component of high-quality fish habitat. Roads change the timing and magnitude of peak and low flows, increasing the frequency of localized flood and drought events, thereby reducing salmon survival and the recruitment of juveniles into the adult population (Shetter 1961, McFadden 1969, Seegrist and Gard 1972). Poorly constructed and/or maintained road stream crossings often create barriers to fish migration, commonly reducing or eliminating access to miles of otherwise suitable spawning and rearing habitat (Clancy and Reichmuth 1990, Eaglin and Hubert 1993, Beechie et al. 1994). As a result, roads produce detrimental impacts on all life-stages of fishes (Furniss et al. 1991, Henjum et al. 1994, MacDonald et al. 1991, Rhodes et al. 1994).

Increase surface erosion and landslide potential – the impacts of roads on landslides are large in magnitude and long in duration. Roads impact both the long-term level of chronic "background" sediment loads in a river system by exacerbating the levels of surface erosion through ongoing contributions from road surfaces, cutbanks, and ditches (Megahan and Kidd 1972, Reid and Dunne 1984). Roads also impact the frequency of landslides contributing large amounts of sediment during mass failures. For example, following the February 1996 storm in the Oregon and Washington Cascades and Oregon

Coast Range Mountains, roads were associated with 15% to 61% of the new landslides (Weaver and Hagans 1996). Thirty-four percent of the 236 landslides in the Fish Creek watershed on the Mt. Hood National Forest caused by that same storm were attributed directly to roads (Reeves et al. 1997). Erosion rates on roads and landings in the Klamath mountains of southwest Oregon were 100 times greater than those on the undisturbed area (Amaranthus et al. 1985). Increased rates of landslides in roaded areas as compared to unroaded lands have been documented in Washington (Reid 1981), northern California (Hagans et al. 1984), and Idaho (Arnold and Lundeen 1968, Burns 1984, Megahan et al. 1992). Road-related mass soil movements can continue for decades after the roads have been constructed (Furniss et al. 1991). In particular, temporary roads can be especially damaging to aquatic ecosystems as they are: (1) typically not engineered to meet road standards; (2) contribute to mass wasting events; (3) most are not hydrologically put to bed when a temporary road is decommissioned; and (4) the Forest Service lacks the funds to decommission them later.

Road avoidance by wildlife - high road densities are associated with declines and regional extirpations of many vertebrates, particularly for the more sensitive species such as wolves (see Mech et al. 1988; Fuller 1989; Mladenoff et al. 1995), black bears (see Young and Beecham 1986; Brody and Pelton 1989), and mountain lions (see Van Dyke et al. 1986; Beier 1995). Roads are known to have negative impacts on lynx (Brocke et al. 1991), fisher (Powell 1979), and marten (Chapin et al. 1998).

Ungulates also are impacted by roads directly or indirectly (Crete et al. 1981, Sage et al. 1983). Both elk (Lyon 1983) and mule deer (Rost and Bailey 1979) were shown to have strong road avoidance behavior in the Rocky Mountains and Pacific Northwest.

Road impacts of many bird species include increased nest predation (Wilcove 1985), cowbird parasitism (Brittingham and Temple 1983), and species displacement (see Reijnen et al. 1996). Thus, whether we are interested in large carnivores, ungulates, small mammals, birds, salmon, or other vertebrates, roads have the single greatest impact to the movement of animals, especially sensitive species (Forman and Hersperger 1996).

Key recommendations – the governor should acknowledge the high costs of maintaining Oregon's existing roads network, which totals over 67,000 miles of urban and rural roads (Oregon Department of Transportation – note - this is a conservative figure as it does not included "unimproved" roads or roads built after 2000) and that existing road maintenance and the rehabilitation and decommissioning of failing roads should take priority over building new roads as the Forest Service lacks the resources to maintain its existing roads network. The Forest Service currently has less than 20% of the funding needed to fully maintain the existing road system on national forests and the backlog of deferred road maintenance and reconstruction exceeds $8 billion (Williams 2000**). In particular, we believe the issue of temporary road building is especially important to the continued maintenance and quality of roadless backcountry conditions as it may be brought up in the petition review process by the Secretary of Agriculture (emphasis added).**

MANAGEMENT PRIORITIES FOR FIRE RISK REDUCTION

Roaded areas are more susceptible to uncharacteristically severe fires than unroaded areas for three reasons: (1) timber management often increases fuel loads (e.g., by leaving logging slash) and reduces resistance to fire by replacing fire-adapted large trees with densely stocked tree plantations that are more likely to burn severely (see Odion et al. 2004); (2) areas without roads have been less adversely affected by fire exclusion than intensively managed lands either because access has limited suppression capabilities or fire cycles exceed the period of fire exclusion, which is most often the case in mid to upper elevation areas where the bulk of roadless areas are found (DellaSala and Frost 2001); and (3) road access raises the risk of fire ignitions (DellaSala and Frost 2001).

According to the Forest Service (USFS 2000), approximately 8 million acres (13%) of the 58.5 million acres of IRAs nation-wide represent a high fire risk requiring fuel treatments; the vast majority of areas at risk of uncharacteristically severe fires are in the intensively managed, roaded landscape. USFS (2000) also makes reference to abundant evidence that the areas with most significant fire/fuel and insect/disease problems (e.g., the highest priorities for "forest health" treatments) are located in portions of the national forests that are already managed and accessible by roads. As stated on page 3-157 of the DEIS, "areas that are more highly roaded actually have a higher potential for catastrophic wildfires than inventoried roadless areas." Other data presented indicate fires are more likely to start in managed/roaded areas and more likely to become large after ignition, irrespective of the source (USFS 2000, DEIS p. 3-157).

We note that the majority of "forest health" problems are related to unnaturally high densities of small-diameter trees that occur mainly in low to mid elevation forests where fire exclusion has resulted in skipped fire cycles and tree encroachment. These areas are generally found in the managed forest landscape and the wildland-urban interface. In contrast, logging has removed a majority of large (>20 inch dbh) trees over the past century (see Strittholt et al. 2006b) replacing them with densely stocked and flammable tree plantations (Odion et al. 2004). About 40% of Oregon's IRAs contain old forests with large trees (Strittholt et al. 2006). These areas are not a priority for fire risk reduction (DellaSala and Frost 2000).

While there is evidence that the risk of catastrophic fires has increased in those national forests dominated by dry forests with frequent fire regimes, those areas with most elevated fire risk and most in need of restoration occur in already roaded landscapes (USFS 2000, DEIS p. 3-99, 3-157). **Treatments in already roaded areas should not only be a higher priority from a hazard perspective, but they are also far more cost-efficient (emphasis added**) **–** more acres can be treated in these areas with a greater potential for influencing fire and insect/disease outbreaks than in more remote roadless areas. Furthermore, significant evidence exists to conclude that although fires can have substantial effects on streams and riparian systems and may threaten the persistence of some local populations of resident fish, particularly those that are small and isolated, major efforts to actively reduce fuel loads and fire hazard in forests may on balance be a threat, rather than a benefit, to native fishes and their habitats. This is particularly true when treatments are focused on addressing forest management symptoms (e.g., fuel load) rather than on restoration of natural processes (Rieman et al. 2003). Moreover, even without new roads, treatments to reduce the risks of catastrophic fires still are feasible in most roadless areas (USFS 2000. DEIS p. 3-37, 3-105) and the Roadless Conservation Rule 2001 provides sufficient guidance to the Forest Service regarding fire concerns without any additional modifications necessary.

Problems with LANDFIRE as a predictive tool for fire behavior – LANDFIRE is increasingly relied on as a predictive tool for modeling fire behavior and risk. However, the main problem with this approach is that only a "rapid assessment" of vegetation has been completed. It has no accuracy assessment, so there is no way of knowing the extent to which vegetation has been mapped correctly. There are lots of reasons to suspect a low level of accuracy, particularly for unroaded areas where access is difficult. The Park Service is testing the data in a couple of parks to see if it is sufficiently accurate to use in the absence of other vegetation maps, but the results are not available at this time. In addition, the predicted fire behavior in different vegetation types is not based on an empirical approach, but modeling. In theory, LANDFIRE should show roaded areas as more departed from reference conditions due to disturbances, but it tends to focus on departure due to lack of fire and not on anthropogenic ignition factors.

Key Recommendations - the governor should request that the Forest Service prioritize and target fire hazard reduction measures giving highest priority to the already roaded areas where treatment costs are lower, particularly within the urban-wildlands interface and flammable tree plantations. Treatments in roadless areas, a lower priority, are more costly and should be limited to stewardship activities that are consistent with a set of specific ecological criteria that balance treatment needs with the potential for adverse cumulative impacts to IRAs. In cases where it can be demonstrated that thinning will likely result in ecological benefits, then thinning should be allowed to proceed as specified under the 2001 roadless rule. Under such conditions no new roads should be built to treat fuels given that roads diminish ecosystem values and contribute to fire ignitions. Further, treatments should focus on small diameter trees (as specified in the Roadless Conservation Rule 2001) that have largely encroached since the advent of mechanized fire suppression in places where it can be demonstrated that the period of fire exclusion has in fact exceeded historic fire return intervals. In addition, fire management in IRAs requires an approach that begins with a fire management plan using science-based criteria to determine when its best to allow fires burning in the backcountry to run their course vs. when they are likely to threaten human communities, requiring active suppression (DellaSala and Frost 2000). The governor could also request an accuracy determination be performed of LANDFIRE and the inclusion of anthropogenic ignition factors into the modeling of fire risks. This would allow for a prioritization of fire risk reduction in places where risks are highest – roaded areas, managed forests, and the wildland-urban interface, which is consistent with the scientific literature on fire risk reduction prioritizations (see DellaSala et al. 2004).

We note that post-fire salvage logging in IRAs is of particular importance to Oregon IRAs and roadless policy in general, as exemplified by the Forest Service mismanagement of Kalmiopsis roadless areas in response to the Biscuit fire. The scientific literature consistently has shown significant cumulative impacts associated with post-fire logging, including soil erosion (Beschta et al. 2004), aquatic ecosystem impacts (Karr et al. 2004), loss of legacy trees (Lindenmayer et al. 2004), and spread of invasive species (Noss and Lindenmayer 2006). Further, post-fire logging has been shown to elevate hazardous fuels in the Biscuit area (Donato et al. 2006), contributing to severe fires during reburn (Thompson and Spies 2006). Therefore, we encourage the governor to recommend that the Forest Service preclude post-fire logging activities in roadless areas as they are inconsistent with the ecological values of these areas and post-fire recovery needs.

ECONOMIC AND RECREATIONAL VALUES OF ROADLESS VALUES

Robust economic growth and IRAs - no longer is timber the driving force behind regional economies in the Pacific Northwest that are much more diversified today than during the boom and bust post-war economies that were dominated by the extraction industries. This has been widely acknowledged by many resource economists as summarized by

Power (2006) and noted by Charnley (2006). According to these researchers, many western communities are at a unique crossroads where achieving ecological sustainability is now possible through reduced harvest levels on federal lands coupled with the added benefits of protecting watersheds and planning for explosive population growth. As an example, we provide information from a case study of roadless areas and protected lands in the West, including Oregon.

Oregon Economic Analysis: Case Study in Economic Value of Protected Areas (excerpted from Southwick and Associates and peer-reviewed by resource economists)

Southwick Associates (2000) tracked several economic indicators from 1969 to 1997 across 410 western counties including nine counties in Oregon, concentrating mainly on the economic impact of protected areas, including National Parks, National Monuments, wilderness, and roadless areas.

In general, their research indicates that protecting wilderness, roadless areas, National Parks, and National Monuments is not devastating to regional and local economies. Using measures of income, employment, and the location and extent of roadless areas and other protected areas, they demonstrated that environmental protection does not come at the expense of either income or employment growth in Oregon or in counties of six western states as follows.

- In Oregon, the percentage of total income generated by extractive industries fell from 13.5% in 1969 to 5.1% in 1997 –while extractive industries were once drivers of the regional economic bus they now are somewhere in the middle (see Niemi et al. 1999a,b).
- Total employment in Oregon grew more than 10 times faster than jobs in extractive industries.
- Counties that are relatively dependent on extractive industries have slower income growth.

- Economic sectors benefiting from the presence of environmental amenities are the new source of economic security in the region (also see Niemi et al. 1999a,b).

The presence of wilderness, National parks, National monuments, and roadless areas does not come at the expense of economic growth. On the contrary, counties containing protected areas grew faster.

- Employment growth in non-metropolitan counties with more than 10% wilderness was more than 1.6 times faster than employment growth in non-metropolitan counties without wilderness.
- Employment growth in non-metropolitan counties with more than 10% roadless areas was 1.4 times faster than employment growth in non-metropolitan counties without roadless areas.
- Of the nine Oregon counties analyzed, income growth rates in seven increased after wilderness designation.
- There is no indication that the presence of roadless areas, wilderness, National Parks, and National Monuments was correlated with slower income growth or slower employment growth.
- The presence of environmental amenities and protected areas promote income growth and employment growth.
- The presence of protected areas (wilderness, National parks, National monuments) and roadless areas does not limit economic growth in western states – on the contrary, these areas are associated with both income and employment growth.
- Even though the employment and income in metropolitan counties grew relatively rapidly during the study period, non-metropolitan counties containing wilderness grew faster than the average western county. Employment in rural counties containing more than 10% wilderness grew 1.6 times faster than all western counties between 1969-1997. Income in rural counties containing more than 10% wilderness grew 1.3 times faster than all western counties between 1969-97.

The positive relationship between economic growth and the presence of environmental amenities holds true for roadless areas, wilderness, national parks, and national monuments. While we recognize that this analysis does not definitively prove that protected areas cause economic growth, it does show that they are indeed associated with growth. In addition, the analysis supports the well-publicized notion that in the rural west, economic security is associated with counties that no longer rely on the environment as a source of raw materials for export, but instead use the environment as a magnet to attract tourism, retirees, and small businesses.

As more studies of the economics of protected areas emerge, it is becoming increasingly apparent that a key to economic prosperity is protection (not degradation) of Oregon's national forests. Coupled with the value that these areas provide in ecosystem services, open space, hunting and angling (see below), and quality of life amenities, a strategy that protects roadless areas is an investment both in sound conservation and sustainable economics. Moreover, when one considers the negative spill over costs of logging and road building in these areas in terms of degraded resource values and ecosystem services (see Niemi et al. 1999a,b), the best strategy for roadless areas is to protect them from exploitation. Restoring fish runs and protecting watersheds, particularly those tied to county and state water municipalities, are wise investments in the economic and biological future of Oregon's national forests.

Roadless areas and outdoor recreation – Oregon's roadless areas provide exceptional recreational opportunities (hiking, camping, fishing, hunting, horseback riding, etc). According to the Forest Service, the Mt. Hood National Forest is only currently able to supply 63% of the demand for back country recreation (Strittholt et al. 2006a). By 2040, the Forest Service estimates they will only be supplying 16% of the public's need for back country recreation while still meeting the demand for developed recreation. As an example, roadless areas such as the Elk River on the Siskiyou National Forest contain one of the most productive wild salmon fishery in Oregon and possibly the lower 48 states. This area is vital to tourism and fishing based economies of Port Orford, which has supported roadless protections in recognition of the outstanding fishery on the Elk

River. Studies in Oregon and elsewhere by Trout Unlimited (2004a,b) have recognized the economic importance of this backcountry experience to anglers and hunters.

Key Recommendations –we suggest that the governor include economic figures on the importance of protected areas (including roadless areas) to Oregon's economy (as for example provided by Southwick Associates 2000) and the growing demand and importance of backcountry experiences to hunters and anglers, which may exceed $1 billion annual to Oregon's economies across all lands (roadless values are a subset of this amenity-based economic engine).

CLOSING COMMENTS

While Oregonians have a history of supporting conservation measures, Oregon has lagged behind other states in protecting its natural heritage with only 5.3% of its lands in protection as compared with neighboring states such as Nevada (7.1%), California (19.5%), Idaho (10.9%), and Washington (12.9%; DellaSala et al. 2001). A commitment to roadless conservation would add approximately 3% to Oregon's protected lands. Nevertheless, the ecological value of these lands goes beyond their percentage-based additions to the state's protected lands because roadless areas make important contributions to robust economic growth, open space amenities, clean drinking water, fish and wildlife conservation, and hunting and angling experiences.

We applaud the governor for his strong leadership on submitting a petition on roadless areas and request that this petition include: (1) protection for all ~2 million acres of Oregon's IRAs; (2) a request to the Forest Service to inventory and then include the 2.6 million acres of unroaded lands in its inventory database for roadless areas (based on a prioritization process of proximity to IRAs and drinking water supplies); (3) a request for prohibitions on road building (including temporary roads) to access for sites for fuels treatment and future mining and grazing claims, and additional restrictions on post-fire logging in roadless areas; and (4) a request to prioritize fire risk reduction treatments on national forest lands to where they are needed the most: the wildland-urban interface and heavily managed and roaded forest lands that require additional federal resources to reduce the risk of uncharacteristically severe fires to communities and nonfederal landowners.

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