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Federal Land Management Serves the Public Interest Better than Private Land Management

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Those seeking to increase logging on federal forestland or transfer control of federal lands to non-federal interests often argue that such transfers will result in higher outputs of timber. In making their case, proponents of increased logging often make misleading claims that public values and ecosystem services will also improve. They are wrong.

Increased logging comes at a cost. Studies comparing land management on federal and non-federal lands consistently show that federal lands are ecologically superior and provide better ecosystem services, compared to non-federal lands. Federal public lands generally have lower rates of disturbance and lower road densities resulting in higher water quality, better habitat for fish and wildlife, greater contributions to recovery of endangered species, greater carbon storage, less hazardous fuel profiles, and better recreation and amenity values.

Furthermore, the relatively greater provision of public values on federal public lands helps mitigate for the degradation of public values on non-federal lands that are managed for primarily for private profit.

On the left, a square mile section of private industrial timberlands, almost entirely clearcut. On the right, a partially logged section of federal public forestlands. Located in the in the McKenzie River watershed in Lane County. The darker color and coarser texture signifies older forest. (Google Maps).

The following survey of analyses show the many ways in which management of federal lands better serve the public interest compared to non-federal land management.

1. Streams flowing through federal forestlands exhibit higher water quality than streams flowing through non-federal timberlands.

   Private non-industrial sites showed the lowest overall biological condition … . Federal and state forest sites showed macroinvertebrate assemblages preferring colder water and fewer fines than observed on private sites … Overall water quality was highest for federal sites … Private non-industrial sites showed the lowest water quality … [1]

2. Watersheds with more private lands have higher road densities and degraded watershed conditions compared to watersheds with more federal lands.

   [N]onfederal watersheds had the lowest [watershed] condition scores of the land use allocations. … Watersheds that contained more than 50 percent nonfederal lands had the highest road densities of the watersheds. … Sixty-two percent of the [non-federal] watersheds had less than 30 percent of the riparian area containing large conifers. … More acres of timber were harvested on nonfederal watersheds than in any of the other land use categories. In general, watersheds that are predominantly nonfederal have the lowest [watershed] condition scores of all of the watersheds, notably worse than predominantly federal watersheds. … [2]

3. Weak rules for protection of riparian areas on non-federal lands results in severely reduced stocking of large trees and inadequate future recruitment of wood to streams.

   As part of the Oregon Plan … Surveys of about 2,000 stream miles on non-Federal lands show there are fewer pieces of large wood in the stream channels than specified in the current Oregon benchmarks. … 94 percent of the riparian areas [on non-federal forest lands] (a potential source of future large wood in streams) are themselves ranked as poor with regard to the presence of large conifers (ODF 1999). We conclude that Oregon streams and adjacent forests currently contain much lower levels of larger wood than they did historically, and under the current management practices, the potential for recruitment will not result in its replenishment.[3]

4. Adverse effects from non-federal forest management are a continuing impediment to recovery of Pacific salmon.

   Burnett et al. (2007) suggested that widespread recovery of coho salmon in the OC Coho Salmon ESU is unlikely unless habitat improved in areas of high intrinsic potential on private lands. The effects of timber harvest on fish and habitat is likely most pronounced on private and state lands. Requirements for management of

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[1] Hubler, S., Miller, S., Merrick, L., Leferink, R., and A. Borisenko. 2009. High Level Indicators of Oregon's Forested Streams. DEQ09-LAB-0041-TR. Oregon DEQ Laboratory and Environmental Assessment Division. June 2009. http://egov.oregon.gov/ODF/indicators/docs/High_Level_Indicators_DEQ09_LAB_0041_TR.pdf

[2] Gallo, K., Lanigan, S.H., Eldred, P., Gordon, S.N., and C. Moyer. 2005. Northwest Forest Plan—the first 10 years (1994–2003): preliminary assessment of the condition of watersheds. Gen. Tech. Rep. PNW-GTR-647. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 133 p. http://www.fs.fed.us/pnw/publications/pnw_gtr647/pnw-gtr647c.pdf

[3] Independent Multidisciplinary Science Team (IMST). 1999. Recovery of Wild Salmonids in Western Oregon Forests: Oregon Forest Practices Act Rules and the Measures in the Oregon Plan for Salmon and Watersheds. Technical Report 1999-1 to the Oregon Plan for Salmon and Watersheds, Governor's Natural Resources Office, Salem, Oregon. http://www.krisweb.com/biblio/gen_ognro_imst_1999_1.pdf

riparian zones on these lands are less than on federal lands. Current forest practice regulations reduce the size of the streamside riparian area to less than that needed to maintain the full suite of ecological processes provide by riparian areas and allows for the removal of trees from within this zone, which further reduces ecological effectiveness. Additionally, there is no requirement for protection on small intermittent streams, which are important sources of wood (Reeves et al. 2003, May and Gresswell 2003, Bigelow et al. 2007), on private lands. These streams are given consideration on a portion of each stream on state lands. Botkin et al. (1995) and the IMST (1999) found these regulations to be insufficient to improve or recover habitat that is currently degraded.

The recent availability of Landsat images, along with the development of tools for analysis, allowed a comprehensive, uniform picture of human disturbance patterns that was previously unavailable. This analysis showed that disturbance has been widespread in the ESU, that some basins experienced much higher disturbance than others, that rates of disturbance are relatively constant, and that the most intense disturbance has moved from federal to private lands, presumably in response to policy changes.

... current policies guiding the management of riparian areas on state and private lands have limited or no management requirements for this important potential source of wood.[4]

5. The cumulative effects of extensive logging on non-federal lands in the Oregon Coast Range is negating watershed restoration on federal lands.

In summary, habitat complexity across the ESU did not improve over the period of consideration (1998--2008). Road densities are high and affect stream quality through hydrologic effects like runoff and siltation and by providing access for human activities. ... Stream habitat restoration activities may be having a short-term positive effect in some areas and passive efforts to restore landscape condition may be effective on much longer time periods than is considered here, but the quantity of impaired habitat and the rate of continued disturbance appears at this time to be outstripping the efforts to restore complex instream habitat.[5]

6. Streams on federal lands are more likely to be resilient to climate change and more likely to provide cool water refugia for salmonids.

Streams on federal public lands can be expected to be somewhat more resilient to climate change conditions and may provide a climate refuge for cool water dependent species. This is because land management practices on USDA Forest Service lands are likely to continue to have a less detrimental impact on stream systems than the generally more intense practices on private and state timber lands.[6]

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[4] Stout, H.A., P.W. Lawson, D. Bottom, T. Cooney, M. Ford, C. Jordan, R. Kope, L. Kruzic, G.Pess, G. Reeves, M. Scheuerell, T. Wainwright, R. Waples, L. Weitkamp, J. Williams, and T. Williams. 2011. Scientific conclusions of the status review for Oregon Coast coho salmon (*Oncorhynchus kisutch*). Draft revised report of the Oregon Coast Coho Salmon Biological Review Team. NOAA/NMFS/NWFSC, Seattle, WA. http://www.nwr.noaa.gov/publications/status_reviews/salmon_steelhead/coho/occ-review-2011.pdf

[5] Id.

[6] Doppelt, B., Hamilton, R., Deacon-Williams, C., Koopman, M., and S. Vynne 2009. Preparing for Climate Change in the Upper Willamette River Basin of Western Oregon - Co-Beneficial Planning for Communities and Ecosystems. Climate Leadership Initiative. March 2009. http://comm.uoregon.edu/files/pmr/uploads/UpperWillamette_REPORT.pdf

7. Old-growth forest attributes are more common on federal lands than on non-federal lands.[7]

   On federal lands, 1.7 percent of the CVS inventory plots exceeded all five of the PNW-447 thresholds evaluated, while 7.0 percent exceeded at least four of the five thresholds

   …

   Old-growth forest attributes were less common on nonfederal lands than on federal lands. None of the inventory plots met all five of the PNW-447 thresholds, while 1 out of 271 (0.4 percent) met four and 4.4 percent met three.

8. Forest practices on non-federal lands do not meet the needs of wildlife associated with mature forests. Short-rotation clearcutting is an impediment to conservation of species associated with mature forests.

   [E]xisting conservation provisions and forestry regulations generally do not fully address the needs of many species associated with mature coniferous forests. … many forest birds use snags, a limited resource in managed forests, for breeding habitat (Bunnell and Kremsater 1990). … Managed second-growth conifer forests typically contain many fewer snags than older forests … Most modern timber harvest practices include pre-commercial and/or commercial thinning, which are designed to increase tree vigor by reducing competition for sunlight and water; thinning generally reduces suppression mortality. These practices, as applied in 45-55-year harvest rotations, reduce the likelihood that large snags will be retained for the entire rotation or to successive stands (Wilhere 2003). … The modern forest management paradigm in west-side forests of Washington and Oregon has changed little over the last half-century (DeBell and Curtis 1993). Forestry practices during this period have emphasized short rotations, clearcut harvesting, and replanting. … The general lack of meaningful conservation value being provided for species associated with mature forest structures on non-federal lands is an impediment to Partners in Flight conservation planning in the Pacific Northwest and elsewhere.[8]

9. Projections of future habitat for terrestrial vertebrates of conservation concern across the Interior Columbia Basin show that —

   Environmental index scores among all 31 species were about 10 to 15 percent higher on FS/BLM lands versus all lands under all alternatives. These results suggest that population outcomes would be more favorable for these species if conditions on FS/BLM lands existed on all lands in the Basin.[9]

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[7] Gray, A.N., Monleon, V.J., and T.A. Spies. 2009. Characteristics of remnant old-growth forests in the northern Coast Range of Oregon and comparison to surrounding landscapes. Gen. Tech. Rep. PNW-GTR-790. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 45 p. http://www.fs.fed.us/pnw/pubs/pnw_gtr790.pdf

[8] Buchanan, J.B. 2005. Challenges of Avian Conservation on Non-Federal Forests in the Pacific Northwest. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. 2005. http://www.fs.fed.us/psw/publications/documents/psw_gtr191/psw_gtr191_0419-0428_buchanan.pdf

[9] USDA/USDI 2000. Scientific Analysis Group – Draft Effects of SDEIS Alternatives on Selected Terrestrial Vertebrates of Conservation Concern within the Interior Columbia River Basin Ecosystem Management Project. http://icbemp.gov/sag/sagzips.shtml

10. The Marbled Murrelet Recovery Plan states —

> *[V]irtually all remaining potential habitat in the [Oregon] Coast Range is on Federal lands. ... Among all Pacific Northwest birds, the marbled murrelet is considered to be one of the most sensitive to forest fragmentation (Hansen and Urban 1992).*[10]

11. Suitable nesting habitat for the marbled murrelet is expected to increase on federal lands as a result of conservation efforts under the Northwest Forest Plan. Similar habitat improvements are not expected on non-federal lands.

> *[Marbled murrelet] habitat losses in the past decade were likely greater than previously estimated, notably on non-Federal lands.*[11]

12. The prospects for marbled murrelet habitat are far better on federal land than non-federal land.

> *[Marbled murrelet] [n]esting habitat loss and modification since listing have been greatly reduced on Federal lands, which encompass 91% of the murrelet habitat, due to the adoption of the NWFP in 1994. On private lands, threats from habitat loss have likely remained the same in Oregon.*[12]

13. On non-federal lands, fragmentation of forest habitat is high and spotted owl densities are low compared to federal lands.

> *Fragmentation of natural forest is much more acute outside of the national forests.*
> *...*
> *Forsman (1989) found that spotted owl densities were extremely low in the northern Oregon Coast Range where young managed forests predominate. Densities there were 5-18 times lower than in landscapes composed of natural mature and old-growth forest.*[13]

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[10] USFWS 1997. Final Recovery Plan for the Marbled Murrelet. http://www.fws.gov/arcata/es/birds/MM/documents/Recovery%20Plan%20for%20the%20Threatened%20MAMU%20in%20CA,%20OR%20and%20WA%201997-optimized.pdf The FWS has also said "Based on the current estimate, about 91% of murrelet suitable habitat is located on Federal land; State, County, and private lands account for about 8%; and Tribal lands contain about 1% (McShane et al. 2004)." USFWS 2004. 5-Year Review of the Status of the Marbled Murrelet.

[11] USFWS 2009. 5-Year Review of the Status of the Marbled Murrelet. U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, Lacey, WA. June 12, 2009. http://www.fws.gov/arcata/es/birds/MM/documents/Mamu2009_5yr_review%20FINAL%2061209.pdf

[12] McShane, C., T. Hamer, H. Carter, G. Swartzman, V. Friesen, D. Ainley, R. Tressler, K. Nelson, A. Burger, L. Spear, T. Mohagen, R. Martin, L. Henkel, K. Prindle, C. Strong, and J. Keany. 2004. Evaluation report for the 5-year status review of the marbled murrelet in Washington, Oregon, and California. Unpublished report. EDAW, Inc. Seattle, Washington. Prepared for the U.S. Fish and Wildlife Service, Region 1. Portland, Oregon. http://web.archive.org/web/20100313172321/http://www.earthjustice.org/library/reports/MAMU_EDAW.pdf

[13] Hansen, A. J., Spies, T. A., Swanson, F. J., and T.L. Ohmann. 1991. Conserving biodiversity in managed forests - Lessons from natural forests. BioScience 41(6):382- 392. http://www.montana.edu/hansen/documents/downloadables/hansenetal1991.pdf

14. Spotted owls are declining faster on non-federal lands than on federal lands managed under the Northwest Forest Plan.

    Owl populations have continued to decline at around 3% per year, although the decline is slower on lands subject to the NWFP than on private timber lands (Anthony et al. 2006).[14]

15. Federal lands provide better spotted owl habitat. Private lands have weak rules, degraded habitat, and inadequate monitoring. Comparing characteristics of spotted owl nest sites on federal and non-federal land —

    total basal area of live trees and number of canopy layers were greater at sites on federal than non-federal (state and private) lands. … [T]he type of harvest on non-Federal lands has resulted in a different type of habitat configuration that is often highly fragmented and generally of younger age (Richards et al. 2002, Staus et al. 2002). … Monitoring habitat changes on non-Federal land does not appear to be sufficient to determine trends. This may be particularly important in Oregon where state regulations provide minimal protection of suitable habitat. … … Loss of habitat due to timber harvest appears to have been generally reduced [on federal lands], and current timber harvest is now primarily occurring on non-federal lands.[15]

16. Federal lands provide a disproportionate amount of the suitable habitat for spotted owls.

    [P]rivate lands constitute about 45 percent of the spotted owl's range and provide roughly 35 percent of the rangewide habitat value (RHS), whereas the NWFP reserve network provides 40 percent of rangewide habitat value on 30 percent of the area.[16]

17. Spotted owls do better on federal land where there is more suitable habitat.

    [Spotted owl] [r]ecruitment was higher on federal lands where the amount of suitable owl habitat was generally highest."[17]

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[14] Carroll, C., Odion, D.C., Frissell, C.A., Dellasala, D.A., Noon, B.R., and R. Noss. 2009. Conservation implications of coarse-scale versus fine-scale management of forest ecosystems: Are reserves still relevant? http://www.klamathconservation.org/docs/ForestPolicyReport.pdf *citing* Anthony R.G., Forsman E.D., Franklin A.B., Anderson D.R., Burnham K.P., White G.C., Schwarz C.J., Nichols J., Hines J.E., Olson G.S., Ackers S.H., Andrews S.L., Biswell B.L., Carlson P.C., Diller L.V., Dugger K.M., Fehring K.E., Fleming T.L., Gerhardt R.P., Gremel S.A., Gutiérrez R.J., Happe P.J., Herter D.R., Higley J.M., Horn R.B., Irwin L.L., Loschl P.J., Reid J.A., and S.G. Sovern. 2006. Status and trends in demography of northern spotted owls, 1985-2003. Wildlife Monographs 163:1-47.

[15] Courtney, S.P., Blakesley, J.S., Bigley, R.E., Cody, M.L., Dumbacher, J.P., Fleischer, R.C., Franklin, A.B., Franklin, J.F., Gutiérrez, R.J., Marzluff, J.M., and L Sztukowski. 2004. Scientific Evaluation of the Northern Spotted Owl. Sustainable Ecosystems Institute. Portland, Oregon. September 2004. http://www.sei.org/owl/finalreport/OwlFinalReport.pdf

[16] USFWS 2011. Draft Revised Recovery Plan For The Northern Spotted Owl. Draft Appendix C: Development of a Modeling Framework to Support Recovery Implementation and Habitat Conservation Planning. http://www.fws.gov/oregonfwo/Species/Data/NorthernSpottedOwl/Recovery/Library/Documents/NSORPDraftAppendixC.pdf

[17] Forsman, E.D., Anthony, R.G., Dugger, K.M., Glenn, E.M., Franklin, A.B., White, G.C., Schwarz, C.J., Burnham, K.P., Anderson, D.R., Nichols, J.D., Hines, J.E., Lint, J.B., Davis, R.J., Ackers, S.H., Andrews, L.S., Biswell, B.L., Carlson, P.C., Diller, L.V., Gremel, S.A., Herter, D.R, Higley, J.M., Horn, R.B., Reid, J.A, Rockweit, J., Schaberl, J., Snetsinger, T.J., and S.G. Sovern. Population Demography of Northern Spotted Owls. draft manuscript 17 December 2010. *in press* No. 40 in Studies In Avian Biology. Cooper Ornithological Society. http://www.reo.gov/monitoring/reports/nso/FORSMANetal_draft_17_Dec_2010.pdf

18. More of the federally managed landscape is within the historic range of variability compared to the non-federal landscape. Federal lands have lower levels of uncharacteristic soil disturbance. Snag habitat is more degraded on non-federal lands.

    Changes in disturbance regimes, especially fire suppression, timber management practices and livestock grazing over the last 100 years have caused successional change and increased HRV departure to moderate and high levels across the entire [Interior Columbia] Basin … Much of the land affected by high levels of HRV departure is in agricultural, grazing, urban and other development outside FS/BLM-administered areas.

    …

    … lack of large snag improvement at the basin level most likely was a reflection of the lack of snag requirements and management restoration efforts on non-FS/BLM lands.[18]

19. Federal lands have better snag habitat than non-federal lands, but federal lands still need to do more to make up for the lack of snags on non-federal lands.

    Snag abundance on nonfederal lands was inadequate …

    Large remnant snags provided much of the snag habitat for cavity-nesters in early- to midsuccessional stands. This habitat will be lost gradually and may not be replaced using current timber management practices. If nonfederal lands are going to contribute habitat for snag-using wildlife, greater attention is needed to retaining large snags and live trees when thinning and regenerating stands. On federal lands, management for viable populations of cavity-nesting wildlife needs to more fully consider snag habitat conditions on adjacent land in determining needed habitat quantities, characteristics, and placement that best meet management objectives.[19]

20. Federal lands provide disproportionately higher biomass compared to private lands which indicates both better habitat and higher carbon storage.

    Within ecoregions, mean live and dead biomass were usually higher on public lands, primarily because of the younger age class distribution on private lands … Private land accounts for 35% of live biomass (and 44% of the forested area)… Mean stand age of publicly owned forests is 50–150 years older than privately owned forests and mean carbon stores are 30–50% higher.[20]

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[18] Hemstrom, M. A., Hann, W. J., Gravenmier, R. A., and J.J. Korol. 2000. Draft landscape effects analysis of the SDEIS alternatives. In Draft Science Advisory Group effects analysis for the SDEIS alternatives, internal working draft, (Draft, March 2000), Quigley, T. M., tech. ed. http://www.icbemp.gov/sag/sagzips.shtml

[19] Ohmann, J.L., McComb, W.C., and A.A. Zumrawi. 1994. Snag Abundance For Primary Cavity-Nesting Birds On Nonfederal Forest Lands In Oregon And Washington Wildl. Soc. Bull. 22:607-620, 1994 619 http://www.fs.fed.us/pnw/pubs/journals/pnw_1994_ohmann001.pdf

[20] Hudiburg, T., Law, B., Turner, D.P., Campbell, J., Donato, D., and M. Duane 2009. Carbon dynamics of Oregon and Northern California forests and potential land-based carbon storage. Ecological Applications, 19(1), 2009, pp. 163–180. http://terraweb.forestry.oregonstate.edu/pubs2/Hudiburg2009EA.pdf

21. Federal lands store more carbon per acre compared to private lands.

    National forests contain an average of 22.8% more carbon per forested acre than private land.[21]

22. The dense, young forests on non-federal forest land create hazardous fuel conditions and increased fire hazard compared to federal lands that have more mature forests and more resilient fuel conditions.

    Fire severity, hazard, and resiliency can generally be equated to broad descriptions of vegetation conditions. … As a young forest develops into a mature forest, the fire severity drops from high to low. . As a mature forest develops into a structurally complex forest, ground fuels, surface fuels and ladder fuels increase, and fire severity changes to a mixed severity rating. … Under moderate and extreme conditions, the primary source of high severity fire would be in stand establishment and young forests that consist of even aged plantations.[22]

23. Federal lands provide relatively higher amenity values and enhance the value of adjacent private lands, compared to non-federal lands.

    Amenity values of Federal land in resource land uses can enhance the value of nearby properties … [23]

24. Federal lands offer more opportunities for public involvement which leads to better decisions and greater public support for management.

    Forests may be managed more sustainably if citizens have responsibility for their use, management, and protection. If citizens are given an opportunity to identify areas of interest and concern about forests, they are more likely to support the management of forests and the principles of sustainability. Public participation processes can foster practical and political support for sustainable management. Access to timely, complete, and accurate information about forests, forest resources, and socioeconomic trends will enhance those participatory processes and promote better forest management. … Federal agencies all provide some level of opportunity for public participation in policy and decision making, and varying levels of access to information. … Nonindustrial private owners do not need to consult other interests or owners in making decisions or release information publicly …[24]

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[21] USDA Forest Service 2010. Climate Change Advisor's Office. U.S. Forests and Carbon: Some Important Facts. http://www.docstoc.com/docs/127394804/US-Forests-and-Carbon-Some-Important-Facts-Climate-Change-doc

[22] USDI/BLM 2008. Western Oregon Plan Revision FEIS p 4-805. http://www.blm.gov/or/plans/wopr/final_eis/index.php

[23] Azuma, D.L., Herstrom, A.A., Lettman, G.J., McKay, N., and T.J. Robinson. 2009. Forests, Farms, & people: Land Use Change on Non-Federal Land in Oregon 1974-2005. USDA Forest Service, Oregon Department of Forestry. http://www.oregon.gov/ODF/RESOURCE_PLANNING/docs/Low_Res_Forest_farms_8_9_09.pdf

[24] USDA Forest Service 2011. National Report on Sustainable Forests – 2010. FS-979. June 2011. http://www.fs.fed.us/research/sustain/docs/national-reports/2010/2010-sustainability-report.pdf