

References Cited

- Agee, J.K. 1989.** Wildfire in the Pacific West: A Brief History and Implications for the Future. *In: Proceedings of the Symposium on Fire and Watershed Management.* USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. General Technical Report PSW-109. Berkeley, CA. pp. 11-16.
- Alexander, E.B. 1988.** Strategies for Determining Soil-Loss Tolerance. USDA Forest Service. Juneau, AK.
- Allison, B. and B. Woodbridge. 1993.** Landscape-level Analysis of Habitat Selection by Nesting Northern Goshawks in the Southern Cascades: A Preliminary Analysis. Klamath National Forest. Unpublished Report.
- Amaranthus, M.P., R.M. Rice, N.R. Barr and R.R. Ziemer. 1985.** Logging and Forest Roads Related to Increased Debris Slides in Southwestern Oregon. *Journal of Forestry*, Vol. 83, No. 4, pp. 229-233.
- Anderson, M.V. and R.L. Pasquinnelli. 1983.** Oak Woodland Resource Assessment for Multiple-Use Management in D.B. Hannaway (ed). *Foothills for Food and Forests.* Timber Press. Beaverton, OR.
- Assman, E. 1970.** The Principles of Forest Yield Study (Trans. by S.A. Cardiner). Pergamon Press. New York, NY. 506 pp.
- Austin, K.A. 1993.** Habitat Use and Home Range Size of Breeding Northern Goshawks in the Southern Cascades. Unpublished M.S. Thesis. Oregon State University, Corvallis, OR.
- Baldwin, K. and J. de la Fuente. 1986.** Developing Strategy for Landslide Management in Forested Mountainous Terrain Considering Decade-scale Climate Variation. (abs.) in Association of Engineering Geologists Annual meeting.
- Bedrossian, T.L. and J.A. Sowma. 1991.** Earthquake Damage in Soquel Demonstration State Forest, Santa Cruz County, CA.
- Bennett, J.H. 1979.** Fault Creep Measurement. California Division of Mines and Geology.
- Bisson, P.A. No date.** Importance of Identification of Limiting Factors in an Evaluation Program, Weyerhaeuser Company. Tacoma, WA.
- Bloom, A.L. 1991.** A Systematic Analysis of Late Cenozoic Landforms. Second Edition.
- Bloom, P.H. 1980.** The Status of Swainson's Hawks in California. CDFG, Federal Aid in Wildlife Restoration Project W-54-R12. 42 pp.
- Boothe, D. 1991.** Personal communication, Klamath National Forest.
- _____ and Dr. A. Taylor, 1991.
- Buck, S., C. Mullis, and A. Mossman. 1983.** Final Report, Corral Bottom - Hayfork Bally Fisher Study. USDA Forest Service. San Francisco, CA.
- Burns, R.M. (Tech. Compiler). 1983.** Silvicultural Systems for the Major Forest Types of the United States, Revised, Dec. 1983. USDA Forest Service, Agriculture Handbook No. 445. 191 pp.
- California Department of Fish and Game. 1987.** Five Year Status Report, Siskiyou Mountain Salamander.
- California Department of Forestry and Fire Protection. 1988.** Forest and Rangeland Resources Assessment Program, California's Forests and Rangelands: Growing Conflict Over Changing Uses.
- Chamberlin, T.W., R.D. Harr and F.H. Everest. 1991.** Timber Harvesting, Silviculture and Watershed Processes *In: W.R. Meehan (ed.) Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats.* American Fisheries Society Special Publication 19. Bethesda, MD.
- Chen, G. 1992.** Use of Basin Survey Data in Habitat Modeling and Cumulative Watershed Effects Analysis, FHR Currents #8. USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. Arcata, CA.
- Countryman, C.M. 1955.** Old Growth Conversion also Converts Fire Climate. Pages 158-160 *In: Proceedings of Society of American Foresters Meeting.*
- _____. 1971. This Humidity Business: What is It All About and Its Use in Fire Control? USDA Forest Service. Pacific Southwest Forest and Range experiment Station. Berkeley, CA. 15 pp.
- Crandell, D.R. and D.R. Nichols. 1987.** Volcanic Hazards at Mount Shasta, California. USGS, Department of Interior.
- Crocker-Bedford, D.C. 1990.** Goshawk Reproduction and Forest Management. *Wildlife Society Bulletin.* 18(3):262-269.
- Daniel, T. W., J.A. Helms and F.S. Baker. 1979.** Principles of Silviculture, Second Ed. McGraw-Hill. 500 pp.
- Davis, F.W. and D.M. Stoms. 1991.** Gap Analysis of Biodiversity in California. *In: Proceedings of the Symposium on Biodiversity of Northwestern California.* October 28-30. Santa Rosa, CA. pp. 23-29.
- de la Fuente, J. and P. Haessig. 1993.** Salmon Sub-basin Sediment Analysis. Final report prepared for USFS and USFWS Interagency Agreement.
- Department of Finance, Population and Research Unit. 1986.** Projected Total Population of California Counties.

References Cited

- Detrich, P. and B. Woodbridge. (In press). Territory Fidelity, Mate Fidelity and Movements of Colormarked Northern Goshawks in the Southern Cascades of California. *Studies in Avian Biology*.
- Dismeyer, G.E. and G.R. Foster. 1984. A Guide for Predicting Sheet and Rill Erosion on Forest Land. Technical Publication R8-TR6, USDA Forest Service.
- Fortmann, L. et al. 1990. The Human Costs of the California Forestry Crisis.
- Franklin, J.F. 1989. Toward a New Forestry. *American Forests*, Nov./Dec., pp. 37-44.
- Freel, M. 1991. A Literature Review for Management of the Marten and Fisher on National Forests in California. Unpublished document. USDA Forest Service.
- Gordon, D.T. 1982. Even-aged vs. Uneven-aged Management in Eastside Pine. In: Robson, T.F. and R.B. Standiford (eds.) Management of the Eastside Pine Type in Northeastern California, Proceedings of a Symposium, June 15-17, 1982. SAF 83-06. Susanville, CA. pp. 54-58.
- Gray, D.H. and W.F. Megahan. 1981. Forest Vegetation Removal and Slope Stability in the Idaho Batholith. US Forest Service, Research Paper INT-271, 23 pp.
- Hall, J.D. and R.L. Lantz. 1969. Effects of Logging on the Habitat of Coho Salmon and Cutthroat Trout in Coastal Streams. Proceedings of Symposium of Salmon and Trout in Streams.
- Hall, P.A. 1984. Characterization of Nesting Habitat of Goshawks (*Accipiter gentilis*) in Northwest California. Unpublished M.S. Thesis, Humboldt State University, Arcata, CA. 70 pp.
- Hankin, D.G. and G.H. Reeves. 1988. Estimating Total Fish Abundance and Total Habitat Area in Small Streams Based on Visual Estimation Methods. *Canadian Journal of Fisheries and Aquatic Sciences*, Volume 45. pp. 834-844.
- Hansen, C. and F. Deloney. 1980. Socioeconomic Overview Klamath National Forest Area of Influence.
- Hargis, C., C. McCarthy and R.D. Perloff. (In press). Home Ranges and Habitats of Northern Goshawks in Eastern California. *Studies in Avian Biology*.
- Hargis, C.D. and D. McCullough. 1984. Winter Diet and Habitat Selection of Marten in Yosemite National Park. *Journal of Wildlife Management*, Volume 48(1). pp. 140-146.
- Harr, R.D. and R.A. Nichols. 1993. Stabilizing Forest Roads to Help Restore Fish Habitats: A Northwest Washington Example. *Fisheries*, Vol. 18, No. 4. April. pp. 18-22.
- Harris, L.D. 1984. The Fragmented Forest: Island Biogeography Theory and the Preservation of Biotic Diversity. University of Chicago Press. Chicago, IL. 211 pp.
- Hart, E.W., W.A. Bryant and T.C. Smith. 1983. Summary Report: Fault Evaluation Program, 1981-1982 Area (Northern Coast Ranges Region). California Department of Conservation, Division of Mines and Geology, OFR 83-10 SF.
- Hawkins, C. 1992. Cumulative Watershed Effects: An Extensive Analysis of Responses by Stream Biota to Watershed Management. Utah State University, Dept. of Fisheries and Wildlife and Watershed Science Unit. Logan UT.
- Helms, J.A. 1980. The California Region. Pages 391-446 In: Barrett, J.W. (ed.) *Regional Silviculture of the United States*, Second Ed. John Wiley & Sons.
- Higgins, P., S. Dobush and D. Fuller. 1992. Factors in Northern California Threatening Stocks With Extinction. Humboldt Chapter, American Fisheries Society. Unpublished Report. 25 pp.
- Hiserote, B. A. and J.O. Howard. 1978. California's Forest Industry, 1976. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station.
- House, R. and V. Crispin. 1989. Evaluation of Stream Rehabilitation Projects - Salem District (1981-1988). USDI Bureau of Land Management, Oregon Office. Tech. Note T/N OR-6, Portland, Oregon.
- Howard, J.O. 1984. California's Forest Product Industry: 1982. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station.
- Hubbell, P.M. and L.B. Boydstun. 1985. An Assessment of the Current Carrying Capacity of the Klamath River Basin for Adult Fall Chinook Salmon. CDFG. Unpublished Report.
- Hunt, H. and J. DiMartini. 1979. The Ecology and Taxonomy of *Vespericola karkorum* Talmadge, 1966, *Vespericola megasoma* Pilsbry, 1928 Near Orleans, California. Report for Six Rivers National Forest. Humboldt State University, Marine Lab. Trinidad, CA. 44 pp.
- Irwin, W. P. 1966. Geology of the Klamath Mountains Province. In: Bailey, E.H. (ed.) *Geology of Northern California*. California Division of Mines and Geology, Bulletin 190.
- Jimerson, T.M. 1990. Characteristics of Old-growth Forests in Northwest California. Paper presented at 1990 BLM/USFS Botanists and Ecologists Workshop. March 19. Monterey, CA.
- _____, and J.A. Fites. 1989. Preliminary Old Growth Definitions for Northwest California. USDA Forest Service, Eureka, CA. 118 pp.
- _____, B.B. Bingham, D. Solis and S. Macmeekan. 1991. Draft Ecological Definition for Old-Growth Douglas-fir/Tanoak/Madrone (Society of American Foresters type 234). USDA Forest Service, Pacific Southwest Region, San Francisco, CA. 20 pp.

- Johnson, K.N., J.F. Franklin, J.W. Thomas and J. Gordon. 1991. Alternatives for Management of Late-Successional Forests of the Pacific Northwest. A Report to the Agricultural Committee and the Merchant Marine and Fisheries Committee of the U.S. House of Representatives.
- _____, S. Crim, K. Barber, M. Howell and C. Cadwell. 1993. Sustainable Harvest Levels and Short-term Timber Sales for Options Considered in the Report of the Forest Ecosystem Management Assessment Team: Methods, Results and Interpretations.
- Kelsey, H.M. 1977. Landsliding, Channel Changes, Sediment Yield and Land Use in the Van Duzen River Basin, North Coastal California, 1941-1975. Ph.D., Geology, dissertation, U. C. Santa Cruz (also available as US Forest Service, Region 5, San Francisco, Earth Resources Monograph 3).
- _____, and M.A. Raines. 1991. Sediment Budget for the Grouse Creek Basin, Humboldt County, California. Department of Geology, Western Washington University. Bellingham, WA.
- Kirkpatrick, D. 1990. Environmentalism: the New Crusade. *Fortune*, February 12. pp 44-52.
- Klamath River Basin Fisheries Task Force. 1991. Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program. USFWS, Klamath Basin Office. Yreka, CA.
- Klamath River Technical Team. 1986. Recommended Spawning Escapement Policy for Klamath River Fall-Run Chinook. USFWS, Klamath Basin Office. Yreka, CA.
- Klock, G.O. 1979. Some Soil Erosion Effect on Forest Soil Productivity. From Determinants of Soil Loss Tolerance. American Society of Agronomy. Special Publication No. 45, 1982.
- Krumland, B. and W. McKillop. 1990. Prospects for Supply of Private Timber in California. University of California.
- LaFavore, M. 1986. The Radon Report. Rodale's New Shelter. pp. 29-34.
- Lee, R.G. 1990. Social and Cultural Implications of Implementing "A Conservation Strategy for the Northern Spotted Owl." College of Forest Resources, University of Washington.
- Mack, S. 1958. Geology and Groundwater Features of Scott Valley, Siskiyou County, California. US Geological Survey, Water Supply Paper No. 1462.
- Martin, R.E., J.B. Kauffman and J.D. Landsberg. 1989. Use of Prescribed Fire to Reduce Wildfire Potential. *In: Proceedings of the Symposium on Fire and Watershed Management*. USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. General Technical Report PSW-109. Berkeley, CA. pp. 17-22.
- Martin, S. 1987. The Ecology of the Pine Marten (*Martes americana*) at Sagehen Creek, California. Ph.D. Thesis. University of California, Berkeley. 222 pp.
- McCain, M., D. Fuller, L. Decker and K. Overton. 1990. Stream Habitat Classification and Inventory Procedures for Northern California. USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. Arcata, CA.
- McCutchan, M.H. No date. Climatic Features as a Fire Determinant. *In: Proceedings of the Symposium on the Environmental Consequences of Fire and Fuel Management in Mediterranean Ecosystems*. USDA Forest Service. General Technical Report WO-3. Washington, D.C.
- McDonald, J.A. 1979. Cultural Resource Overview, Klamath National Forest, Yreka, CA.
- Medford Water Commission. 1990. Big Butte Springs Watershed Geohydrologic Report, Vol. 1.
- Meehan, W.R. 1991. Influences of Forests and Rangeland Management on Salmonid Fishes and Their Habitats. USDA Forest Service. Bethesda, MD. pp. 191-205 and 483-518.
- Megahan, W.F., J.P. Potyondy and K.A. Seyedbagheri. 1992. Best Management Practices and Cumulative Effects From Sedimentation in the South Fork Salmon River: An Idaho Case Study. *In: Watershed Management; Balancing Sustainability and Environmental Change*, R.J. Naiman (ed). New York. Translated by J.E. Springer-Verlag. pp. 401-414.
- Miller, A. 1990. Great Grey Owl: Status on the Goosenest Ranger District, Klamath National Forest, CA. Unpublished report. 22 pp.
- Miller, D.C. 1980. Potential Hazards from Future Eruptions in the Vicinity of Mount Shasta Volcano, Northern California. US Geological Survey Bulletin 1503.
- _____. 1989. Potential Hazards from Future Volcanic Eruptions in California. US Geological Survey Bulletin 1847.
- Morford, L. 1984. 100 Years of Wildland Fires in Siskiyou County. Obtained from Klamath National Forest Library. 124 pp.
- Murphy, M.L. and J.D. Hall. 1981. Varied Effects of Clearcut Logging on Predators and Their Habitat in Small Streams of the Cascade Mountains, Oregon. *Can. Jnl. Fish. and Aqua. Sci.* 38. pp. 137-145.
- _____, J. Helfitz, S.W. Johnson, K.V. Koski and J.F. Thedinga. 1986. Effects of Clear-cut Logging With and Without Buffer Strips on Juvenile Salmonids in Alaska Streams. *Can. Jnl. Fish and Aqua. Sci.* 43. pp. 1521-1533.
- Nehlsen, W., J.E. Williams and J.A. Lichatowich. 1991. Pacific Salmon at the Crossroads: Stocks at

References Cited

- Risk from California, Oregon, Idaho, and Washington. *Fisheries* 16(2). pp. 4-21.
- Norris, R. M. and R.W. Webb. 1976.** Geology of California. University of California, Santa Barbara, CA.
- Northern California Region Quality Control Board. 1988.** Water Quality Control Plan for the Northern California Region. 106 pp.
- Noss, R.F. No date.** Natural Conditions and Context: Landscape Guidelines for Managing Klamath National Forest. Corvallis, OR.
- Nussham, R.A., Ph.D. 1974.** The Distributional Ecology and Life History of the Siskiyou Mountain Salamander, *Plethodon stormi*, in Relation to the Potential Impacts of the Proposed Applegate Reservoir on this Species. US Army Corps of Engineers, Portland Division.
- Olson, A.D. and J.R. West. 1990.** Evaluation of In-stream Fish Habitat Restoration Structures in Klamath River Tributaries, 1988-1989. USDA Forest Service, Klamath National Forest, Yreka, California.
- Pacific Fishery Management Council. 1992.** Preseason Report I: Stock Abundance Analysis for 1992 Ocean Salmon Fisheries. Pacific Fishery Management Council, Portland, OR.
- _____. 1992. Review of 1991 Ocean Salmon Fisheries. Pacific Fishery Management Council, Portland, OR.
- Palmer, Gary B. 1980.** Karuk World Renewal and Village Sites: a Cultural and Historic District. Klamath National Forest. Yreka, CA
- Paton, P.W.C., C.J. Ralph, H.R. Carter and S.K. Nelson. 1990.** Surveying Marbled Murrelets in Inland Forested Sites: A Guide. USDA Forest Service. General Technical Report PSW-120.
- Platts, W.S. and M.L. McHenry. 1988.** Density and Biomass of Trout and Char in Western Streams. USDA Forest Service, Intermountain Research Station. Gen. Tech. Rpt. INT-241.
- Ricker, W.E. 1972.** Hereditary and Environmental Factors Affecting Certain Salmonid Populations. *In:* R.C. Simon and P.A. Larkin (eds) *The Stock Concept in Pacific Salmon*. H.R. McMillan Lectures in Fisheries. University of British Columbia. pp. 19-160.
- Ruderman, F.K. and D. Warren. No date.** Production, Prices, Employment and Trade in Northwest Forest Industries. USDA Forest Service. Pacific Northwest Forest and Range Experiment Station, quarterly.
- Saunders, L.B. 1982.** Essential Nesting Habitat of the Goshawk (*Accipiter gentilis*) on the Shasta-Trinity National Forests, McCloud District. Unpublished M.S. Thesis. California State University, Chico.
- Schafer E. and M.S. Hobbs. 1979.** Selected Characteristics of Oregon's Population. *In:* M. Luana (ed.) Oregon Policy Choices, 1989. University of Oregon, Bureau of Governmental Research and Service. Eugene, OR.
- Scott, D.R.M. 1980.** The Pacific Northwest Region. *In:* Barrett, J.W. (ed.) *Regional Silviculture of the United States*, Second Edition. John Wiley & Sons. pp. 447-493.
- Sedell, J.R. 1988.** Draft Copy of A Proposal for Managing and Monitoring Streams for Fish Production. Pacific Northwest Forest and Range Experiment Station (unpublished paper).
- _____, **G.H. Reeves, F.R. Hauer, J.A. Standiford and C.P. Hawkins. 1991.** Role of Refugia in Recovery from Disturbances: Modern Fragmented and Disconnected River Systems. *Environmental Management*, Volume 14(5). pp. 711-724.
- _____, **P.A. Blisson, F.J. Swanson and S.V. Gregory. 1988.** What We Know about Large Trees that Fall into Streams and Rivers. *In:* *From the Forest to the Sea: A Story of Fallen Trees*. USDA Forest Service and USDI BLM. Gen. Tech. Report PNW-GTR-229. Portland, OR.
- Shifflet, T.M., editor. 1994.** Rangeland Cover Types of the United States. Society for Range Management. Denver, CO.
- Simon, T.L. 1980.** Ecological Study of the Marten in the Tahoe National Forest, California. Unpublished M.S. Thesis. California State University, Sacramento, CA.
- Skinner, C.N. 1994.** Changes in Spatial Characteristics of Forest Openings in the Klamath Mountains of Northwestern California. Unpublished Draft. USDA Forest Service, Pacific Southwest Research Station. Redding, CA.
- Smith, D.M. 1962.** *The Practice of Silviculture*, Seventh Ed. John Wiley & Sons. 578 pp.
- Society of American Foresters. 1981.** *Choices in Silviculture for American Forests*. Society of American Foresters, Wash., D.C.. 80 pp.
- Sprinkel, D.A. 1987.** Potential Radon Hazard Map. Utah Geological and Mineral Survey, Open File Report 108.
- State of Oregon Business and Employment Outlook. March 1988.** Employment Division, Department of Human Resources, RS PUB 100.
- State of Oregon Population Projections for Oregon and its Counties. 1980.** Population Bulletin, Center for Population Research and Census. Portland State University.
- Steinhart, P. 1990.** California's Wild Heritage, Threatened and Endangered Animals in the Golden State. California Department of Fish and Game.

Stewart, J.H. and V.C. LaMarche, Jr. 1967. Erosion and Deposition Produced by the Flood of December 1964 on Coffee Creek, Trinity County, California. U.S. Geological Survey, Professional Paper 422-K. 22 pp.

Taylor, Dr. A. 1991. Penn State University. Personal communication.

The Pacific Coast American Peregrine Falcon Recovery Team. 1982. Pacific Coast Recovery Plan for the American Peregrine Falcon. USDI Fish and Wildlife Service. 85 pp.

Thomas, J.W., R.G. Anderson, C. Maser and E.L. Bull. 1979. Riparian, Chapter 3 and Snags, Chapter 5 *In: Thomas, J.W. tech. ed. Wildlife Habitats in Managed Forests of the Blue Mountains of Oregon and Washington. Agr.Hbk. 553. Washington D.C.: USDA Forest Service. 512 pp.*

_____, **E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon and J. Verner. 1990.** A Conservation Strategy for the Northern Spotted Owl: A Report of the Inter-agency Scientific Committee to Address the Conservation of the Northern Spotted Owl. Portland, OR. 427 pp.

_____, **M.G. Raphael, R.G. Anthony, E.D. Forsman, A.G. Gunderson, R.S. Holthausen, B.G. Marcot, G.H. Reeves, J.R. Sedell and D.M. Solis. 1993.** Viability Assessments and Management Considerations for Species Associated With Late-Successional and Old-Growth Forests of the Pacific Northwest. The Report of the Scientific Analysis Team. USDA National Forest System, Forest Service Research. 530 pp.

Tschaplinski, P.J. and G.F. Hartman. 1983. Winter Distribution of Juvenile Coho Salmon (*Oncorhynchus kisutch*) Before and After Logging in Carnation Creek, British Columbia, and Some Implications for Overwinter Survival. *Can. Jnl. Fish. and Aqua. Sci.* 40. pp. 452-461.

USDA Forest Service. 1982. An Analysis of the Timber Situation in the United States 1952-2030.

_____. **1978.** Uneven-aged Silviculture and Management in the United States. Combined Proc. of 2 In-Service workshops held in Morgantown, West Virginia, July 15-17, 1975, and in Redding California, October 19-21, 1976. Timber Management Research, Forest Service, Washington D.C. 234 pp.

_____. **1980.** National Forest Landscape Management, Vol. 2, Chapter 5, Timber. Agriculture Handbook No. 559. 223 pp.

_____. **1985.** National Forest Landscape Management, Vol. 2, Chapter 6, Fire. Agriculture Handbook No. 608. 89 pp.

_____. **1986.** The South's Fourth Forest, Alternatives for the Future, (review draft).

_____. **1990.** The Forest Service Program for Forest and Rangeland Resources: A Long Term Strategic Plan.

_____. **1992.** Management Recommendations for the Northern Goshawk in the Southwestern United States. General Technical Report, RM-217. Fort Collins, CO.

_____. **1992.** Final Environmental Impact Statement on Management for the Northern Spotted Owl in the National Forests. Appendix F.

_____, **Pacific Southwest Region. 1988.** Final Environmental Impact Statement, Vegetation Management for Reforestation.

_____. **1989.** Grider Fire Recovery Project, Final EIS. Klamath National Forest.

_____, **USDI USFWS, USDC National Oceanic and Atmospheric Administration National Marine Fisheries Service, USDI National Park Service, USDI BLM, Environmental Protection Agency. 1993.** Forest Ecosystem Management: An Ecological, Economic and Social Assessment. Report of the Forest Ecosystem Management Assessment Team.

_____, **USDI BLM et.al. 1994.** Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

_____, **and USDA BLM. 1994.** Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl. And Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.

USDA Soil Conservation Service. 1983. National Soil Handbook.

_____. **1983.** Soil Survey of Siskiyou County, CA, Central Part, 291 pp.

U.S. Department of Commerce, Bureau of the Census. May 1988. County and City Data Book. U.S. Government Printing Office.

USDI Fish and Wildlife Service. No date. Recovery Plan for the Bald Eagle. Portland, OR. 163 pp.

USDI Water and Power Resources Service. 1981. Butte Valley Division, Klamath Project, Oregon - California, Concluding Report.

VanSickle, V.J. 1994. Comparison of Vegetation Patch Composition, Biodiversity and Wildlife, Human and Livestock Use of Marble Mountain Wilderness Area Meadow Basins. M.S. Thesis. University of California, Davis.

References Cited

Varnes, D.J. 1978. Slope Movement Types and Processes. *In: Schuster, R.L. and Krizek, R.J. Landslides: Analysis and Control.* Transportation Research Board, Special Report 176. National Academy of Sciences, Washington D.C.

Veder, C. 1981. Landslides and Their Stabilization. Translated by J.E. Springer-Verlag. 247 pp.

Weatherspoon, C.P. and C.N. Skinner. 1989. An Assessment of Factors Associated with Damage from the 1987 Wildfires on the Hayfork Ranger District, Shasta-Trinity National Forest. Draft Report. USDA Forest Service, Pacific Southwest Forest and Range Experiment Station. Redding, CA. 29 pp.

West, J.R. 1991. A Proposed Strategy to Recover Endemic Spring-run Chinook Salmon and their Habitats in the Klamath River Basin. USDA Forest Service, Klamath National Forest. Yreka, CA.

_____, **O.J. Dix, A.D. Olson, M.V. Anderson, S.A. Fox and J.H. Power. 1990.** Evaluation of Fish Habitat Condition and Utilization in Salmon, Scott, Shasta, and mid-Klamath Sub-basin Tributaries 1988/1989. USDA Forest Service, Klamath National Forest. Yreka, California.

Wilson, E.O. 1992. The Diversity of Life. Belnap Press of Harvard University Press. Cambridge, MA.

Wood, P. R. 1960. Geology and Groundwater Features of the Butte Valley Region, Siskiyou County, California.

Woodbridge, B. 1991. Habitat Selection by Nesting Swainson's Hawks: A Hierarchical Approach. Unpublished M.S. Thesis. Oregon State University, Corvallis, OR.

_____, **P. Detrich and P.H. Bloom. 1988.** Territory Fidelity and Habitat Use by Nesting Northern Goshawks: Implications for Management. Unpublished Manuscript.

_____, **and P. Detrich. (In press).** Territory Occupancy and Habitat Patch Size Relationships of Northern Goshawks in the Southern Cascades of California. *Studies in Avian Biology.*

Zaruba, Q. and V. Mencl. 1969. Landslides and Their Control. Elsevier, 202 pp.

Ziemer, R., J. Lewis, R.M. Rice and T.E. Lisle. 1991. Modeling the Cumulative Effects of Forest Management Strategies. *Journal of Environmental Quality.*



Glossary

Abbreviations and Acronyms

Abbreviations and Acronyms with an asterisk (*) are defined in the Glossary

| | | | |
|----------------|---|----------|---|
| AC | Acres | MDM | Mount Diablo Meridian |
| AMA | Adaptive Management Area* | MIS | Management Indicator Species* |
| AMS | Analysis of the Management Situation | MMBF | Million Board Feet |
| ASQ | Allowable Sale Quantity* | MMCF | Million Cubic Feet |
| AUM | Animal Unit Month* | MR | Management Requirement* |
| BA | Basal Area | MS | Mineral Survey |
| | | NEPA | National Environmental Policy Act* |
| BLM | Bureau of Land Management | NFMA | National Forest Management Act |
| BMP | Best Management Practice* | NFMAS | National Fire Management Analysis System |
| BVNG | Butte Valley National Grassland | | National Forest System* |
| CAS | Capable, Available, Suitable (Land)* | NFS | National Natural Landmark |
| CDF | California Department of Forestry and Fire Protection | NNL | Off-Highway Vehicle* |
| | | OHV | Persons At One Time* |
| CDFG | California Department of Fish and Game | PAOT | Pacific Crest Trail |
| | | PCT | Preferred Alternative |
| CFR | Code of Federal Regulations | PFD | Public Law |
| CHU | Critical Habitat Unit* | PL | Suspended Particulate Matter* |
| CMAI | Culmination of Mean Annual Increment* | PM-10 | Prescribed Natural Fire* |
| | | PNF | Present Net Value* |
| CPP | Citizen's Participation Program | PNV | Roadless Area Review and Evaluation* |
| CWD | Coarse Woody Debris* | RARE | Second Roadless Area Review and Evaluation* |
| CWE | Cumulative Watershed Effects* | | Resource Conservation District |
| EHR | Erosion Hazard Rating* | RARE II | Pacific Southwest Region of the United States Forest Service |
| EIS | Environmental Impact Statement* | | Riparian Management Zone* |
| ERA | Equivalent Roaded Area* | RCD | Research Natural Area* |
| ESA | Endangered Species Act* | Region 5 | Record of Decision |
| ESV | Existing Visual Conditions* | | Recreation Opportunity Spectrum* |
| EO | Executive Order | RMZ | Forest and Rangeland Renewable Resources Planning Act of 1974 |
| F | Degrees Fahrenheit | RNA | Riparian Reserves* |
| FEMAT | Forest Ecosystem Management Assessment Team | ROD | Recreation Visitor Day* |
| | | ROS | Scientific Analysis Team |
| FH | Forest Highway | RPA | State Historic Preservation Officer* |
| FMAZ | Fire Management Analysis Zone* | | Special Interest Areas |
| Forest | Klamath National Forest | RR | Spotted Owl Habitat Area* |
| Forest Service | United States Forest Service | RVD | Threatened and Endangered Species* |
| Forest Plan | Klamath National Forest Land and Resource Management Plan | SAT | Threatened, Endangered and Sensitive Species |
| | | SHPO | Timber Management Plan |
| FORPLAN | A Linear Programming Model* | SIA | Threshold of Concern* |
| FSEIS | Final Supplemental EIS (President's Plan) | SOHA | Timber Stand Improvement* |
| | | T&E | Total Suspended Particulate* |
| FSH | Forest Service Handbook | | United States Department of Agriculture |
| FSM | Forest Service Manual | TE&S | United States Department of Interior |
| FUDs | Fish User Days | | United States Fish and Wildlife Service |
| FVC | Future Visual Condition* | TMP | Visual Absorption Capability* |
| GTR | Green Tree Retention* | TOC | Visual Management System |
| HCA | Habitat Conservation Area (for northern spotted owl)* | TSI | Visual Quality Index* |
| | | TSP | Visual Quality Objective* |
| HCM | Habitat Capability Model | USDA | Wildlife User Days |
| HES | Homestead Entry Survey | | Wild and Scenic River* |
| HM | Humboldt Meridian | USDI | Wild and Scenic Rivers Act |
| HQI | Habitat Quality Index* | USFWS | Yarding of Unutilized Material* |
| ID | Interdisciplinary* | | |
| IMPLAN | Impact Planning Model* | VAC | |
| IR | Implementation Requirement | VMS | |
| ISC | Interagency Scientific Committee* | VQI | |
| IVQO | Inventoried Visual Quality Objective* | VQO | |
| KGRA | Known Geothermal Resource Area | WUD | |
| KV | Knudsen-Vandenburg Fund* | WSR | |
| LSR | Late-Successional Reserves* | WSRA | |
| LTSY | Long-term Sustained Yield* | YUM | |

Definitions

This glossary gives definitions of terms in the EIS

A

Active Fault A fault which has shown surface rupture within the last 11,000 years. **Potentially active faults** are those which have evidence of surface displacement within the last 1.6 million years.

Activity The work processes or management practices that are conducted to produce, enhance or maintain outputs or achieve administrative and environmental quality objectives. An activity can generate multiple outputs.

Adaptive Management Area (AMA) A landscape unit designated to encourage the development and testing of technical and social approaches to achieving desired ecological, economic and other social objectives.

Administrative Trail A non-system trail established to access management activities. This trail may be constructed to a lower standard than recreation trails.

Adopted Visual Quality Objective (Adopted VQOs) Visual Quality Objectives which have been adopted for use through approval of the Forest's Land and Resource Management Plan. These objectives typically incorporate trade-offs based on the concepts of multiple use.

Advisory Council on Historic Preservation The Council is responsible for commenting to the Agency Official on an undertaking that affects historic properties. (36 CFR § 800).

Affected Environment The natural-, physical- and human-related environment that is sensitive to changes due to proposed actions.

Aggradation An accumulation of sediment.

Air Quality Related Values Values in designated Class 1 Wilderness Areas that the Forest Service is required to protect by the Federal Clean Air Act, as amended in 1977.

Airshed A geographical area that, because of topography, meteorology and climate, shares the same air.

Allowable Sale Quantity (ASQ) The maximum amount of timber that may be programmed for harvest from CAS lands during any decade. The ASQ is typically expressed as an annual average quantity. May also be referred to as programmed Timber yield, scheduled timber harvest or chargeable timber.

Alluvial Pertaining to alluvium. Formerly used as a term for recent unconsolidated sediments.

Alluvium Detrital deposits resulting from the operations of modern rivers, thus including sediments laid down in river beds, flood plains, lakes, fans at the foot of mountain slopes and estuaries.

Alternative A mix of management prescriptions applied to specific land areas to achieve a set of goals and objectives. The alternative provides management direction for the proposed project.

Ambient Air Quality Standards The maximum concentration of a pollutant that may be present in the ambient air on a short-term or annual basis.

Amenity Resources or experiences enjoyed on the Forest that do not have established market values; for example, scenic views, recreational activities, etc.

Anadromous Fish Species of fish which mature in the ocean and migrate into streams to spawn. Use here refers to salmon and steelhead.

Analysis Area A delineated area of land analyzed to determine possible responses to proposed management practices. Multiple use outputs in various biological resources and economic and social impacts are analyzed.

Animal Unit Month (AUM) The amount of forage a mature cow and calf consume over a 30 day period (1,200 pounds).

Annual Operating Instructions (AOIs) Yearly management instructions to the livestock permittee.

Appraisal Allowances Costs that are subtracted from selling value to obtain a residual value.

Aquatic Living or growing in water.

Aquifer Rock layers which hold water.

Area of Influence Local area, where most of the goods and services produced from the project area, are processed or used. Also, where the employment, income and other social impact of Forest policies are felt.

Arterial Road A major transportation route that accesses and services a large land area and usually connects with public highways or other arterial routes.

Assemblage A group of organisms sharing a common situation, essentially by chance.

Available Land Lands administratively available for timber harvest.

B

Background Visual Management; The distant part of a landscape, picture, etc.; surroundings, especially those behind something and providing harmony or contrast; surrounding area or surface. Area located from 3-5 miles to infinity from the observer.

Basal Area (BA) The cross-sectional area (in square feet) of tree coverage per acre, measured at breast height.

Basin Also sub-basin or reach basin. An area left over when a watershed is divided into sub-watersheds. Basins are not "true watersheds," but are part of the larger watershed. Basins are usually tracked like true watersheds in a watershed analysis.

Bedload Sediment (sand, gravel or heavy rock fragments) that moves by sliding, rolling or bouncing on or very near the bed of a stream or along the bottom of an estuary.

Benthic Community Animals and plants living on or within the substrate of a water body or stream.

Benefit Value. Inclusive terms used to quantify in monetary or non-monetary terms the results of a proposed activity, project or program.

Best Management Practice (BMP) A practice, or a combination of practices, that is determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals. BMPs for national forests in California are shown in Water Quality Management for NFS Lands in California, USDA Forest Service, April 1979, and have been certified by the State of California as Best Management Practices.

Big Game Those species of large mammals normally managed for sport hunting. This generally refers to Roosevelt elk, black-tailed deer or black bear.

Biological Diversity The variety of life in an area, including gene pools, species, plant and animal communities, ecosystems and the processes through which individual organisms interact with one another and their environments.

Biological Diversity Corridor A biological link or passageway for the movement and dispersal of animals and plants.

Biological Evaluation A report that assesses the effects or impacts of a proposed activity on a wildlife or fish species and its habitat.

Biomass Total weight of the living organisms in a particular habitat.

Board Foot A unit of measurement equal to an unfinished board one foot square by one inch thick.

Burning Period That part of each 24-hour period when fires spread most rapidly, typically from 10:00 am to sundown.

C

California Wilderness Act of 1984 The Act that added to existing wildernesses and created new wilderness areas from certain roadless areas in California.

Canopy The upper-most spreading, branchy layer of a forest.

Canopy Closure A measure of the percent of potential open space occupied by the collective tree crowns in a stand.

Capability The potential of an area to produce resources (supply goods and services) and allow resource uses under a particular set of management practices and at a given level of management intensity.

Capable, Available and Suitable (CAS) Land National forest land that has been determined to be capable, available and suitable for timber management.

Capable Land Land where at least 20 cubic feet of commercial wood products can be grown per acre per year.

Capital Investment Activities that create or improve capital assets to obtain benefits occurring during several planning periods.

Carrying Capacity The maximum number of organisms that can be supported within a particular habitat without causing deterioration of the ecosystem.

Cavity Nester Wildlife species that excavate and/or occupy cavities in trees and snags for nesting.

Channel Aggradation The build-up of a stream bed by sedimentation.

Channel Erosion Channel widening caused by erosion, undermining action of the stream flows on channel perimeter and by the abrasive force of mud and woody debris during a debris flow.

Checkerboard Ownership Pattern Every other section of land is in private ownership, due to the railroad land grants in the late 1800s.

Cirque See glacial cirque.

Class I Area An area designated for the most stringent protection from degradation of air quality.

Class II Area An area designated for moderate protection from air quality degradation.

Clearcutting The harvesting of an entire stand of trees in one cutting operation, leading to the establishment of an even-aged stand.

Climax Vegetation Management: The culminating stage in plant succession for a given site, where the composition of the vegetation has reached a highly stable condition over time and

perpetuates itself unless disturbed by outside forces.

Coarse Sediment Fine gravel and larger sized particles deposited by water or ice.

Coarse Woody Debris (CWD) Woody material, at least 20 inches in diameter from whatever source that is dead and lying on the forest floor.

Coliform A group of bacteria used as an indicator of sanitary quality in water.

Collector Road A road which collects traffic from Forest local roads or other collector roads. These roads serve smaller land areas than arterial roads and are usually connected to a national forest arterial or public highway.

Colluvial Consisting of alluvium, in part, and also containing angular fragments of the original rocks. Contrasted with alluvial and diluvial. Also, talus and cliff debris; material of avalanches.

Colluvium A general term applied to loose and incoherent deposits, usually at the foot of a slope or cliff and brought there chiefly by gravity. Talus and cliff debris are included in such deposits.

Cobbly Containing appreciable quantities of cobblestones.

Commodity A resource product with commercial value; all resource products that are articles of commerce (transportable).

Compartment An organizational unit of forest area for administrative and silvicultural operations, defined by permanent boundaries (either natural or artificially marked), not necessarily coincident with timber stand boundaries.

Connectivity Contiguous; continuous. Refers to the quality of plant or animal habitat. A characteristic of a landscape or larger region where the condition of its' vegetation allows for plants and animals to be able to move between areas of suitable habitat.

Consolidated Inner Gorge Slopes along streams and rivers that exceed 65% and are incised into bedrock and support shallow soil cover. Subdivided into granitic and non-granitic.

Consumptive Use Those uses of a resource that reduce its supply.

Conversion Changing the forest from an unmanaged to a managed condition.

Cost The cost of human-made structures, facilities or improvements in natural resources used as inputs in economic analyses.

Cost Efficiency The use of specified inputs (costs) to produce specified outputs (benefits). Some outputs including environmental, economic or social impacts are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value (PNV), although use of benefit-cost ratios and rates-of-return may be appropriate. (36 CFR 219.3).

Cover Vegetation used by wildlife for protection from predators and weather conditions or in which to reproduce.

Cover/Forage Ratio The ratio, in percent, of the amount of area in cover conditions to that in forage conditions.

Created Opening An opening in the forest created as the result of even-aged silviculture through clearcutting, group selection or shelter-wood regeneration timber harvest systems.

Critical Habitat Unit (CHU) That habitat designated by the Secretary of Interior, USDI, as critical to the continued survival of Sensitive, Threatened or Endangered species.

Critical Reaches Stretches of streams with fish habitat most sensitive to pool losses because of low stream gradients (less than 2 percent) and sediment build-up in rearing pools.

Culmination of Mean Annual Increment (CMAI) The point at which the stands average net merchantable growth is at its maximum level.

Cultural Resources The tangible and intangible aspects of cultural systems, living and dead, that are valued by a given culture or contain information about that culture. Cultural resources include, but are not limited to, sites, buildings, structures, districts and objects associated with or representative of people and cultures, human activities and events.

Cultural Resource Program This term has been replaced by Heritage Resource Program. Refer to Heritage Resource Program.

Cumulative Effect The impact on the environment which results from the incremental impact of the action when added to other actions. Cumulative impacts can also result from individually minor but collective, individual actions over a period of time.

Cumulative Watershed Effects (CWE) Combined effects of management activities and natural conditions on watershed conditions.

Current Direction The combination of activities dictated by laws, regulations, the Forest Service Manual and existing unit plans.

D

Debris Flow A relatively fast moving (feet per second) slurry-like flow of soil, rock and vegetative material most frequently in a first to third order stream channel. Also known as a mudflow.

Debris Slide A relatively fast moving (inches per day to feet per minute) landslide of relatively thin soil where the original soil structure is severely disrupted. Most of the disrupted soil moves off the site of the rupture and may become a debris flow.

Destabilized Made unstable; or when a channel goes out of equilibrium and begins to downcut.

Developed Recreation Recreation occurring at permanent sites developed specifically for recreation purposes; for example, campgrounds, trailheads.

Direct Habitat Improvement A project to improve the habitat capability (carrying capacity) for fish, wildlife or Sensitive plants.

Direct Payments Payments that are made from appropriated money.

Direct Protection Boundary That area which, by law or pursuant to the terms of the cooperative fire agreement between the California Department of Forestry and Fire Protection and California-based Federal Agencies, is provided wildland fire protection by the State or by the Federal agencies. Direct protection areas may include a mixture of State, Federal or local responsibility areas.

Discount Rate, Real A discount rate adjusted to exclude the effects of inflation.

Discounting The process of carrying an end value backwards in time at compound interest.

Dispersal Route A corridor or passageway that provides cover for migrating or dispersing wildlife.

Dispersed Recreation Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.

Dissected Granitic Terrane Terrane founded on granitic bedrock. It is characterized by closely spaced, steep-walled intermittent and ephemeral drainages shaped by shallow debris slides. This terrane has responded to certain types of land management with accelerated debris slide rates in parts of the Forest.

Distance Zone Areas of landscapes denoted by specific distances from the observer. There are three distance zones:

Foreground (0 to 1/2 mile).

Middleground (1/2 to 5 miles).

Background (5 miles and greater).

Disturbance Any management activity that has the potential to accelerate erosion or mass movement.

Disturbance Level The portion of a watershed in a disturbed condition equivalent to roading.

Diversity The distribution and abundance of different plant and animal communities and species within an area.

Duff The more or less firm organic layer on top of mineral soils, consisting of fallen vegetative matter in the process of decomposition, including everything from pure humus below to the litter on the surface.

Dunite An ultramafic rock consisting essentially of olivine, with accessory pyroxene, plagioclase or chromite.

Dunning Site Classes A site classification for the mixed-conifer forests of the Sierra Nevada, developed in 1942. Site index is an indicator of site quality.

E

Early Seral or Successional Stage The biotic community that develops immediately following the removal or destruction (for example, from wildfire) of the vegetation in an area.

Earthflow A relatively slow moving (inches to feet per year) typically large (acres to tens of acres and larger) landslide of relatively thick soil. Most of the disrupted soil remains on the rupture site in the short-term though some may leave the site by debris sliding and/or debris flow.

Econometric The branch of economics concerned with the application of mathematical economic by use of statistics.

Ecosystem A dynamic community of biological organisms, including humans, and the physical environment with which they interact.

Ecosystem Health An ecosystem in which structure, composition and function ensure the maintenance of biological diversity, biotic integrity and ecological processes over time.

Ecosystem Management The integration of ecological principles, economic factors and social factors to manage ecosystems to safeguard ecological sustainability, biological diversity and productivity.

Edge The place where plant communities meet or where successional stages or vegetative conditions with plant communities come together.

Edge Effect Occurs in the transition zone where two plant communities or successional stages meet and mix; edge effects include the climatic effects of wind, temperature, light and humidity and an increase of wildlife species associated with edge.

Effects Impacts; physical, biological, economic and social results (or expected results) from implementing an activity or producing outputs.

Embedding A measure of fine material surrounding larger streambed materials such as cobbles and gravel.

Embryotoxicity Poisoning of a developing organism, such as an egg.

Encroachment A situation where adjacent property owners have improvements over the property boundary line or are otherwise using NFS land without benefit of an authorization.

Endangered Species Any plant or animal species which is in danger of extinction throughout all or a significant portion of its range. (Endangered Species Act of 1973).

Endangered Species Act of 1973 (ESA) An act which mandates Threatened and Endangered Species to be conserved.

Endemic Native or confined to a certain region, having a comparatively restricted distribution.

Endemism The quality or state of being endemic.

Environment The aggregate of physical, biological, economic and social factors affecting organisms in an area.

Environmental Analysis An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic and social consequences and their interactions; short and long-term effects, direct, indirect and cumulative effects.

Environmental Impact Statement (EIS) A detailed statement prepared by the responsible official in which a major Federal action which significantly affects the quality of the human environment is described, alternatives to the proposed action provided and effects analyzed.

Ephemeral A stream channel or depression in the topography that carries surface water during the rainy season or during snowmelt.

Epicenter The point on the earth's surface directly above the focus of an earthquake.

Epochs A division of geologic time; when capitalized it becomes a formal division of geologic time corresponding to a series of rock and a subdivision of a period.

Equivalent Road Area (ERA) ERAs are units of measure used to determine disturbance level in a watershed in terms of hydrologic effects.

Eras In general, a large division of geologic time; specifically, a division of geologic time of the highest order, comprising one or more periods.

The eras now generally recognized are the Paleozoic, Mesozoic and Cenozoic.

Erodibility The state or condition of being erodible.

Erosion A general term for movement of soil particles on the surface of the land initiated by rainfall and running water. This includes surface erosion and channel erosion, as opposed to landsliding.

Erosion Hazard Rating (EHR) A system for determining the susceptibility of a soil to sheet, rill and gully erosion. Four classes are defined and depend upon combinations of factors such as soil type, topography, climate and cover (see USFS form R5-2500-14). In general, the sandy soils are the most erodible due to the lack of binding material such as clay or organic material.

A) *Very High* Soils with a very high potential for sheet, rill and gully erosion. Examples are sandy soils on gradients greater than 45% or loams on gradients greater than 65%.

B) *High* Soils with a high potential for surface erosion. Includes sandy soils on gradients 25-45% or loams on gradients 45-65%.

C) *Moderate* Soils with a moderate potential for surface erosion. Includes sandy soils on 0-25% gradients or loams on gradients of 25-45%.

D) *Low* Soils with a low potential for surface erosion. None of the sandy soils are in this class due to the weak soil structure. Loams with gradients of 0-25% are typical of this class.

Escaped Fire A fire which has exceeded initial attack capabilities.

Escapement Portion of an anadromous fish population that escapes the commercial and recreational fisheries and reaches the freshwater spawning grounds.

Evapotranspiration The conversion of water, whether open or as soil moisture (by evaporation) or within plants (by transpiration) into water vapor that is released to the atmosphere.

Even-aged Management The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Clearcut, shelterwood or seed tree cutting methods produce even-aged stands.

Existing Visual Conditions (EVC) An analysis of how natural appearing the landscape is today.

Extremely Unstable Lands Lands determined to be unsuited for intensive management due to

their extreme sensitivity to disturbance. In order of decreasing abundance, these lands include: a) valley inner gorges; b) the most sensitive portion of dormant slump-earthflow complexes and debris slide scars; c) portions of the most severely dissected granitic terrane; and d) active landslides.

F

Fine Sediment Coarse sand and smaller sized particles deposited by water or ice.

Fire Dependent An ecosystem evolving under periodic perturbations by fire and which consequently depends on periodic fires for normal ecosystem functioning.

Fire Management All activities required for the protection of wildland values from fire and the use of fire to meet land management goals and objectives.

Fire Management Analysis Zone (FMAZ) An area for fire management planning defined by commonalities in topography, fuels and weather.

Fire Regime The kind of fire activity (frequency and intensity) that characterizes a specific region.

Flame length An indicator of fire intensity measured from the base of the flame to the tip of the flame.

Flora Any plant or plants as a whole, usually pertains to a regional description.

Floodplain The lowland and relatively flat areas adjoining streams.

Forage Vegetation used for food by wildlife, particularly big game wildlife and domestic livestock.

Forb Any herbaceous plant species other than those in the Gramineae (grasses), Cyperaceae (sedges) and Juncaceae (rushes) families; fleshy-leaved plants.

Foreground Visual Management; The detailed landscape found within 0 to 1/4-1/2 mile from the observer.

Forest Cover Type A group of timber stands of similar development and species composition, due to ecological factors. Examples in California include the Douglas-fir, mixed conifer and true fir types.

Forest Land Land which has at least 10% occupied by forest trees or formerly having had such tree cover and not currently developed for non-forest use.

Forest Survey Site Classes A measure of site productivity, based on maximum potential volume growth, as measured in cubic feet per acre per year.

| Site Class | Maximum Cubic Feet per Acre per Year: |
|------------|---------------------------------------|
| 1 | - 225 plus |
| 2 | - 165-224 |
| 3 | - 120-164 |
| 4 | - 85-119 |
| 5 | - 50-84 |
| 6 | - 20-49 |
| 7 | - less than 20 |

FORPLAN A linear programming system used for developing and analyzing forest planning activities.

Fragmentation Isolating or breaking up, large tracts of forest as a result of natural events (such as wildfire) or by the implementation of timber management or other human activities.

Front Zone A lower- to mid-elevation zone near Yreka and the Scott Valley, with scattered commercial-quality timber and important deer habitat. The zone is visible from populated areas in many places.

Fry The life stage of salmonid fish species, referring to juvenile fish, which have either not emerged from the gravel or have recently emerged.

Fuels Anything within the forest that will burn. Usually live and dead woody vegetation.

Fuel Break Any natural or constructed barrier utilized to segregate, stop and control the spread of fire or to provide a control line from which to suppress the fire.

Fuel Loading The quantity of fuel per acre in a given area.

Fuel Treatment The process of removing and/or modifying natural or human created fuels to reduce fire hazard and achieve other resource objectives.

Furbearer An animal that bears fur, especially of a commercially desired quality.

Future Visual Condition (FVC) An analysis of how natural appearing the Forest would be in the future (10 to 15 years).

G

Geologically Sensitive Land Refer to Geologic Sensitivity Class below.

Geologic Hazard Class This is a grouping of the landscape into units of extreme, high, medium and low landslide potential which is based on slope gradient, rock type and geomorphic characteristics. It combines different geomorphic terranes into a single class. For example, the extreme hazard class consists of active landslides, inner gorges, toe zones of dormant landslides and severely dissected granitic terrane. Criteria for this classification are described in the geologic portion of the AMS.

Geologic Sensitivity Class This classification system was developed for use in the FORPLAN Model with the intent of subdividing the landscape into two broad categories of landslide potential. These categories are "sensitive" and "non-sensitive" and they are defined in terms of the geomorphic terranes described below.

The sensitive lands include:

- Active landslides
- Dormant landslides
- Inner gorges
- Granitic lands
- Debris basins (headwalls)

The term "non-sensitive" means that landslide potential is generally low on these lands. It does not imply that the potential is non-existent.

The non-sensitive lands include:

- Non-granitic mountain slopes
- Glacial, terrace and fan deposits
- Cascade mountain slopes

Geologic Suitability Class This classification divides the landscape into two classes, one which is suited for programmed timber harvest and one which is not. The suited lands are those which are sufficiently stable to allow timber to be managed on a programmed basis without causing irreversible or irretrievable adverse effects. The unsuited class is so unstable that removal of timber on a programmed basis would cause irreversible and irretrievable effects on the environment.

The unsuited class includes:

- Active landslides
- Inner gorges developed in weak, unconsolidated material such as dormant landslide or glacial deposits.
- Toe zones of dormant landslides.
- Severely dissected granitic terrane (not identified in the geologic data base).

All other lands are classified as suitable for programmed timber harvest, but may still be geologically sensitive.

Geomorphic Terrane A land classification unit based on patterns of soil characteristics, the form of the land and the character of landslide and erosion processes that act on the land. (Also terrane).

Geomorphology The science of the form of and processes acting to form, the earth's surface.

Glacial Cirque A glacially carved hollow.

Glacial Moraine Rubble transported by glaciers.

Green Tree Retention (GTR) An even-aged management silvicultural system that maintains a portion of the existing stand, creating a two-storied structure with two or more age classes present. Replaces term Regeneration with Reserves.

Ground Water Phreatic water. That part of the subsurface water in the zone of saturation.

Gullies Erosional channels in the soil, 18 inches and greater in width and depth.

H

Habitat A place where the physical and biological elements of ecosystems provide a suitable environment and the food, cover and space needed for plant and animal livelihood.

Habitat Capability The estimated carrying capacity of an area to support a wildlife, fish or Sensitive plant population. Habitat capability can be existing or future and is normally expressed in numbers of animals, pounds of fish or acres of plants.

Habitat Conservation Areas (HCAs) Large blocks of habitat containing multiple pairs of northern spotted owls that are distributed across the range of the owl and spaced closely enough to facilitate dispersal of owls. HCAs are managed and conserved for breeding pairs, connectivity and distribution of spotted owls.

HCA 1 A block of habitat capable of supporting at least 20 pairs of spotted owls.

HCA 2 A block of habitat capable of supporting at 2 to 19 pairs of spotted owls.

HCA 3 A block of habitat capable of supporting an individual pair of spotted owls.

HCA 4 A block of habitat that may be smaller than the median annual home-range size, but provides connectivity or potential habitat for future nest sites.

Habitat Diversity Distribution and abundance of plant and wildlife habitats.

Intra-stand Habitat Diversity Mix of component parts within a particular habitat type.

Inter-stand Habitat Diversity Number of different types of habitat within a given area.

Habitat Quality Index (HQI) A rating developed and used by forest biologists to describe habitat quality with regard to fish suitability parameters; used to compare predicted habitat disturbance from management activities by alternative.

Hard Snag A snag composed primarily of sound wood, particularly sound sapwood; generally merchantable.

Hardwood A conventional term for the wood of broadleaf trees. Hardwood stands on land allocated for timber harvest are stands with less than 10 MBF per acre stocking of conifer timber.

Hazard Reduction Any treatment of forest fuels that reduces the threat, ignition or spread of wildfire.

Headwall The steep, wall-like cliff at the back of a cirque or at the head of a steep drainage.

Heritage Program Replaces term Cultural Resource Program. This program emphasizes the study and implementation of prehistory, ethnology, interpretation, historic preservation and history management.

High Timber Yield Same as Regulation Class 1.

High Water Line Mark; The limit of growing land vegetation, not the line of extraordinary floods or of marine vegetation.

Historic Property This term means any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion in, the

National Register of Historic Places (16 U.S.C. 470w[5]).

Hydrologic Of or relating to hydrology (water science); hydrologic cycle.

Hydrologic Cycle The complete cycle of phenomena through which water passes, commencing as atmospheric water vapor, passing into liquid and solid form as precipitation, thence along or into the ground surface and finally again returning to the form of atmospheric water vapor by means of evaporation and transpiration.

Hydrologic Disturbance Any activity or natural phenomenon which increases the runoff efficiency during intense storms (thunderstorms and rain-on-snow) including compaction clearing >2 1/2 acres.

Hydrology The science that relates to the water of the earth.

Hydrophobic Water repellent.

I

IMPLAN Model Stands for Impact Planning Model which is a model that calculates the sum of economic activity generated across all sectors of the economy resulting from a unit of purchase or sales. It is a type of Input-Output Model.

Incorporation by Reference A technique used to cut down on the bulk in environmental documents without impeding agency and public review of the action. The material included as part of the document must be cited in the document and its content briefly described.

Indicator Species Species of fish, wildlife or plants which reflect ecological changes caused by land management activities. See Management Indicator Species.

Indigenous Species A species which originally inhabited a particular National Forest or National Grassland.

Individual Tree Selection The selection of trees for harvest based on individual tree characteristics.

Influence Zone An area of land that has a direct effect on a resource value.

Inner Gorge Slopes Slopes greater than 65% which occur along rivers and streams.

Initial Attack Initial Action; The control efforts taken by resources which are the first to arrive at the incident.

Integrated Pest Management A process wherein pests, their impacts and management, are considered an integral part of resource management planning and decision making.

Intensive Management A high investment level of timber management that includes precommercial and commercial thinnings, planting with genetically improved stock, control of competing vegetation and other practices which increase tree growth.

Interdisciplinary (ID) The utilization of individuals representing two or more areas of knowledge and skills focusing on the same subject.

Interdisciplinary Approach The integrated use of the natural and social sciences and the environmental design arts. The disciplines of the preparers shall be appropriate to the scope and issues identified in the scoping process (40 CFR 1502.6).

Intergravel Habitat provided by spaces between particles composing the stream bed.

Interior Habitat That portion of the mature and "old growth" forest that is buffered and protected from edge effects.

Intermittent Stream Any non-permanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these 2 physical criteria.

Inter-stand diversity Diversity of conifer and/or hardwood stands across a landscape.

Intra-stand diversity Diversity of structure (live trees, snags, down logs and down woody material) within a particular stand of trees.

Inventoried Visual Quality Objectives (IVQO) Interim standards for measures of visual quality on the Forest. IVQOs are estimates of public preferences for visual quality.

Irreversible A term that describes the loss of future options. It applies primarily to the effects or

use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time.

Irretrievable A term that applies to the loss of production, harvest or use of natural resources. For example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

Interagency Scientific Committee (ISC) 50-11-40 Rule; (From the Interagency Scientific Committee's Conservation Strategy for the Northern Spotted Owl). For every quarter township, timber harvest shall be permitted only when 50% of the forest landscape consists of forest stands with a mean DBH of 11 inches and a canopy closure of 40%; all land-use allocations on forest lands and all ownerships within the quarter township contribute to meeting this rule.

Issue Points of discussion, debate or dispute about the environmental effects.

K

Key Indicator A quantitative measure of how well an issue is addressed.

Key Watershed A watershed containing habitat for potentially threatened fish stocks or species.

Knutson-Vandenberg Fund (KV) The Knutson-Vandenberg Act of 1930, as amended created a special fund derived from the sale of timber. These funds may be used for reforestation and for the protection and improvement of resources within the sale area.

L

Land Allocation The assignment of a management emphasis to particular land areas with the purpose of achieving goals and objectives. Land allocation decisions are documented in environmental analysis documents such as the Rogue-Illinois Final EIS and Forest Land and Resource Management Plans.

Landscape An area composed of interacting ecosystems that are variously repeated in response

to geology, land form, soils, climate, biota and human influences throughout the area.

Landscape Linkage Another name for a biological diversity corridor.

Landscape Scale Diversity A spatial scale for analyzing biological diversity; the area considered may vary from tens to thousands of acres and is dependent on variables such as plant community composition, seral stage distribution, fragmentation and edge effects, connectivity, stand size and shape and stand juxtaposition.

Landslide The movement of bodies of soil and/or rock by gravity and structural weakness of the material. This includes debris slides, debris flows, slumps and earthflows as opposed to erosion.

Late Successional Reserves (LSRs) Large blocks of habitat that are distributed across the range of the northern spotted owl and spaced closely enough to facilitate dispersal of owls. LSRs are managed to provide habitat for late successional and "old growth" species.

Leasable Minerals Commodities that may be acquired under the Mineral Leasing Act, as amended. These include oil, gas and geothermal energy.

Leave Trees Trees that are left un-cut. Usually these are for future seed sources and/or wildlife trees and watershed protection.

Light Burn A light burn intensity occurs when the litter and duff layer is partially consumed. Generally, the upper portion of this layer is charred and/or turned to ash. Fine woody material may be completely consumed when not in contact with ground and logs are charred.

Local Road Connects terminal facilities with forest collector or forest arterial roads or public highways. The location and standard are usually controlled by a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long- or short-term service.

Locatable Minerals Mineral which can be acquired through the filing of mining claims in accordance with the General Mining Law of 1872, as amended.

Lode A fissure (crack) filled with mineral. Also several veins with spacing so close they can be mined as a unit.

Long-term Effects Generally, those effects which occur after 20 years. The time span varies for individual resources and therefore is defined throughout the text.

Long-term Sustained Yield (LTSY) The maximum timber yield that can be sustained, indefinitely, from lands managed for timber production when all stands have been converted to a managed state.

M

Maintenance Levels Roads are maintained at different levels depending on road management objectives and type of use. The maintenance level relates directly to intensity of maintenance activity. **Level 1** provides basic custodial care necessary to protect the road investment and to prevent damage to adjacent land and resources. Level 1 roads are closed to vehicle use other than those necessary to maintain them. **Level 2** is used when public travel is to be limited. Use is for administrative or permitted use only. **Level 3** is used where roads are open to public use, but use is expected to be relatively light. **Level 4** applies when heavier use is anticipated and user comfort is a larger consideration; roads may be surfaced with aggregate. **Level 5** roads, generally arterials, receive the most use, are surfaced with aggregate, and have comfort and safety as an important consideration.

Managed Forest A forest that has been brought under management to accomplish specified objectives, usually increased wood production.

Management Area A distinct geographical area with specified objectives and prescriptions.

Management Activities Road construction, timber harvest, site preparation for planting and fuels treatment.

Management Direction A statement of multiple use and other goals and objectives, along with the associated management prescriptions and standards and guidelines to direct resource management.

Management Emphasis The multiple-use values to be featured or enhanced.

Management Ignited An ignition put into place by a planned, deliberate management action.

Management Indicator Species (MIS) Management indicator species are animals or plants selected for special attention for one or more of three reasons. They may be:

- (1) *Emphasis species* Species to be managed as key resources on the basis of identified issues; for example, threatened, endangered, rare, sensitive, harvest or special interest species.
- (2) *Indicate special habitat conditions* Species that require special habitat such as snags, riparian, "old growth" forest stands, etc.; and/or
- (3) *Indicate cumulative forest ecosystem change* Generally species having large home ranges and requiring a diversity of habitats.

Management Requirements (MR) Specific requirements consistent with 36 CFR 219.27 that are designed to prevent damage to forest resources beyond a minimum threshold established by law or regulation.

Marginal Component Land Land with low intensity timber management due to economic considerations or physical condition under the 1972 Multiple Use Plans.

Mass-Wasting All geologic processes in which large masses of earth materials move downslope, either slowly or quickly, by gravitational forces. This includes erosion, landsliding and soil creep.

Matrix Lands in Regulation Classes 1, 2 and 3.

Mature On lands allocated for timber harvest, mature is defined as trees or stands that have reached rotation age, generally around 120 years. In the context of wildlife -- mature forest habitat with characteristics needed to provide habitat for species such as marten and pileated woodpecker (generally occurs around age 100).

Mature Forest Often found in close association with "old growth" habitat; are distinguished from old growth by lower basal area values in the conifers, a higher density of hardwood snags, a lower density of hardwood saplings and lower basal area of large hardwoods.

Mean Annual Increment The average annual growth of a tree, calculated by dividing its total

growth by its age in years at the time of measurement.

Metamorphic A rock that has been transformed by pressure and heat.

Micro-habitat Specific localized habitat conditions within a larger habitat type that a plant or animal is dependent on for some part of its' life cycle. For example, a moist log on the ground within a forest stand is a micro-habitat important to pacific salamanders.

Middleground The space between the foreground and the background in a picture or landscape. The area located from 1/4-1/2 to 3-5 miles from the observer.

Mineral Materials Common varieties of rock, gravel, sand, stone and volcanic cinders that can be disposed of under the Materials Act of 1947, as amended.

Mineralogy The kind of minerals present in rock or in a soil.

Minimal Timber Yields Same as Regulation Class 3.

Mitigation As defined by the implementing regulations for NEPA, mitigation includes: 1) avoiding the impact altogether by not taking a certain action or parts of an action; 2) minimizing impacts by limiting the action; 3) rectifying the impact by repairing, rehabilitating or restoring the affected environment; 4) reducing or eliminating the impact over-time by preservation and maintenance operations during the life of the action; or 5) compensating for the impact by replacing or providing substitute resources or environments.

Mobilization Act of mobilizing; the state of being mobilized. Often applied to soil particles on a slope or sand and gravel in a stream bed.

Moderate Timber Yields Same as Regulation Class 2.

Modification Visual; Refer to Inventoried Visual Quality Objective

Moraine See glacial moraine.

Mudflows A flowage of heterogeneous debris lubricated with a large amount of water usually following a former stream course.

Multiple-Use The use of the forest for many different resources such as trees, wildlife, range, fish, plants, etc.

Mycorrhizal A type of fungus that develops as a root-like network in the soil, usually connecting and functioning with the roots of trees, shrubs and other vegetation.

N

Natal (stream) Locality of birth.

National Environmental Policy Act (NEPA)
The act which governs how Federal agencies access impacts to public lands.

National Forest System (NFS) Consists of units of federally owned forest, range and related lands united into a nationally significant system dedicated to the long-term benefit for present and future generations. The NFS includes all national forest lands acquired through purchase, exchange, donation or other means; the national grasslands; and other lands, waters or interests which are administered by the Forest Service.

Natural Ignition An ignition started at random by any natural cause.

Natural Opening A break in the forest canopy. A naturally-occurring area of bare soil, grasses, forbs or shrubs located in a large area dominated by trees. Also included are created openings no longer suitable for timber production.

NEPA Process An interdisciplinary process, mandated by the NEPA, which requires consideration of the environmental effects of alternatives and disclosure of those effects.

Net Cash Flow The difference between the annual receipts of an alternative and the costs required to implement that alternative.

Net Public Benefit The overall long-term value to the nation of all positive outputs and benefits less all associated costs and negative effects whether they can be quantified or not.

Net Value Change (NVC) The sum of the changes in resource values on a land area that results from increases (benefits) and decreases (damages) in resource outputs as a consequence of fire.

Net Growth The forest inventory plus growth, less mortality and harvest.

No Action Alternative The no action alternative is required by regulations implementing the National Environmental Policy Act (40 CFR 1502.14). The no action alternative provides a baseline for estimating the effects of other alternatives. For a program, plan or policy analysis, the no action alternative is defined as no change from current management. (CUR Alternative).

Non-forest Land Lands that never have had or that are incapable of having 10% or more of the area occupied by forest trees; or lands previously having such cover and currently developed for non-forest use.

Non-game species All wild terrestrial vertebrates not subject to sport hunting.

Non-market Products derived from national forest resources that do not have a well-established market value; for example, recreation, wilderness, wildlife.

Non-merchantable FORPLAN modeling: This includes forest stands where the average diameter at breast height is less than 13 inches and the average tree height is less than 50 feet within the range of optimum stocking. Timber sale contracts may specify slightly different standards to maximize product utilization.

Non-point Pollution Pollution whose source is general rather than specific in location.

Non-system Road Roads that exist on the landscape that at the time of their construction were not intended to be part of the forest development transportation system.

Non-vegetative Rock and rock outcrops.

Nuisance Anything which is (1) injurious to health or is indecent or offensive to the senses or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, and (2) affects at the same time an entire community or neighborhood or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal, and (3) occurs during or as a result of the treatment or disposal of wastes. (Definition of Nuisance per the Porter-Cologne

Water Quality Control Act of 1981, section 13050, page 16 (m).

O

Occupancy Trespass Residing on NFS land without a special-use authorization or as otherwise authorized by Federal law or regulation.

Off-Highway Vehicle (OHV) A vehicle capable of cross-country travel or travel on low-standard roads and trails; for example, motorbikes, all-terrain vehicles, 4-wheel drive vehicles, snowmobiles.

"Old growth" Habitat or Stand Any stand of trees 50 acres or greater generally containing the following characteristics: (1) stands contain mature and overmature trees in the overstory and are well into the mature growth stage; (2) stands will usually contain a multi-layered canopy with trees of several age classes; (3) standing dead trees and down material are present; and (4) evidence of human activities may be present, but do not significantly alter the other characteristics and are a subordinate factor in the stand description.

Opportunity Potential benefits that can be realized through a management action.

Opportunity Costs Benefits that may be lost if an alternative or project is implemented. They are benefits foregone and the value of these lost benefits becomes a cost of the project.

Order 2 Soil Resource Inventory (SRI) A soil survey that provides enough detail for project planning for a variety of intensive uses, such as, timber sales, reforestation, grazing, road construction and some recreation development.

Order 3 Soil Resource Inventory A soil survey that are made for extensive land uses that do not require precise knowledge of small areas or detailed soil information. The information can be used for preliminary project planning, for identifying general soil management considerations and evaluation for range, forest, recreation areas and similar extensive land uses.

Organic Matter Soil surface cover of litter and duff. Aids in erosion prevention and nutrient cycling.

Outputs The goods, services and products which are measurable and capable of being used

to determine the effectiveness of programs and activities in meeting objectives. Also goods, end products or services that are purchased, consumed or utilized directly by people.

Outstandingly Remarkable Value The WSR Act in Section 1 (b) declares it "to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreation, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition...." The implementing regulations state that only one outstandingly remarkable value is needed for eligibility and the determination is a professional judgement on the part of the study team.

Outwash Stratified glacial drift deposited by meltwater streams beyond active glacial ice.

Overburden The material (for example, gravel, cobblestones) that lies above the top soil.

Overstory The portion of trees in a forest which forms the uppermost layer of foliage.

Overwinter Portion of juvenile salmonid life history spent residing in freshwater during winter months.

P

Payments to Counties The portion of receipts derived from Forest Service resource management that is distributed to State and county governments such as the Forest Service 25% fund payments.

Peak Flow The greatest flow attained during a flood event.

Peak Flow/Increase Hazard The likelihood of increasing the magnitude of the greatest flow assessed to hydrologic disturbance in the watershed and the watershed sensitivity level.

Permanent Rangeland Suitable rangeland capable of sustained forage production under proper management.

Persons at One Time (PAOT) The number of persons that can occupy a recreational site at one time.

Perennial Stream A stream which normally flows throughout the year.

Peridotite Plutonic rocks containing olivine, amphibole, pyroxenes and micas.

Period A major, worldwide standard geologic time unit corresponding to a system.

Permeability The permeability (or perviousness) of rock is its capacity for transmitting a fluid. Degree of permeability depends upon the size and shape of the pores, the size and shape of their interconnections and the extent of the latter.

pH The negative logarithm of the hydrogen-ion activity of a soil. It is used to indicate the degree of acidity or alkalinity of a soil.

Phenological Pertaining to the phenology or growth stages of plants, from seedling through flowering and seed set.

Pioneer Species A plant capable of invading bare sites (newly exposed soil surface) and persisting there, until replaced by a seral stage of vegetation.

Planned Ignition A fire started by a scheduled, deliberate management action.

Plan of Operation An agreement between a miner and the Forest Service that describes the work and activities that will be undertaken to protect surface resources during prospecting, exploration, development, mining or processing of mineral resources and all uses reasonably incidental.

Plantability The capability of planting tree seedlings by hand or machine.

Plant Association Plant Ecology; A kind of plant community with a definite species composition and structure and relatively uniform environment.

Pool/Riffle Ratio The ratio of pools to riffles, expressed as a percentage, used to describe fish habitat rearing quality.

Porter-Cologne Act A California State law which provides for establishment of water quality board which set standards for water quality. It is the State version of the Federal Clean Water Act.

Potential Habitat Habitat that is not suitable in at present but can become suitable in the future through management or natural processes.

Preferred Alternative(s) The agency's preferred alternative(s), one or more, that is identified in the draft statement (40 CFR 1502.14).

Prescribed Burning Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions which allow the fire to be confined to a predetermined area and at the same time to produce the fireline intensity and rate of spread required to attain planned resource management objectives.

Prescribed Fire A fire burning within prescription resulting from management ignited or natural ignition.

Prescribed Natural Fire (PNF) A fire resulting from a natural ignition such as lightning and designated and managed as a prescribed fire.

Prescription Prescribed fire: A written statement defining objectives to be attained as well as temperature, humidity, wind direction and wind speed, fuel moisture content and soil moisture under which the fire will be allowed to burn, generally expressed as acceptable ranges of the various indices and describing the geographic area to be covered.

Present Net Value (PNV) A value that represents the dollar difference between the discounted value of all outputs to which monetary values are assigned and discounted costs of managing the recovery area for the next 60 years.

Primary Production Production of organic substances by photosynthesis; the quantity of material so produced per unit time.

Pristine Visual management; An area of land that appears to be untouched by management activities, with only ecological processes occurring. Similar to the "Preservation" VOO, except without the presence of minor signs and trails.

Primary Range Suitable, permanent rangeland where livestock naturally graze. It is usually readily accessible and has water available.

Programmed Cultural Surveys Surveys related to timber sales.

Programmed Timber Harvest Volume scheduled to be harvested that is applied to the allowable sale quantity.

Project Dollars Money allocated to national forests for use in funding day-to-day operations.

Pumice A volcanic glass full of cavities and very light in weight.

Put to Bed Roads are obliterated or decommissioned and are no longer part of the transportation system.

R

Range of Variability The spectrum of conditions possible in ecosystem composition, structure and function considering both temporal, spatial and environmental factors. (also Natural Range of Variability, Historic Range of Variability, and Variability.

Ranger District Administrative subdivision of the Forest, supervised by a District Ranger who reports to the Forest Supervisor.

Rapids Classification Ratings; Classification of river rapids using the Western Scale.

Rating Description:

| | |
|------|--|
| 0 | Flat Water |
| 1-2 | Easy. Waves small; passages clear, no serious obstacles. |
| 3-4 | Medium. Rapids of moderate difficulty with passages clear. Requires experience plus fair outfit and boat. |
| 5-6 | Difficult. Waves numerous high irregular; rocks; eddies; rapids with passages clear though narrow requiring expertise in maneuver, scouting usually needed. Requires good operator and boat. |
| 7-8 | Very Difficult. Long rapids; waves powerful irregular; dangerous rocks; boiling eddies; passages difficult to scout; scouting mandatory first time; powerful and precise maneuvering required. Demands expert operator and excellent boat and outfit. |
| 9-10 | Extremely Difficult. Exceedingly difficult long and violent rapids following each other almost without interruption; riverbed extremely obstructed; big drops; violent current; very steep gradient; close study essential but often difficult. Requires best operator, boat and outfit suited to the situation. All possible precautions must be taken. |
| U | Unrunnable |

Rare Plant or animal species which are uncommon in a specific area. All Endangered, Threatened

and Sensitive species can be considered rare, but the converse is not true.

Rearing Habitat The river or stream areas where juvenile salmonids must find food and shelter to survive for a period of time.

Receipts Revenues; Those priced benefits for which money will actually be paid to the Forest Service. They would include recreation fees, timber harvest payments, mineral leases and special use fees.

Recharge Aquifers; Intake. The processes by which water is absorbed and is added to the zone of saturation, either directly into a formation or indirectly by way of another formation. Also, the quantity of water that is added to the zone of saturation.

Recoverability Ability to recover.

Recreation Capacity The number of people that can take advantage of the supply of a recreation opportunity during an established use period without substantially diminishing the quality of the recreation experience or the resources.

Recreation Opportunity Spectrum (ROS) A continuum of recreation opportunity settings. A recreation opportunity setting is a combination of physical, biological, social and managerial conditions that give value to a place. The ROS assumes that recreationists seek a range or spectrum, of recreational opportunities from the highly constructed and interactive to the natural and solitude oriented.

The Forest uses five classes:

Primitive (P) Characterized by essentially unmodified natural environments with size and configuration assuring remoteness from the sights and sounds of human activity.

Semi-Primitive Non-motorized (SPNM) Characterized by predominantly natural or natural-appearing landscapes and the absence of motorized vehicles. The size gives a strong feeling of remoteness. The presence of roads is tolerated, provided they are closed to public use, used infrequently for resource protection and management and road standards are visually appropriate.

Semi-Primitive Motorized (SPM) Characterized by predominantly natural or natural-appearing landscapes and the presence of motorized vehicles. The size gives a strong feeling of remoteness.

Roaded Natural (RN) Characterized by predominantly natural-appearing settings with moderate sights and sounds of human activities and structures.

Rural (R) The sights and sounds of human activity are readily evident while the landscape is often dominated by human-caused geometric patterns.

Recreational River See Wild and Scenic Rivers.

Recreation Visitor Day (RVD) A unit for measuring recreation activities. One unit equals 12 visitor hours and may consist of 1 person for 12 hours or 12 persons for 1 hour or any equivalent combination.

Redd Nest in gravel of stream bottom where fish deposit eggs; herein, refers to salmon spawning redds.

Reforestation The natural or artificial restocking of an area with forest trees; includes measures to obtain natural regeneration, as well as tree planting and seeding. The work is done on national forests to produce timber and other forest products, protect watershed functioning, prevent erosion and improve other social and economic values of the forests, such as wildlife, recreation and natural beauty.

Refugia Areas of contiguous habitat for animal and plant populations which have been determined to have problems maintaining population viability.

Regenerability The ability for the survival of bare-root tree seedlings the first season after planting.

Regeneration The renewal of a tree crop, whether by natural or artificial means. Also the young tree crop (seedlings and saplings) itself.

Regeneration Harvest Used in reference to clearcut, seed tree and shelterwood cut harvest methods which remove an existing stand to prepare a site for regeneration.

Regeneration Potential An estimate of the difficulty of establishing conifer plantations. Determined by the water holding capacity of the upper 20 inches of the soil, the seedling water requirements and precipitation.

Regional Scale Diversity A spatial scale for analyzing biological diversity; a region is a large area, with generally homogeneous vegetation that is influenced by climate, elevation and topography; at the regional scale, analysis of biological diversity can encompass thousands of plant and animal species and many biological communities.

Regulated The classical regulated forest has a distribution of age classes such that an equal amount of harvest volume is available each year

for the intensity of management applied. This would imply equal areas of each age class, if every acre grew timber at the same rate. Such a forest is termed a normal, even-aged forest.

Regulation Class 1 Also timber emphasis. These timber emphasis lands are characterized by high timber yields using the full range of silvicultural practices to obtain these yields within the standards and guidelines designed to provide for multiple uses. Rotation ages on intensive timber lands occur near culmination of mean annual increment (CMAI). CMAI occurs at a point where net merchantable growth is at its maximum.

Regulation Class 2 Also moderate timber yields. These lands which coemphasize timber management and other resources relatively equally are characterized by moderate yields (70 to 80% of the biological potential) and by longer rotations. Such reductions are due to limitations on silvicultural practices or to an emphasis on other resource objectives.

Regulation Class 3 Also minimal timber yields. These lands emphasize non-timber resources and timber yields are characterized as minimal (20% of the biological potential). All prescriptions are available, but longer rotations and reduced rates of regeneration harvest restrict timber yields.

Release All work done to free desirable trees from competition with other less desirable vegetation.

Research Natural Area (RNA) An area that is set aside for research.

Residential Bound to or involving an official residence.

Residue Timber: See slash.

Resilience A system's ability to maintain structure and patterns of behavior in the face of disturbance.

Restoration The process of re-establishing, to the extent possible, the structure, function and integrity of indigenous ecosystems (Also Rehabilitation).

Richter Scale The range of numerical values of earthquake magnitude, devised in 1935 by the Seismologist, C. F. Richter. Very small earthquakes or micro-earthquakes, can have negative magni-

tude values. In theory there is no upper limit to the magnitude of an earthquake. However, the strength of earth materials produces an actual limit of slightly less than nine.

Right-of-Way The strip of land within which a road is constructed for passage over another man's or woman's ground; and in its legal and generally accepted meaning, in reference to a roadway, it is a mere easement in the land of others obtained by lawful condemnation for public use or by purchase.

Rill A narrow erosional channel in the soil, one to two inches in width and depth.

Riparian Habitat That portion of the watershed or shoreline influenced by surface or subsurface waters, including stream or lake margins, marshes, drainage courses and spring seeps.

Riparian Reserves (RRs) The stream and an adjacent area of varying width where practices that might affect water quality, fish and other resources are curtailed, as necessary, to meet management goals for each class of stream.

Risk Exposure to the chance of loss.

Risk Ratio A ratio calculated by dividing percent ERA by percent Threshold of Concern (TOC) which indicates whether the area being analyzed will exceed the TOC. A risk ratio greater than one indicates that the TOC will be exceeded.

River Corridor For WSRs; a strip of land averaging 320 acres per mile and extending at least 1/4 mile from the high water mark on both sides of the river.

Road Density The number of miles of roads in one square mile of land (640 acres).

Roadless Area Review and Evaluation (RARE) The process of evaluating roadless areas for inclusion as wilderness.

Roadless Area Review and Evaluation II (RARE II) A comprehensive process (the second) instituted in 1977 to identify roadless and undeveloped land areas containing 5,000 acres or more in the NFS for the purpose of determining which of the inventoried areas should be recommended to Congress for inclusion in the National Wilderness Preservation System, which areas should be

managed for non-wilderness uses and which areas required further planning before a reasonable decision on them could be made. This assessment was documented through a Final EIS.

Rotation The planned number of years required to establish (including the regeneration period) and grow timber crops to a specified condition or maturity for regeneration harvest. Selected management prescriptions provide the basis for the rotation age.

S

Salmonid Member of the fish family Salmonidae; includes salmon and trout.

Salvage Removal of recently-dead or dying trees to minimize the loss of wood products.

Scale The spatial and/or temporal resolution at which ecological patterns and processes, structures, and composition occur or are observed, measured or manipulated.

Scenic River See Wild and Scenic Rivers.

Scoping The process used to identify the scope of issues to be addressed and to determine the significant issues to be addressed. The scope of the issues determines the extent of analysis necessary; for example, the range of actions, alternatives and impacts to be addressed.

Secondary Range Rangeland that is usually accessible and capable of forage production, but is grazed only lightly or not at all under current management.

Second Growth Young Growth; Timber stands established after natural or human-caused removal of the original stand or previous forest growth.

Sedimentation The deposition of material along a stream channel.

Seed Tree A tree selected and often reserved, for seed collection.

Seed Tree Cutting Similar to clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration. In this case, scattered surviving trees on burned acres will be left to seed in regeneration naturally.

Seedlings and Saplings Non-commercial-size young stands, generally plantations.

Selection Cutting The annual or periodic removal of trees, individually or in small groups, from an uneven-aged forest in order to realize yield and establish a new stand of irregular constitution.

Sensitive Animals and Plants Those species identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trends in (a) population numbers or density or (b) habitat capability that would reduce a species' existing distribution.

Sensitivity Level The measure of people's concern for the scenic quality of the landscape. Sensitivity levels are identified as: "1" for high use and high concern for scenery; "2" for moderate use and concern; and "3" for low use and concern or seldom seen.

Seral or Successional Stage A transitory or developmental stage of a biotic community in an ecological succession.

Serpentinite A rock consisting essentially of a hydrous magnesium silicate usually having a dull green color and often a mottled appearance. Term sometimes used with soil, to indicate environmental conditions found on soils derived from serpentinite or peridotite.

Shelterwood Cutting A regeneration method under an even-aged silvicultural system. A portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration.

Significant As used in NEPA, requires consideration of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole and the affected region, interests and locality. Intensity refers to the severity of impacts (40 CFR 1508.27).

Silviculture The art and science of growing and tending forest vegetation, i.e., controlling the establishment, composition and growth of forests, for specific management goals.

Silvicultural System A management process whereby forests are tended, harvested and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the cuttings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced.

Site Preparation Removal of unwanted vegetation, slash, roots and stones from a site before reforestation.

Site Quality A quantitative measure of the productive capability of an area.

Site-Specific Management practices that are specific to a particular site. These management practices are usually tied to a particular piece of ground and are not used wide-spread.

Skyline Logging System A method of logging using steel rope, tower and a powered winch to elevate logs from their position on the ground slope and carry them to a point where they can be loaded onto trucks.

Slash Woody debris left after logging, pruning, thinning, brush cutting or other management activities and/or accumulating there as a result of storm, fire or other damage.

Slump A relatively slow moving (inches to feet per year) landslide of relatively thick soil where some of the original soil remains at the site of the rupture; some soil may leave the site by debris sliding or debris flow.

Smolt Juvenile salmonid, one or more years old, that has undergone physiological changes to cope with a marine environment; the seaward migrant stage of an anadromous salmonid.

Smolt Habitat Capability Index An indicator of the quality of rearing habitat for young salmon or steelhead (smolt). It assumes that spawning gravels are adequate to provide sufficient spawning areas to fully seed the existing rearing habitat and that sufficient numbers of adults will escape past fishermen, dams or natural mortality to return and fully seed the spawning gravels. It is expressed as the number of smolt which could be produced, estimating potential rather than actual production.

Snag A standing dead tree usually without merchantable value for timber products.

Soft Snag A snag composed primarily of wood in advanced stages of decay and deterioration, generally not merchantable.

Soil Erosion Hazard Potential The soil erosion potential based on erodibility plus such factors as topography, rainstorm characteristics and vegetative cover and management.

Soil Productivity The capability of a soil to produce a specific crop such as fiber, forage, etc., under defined levels of management.

Species Diversity The distribution and abundance of different plant and animal communities and species per unit of area; i.e. within a planning area.

Special Component Land Moderate to low intensity timber management land with an emphasis on other resource values under the 1972 Multiple Use Plans.

Spill Contingency Plan An emergency plan documenting specific procedures to be followed when a pesticide or hazardous material spill occurs.

Spotted Owl Habitat Area (SOHA) A habitat area designated to support one owl pair.

Stand A community of trees or other vegetation uniform in composition, constitution, age, spatial arrangement or condition to be distinguishable from adjacent communities.

Stand Scale Diversity A spatial scale for analyzing biological diversity at the stand level; it is dependent on soil, past disturbance and microclimate and includes the components of vegetative species composition, canopy closure and canopy layers, live tree size classes and density, snag density, size and stage of decay and size and decomposition class of CWD.

Standard and Guideline A principle requiring a specific level of attainment; a rule to measure against.

Standard Component Land Capable, available and suitable lands managed intensively to provide timber products under the 1972 Multiple Use Plans.

State Historic Preservation Officer (SHPO)
The SHPO coordinates State participation in the implementation of the National Historic Preservation

Act and is a key participant in the section 106 process. (36 CFR § 800.1[c][1][11]).

Steelhead A large-sized, silvery anadromous rainbow trout.

Stochastic Any process whose development in time is governed by chance or probabilistic considerations.

Stocking The degree to which trees occupy the land, measured by basal area and/or number of trees by size and spacing, compared with a stocking standard; that is, the basal area and/or number of trees required to fully utilize the land's growth potential.

Strategy Fire; Overall plan of attack for fighting a fire which gives consideration to the most cost-efficient use of personnel and equipment in consideration of values threatened, fire behavior, legal constraints and objectives established for management of natural resources; leaves decisions on tactical use of personnel and equipment to the line commanders in the suppression function.

Stratigraphic Classification of stratified rocks and geologic time into rock, time-rock, time and biostratigraphic units.

Stream Class The classification of streams according to their beneficial uses. Whole streams or parts of streams can be classified.

One stream may be divided into several classes:

Class I, Highly Significant These are perennial or intermittent streams, or segments thereof, which meet one or more of the following criteria: a) are habitat for large numbers of resident and/or migratory fish for spawning, rearing or migration; b) furnish water locally for domestic or municipal supplies; c) have flows large enough to materially influence downstream water quality; d) are characterized by major fishing or other water-oriented recreational uses; e) have special classification or designation, such as wild, scenic or recreation rivers; f) have special visual or distinctive landscape features and are classified as variety class A as defined in "National Forest Landscape Volume 2" (AGR Handbook 462); g) are habitat for threatened or endangered animal species or contain plants which are potential or viable candidates for threatened or endangered classification; h) exhibit ethnological, historical or archaeological evidence that makes them eligible for or are included in the "National Register of Historical Places."

Class II, Significant These are perennial or intermittent streams, or segments thereof, which meet one or more of the following criteria: a) are used by moderate numbers of fish for spawning, rearing or migration; b) furnish water locally for industrial or agricultural use; c) have enough water flow to exert a moderate influence on downstream quality; d) are used moderately for fishing and other

recreational purposes; e) are of moderate visual quality and meet variety class B as defined in "National Forest Landscape Management Volume 2" (Agr. Handbook 462); f) exhibit ethnological, historical or archaeological evidence that makes them eligible for State or local registers of historical significance or interest.

Class III, Moderately Significant These include perennial or intermittent streams, or segments thereof, which meet one or more of the following criteria: a) are habitat for few fish or spawning, rearing or migration; b) are rarely used for fishing or other recreational purposes; c) have enough water flow to exert minimum influence on downstream water quality; d) are of relatively low visual quality in the landscape and classified as variety class B as defined in "National Forest Landscape Management Volume 2" (Agr. Handbook 462); e) exhibit historical or archaeological properties that are of "archaeological interest" in accordance with the Archaeological Resource Protection Act of 1979.

Class IV, Minor Significance These are intermittent or ephemeral streams, or segments thereof, not previously classified.

Stream Order A stream classification which is a measure of the amount of branching within a watershed. Zero order is the designation for draws and swales that are tributary to first order streams. The smallest fingertip stream tributaries are designated order 1. Where two first-order channels join, a channel segment of order 2 is formed; where two of order 2 join a segment of order 3 is formed; and so forth. The trunk stream through which all discharge of water and sediment passes is therefore the stream segment of highest order.

Structure The amount of dead and live vegetation remaining after a disturbance, such as timber harvest or wildfire, that provides habitat structure and perpetuates ecosystem complexity in the new young stand.

Sub-soiling The tillage of subsurface soil, without inversion, for the purpose of breaking up dense layers that restrict water movement and root penetration.

Substratum The base or material on which an organism lives; food source.

Successional or Seral Stage A stage or recognizable condition of a plant community which occurs during its development from bare ground to climax.

Suitable Land Land where the harvest activities could occur without causing irreversible damage to soil or watershed.

Suitable Rangeland An area that produces accessible forage or has inherent forage-producing

capability (>50 pounds/acre) and can be grazed on a sustained yield basis.

Suppression All work and activities associated with fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

Suspended Particulate Matter (PM-10) Any airborne material, except water or gas, in a chemically uncombined form that exists as a liquid or solid at standard temperature and pressure conditions. PM-10 is particulate matter 10 micrometers or smaller in size.

Sustained Yield The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the NFS, without impairment of the productivity of the land.

Symbiotic The living together of two dissimilar organisms that is beneficial to both organisms.

System Road Roads that are part of the forest development transportation system, that serve the national forest and is necessary for the protection, administration and use of national forest and for the use and development of its resources.

T

Tarn Glacial lakes and ponds.

Taxonomic Scientific classification of organisms, according to their presumed natural relationships.

Ten-Year Storm Event A storm of such intensity that it causes streamflow peaks large enough to be equaled or exceeded only once every 10 years on average.

Terrane A land classification unit based on patterns of soil characteristics, the form of the land and the character of landslide and erosion processes that act on the land. (Also geomorphic terrane).

Terrestrial Pertaining to the land as distinct from water.

Threatened and Endangered Species (T&E) Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Threshold of Concern (TOC) An estimated upper limit to land use which causes hydrologic disturbance based on the inherent properties of the primary stream in the area being analyzed and expressed in percent.

Timber Emphasis Also Regulation Class 1.

Timber Stand Improvement (TSI) Treatments to maintain the growth and vigor of regenerated stands. Includes measures such as thinning, pruning, release cutting, prescribed fire, girdling and weeding.

Timber Strata A vegetation classification scheme for a national forest. It is used for timber inventories which describe a regional forest type, size class and stand density.

Total Suspended Particulate (TSP) Air and water; The amount of suspended matter. Air suspensions include carbon particles, liquid chemicals (aerosols), and pollen, etc. Water particulates include suspended soil and organic matter.

Transitory Rangeland Provides forage for a limited time after complete or partial removal of the overstory vegetation.

Travel Corridor A road, trail or waterway used by people; or a strip of land used by wildlife.

Travel Influence Zone This zone includes areas of existing or anticipated significant recreational occupancy, use and enjoyment along existing and planned overland routes of travel.

Travel Route A narrow strip of land, usually for location of transportation or utility rights-of-way within its boundaries.

Tribal Government Program A program designed to improve relationships between the Forest Service and Indian people through a formal protocol adopted by the Forest.

Turbidity The optical property of water as affected by suspension of material such as sediment, i.e., the muddy or cloudy state of water as measured in standard turbidity units based on light transmission through the water column.

Two-Year Storm Event A storm of such intensity that it causes streamflow peaks large enough to

be equaled or exceeded only once every 2 years on average.

Type Conversion A change from one community of species to another (for example from hardwood to conifer forest) or from trees/shrubs to grasses/forbs.

U

Ultrabasic Igneous or metamorphic rock containing less than 45% silica; containing virtually no quartz or feldspar and composed essentially of ferromagnesium silicates, metallic oxides and sulfides and native metals or of all three.

Unacceptable Modification Management activities which are excessive in size, extent or contrast with the natural landscape.

Unauthorized Use Occupancy or use of NFS land that is not authorized by Federal law, regulation or special-use authorization.

Unconsolidated Inner Gorge Slopes along rivers and streams that exceed 65% and have developed in unconsolidated material such as landslide deposits. They are extremely prone to landsliding.

Understory Vegetation (trees or shrubs) growing under the canopy formed by taller trees.

Uneven-age Management The application of a combination of actions needed to simultaneously maintain continuous high-forest cover. Cutting methods that develop and maintain uneven-aged stands are single-tree and group selection.

Universal Soil Loss Equation An equation for prediction of soil erosion from lands, induced by rainfall. It was designed to predict annual soil loss from sheet and rill erosion.

Unplanned Ignition A fire started at random by either natural or human causes or a deliberate incendiary fire.

Unprogrammed Cultural Surveys Heritage Program is the only program which benefits from the survey.

Unregulated Lands Lands with no programmed timber yields. These lands are not included in the

allowable sale quantity calculation. However, non-scheduled or incidental harvests might be obtained from some unregulated lands if they served to enhance other resources.

Unstable Lands Lands determined to have elevated risk for ground-disturbing activities due to their sensitivity. Refer to Geologic Sensitivity Class.

Unsuitable Land Forest land withdrawn from timber utilization by statute or administrative regulation or identified as not appropriate for timber production in the forest planning process, i.e., irreversible soils damage and nonreforestable in five years.

Utility Corridor A linear strip of land without definite width but limited by technological, environmental and topographical factors and containing one or more utility or transportation facilities. A corridor is a land use designation, identified for the purpose of establishing policy direction as to the preferred location of compatible linear facilities and compatible and conflicting land uses. It does not imply entitlement of use. Appropriate environmental review and regulatory proceedings must precede occupancy on a project specific basis.

V

Variety Class The scenic attractiveness of national forest lands in terms of natural visual interest and diversity. Variety class is identified as: "A" highly scenic; "B" average scenery; and "C" dull or monotonous scenery, as compared to the landscape province as a frame of reference.

Viable Population A population that has sufficient numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its range, within the planning area.

Viewshed A total landscape seen or potentially seen from specific points on a logical part of a travel route or water body.

Visual Absorption Capability (VAC) The measure of the lands' capability to absorb alterations, yet retain its' visual integrity.

Visual Quality Index (VQI) A measure of the overall visual quality that currently exists and is

expressed as a theoretical number between 0 and 120. It is a product of variety class and existing visual condition.

Visual Quality Objective (VQO) Measurable standards for visual resource management based on the acceptable degree of alteration of the characteristic landscape. These VQOs are based strictly on inventory conditions and have not undergone the land management planning process.

The VQOs and their definitions are:

Preservation Provides for ecological changes only.

Retention Activities are not evident to the casual forest visitor.

Partial Retention Activities may be evident but must remain subordinate to the characteristic landscape.

Modification Activities may dominate, but must utilize naturally-established form and texture. These areas should appear natural when viewed in foreground or middleground situations.

Maximum Modification Activities may dominate, but should appear as a natural occurrence when viewed in background situations.

Visual Resource The composite of basic physiographic features and patterns and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

Visual Sensitivity Levels Sensitivity classification is based on the level of social importance of travel routes, use areas and water bodies and the lands seen from them.

There are three levels of importance, generally:

Level 1 (High) Areas of high public concern for scenery.

Level 2 (Average) Areas of average public concern for scenery.

Level 3 (Low) Areas of low public concern for scenery.

Volume The quantity of measurable wood fiber in a tree or a stand of trees.

W

Water Influence Zone Areas of significant existing or anticipated water oriented recreational occupancy, use and enjoyment on and along lakes, reservoirs, rivers and streams.

Watershed The entire land area which drains to a specific point.

Wetlands Areas that are covered by shallow surface or ground water. These areas usually support the growth of plants that are associated with water or saturated soils.

Wildfire Any wildland fire not designated and managed as a prescribed fire within an approved prescription.

Wild and Scenic Rivers (WSRs) Rivers or river segments which have been designated as part of the National Wild and Scenic Rivers System (Public Law 90-542, 1968).

Criteria for classification are as follows:

Wild Rivers Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic Rivers Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational Rivers Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

Wilderness All lands included in the National Wilderness Preservation System by public law; generally defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation.

Wilderness Potential Areas generally 5,000 acres or larger in which the natural features of the area's ecosystems are intact and uninterrupted

by the sights, sounds, smells of human habitation or permanent improvements and offer the opportunities for solitude, self reliance and primitive experiences.

Wild River See Wild and Scenic Rivers.

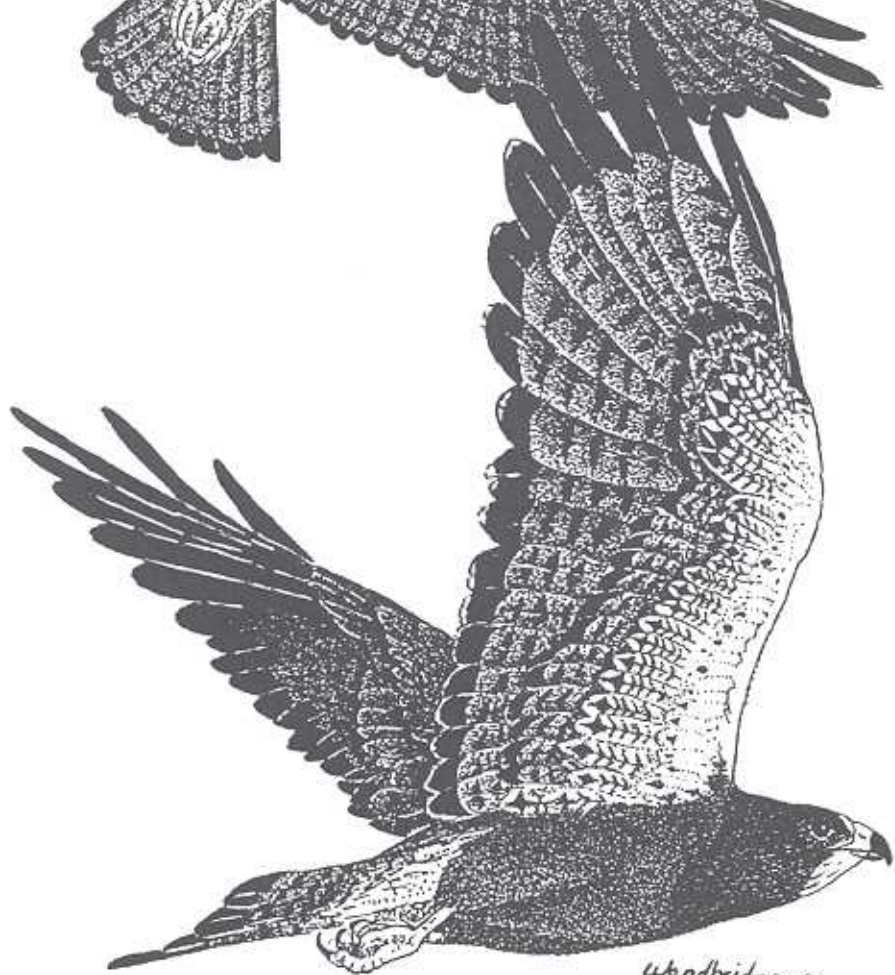
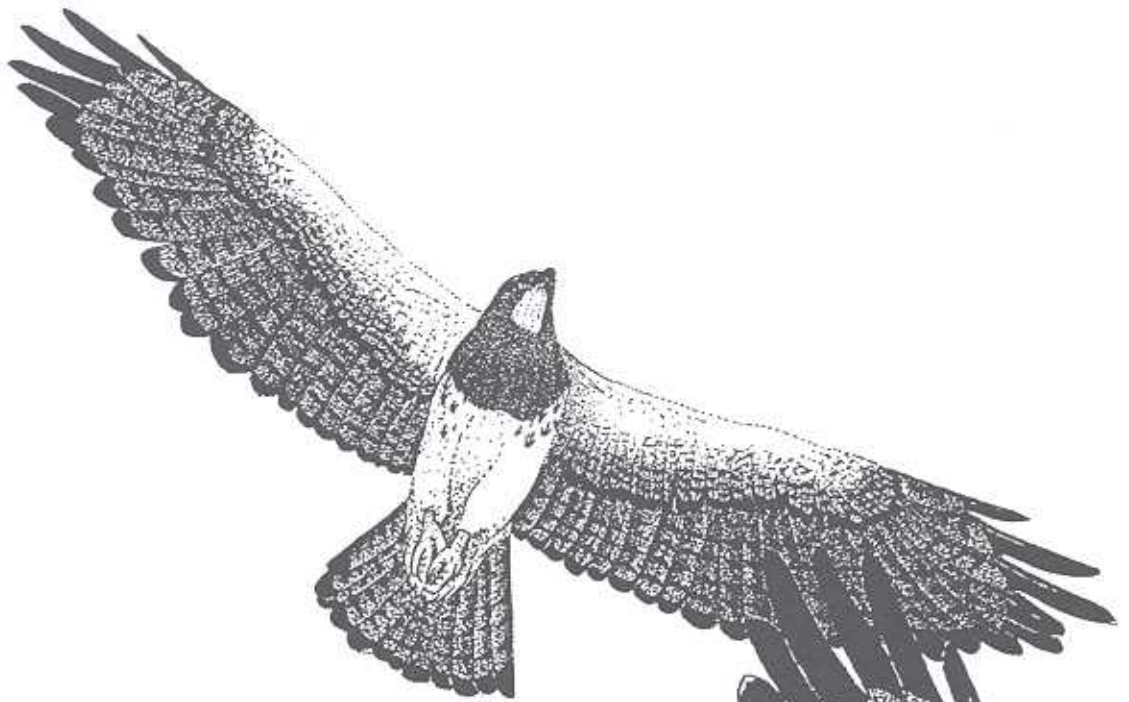
Winter Range An area used by deer and elk during the winter months; usually at lower elevation and/or south and west exposures.

Withdrawal The withholding of an area of Federal land from entry, settlement or sale location under some or all of the general land laws, including the mining and mineral leasing laws for the purpose of limiting activities under those laws in order to maintain other public values in the area or to reserve the area for a particular public purpose or program. A withdrawal does not take away existing rights.

Y

Yarding A method of bringing logs in to a roadside area or landing, for truck transport. Methods may include forms of skyline cable logging systems, balloon, helicopter, etc.

Yarding of Unutilized Material (YUM) Removal of unutilized logging material to the landing for purposes of fuels reduction.



Woodbridge 92

Index

A

Air 1-9, 2-12, 2-38, 2-47, 3-27--3-28, 3-118, 4-35--4-37
Acreage Allocation 2-20, 2-25, 2-28, 2-33, 2-38, 2-42, 2-47, 2-50, 2-55
Affected Environment 3-1
 Air 3-27--3-28
 Biological Diversity 3-29--3-40
 Butte Valley National Grassland 3-95
 Cultural Resources Management 3-127--3-129
 Economics 3-134--3-139
 Fire Management 3-115--3-122
 Fisheries 3-61--3-74
 Geology 3-4--3-16
 Lands Program Management 3-96--3-98
 Law Enforcement 3-98--3-99
 Minerals Management 3-99--3-103
 Range Management 3-122--3-126
 Recreation Management 3-78--3-83
 Released Roadless Area Management 3-85
 Riparian Management 3-41--3-42
 Sensitive Plant Species 3-42--3-47
 Social 3-130--3-134
 Soils 3-17--3-20
 Specially Designated Area Management 3-89--3-95
 Timber Management 3-106--3-115
 Transportation and Facilities Management 3-103--3-105
 Visual Resource Management 3-75--3-78
 Water 3-20--3-27
 Wild and Scenic Rivers Management 3-85--3-88
 Wilderness Management 3-83--3-84
 Wild Horse Management 3-126--3-127
 Wildlife 3-48--3-61
Agency Planning Framework 1-2
Allowable Sale Quantity (ASQ) 1-14, 3-110--3-112, 4-137--4-138
Alternatives
 Alternative Description 2-1
 Alternative Development Process 2-1--2-3, A-2
 Benchmarks 2-3--2-7, B-24--B-26
 Common to All Alternatives Except Preferred 2-13
 Comparison of Alternatives 2-53--2-75
 Comparison of Economic Effects 2-76--2-87
 Comparison of Outputs 2-16--2-18
 Comparison of PNV 2-81
 Considered in Detail 2-10--2-87, B-27--B-32

 Alternative A 2-28--2-32
 Alternative B 2-33--2-37
 Alternative B' 2-37
 Alternative C 2-37--2-41
 Alternative D 2-41--2-46
 Alternative D' 2-46
 Alternative E 2-47--2-50
 Alternative G(SOHA) 2-50--2-53
 Preferred Alternative 2-20--2-25
Direction Common to All 2-10--2-13
Eliminated From Further Detailed Study 2-7--2-10
 Karuk Alternative 2-7
 Klamath Forest Alliance 2-9
Environment To Be Created 2-24, 2-27, 2-32, 2-37, 2-41, 2-46, 2-50, 2-53
Key Comparisons 2-19
Range of Alternatives 2-3
American Marten 3-51, 4-69--4-72, 4-75--4-76, I-11
Analysis of the Management Situation 1-2, 2-2
Aquatic Conservation Strategy 2-20, 2-21, 2-22
Available Land 2-10

B

Bald Eagle 2-10, 3-49, 4-62
Benchmarks 2-3--2-7, B-24--B-26
Best Management Practices 1-9, 2-11, 2-33, 3-18, 3-25, 4-7, 4-20
Big Game 2-22, 2-26, 2-29, 2-34, 2-44, 2-48, 2-51
Biological Diversity 1-9--1-10, 2-11, 2-21, 2-25, 2-28--2-29, 2-34, 2-38, 2-43, 2-47, 2-51, 3-29--3-40, 4-38--4-56, A-3
 Coarse Woody Debris (CWD) 1-8, 2-22, 2-34, 2-39, 2-44, 3-20, 3-35, 4-49
 Community and Species Diversity 3-33--3-34, 3-39, 4-45--4-47
 Connectivity 2-21, 2-26, 2-29, 2-34, 2-38, 2-39, 2-43, 2-47, 2-51, 3-37--3-38, 4-52--4-55, 4-75--4-76
 Ecological Role of Fire 4-55--4-56
 Ecosystem Health 3-39--3-40, 3-112--3-113
 Elements 3-30--3-40
 Fragmentation 4-51--4-52
 Genetic Diversity 3-34, 3-39, 4-47--4-48, 4-133
 Hardwoods 2-22, 2-26, 2-29, 2-34, 2-39, 2-44, 2-48, 2-52, 3-35, 4-49, 4-81--4-82, 4-133, I-28
 "Old Growth" 1-9, 2-29, 2-34, 2-36, 2-48, 3-36--3-37, 4-51
 Rangeland Types 3-32--3-33, 3-124, 4-44--4-45

- Refugia 2-44, 3-40, 4-56
- Seral Stage 3-30--3-32, 3-38, 4-40--4-44, 4-52
- Structural Elements 1-8, 2-22, 2-26, 2-29, 2-34, 2-39, 2-44, 2-48, 2-52, 3-20, 3-34--3-38, 4-48--4-49, 4-81--4-83, 4-133
- Biological Diversity Elements 3-30--3-40
- Biomass 1-15, 2-13, 2-32, 3-113--3-114, 4-143
- Butte Valley National Grassland 1-13, 3-95, 4-116
- C**
- Capable Land 2-10
- Capable, Available, Suitable Lands 1-14, 2-10, 2-53, 2-54, 3-107--3-108, 4-130
- Candidates for Federal Listing (Wildlife) 3-53
- Cash Flow 2-76, 2-83, 2-86
- Chapparral 3-33, 4-44, 4-45
- Citizen's Participation Program 2-2, A-3
- Clearcutting 2-27, 2-52, 3-109, 4-136, F-2
- Coarse Woody Debris (CWD) 1-8, 2-22, 2-34, 2-39, 2-44, 3-20, 3-35, 4-49
- Community and Species Diversity 3-33--3-34, 3-39, 4-45--4-47
- Community Expansion 1-13, 3-98, 4-117
- Connectivity 2-21, 2-26, 2-29, 2-34, 2-38, 2-39, 2-43, 2-47, 2-51, 3-37--3-38, 4-52--4-55, 4-75--4-76
- Cultural Resources Management 1-16, 2-24, 2-27, 2-31, 2-37, 2-41, 2-46, 2-53, 3-127--3-129, 4-155--4-158
 - Cultural Sites 2-11, 2-13
 - Heritage Resource Program 2-24, 4-156, 4-158
 - Karuk Ceremonial Areas 1-17, 2-24, 2-27, 2-31, 2-37, 2-46, 2-50, 2-53, 4-156, 4-158
- Cultural Sites 2-11, 2-13
- Cumulative Watershed Effects 1-9, 2-11, 3-25, 4-23--4-32, G-7--G-14
- D**
- Diversity (See Biological Diversity)
- Description of the Forest 3-1
- E**
- Eagle 2-10, 3-49, 4-62
- Ecological Role of Fire 4-55--4-56
- Economics 1-17, 3-134--3-139, 4-162--4-165
- Economic Effects, Comparison of 2-76--2-87
- Economic Efficiency D-1--D-2
- Ecosystem Health 3-39--3-40, 3-112--3-113
- Ecosystem Management 2-12, 3-109
- Effects on Future Fires 1-16, 4-145, 4-149--4-151
- Employment 1-17, 2-78, 2-84, 3-138, 4-163, 4-165
- Endangered Species 1-10, 2-10, 2-54, 3-48--3-49, 3-61, 4-62--4-63
- Energy 1-13, 2-13, 3-100, 3-101, 4-119, 4-167--4-168
- Environmental Consequences 4-1
 - Adverse Environmental Effects Which Cannot Be Avoided 4-166
 - Air 4-35--4-37
 - Biological Diversity 4-38--4-56
 - Butte Valley National Grassland 4-116
 - Cultural Resources Management 4-155--4-158
 - Economics 4-162--4-165
 - Energy Requirements and Conservation Potential 4-167--4-168
 - Fire Management 4-145--4-151
 - Fisheries 4-85--4-91
 - Geology 4-3--4-19
 - Irreversible or Irrecoverable Commitment of Resources 4-166--4-167
 - Lands Program 4-116--4-118
 - Law Enforcement 4-118
 - Means to Mitigate Adverse Impacts 4-165--4-166
 - Minerals Management 4-118--4-123
 - Possible Conflicts With Federal, Regional, State and Local Land Use Plans 4-167
 - Range Management 4-151--4-154
 - Recreation Management 4-97--4-103
 - Relationship Between Short-term Uses and Long-term Productivity 4-166
 - Released Roadless Area Management 4-103--4-106
 - Riparian Management 4-56
 - Sensitive Plant Species 4-57--4-59
 - Social 4-159--4-162
 - Soils 4-20--4-23
 - Specially Designated Area Management 4-111--4-115
 - Timber Management 4-129--4-144
 - Transportation and Facilities Management 4-123--4-128
 - Visual Resource Management 4-92--4-97
 - Water 4-23--4-35
 - Wild and Scenic Rivers Management 4-106--4-110
 - Wilderness Management 4-102--4-103
 - Wild Horse Management 4-154--4-155
 - Wildlife 4-60--4-84
- Environmental Impact Statement Organization 1-4

Environment To Be Created 2-24, 2-27, 2-32, 2-37, 2-41, 2-46, 2-50, 2-53

F

Facilities 1-14, 2-23, 2-26, 2-30--2-31, 2-36, 2-40, 2-45, 2-49, 2-52, 3-103--3-105, 4-123--4-128

Falcon 2-10, 3-49, 4-63

Fire, Ecological Role 3-38, 4-55--4-56

Fire Effects 1-15, 3-112, 4-139--4-142

Fire Management 1-15--1-16, 2-13, 2-24, 2-27, 2-31, 2-37, 2-41, 2-45, 2-50, 2-52, 3-115--3-122, 4-55--4-56, 4-145--4-151

Effects on Future Fires 1-16, 4-145, 4-149--4-151

Fire Suppression 1-15, 3-117--3-118, 4-145, 4-146--4-147

Fuel Treatment 3-118

Plantation Survival 1-16, 4-145, 4-149

Prescribed Fire 1-15, 2-24, 2-30, 2-31, 2-36, 2-37, 2-40, 2-45, 4-145, 4-147--4-149

Prescribed Natural Fire (PNF) 2-24, 2-30, 2-31, 2-36, 2-37, 2-40, 2-45, 4-147, 4-148

Smoke Management 1-9, 3-118, 4-145, 4-146

Fire Suppression 1-15, 3-117--3-118, 4-145, 4-146--4-147

Firewood 1-15, 2-13, 2-24, 3-113--3-114, 4-143--4-144

Fish Habitat Conditions 3-67--3-72, 4-85--4-87

Fish Habitat Quality Rating 4-89

Fisher 3-51, 4-69--4-70, 4-72--4-76, 1-9

Fisheries 1-11, 2-12, 2-22, 2-26, 2-30, 2-35, 2-40, 2-44, 2-48, 2-52, 3-61--3-74, 4-85--4-91

Habitat Conditions 3-67--3-72, 4-85--4-87

Habitat Quality Rating 4-89

Habitat Restoration 1-11, 4-87--4-89

Sensitive Fish Species 3-62

Forest Constraints 2-12

Forest Pests 1-15, 3-112--3-113, 4-142--4-143

FORPLAN 2-2, 4-1--4-2, B1--B11

Forest Planning Steps 1-2--1-3

Fragmentation 4-51--4-52

Fuel Treatment 3-118

Furbearers 2-22, 2-25, 2-29, 2-34, 2-39, 2-44, 2-48, 2-51, 3-51, 4-69--4-76, 1-9, 1-11

G

Game Species 3-60, 4-84

Genetic Diversity 3-34, 3-39, 4-47--4-48, 4-133

Geologic Hazards 1-8, 3-13--3-14, 4-4--4-6, 4-17

Geology 1-7--1-8, 2-20, 2-25, 2-28, 2-33, 2-38, 2-42, 2-47, 2-51, 3-4--3-16, 4-3--4-19, G-1--G-6

Geologic Hazards 1-8, 3-13--3-14, 4-4--4-6, 4-17

Groundwater 1-8, 3-15, 4-4, 4-18

Hazardous Materials 1-8, 3-13, 4-4

Landslide Hazards 1-7, 3-5--3-9, 4-3--4-17

Rock Material Resource 3-15, 3-100, 4-4, 4-18

Unsuitable Lands 4-6

Geothermal (See Leasable Minerals)

Goshawk (See Northern Goshawk)

Grazing 3-122--3-123

Great Gray Owl 3-52, 4-76

Green Tree Retention 2-21, 2-23--2-24, 2-31, 2-36, 2-41, 2-45, 2-49, 4-132--4-136, F-1, F-2

Groundwater 1-8, 3-15, 4-4, 4-18

Growth and Yield 4-138--4-139

H

Habitat Capability Models 4-60--4-61, 1-1--1-31

Habitat Conditions (Aquatic) 3-67--3-72, 4-85--4-87

Habitat Conservation Areas (HCAs) 2-25, 2-29, 2-34, 2-37, 2-38, 2-43, 2-46

Habitat Quality Rating (Aquatic) 4-89

Habitat Restoration (Aquatic) 1-11, 4-87--4-89

Hardwoods 2-22, 2-26, 2-29, 2-34, 2-39, 2-44, 2-48, 2-52, 3-35, 4-49, 4-81--4-82, 4-133, 1-28

Harsh Sites 2-24

Hazardous Materials 1-8, 3-13, 4-4

Herbicide Use 1-15, 2-24

Heritage Resource Program 2-24, 4-156, 4-158

I

Implementation Requirements 2-2, 2-11, B-22

Innocent Encroachment 1-13

Integrated Pest Management

Irreversible and Irrecoverable Commitments 4-166--4-167

Issues and Concerns 1-7--1-17, 2-1--2-2, 2-57--2-75

K

Karuk Alternative 2-7, A-4

Karuk Ceremonial Areas 1-17, 2-24, 2-27, 2-31, 2-37, 2-46, 2-50, 2-53, 4-156, 4-158

Key Watersheds 2-21, 4-56

Klamath Forest Alliance Alternative 2-9

L

Land Allocations 2-20, 2-25, 2-28, 2-33, 2-38, 2-42, 2-47, 2-50--2-51

Land Classification 2-54

Landslide Hazards 1-7, 3-5--3-9, 4-3--4-17

Lands Program Management 1-13, 2-13, 2-23, 2-26, 2-30, 2-36, 2-40, 2-45, 2-49, 2-52, 3-96--3-98, 4-116--4-118

Community Expansion 1-13, 3-98, 4-117

Special Uses 3-97, 4-116

Utility Corridors 1-13, 3-97, 4-117

Withdrawals 3-98, 4-116--4-117, 4-119--4-121

Late Successional Reserves (LSRs) 2-21, 2-22

Law Enforcement 1-13, 2-13, 3-98--3-99, 4-118

Leasable Minerals 3-100, 4-121--4-122

Legislative Framework 1-1

List of Preparers 5-1

Locatable Minerals 3-100, 4-119--4-121

M

Maintenance

Management Areas 2-13--2-15, 2-53--2-57, B-3

Management Direction

Management Indicator Species (MIS) 1-10, 3-55--3-57, 4-60--4-62, 4-76--4-84

Management Practices

Management Prescriptions 2-13--2-15, B-4--B-7

Management Requirements 2-2, 2-10--2-11, B-20--B-22

Marbled Murrelet 2-10, 3-50

Marten 3-51, 4-69--4-72, 4-75--4-76, I-11

Means to Mitigate Adverse Effects 4-165--4-166

Minerals Management 1-13, 2-13, 2-45, 2-49, 3-99--3-103, 4-118--4-123

Energy 1-13, 2-13, 3-100, 3-101, 4-119, 4-167--4-168

Leasable Minerals 3-100, 4-121--4-122

Locatable Minerals 3-100, 4-119--4-121

Mineral Materials 3-100

Mineral Withdrawals 3-98, 4-116--4-117, 4-119--4-121

Mineral Materials 3-100

Modeling and Analysis Process B-1--B-32

Multi-Species Assemblages 3-57--3-60

N

National Environmental Protection Act (NEPA) 1-1, A-1

National Forest Management Act (NFMA) 1-1, A-1

National Natural Landmarks 1-13, 2-12, 4-115

Net Public Benefit 2-1

Northern Spotted Owl 2-10, 2-22, 2-26, 2-29, 2-34, 2-39, 2-43, 2-48, 2-51, 3-49--3-50, 4-63--4-67, I-4

Northern Goshawk 2-22, 2-26, 2-29, 2-34, 2-39, 2-43, 2-48, 2-51, 3-52, 4-67--4-69, I-7

O

Off-Highway Vehicles (OHV) 2-23, 2-30, 2-36, 2-40, 4-124

"Old Growth" 1-9, 2-29, 2-34, 2-36, 2-48, 3-36--3-37, 4-51

Other Products 1-15, 2-24, 3-113--3-114, 4-143--4-144

Outputs 2-16--2-18

P

Pacific Fisher 3-51, 4-69--4-70, 4-72--4-76, I-9

Peregrine Falcon 2-10, 3-49, 4-63

Pesticides 1-15

Pest Management 1-15, 2-24, 2-31, 2-49, 2-52, 3-112--3-113, 4-142--4-143

Planning Framework, Agency 1-2

Planning Framework, Legislative 1-1

Planning Issues 1-7--1-17

Planning Process 1-1

Planning Steps 1-2--1-3

Plans Incorporated By the Forest Plan 1-3

Plans Superseded by the Forest Plan 1-4

Plantation Survival 1-16, 4-145, 4-149

Pollution

Possible Conflicts With Other Plans 4-167

Preferred Alternative 2-20--2-25

Prescribed Fire 1-15, 2-24, 2-30, 2-31, 2-36, 2-37, 2-40, 2-45, 4-145, 4-147--4-149

Prescribed Natural Fire (PNF) 2-24, 2-30, 2-31, 2-36, 2-37, 2-40, 2-45, 4-147, 4-148

Prescriptions

FORPLAN B-4--B-7

Management 2-13--2-15, B-4--B-7

Present Net Value (PNV) 2-1, 2-2, 2-76--2-87

Proposed Action 1-3

Public Comment K-1
 Public Involvement 1-2, 2-1, 2-2, A-2--A-5
 Purpose and Need 1-1

R

Rangeland Types 3-32--3-33, 3-124, 4-44--4-45
 Range Management 1-16, 2-13, 2-24, 2-27, 2-31, 2-37, 2-41, 2-46, 2-50, 2-53, 3-122--3-126, 4-151--4-154
 Ecological Types 3-124
 Grazing 3-122--3-123
 Record of Decision for Amendments to Forest Service and BLM Planning Documents Within the Range of the Northern Spotted Owl 1-2, 2-3, 2-21
 Recreation Management 1-11, 2-12, 2-23, 2-26, 2-30, 2-35, 2-40, 2-44, 2-49, 2-52, 3-78--3-83, 4-97--4-103
 Trail Management 1-12, 3-80
 Refugia 2-44, 3-40, 4-56
 Regional Timber Supply H-1--H-7
 Relationship Between Short-term Uses and Long-term Productivity 4-166
 Released Roadless Area Management 1-12, 2-23, 2-30, 2-49, 3-85, 4-103--4-106, C-1--C-92
 Renewable Resources Planning Assessment and Program (RPA) 1-1, 1-2
 Research Natural Areas (RNAs) 1-12, 2-12, 3-89--3-90, 4-111
 Returns to Treasury
 Riparian Management 1-10, 2-11, 2-22, 2-25, 2-29, 2-34, 2-39, 2-43, 2-48, 2-51, 3-41--3-42, 4-56, 4-83--4-84, 4-85, I-21--I-24,
 Riparian Management Zone (RMZ) 2-25, 2-29, 2-30, 2-34, 2-39, 2-40, 2-43, 2-48, 2-51, 2-52, 4-85
 Riparian Reserve (RR) 2-20, 2-22, 4-85
 Roadless Areas (See Released Roadless Area Management)
 Road Construction 4-124--4-125
 Road Density 4-127
 Road Maintenance 3-104, 4-127
 Road Management 1-14
 Rock Material Resource 3-15, 3-100, 4-4, 4-18
 Rural Development Program 2-13, 2-24

S

Salvage 2-24, 2-31, 2-36, F-3
 Scenic Byway 2-11, 2-36, 2-40, 4-124
 Scoping Process 1-7, 2-1--2-2, A-1

Sensitive Animal Species 1-10, 2-11, 2-44, 3-50--3-53, 4-67--4-76
 Sensitive Fish Species 3-62
 Sensitive Plant Species 1-10, 2-11, 2-12, 3-42--3-47, 4-57--4-59
 Seral Stage 3-30--3-32, 3-38, 4-40--4-44, 4-52
 Silvicultural Systems 1-14, 2-23--2-24, 2-27, 2-31, 2-36, 2-40, 2-45, 2-49, 2-52, 3-109--3-110, 4-132--4-137, F-1--F-15
 Smoke Management 1-9, 3-118, 4-145, 4-146
 Snags 2-22, 2-26, 2-29, 2-34, 2-39, 2-44, 2-48, 2-52, 3-34--3-35, 4-48--4-49, 4-82--4-83, I-25
 Social 1-17, 2-13, 3-130--3-134, 4-159--4-162, A-3
 Soils 1-8, 2-11, 2-12, 2-21, 2-28, 2-33, 2-42, 3-17--3-20, 4-20--4-23
 Coarse Woody Debris (CWD) 1-8, 2-22, 2-34, 2-39, 2-44, 3-20, 3-35, 4-49
 Soil Productivity 2-11, 3-17--3-18, 4-20--4-23
 Suitability 1-8, 2-10, 3-19
 Soil Productivity 2-11, 3-17--3-18, 4-20--4-23
 Special Habitat Provisions 2-22, 2-26, 2-29, 2-34, 2-44, 2-48, 2-51
 Special Interest Areas (SIAs) 1-13, 2-12, 3-90--3-95, 4-111--4-115
 Specially Designated Area Management 1-12--1-13, 2-36, 2-40, 2-44, 3-89--3-95, 4-111--4-115
 Special Uses 3-97, 4-116
 Species Introduction 1-11, 2-26, 2-34, 2-39, 2-48, 2-51
 Stability 1-7
 Standards and Guidelines 2-12--2-13
 Structural Elements 1-8, 2-22, 2-26, 2-29, 2-34, 2-39, 2-44, 2-48, 2-52, 3-34--3-38, 4-48--4-49, 4-81--4-83, 4-133
 Suitable Lands 1-8, 2-10, 3-19
 Surface Use 1-13

T

Threatened and Endangered Species 1-10, 2-10, 2-54, 3-48--3-50, 3-61, 4-62--4-67
 Timber Management 1-14, 2-13, 2-23, 2-27, 2-31, 2-36, 2-41, 2-45, 2-49--2-60, 2-52, 3-106--3-115, 4-129--4-144
 Allowable Sale Quantity (ASQ) 1-14, 3-110--3-112, 4-137--4-138
 Biomass 1-15, 2-13, 2-32, 3-113--3-114, 4-143
 Capable, Available and Suitable Lands (CAS) 1-14, 2-10, 2-53, 2-54, 3-107--3-108, 4-130
 Clearcutting 2-27, 2-52, 3-109, 4-136, F-2

Fire Effects 1-15, 3-112, 4-139--4-142
 Firewood 1-15, 2-13, 2-24, 3-113--3-114, 4-143--4-144
 Green Tree Retention 2-21, 2-23--2-24, 2-31, 2-36, 2-41, 2-45, 2-49, 4-132--4-136, F-1, F-2
 Growth and Yield 4-138--4-139
 Land Classification 2-54
 Other Products 1-15, 2-24, 3-113--3-114, 4-143--4-144
 Pest Management 1-15, 2-24, 2-31, 2-49, 2-52, 3-112--3-113, 4-142--4-143
 Policy Constraints 2-11--2-12, B-22--B-23
 Regional Timber Supply H-1--H-7
 Silvicultural Systems 1-14, 2-23--2-24, 2-27, 2-31, 2-36, 2-40, 2-45, 2-49, 2-52, 3-109--3-110, 4-132--4-137, F-1--F-15
 Timber Management Intensity 3-108--3-109, 4-130--4-131
 Timber Management Intensity 3-108--3-109, 4-130--4-131
 Timber Policy Constraints 2-11--2-12, B-22--B-23
 Trail Management 1-12, 3-80
 Transportation and Facilities Management 1-14, 2-23, 2-26, 2-30--2-31, 2-36, 2-40, 2-45, 2-49, 2-52, 3-103--3-105, 4-123--4-128
 Road Construction 4-124--4-125
 Road Density 4-127
 Road Maintenance 3-104, 4-127

U

Unauthorized Uses 1-13
 Unsuitable Lands 4-6
 Utility Corridors 1-13, 3-97, 4-117

V

Vandalism of Cultural Sites 1-13
 Vegetative Diversity 1-10
 Viability 2-11
 Visual Resource Management 1-11, 2-11, 2-12, 2-22--2-23, 2-26, 2-30, 2-35, 2-40, 2-44, 2-48--2-49, 2-52, 3-75--3-78, 4-92--4-97
 Visual Quality Objectives 1-11, 2-22, 2-26, 2-30, 2-35, 2-40, 2-44, 2-48--2-49, 2-52, 3-75--3-76, 4-92--4-97

W

Water 1-9, 2-11, 2-12, 2-21, 2-28, 2-33, 2-38, 2-42, 2-47, 3-20--3-27, 4-23--4-35
 Cumulative Watershed Effects 1-9, 2-11, 3-25, 4-23--4-32, G-7--G-14
 Water Quality 1-9, 3-21--3-25, 4-32--4-34, G-14--G-15
 Watershed Restoration 1-9, 3-26, 4-34--4-35
 Watersheds 3-21--3-23, 4-1--4-2
 Water Yield 1-9, 3-26
 Water Quality 1-9, 3-21--3-25, 4-32--4-34, G-14--G-15
 Watershed Restoration 1-9, 3-26, 4-34--4-35
 Watersheds 3-21--3-23, 4-1--4-2
 Water Yield 1-9, 3-26
 Western Pond Turtle 3-53, 4-76
 Wild and Scenic Rivers Management 1-12, 2-11, 2-23, 2-26, 2-30, 2-36, 2-40, 2-45, 2-49, 2-52, 3-85--3-88, 4-106--4-110, E-1--E-160, J-1--J-20
 Additional Designation 1-12, 3-88, 4-110, E-1--E-160
 Wilderness Management 1-12, 2-13, 2-23, 2-30, 2-36, 2-40, 2-45, 2-49, 3-83--3-84, 4-102--4-103
 Wild Horse Management 1-16, 2-24, 2-27, 2-31, 2-37, 2-41, 2-46, 2-50, 2-53, 3-126--3-127, 4-154--4-155
 Wildlife Management 1-9--1-10, 2-22, 2-25--2-26, 2-29, 2-34, 2-39, 2-43--2-44, 2-48, 2-51--2-52, 3-48--3-61, 4-60--4-84
 Big Game 2-22, 2-26, 2-29, 2-34, 2-44, 2-48, 2-51
 Candidate for Federal Listing 3-53
 Furbearers 2-22, 2-25, 2-29, 2-34, 2-39, 2-44, 2-48, 2-51, 3-51, 4-69--4-76, I-9, I-11
 Game Species 3-60, 4-84
 Habitat Capability Models 4-60--4-61, I-1--I-31
 Management Indicator Species (MIS) 1-10, 3-55--3-57, 4-60--4-62, 4-76--4-84
 Multi-Species Assemblages 3-57--3-60
 Sensitive Animal Species 1-10, 2-11, 2-44, 3-50--3-53, 4-67--4-76
 Special Habitat Provisions 2-22, 2-26, 2-29, 2-34, 2-44, 2-48, 2-51
 Species Introduction 1-11, 2-26, 2-34, 2-39, 2-48, 2-51
 Threatened and Endangered Species 1-10, 2-10, 2-54, 3-48--3-50, 3-61, 4-62--4-67
 Willow Flycatcher 3-53, 4-76
 Withdrawals 3-98, 4-116--4-117, 4-119--4-121

