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To Whom It May Concern:

I offer the following comments on the proposed snowmaking system and additional withdrawal of 1.1 cubic feet per second (cfs) from the East Fork of the Hood River, as described in the April 5, 2005 Scoping Letter from the Mt. Hood National Forest (SL).

My comments are based on experience, education, personal knowledge of the impact area of Mt. Hood Meadows and the East Fork of Hood River (EFHR), and other affected resources.

I am hydrologist with more than 23 years of professional experience, with a B.S. in hydrology and water resources from the University of Arizona, a M.S. in hydrology and hydrogeology from the University of Nevada-Reno, and finished all the required academic work toward a Ph.D. in forest hydrology at the University of Washington. I currently work as a consulting hydrologist for a variety of clients, including county and tribal governments in Oregon and Idaho. I worked for more than 12 years at the Columbia River Inter-Tribal Fish Commission, where I served as Senior Scientist-Hydrologist. I have served as a technical advisor on non-point source water pollution to the states of Idaho and Oregon and have worked as a consultant for several local governments in Nevada, Oregon, Arizona, and California. My professional experience over the last 23 years includes work for tribal, federal, state, county, and city governments, universities, homeowners associations, and non-profit groups in eight western states. A copy of my curriculum vitae is attached to this declaration as Attachment A.

For more than 16 years, most of my work has focused on the effects of land uses on nonpoint sources of pollution, water quality, channel morphology, and native trout and salmon habitat. I have examined water withdrawals, logging, roadbuilding, mining, and other activities that affect soil erosion, streamflow, or water quality. I have developed monitoring programs to measure changes in streams and water quality caused by various land uses. I have also developed measures to protect existing streams from additional degradation and to restore forested watersheds and their streams.

During my tenure at CRITFC, our work with the U.S. Forest Service (USFS) provided some of the groundwork for most of the substantive watershed protection measures ultimately adopted by the USFS and U.S. Bureau of Land Management (USBLM) in two combined agency management strategies designed to slow the decline in habitat for anadromous and resident salmonids in the Columbia River basin: "Implementation of Interim Strategies for Managing Anadromous Fish Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California" (1995) (PACFISH) and "Inland Native Strategies for Managing Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada" (INFISH).

I have served as a peer-reviewer for the scholarly scientific journal, North American Journal of Fisheries. I also served as a peer-reviewer for the proceedings of an international conference on forestry-fish interactions for papers related soil erosion and stream sedimentation from forestry activities.

I have published numerous papers on the effects of water and land uses on watersheds and aquatic systems. Under contract with NOAA Fisheries, I also authored an evaluation of models for the estimation of erosion, sediment delivery, and effects on fish habitat (Rhodes, 1995). I also co-authored a data-driven publication documenting how federal land management schema failed to protect fish habitats on the Clearwater National Forest in Idaho from the adverse effects of sedimentation caused by roads and logging (Espinosa et al., 1997).

I have published numerous papers on the effects of logging and related activities on watersheds and aquatic systems. Under contract with NOAA Fisheries (NOFISH) I co-authored an extensive evaluation of the condition of ESA-listed salmonids and their habitats in the Columbia Basin, with recommendations to protect and restore these habitats (Rhodes et al., 1994). I also co-authored data-driven assessments of the status of imperiled trout across the western US (Kessler et al., 2001) and how federal land management schema failed to protect fish habitats on the Clearwater National Forest in Idaho (Espinosa et al., 1997).

I am quite familiar with the Mt. Hood Meadows ski area and its significant negative impacts on the watersheds and downstream aquatic resources. I have done detailed site evaluations many times within the ski area since 1989, including guiding agency personnel on evaluations of wetland, riparian, and aquatic damage caused by the ski area. I am also quite familiar with the conditions of streamflows, fish habitat, and fish populations in the EFHR.

I have reviewed the SL, the EFHR Watershed Analysis (EWA), the Mt. Hood National Forest LRMP (LRMP), and the Northwest Forest Plan (NFP). I am quite familiar with the NFP, having evaluated its aquatic provisions in detail under contract with NOFISH (Rhodes, 1995) and its amended provisions for other clients.

**The MNF has completely failed to describe the existing situation for affected resources.**

It is apparent that the Mt. Hood National Forest (MNF) has failed to provide adequate and consistent information to perform any real analysis of the likely manifold and significant impacts of the proposed actions in their entirety. This, alone, usurps the MNF's premature determination of the project's likely impacts.

The SL is wholly devoid of any information on the current condition of affected resources, including the status of affected fish populations, other aquatic organisms, the condition of their habitats, water quality, and current streamflows. It is well-documented in numerous sources that fish populations in the EFHR are depressed, although this is wholly ignored in the SL. The SL fails to even list sensitive fish species that inhabit the affected EFHR, or that steelhead trout in the affected streams are listed as threatened under the ESA.

The SL also ignores that habitat degradation is a key factor in this situation. Impacts from the MHM contribute to cumulative habitat and water quality damage from water withdrawals, elevated erosion, sediment delivery, and runoff from impervious surfaces. These impacts contribute to the elevated water temperatures, increased sedimentation, reduced lowflows, increased turbidity and consequent habitat degradation that are major aquatic problems in the EFHR. I have personally surveyed the MHM impact area many times and it is clear that the MHM has had significant negative impacts on these aquatic conditions, as well as wetlands and riparian areas.

The SL also fails to even mention that anadromous fish in the affected rivers are subject to treaty rights by the Columbia River Tribes and that the MNF has a federal trust responsibility to manage watersheds consistent with the rebuilding of tribal fisheries. This is not a trivial omission because local, state, federal, and tribal governments have spent and are spending many millions of dollars to protect and restore these fish populations and their habitats.

The SL is also devoid of any information on the status and extent of affected wetlands and riparian areas and/or their relation to riparian reserve requirements under the NFP. Similarly, the SL is also inexplicably devoid of any discussion of current habitat conditions in the EFHR that will be affected by the project and their level of non-compliance with the LRMP's aquatic standards. Similarly, the SL completely lacks any discussion of soils that will be affected by trenching and other disturbances, including associated erosion and compaction hazards.

The utter failure to analyze these conditions and disclose their significance in the SL exemplifies the slipshod nature of the premature decision to issue a Categorical Exclusion (CE).

**The MNF has not provided adequate information on the likely impacts of the proposed project.**

The SL has a dearth of information on the likely direct, indirect, and cumulative impacts of the proposed project on watershed and aquatic resources. This causes the SL to be woefully defective with respect to the impacts' relationship to tribal treaty rights, ESA, LRMP standards, NFP requirements, and other regulatory requirements. This demonstrates that MNF's premature decision to issue a project decision under a CE is arbitrary and capricious.

It is obvious that the project will have many significant and persistent negative effects on watershed and aquatic resources in the project area and downstream, which the MNF has completely failed to discuss and analyze. These include the following:

- 1) Reduced streamflows caused by the water withdrawals and snowmaking. Snowmaking creates a high degree of consumptive loss just between the nozzle and the ground. Snowpacks continue to incur significant amounts of water loss from sublimation before melting, especially in alpine environments like the MHM (Purser and Rhodes, 1998). During snowmelt, still more water is lost via evapotranspiration. As a result, only a fraction of the water withdrawn to make snow ultimately returns to streams. The little water from snowmaking that does return to streams, does not do so during the lowest flows. Low flows are already a major limiting factor for the survival and production of salmonids in the EFHR and Hood River. Because subsurface

and groundwater flows are hydrologically connected to surface water and wetlands, any groundwater withdrawals will also impact wetlands and streamflows.

2) Flow impacts from soil compaction, impervious surfaces (e.g. tanks), and trenching. Soil compaction and impervious surfaces increase surface runoff while reducing subsurface flows to streams. A significant area is likely to be compacted by trenching equipment, although the SL sheds no light on this.

Trenches inexorably interrupt unsaturated flow towards streams during drier periods (Kirkby, 1978). During wetter periods trenches divert subsurface flow away from stream by intercepting the flow (Kirkby, 1978). Both mechanisms reduce flows to wetlands and streams.

Pipes, once buried, reduce the ability of the soil profile to store and release water, contributing to reduced lowflows. For instance, 14,000 feet of buried pipe, as is proposed in the SL, with a just a 2 inch diameter reduces the water holding capacity of affected soils by more than 300 cubic feet. Notably, the SL fails to even describe the size of pipe proposed for burial. These impacts likely conflict with LRMP standard that requiring maintenance of groundwater recharge areas. Impacts to subsurface flows will adversely affect wetlands and streams because much of their water supply comes from subsurface flow especially during the non-snowmelt period.

3) Reduced soil productivity and elevated erosion and sedimentation. Elevated topsoil erosion causes essentially permanent loss of soil productivity (Beschta et al., 2004; Karr et al., 2004). Compaction and vegetation removal also causes long-term reductions in soil productivity. Impervious surfaces cause irretrievable losses of soil productivity. Activities associated with trench construction, vegetation removal, and other soil impacts will contribute to increased erosion and sediment delivery.

Increases in erosion and sedimentation increase turbidity, and contribute to reductions in pool quality and volume, increases in channel width/depth ratio, and elevated levels of fine sediment in streams (Rhodes et al., 1994). All of these impacts are highly deleterious to the survival of salmonids and some amphibians and macroinvertebrates (Waters, 1995; Karr et al., 2004). Many of these impacts affect stream conditions that have applicable standards in the MNF LRMP and the NWF. The affected aquatic organisms also provide an important source of the food web for terrestrial organisms, so they have terrestrial impacts, as well. Increased erosion and sediment delivery from activities within the MHM impact area contribute to cumulative damage by sediment far downstream.

4) Increases in seasonal water temperature extremes. Reduced flows and increases in channel/width depth work to increase summer water temperatures while making streams prone to reduced winter water temperatures. Both situations adversely affect the survival and production of salmonids (McCullough et al., 1999) and other stenotherms, including macroinvertebrates and amphibians. Elevated summer water temperatures are already a major problem in the EFHR and the Hood River.

5) Elevated peakflows. Although only a portion of the water used for snowmaking will return to streams it will all return during snowmelt which will increase peakflows. Elevated peakflows inexorably increase channel erosion and contribute to channel widening.

6) The project will also likely impact riparian reserves and wetlands. However, the SL includes no adequate description of the extent and type of these impacts.

7) These obvious negative effects on many aquatic and riparian conditions are plainly inconsistent with the NWF which requires that activities be consistent with the long-term maintenance and improvement of riparian and aquatic systems. These impacts conflict with several of the Aquatic Conservation Strategy Objectives (ACSOs) for the NWF. These negative effects are also inconsistent with the rebuilding of salmonid populations and the Columbia River Basin Tribes' recovery plan for anadromous fish, *Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes* (CRITFC, 1995)

8) Due to their number, type, and nature, the proposed project's impacts are clearly controversial. For instance, the CRITFC, ODFW, and the Confederated Tribes of the Warm Springs all spent considerable effort opposing a previous water withdrawal by MHM in the watershed of the EFHR.

All of these impacts must be examined in order to reasonably determine the project's likely effects on the environment and their significance. Thus far, the MNF has failed to do that. However, even a cursory examination of the obvious nature of the likely impacts indicates that project will have significant environmental impacts that potentially conflict with a wide variety of plans, policies, and regulatory requirements, including the LRMP, NWF, ESA, and tribal efforts to restore flows in Hood River and rebuild treaty-protected fish runs. This clearly indicates that issuance of CE for the project is arbitrary and capricious.

Sincerely,

Jonathan J. Rhodes

Literature Cited:

Beschta, R.L., Rhodes, J.J., Kauffman, J.B., Gresswell, R.E, Minshall, G.W., Karr, J.R, Perry, D.A., Hauer, F.R., and Frissell, C.A. 2004. Postfire Management on Forested Public Lands of the Western USA. Cons. Bio., 18: 957-967.

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[http://www.critfc.org/text/tech\\_rep.htm](http://www.critfc.org/text/tech_rep.htm)

Rhodes, J.J. 1995. A Comparison and Evaluation of Existing Land Management Plans Affecting Spawning and Rearing Habitat of Snake River Basin Salmon Species Listed Under the Endangered Species Act, CRITFC, Portland, OR. [http://www.critfc.org/text/tech\\_rep.htm](http://www.critfc.org/text/tech_rep.htm)

Purser, M.D. and Rhodes, J.J. 1998. Thinning For Increased Water Yield in the Sierra Nevada: Free Lunch or Pie in the Sky? Pacific Rivers Council, Eugene, OR.

Waters, T. F. 1995. Sediment in streams: sources, biological effects and control. American Fisheries Society Monograph 7, Bethesda, MD.

**Curriculum Vitae: Jonathan J. Rhodes**  
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### EDUCATION

1989: Doctoral candidacy degree in forest hydrology at the Univ. of Wash. Completed all requirements but dissertation.

1985: M.S. in Hydrology and Hydrogeology at the Univ. of Nev.-Reno. Thesis topic: The influence of seasonal stream runoff patterns on water quality.

1981: B.S. in Hydrology and Water Resources at the Univ. of Ariz.

### RECENT PROFESSIONAL HISTORY

Sept. 2001 – present. Senior Conservation Hydrologist. Main duties: Analysis of effects of water and land use on streams and other aquatic resources, including native salmonids and their habitats; diagnosis of watershed and stream conditions; stream monitoring; development of programmatic and site-specific watershed and stream protection measures; project management. Recent projects (and clients): Analysis of potential effects of groundwater pumping on streamflow (Conf. Tribes of the Umatilla Indian Reservation, OR); diagnosis of watershed and stream conditions in an urbanized watershed (West Multnomah Soil and Water Conservation District, OR); diagnosis of effects of grazing on watershed and stream conditions in forested watersheds in N. California (Center for Biological Diversity (CBD)) and Oregon (Or. Natural Desert Assoc.); Coordinator and Aquatic Scientist for the Western Native Trout Campaign (CBD, Pacific Rivers Council (PRC), Biodiversity Conservation Alliance, Trout Unlimited).

Aug. 1990 – Sept. 2001. Consulting hydrologist for non-profit organizations. Past projects (and clients): hydrologic characterization of remnant marsh proposed as urban wildlife refuge/greenspace (Multnomah County Parks Department, OR); review of aquatic effects of: quarry expansion (Friends of Forest Park, OR), urban construction (homeowners consortium, W. Linn, OR); forest manipulations on streamflow (PRC).

Apr. 1989 – Sept. 2001. Senior Scientist-Hydrologist, Columbia River Inter-Tribal Fish Commission. Main duties: Administration and implementation of projects monitoring channel change from land management in Columbia River basin; development of programmatic and site-specific land management plans to ensure protection of watershed integrity, water quality and aquatic resources; development of restoration plans for watersheds degraded by grazing, roads, logging and mining; design of plans for monitoring watershed and stream erosion, sedimentation, water quality, and habitat conditions; review of land management plans for adequacy of protection of aquatic resources; field evaluation of watershed and channel conditions throughout the Columbia Basin; expert witness testimony; development of technical recommendations for policy staff for protection of natal habitat for anadromous fish; review of state and federal aquatic resource monitoring plans; report and proposal writing; and, participation in various state and federal technical work groups.

Aug. '84 -- Apr. '89. Research assistant, College of Forestry, Univ. of Wash. Main duties: analysis and interpretation of water quality-quantity data; technical report writing; design and maintenance of water chemistry and quantity monitoring network in a coastal forested watershed; training in data acquisition techniques; public presentation of findings.

July -- Oct. 1987 and May -- Oct. 1988. Consulting hydrologist, Tahoe Regional Planning Association, CA and NV. Main duties: field delineation and mapping of riparian zones, wetlands, and erosion-prone areas.

June -- Sept. 1985 and July 1986. Research assistant, Dept. of Geophysics, Univ of Wash. Main duties: operation of field station for glacier research on Mt. Olympus, Wash.; measurement of snow and glacier melt rates; mapping of supra- and extra- glacial streams contributing to basal sub-glacial flow rates on surging and non-surging glaciers in the Alaska Range, Alaska.

Jan. 1984. Consultant with C.M. Skau, Reno, NV. Main duties: field evaluation of logging roads for erosion potential and sedimentation risk; recommendations for placement of future roads to minimize erosion and sediment delivery to fish-bearing streams in coastal Northern California; report preparation.

Oct. 1983 -- June 1984. Hydrologic Tech., USGS, Carson City, NV. Main duties: aid in development and calibration of predictive water quality model for the Truckee River; statistical analysis of water quality data; identification and quantification of non-point sources of nutrients to Truckee River, NV.

Aug. 1981 -- Sept. 1983. Research Assistant, Univ. of Nev.-Reno. Main duties: design and installation of instrument network to monitor water chemistry and quantity in a small, forested alpine watershed in the Sierra Nevada; water quality sampling; data interpretation and management; preparation of reports, grant proposals, and publications, computer programming for data reduction and storage; mapping of geology, soils and runoff-producing areas; and, training of field technicians.

Feb. -- May 1981. Water Quality Intern, Pima Assoc. of Gov'ts., Tucson, AZ. Main duties: water quality sampling of agricultural production wells; mapping of groundwater levels; and, coordination of sampling efforts.

### PROFESSIONAL SERVICE

Mar 2004. Invited Panel Speaker, International Environmental Law Conference: "Postfire Watershed Restoration," Univ. of OR, Eugene, OR

April 2002. Invited Speaker, Restoring Public Lands: Reclaiming the Concept of Forest Restoration, "Watersheds and Fisheries: Restoration Needs for Trout Habitats," Univ. of CO, Boulder, CO

Mar 2002. Invited Panel Speaker, International Environmental Law Conference: "Soils Impacts and Effects on Trout Habitat," Univ. of OR, Eugene, OR

Mar. 2001. Invited Panel Speaker, International Environmental Law Conference: "NFMA and Salmon Habitat Protection," Univ. of OR, Eugene, OR.

May 2000. Invited speaker, 5<sup>th</sup> National Tribal Conf. on Environmental Management: "Federal Land Management's Effects on Critical Habitat for Endangered Salmon," Lincoln City, OR

July 1998-2000. Peer Reviewer for N. Amer. J. Fish for papers related to the sedimentation of fish habitat in response to erosion from land uses.

Feb. 1998. Invited Speaker, Oregon AFS Annual meeting: "Adaptive management: Is it really adaptive?" Sunriver, OR

**Professional Service** (cont'd)

May 1996-2000. Guest lecturer, OSU graduate course on riparian and wetland ecology, Corvallis, OR

1996. Peer-reviewer for Proceedings of Forest-Fish Conference: Land Management Affecting Aquatic Ecosystems, Proc. Forest-Fish Conf., May 1-4, 1996, Calgary, Alberta, Canada. Nat. Resour. Can., Can. For. Serv. Nort. For. Cent., Edmonton, Alberta. Inf. Rep. NOR-X-356.

Apr. 1995. Invited speaker, Pacific Rivers Council Workshop on Watershed Analysis and Salvage Logging, Wenatchee, Wash.

Apr. 1995. Invited speaker, Oregon State Univ. Dept of Fisheries and Wildlife Seminar, Corvallis, OR

Apr. 1995. Invited speaker, American Fisheries Society North Pacific International Chapter, Annual Meeting, Vancouver B.C., Can.

Mar. 1995. Invited speaker, American Fisheries Society Idaho Chapter Annual Meeting, Boise, ID.

Nov. 1994. Invited speaker, President's Council on Sustainable Development Workshop, Yakima, WA.

Sept. 1994. Invited speaker, Oregon Water Resources Research Institute Streambank Restoration Conference: "Biological Methods to Stabilize Streambanks--From Theory to Practice," Portland, OR.

Mar.-April, 1994. Peer-reviewer for Henjum et al., 1994. Interim Protection for Late Successional Forests, Fisheries, and Watersheds: National Forests East of The Cascade Crest, Oregon and Washington. The Wildlife Soc., Bethesda, MD.

Jan. 1993-Sept. 1995. Member, Oregon Department of Environmental Quality's (ODEQ) Technical Advisory Committee for Triennial Review of the State Water Temperature Standard.

Mar. 1993. Invited speaker, Northwest Scientific Association Symposium: "Cumulative Effects of Land Management Practices on Anadromous Salmonids," La Grande, OR.

Aug. 1992 -- Sept. 1992. Member, Ad Hoc Consultant Selection Committee for Portland Water Bureau Study of Future Water Supply Needs.

May 1992. Invited Speaker, US Forest Service, Pacific Northwest Region, Regional Workshop on Monitoring Soil and Water Resources, Bend, OR.

May 1992. Invited Speaker, Northern Arizona University, School of Forestry, Graduate Seminar Series, Flagstaff, AZ.

Jan. 1991 -- Mar. 1995. Member, Technical Work Group: Upper Grande Ronde River Anadromous Fish Habitat Protection, Restoration and Monitoring Plan.

Aug. 1989 -- Feb. 1990. Member, Technical Advisory Committee to ODEQ for development of definitions for level of beneficial use impairment by nonpoint sources.

May 1989 -- Jan. 1991. Member, Nonpoint Source Technical Advisory Committee to Idaho Department of Environmental Quality: Coordinated Nonpoint Source Monitoring Program For Idaho.

## PUBLICATIONS

### Peer-Reviewed:

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1993. A comprehensive approach to restoring habitat conditions needed to protect threatened salmon species in a severely degraded river--The Upper Grande Ronde River Anadromous Fish Habitat Protection, Restoration and Monitoring Plan. USFS Gen. Tech. Rept RM-226, pp. 175-179. (Co-authors: J.W. Anderson, R.L. Beschta, P. Boehne, D. Bryson, R.E. Gill, S. Howes, B. McIntosh, M.D. Purser and J. Zakel).

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2001. Annual Project Report: Monitoring Fine Sediment in Salmon Habitat in John Day and Grande Ronde Rivers. BPA, Portland, OR. (Co-author: M. J. Greene)

2001. Imperiled Western Trout and the Importance of Roadless Areas. Western Native Trout Campaign, Center for Biological Diversity, Tucson, Az. (Co-authors: J. Kessler, C. Bradley, and J. Wood)

2002. Tryon Creek Watershed: Overview of Existing Conditions, Data Gaps, and Recommendations for the Protection and Restoration of Aquatic Resources. West Multnomah Soil and Water Conservation District, Portland, OR

2002. An Analysis of Trout and Salmon Status and Conservation Values of Potential Wilderness Candidates in Idaho and Eastern Washington. Western Native Trout Campaign, Center for Biological Diversity, Tucson, AZ. (Co-authors: C. Bradley, J. Kessler, C. Frissell)

2003. Stream and Fish Habitat Conditions in Tryon Creek: Their Likely Causes and Ramifications for Salmonids. Proceedings of Urban Ecology and Conservation Symposium, January 24, 2003, Portland, OR. Portland State University, Environmental Sciences and Resources, Portland, OR

Semi-Technical Publications:

1993. Dam the analysis--heal streams instead. The Assoc. of Forest Service Employees for Env. Ethics Inner Voice, 5(6): 1, 4-5.

1994. Invited Preface to Northwest Science Special Issue--Environmental History of River Basins in Eastern Oregon and Washington. Northwest Sci., **68**.

### **PROJECT MANAGEMENT**

1993-1996. Technical Assistance Contract with NMFS to produce technical guidance for ESA consultations for effects of land management on critical habitat for listed Columbia basin salmon. Main duties: Co-Primary Investigator; primary author of peer-reviewed reports including proposed ESA consultation guidelines for effects on salmon habitat (Rhodes et al., 1994), evaluation and comparison of compatibility of land management plans with protection of critical salmon habitat (Rhodes, 1995), and evaluation of models for estimating land management effects on salmon habitat (Rhodes, 1996); review and synthesis of available scientific literature; budget preparation and tracking; coordination with subcontractors and grantor representatives. Total budget: \$230,000

1998-2000. Watershed Evaluation and Aquatic Habitat Response to Recent Storms. Main duties: Primary Investigator; design and implementation of monitoring methods (erosion, runoff, etc.), coordination with subcontracting fish biologists in 10 watersheds with differing levels of grazing and logging within 3 subbasins in Idaho, Washington, and Oregon; training of field technicians; data analysis and synthesis; subcontract administration; proposal development; technical and progress report preparation; budget development and tracking; coordination with grantor representatives. Total budget: \$164,000.

1998-2000. Evaluation of Effects of Grazing on Rate of Salmon Habitat Recovery. Main duties: Primary Investigator; design and implementation of monitoring methods, training of field technician; data analysis and synthesis; proposal development; preparation of progress reports; budget development and tracking; coordination with grantor representatives. Total budget: \$73,000

1998-2001. Monitoring Fine Sediment Levels in Salmon Habitat in Grande Ronde and John Day Rivers. Main duties: Primary Investigator; design and implementation of methods for monitoring fine sediment levels in four rivers; field technician training; data analysis and synthesis; subcontract administration; proposal development; progress and technical report preparation; budget development and tracking; coordination with grantor representatives. Total budget: \$128,000.

2001-2002. Western Native Trout Campaign, Aquatic Scientist and Coordinator. Main duties: Provide oversight and assure scientific integrity of all reports and work products; coordinate conservation efforts among campaign member organizations; coordinate campaign efforts with other groups working to protect and restore trout habitats and populations; budget tracking; technical and progress report preparation.

### **HONORS AND AWARDS**

1996. Leadership and Excellence. Col. River Inter-Tribal Fish Comm., Portland, OR

1991. Employee of the Year. Col. River Inter-Tribal Fish Comm., Portland, OR

1984. Academic Recruitment Scholarship for Outstanding Graduate Prospect. Univ. of Wash, Seattle, Wash.

1982. Maxey Award for Outstanding Graduate Student Paper in Hydrology. Univ. of Nev.-Reno.

Curriculum Vitae: J.J. Rhodes

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Honors (cont'd)

1980. Winslow and Myron Reuben Scholarship for Outstanding Undergraduate in the Earth Sciences. Univ. of Ariz., Tucson, Az.

#### ADDITIONAL TRAINING

1993. USFWS Water Temperature Modeling via SNTEMP

1991. USFWS Introduction to IFIM Investigations