

APPENDIX 15. ROS CLASSIFICATIONS

Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is a behavioral approach developed for land managers to help them identify and provide a diversity of recreation opportunities on public lands. The ROS approach recognizes that people seeking certain types of recreation are looking for more than just a generic place to do their activities. Instead, people are seeking a complex *experience* that derives from a matrix of related factors. People are seeking opportunities to engage in their preferred activities in preferred *physical, social and managerial* settings. ROS is a zoning tool that allows managers to describe and provide a range of recreation experiences to a diverse public, recognizing that no one piece of land can provide the entire recreation spectrum at once.

The ROS identifies a spectrum of recreation opportunities on a continuum ranging from *Primitive* to *Semi-primitive non-motorized* to *Semi-primitive motorized* to *Roaded Natural* to *Rural* to *Urban/developed*. In the Bruneau Planning Unit, most of the area (57%) is currently classified as Semi-primitive motorized. 28% of the area is currently classified as Semi-primitive non-motorized, 15% of the area is Roaded natural, less than 12% is closed. Though no Primitive, Rural or Urban/developed acreage currently exists in the Bruneau Planning Unit, this RMP proposes creating a Primitive area by closing some roads adjacent to the major canyon systems under one of the four alternatives.

Each of these classifications has differences in the sorts of settings supplied. For example, in the *Primitive* classification the appropriate social setting calls for encounters with fewer than 6 parties a day on trails or streams and fewer than 3 parties a day visible from campsites; the physical setting calls for an area of a least 5,000 acres no closer than 1 mile from all roads or motorized use; the managerial setting calls for a limited or absent enforcement presence, recreation users assuming most responsibility for their own health and safety, and rules, regulations, signs and facilities kept to the minimum necessary. In the Bruneau Planning Unit, the Primitive area envisioned would be located in remote deep canyon and adjacent rim areas in and around existing WSAs.

In the *Roaded natural* classification, the appropriate social setting allows for “moderate to high” contact on roads, “low to moderate” contact on trails; the physical setting establishes no requirements for distance from low standard roads or trails, and lies within 1 mile of improved roads; the managerial setting calls for more intensive management with frequent encounters with enforcement or regulatory personnel, much more frequent interaction with other parties, more intensive facility development such as signing, restroom, parking and staging areas, trail building and grooming, as well as reasonable access to emergency medical responders in case of accidents. In the Bruneau Planning Unit, the largest amount of area proposed to be managed as Roaded Natural under each alternative is found in the low elevation desert flats and sand washes of the Owyhee Front, where OHV activities are the dominant recreational activity.

ROS is a broad zoning approach that attempts to identify large polygons of land where certain kinds of recreation experiences will likely be available to the public. The classifications are tentative and are expressed in terms of a range of percentages rather than absolute acreage or trail/road miles, because the Bruneau Planning Unit will also conduct a route designation process related to, but not contained within the RMP. This process will identify and classify each route and determine whether to keep it open, close it, or in some way limit its use. Though the route designation process will be guided and influenced by ROS, it is currently impossible to determine exactly what the route network that is finally adopted will look like, and likewise it is also impossible to predict what the ROS polygons will ultimately be.



For that reason, the percentage of land in the Planning Unit allocated to each ROS classification in each Alternative is expressed as a possible range (e.g. 20-30% or 40-60%), rather than an absolute value.



Physical Setting	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Remoteness	3 miles from any interstate, county or BLM system roads or isolated by topography	1 mile from interstate, county or BLM system roads, or isolated by topography	At least ¼ mile from interstate or state roads	May include areas within 1 mile of interstate, state, county or BLM roads	No distance criteria	No distance criteria
Minimum Size	5,000 acres	2,000 acres	1,000 acres	No size criteria	No size criteria	No size criteria
Evidence of Humans	Essentially unmodified natural environment	Natural setting with some subtle modifications	Natural setting with moderate alterations	Natural setting with easily noticed to dominant modifications	Modified natural setting with dominant modifications continually noticeable	Structurally dominated setting, with natural elements subordinate.
Social Setting						
User Density	Less than 6 parties encountered per day on trails. Less than 3 parties encountered in camping areas.	Less than 15 parties encountered per day on trails. Less than 6 parties encountered in camping areas.	Low to moderate encounters with other parties.	Moderate to high frequency of encounters with other parties.	High frequency of encounters with other parties,	Near constant encounters with other parties.
Managerial Setting						
Managerial Presence	Very low levels of onsite management	Onsite management is present, but subtle.	Onsite management is present, but subtle.	Onsite management is noticeable, but designed to blend with the natural environment.	Onsite management is obvious, frequently blending with the natural environment.	Onsite management is obvious and numerous.



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APPENDIX 16. LIST OF PREPARERS

Name and Title	RMP Responsibility	Experience	Education
BLM Interdisciplinary Planning Team			
Mike Austin Realty Specialist	Lands and Realty Utility Corridors	BLM 28 years Other 9 years	B.B.A. Business Administration and Management, Boise State University
Mike Barnum Rangeland Management Specialist	Livestock Grazing Upland Vegetation	BLM 3 years Other 34 years	B.S. Agriculture M.S. Plant Science California State University
Tim Carrigan Wildlife Biologist	Fish and Wildlife Special Status Animals	BLM 22 years Other 5 years	B.S. Wildlife Management B.S. Range Management Humboldt State University
John Doremus Wildlife Biologist	Fish and Wildlife Special Status Animals	BLM 30 years	B.S. Biology College of Idaho
Bob Harrison Geologist	Mineral Resources	BLM 13 years Other 25 years	B.S. Geology Boise State University
Frank Jenks Outdoor Recreation Planner	Recreation Visual Resources Wild & Scenic Rivers	BLM 27 years	B.A. Anthropology University of Toledo
Mary Jones Writer/Editor	Writer/Editor	BLM 12 years Other 18 years	Northern Virginia Community College and Boise State University
Bob Mallis Geologist	Mineral Resources	BLM 22 years Other 18 years	B.S. Geology Virginia Polytechnic Institute
John Martin Economist	Social and Economics	BLM 26 years Other 9 years	B.S. Agricultural Business Management California Polytechnic State University; M.S. Agricultural and Natural Resource Economics, University of Nevada Reno
Matt McCoy NEPA Specialist	Vegetation Fish and Wildlife	BLM 16 years	B.S. Fisheries Science Utah State University M.S. Wildlife Management Humboldt State University
Jeff Mork GIS Specialist	GIS Support	BLM 20 years Other 3 years	B.S. Forest Resource Management B.S. Forest Products Business University of Idaho
Mike O'Donnell Planning and Environmental Coordinator	RMP Team Lead	BLM 16 years Others 13 years	B.L.A.E.P Landscape Architecture Utah State University

Name and Title	RMP Responsibility	Experience	Education
Larry Ridenhour Outdoor Recreation Planner	Recreation Visual Resources Wild & Scenic Rivers	BLM 14 years	B.S. Forestry North Carolina State University M.S. Recreation Management University of Montana
Irene Saphra Fuels Specialist	Fire and Fuels Vegetation	BLM 22 years	B.S. Forest Biology Syracuse University M.S. Fire Ecology University of Idaho
Paul Seronko Soil Scientist	Soil, Water, Air and Hazardous Materials	BLM 26 years Other 2 years	B.S. Soil Science University of Wisconsin
Dean Shaw Archaeologist	Cultural and Tribal Resources	BLM 13 years Other 1 year	B.A. Anthropology Boise State University
Mark Steiger Botanist	Vegetation Special Status Plants	BLM 7 years Other 9 years	B.S. Wildlife Management M.A. Mycology Humboldt State University
John Sullivan NCA Manager	NCA Manager	BLM 28 years	B.S. Range Management Oregon State University M.S. Range Science Texas Tech University
Allen Tarter Riparian Specialist	Riparian and Water Quality	BLM 15 years	B.S. Biology Boise State University
Cooperating Agency Representatives on the Interdisciplinary Planning Team			
Charles Chambers Special Projects Officer Colonel (Retired)	Idaho Army National Guard	Army 32 years IDARNG 8 years	B.A. Sociology Idaho State University M.S. Strategic Planning US Army War College
Jim Desmond Director, Owyhee County Natural Resources Committee	Interdisciplinary Team Member	Army 30 years Owyhee County 6 years	B.A. Education University of Northern Colorado
Marjorie McHenry IDARNG Natural Resources Manager	Idaho Army National Guard	IDARNG 18 years	B.S. Biological Sciences Southwestern College M.S. Environmental Ecology Emporia State University
URS Contract Staff			
Charles Baun Range Ecologist	Upland Vegetation Livestock Grazing Idaho Army National Guard	URS 3 years BLM 2 years Other 4 years	B.S. Biology/Chemistry Albertson College of Idaho M.S. Natural Resource Management University of Idaho
Jarod Blades Biologist	Fish and Wildlife and Special Status Animals	URS 1 year BLM 3 years Other 2 years	B.S. Biology in Environmental Sciences M.S. (in progress) Natural Resource Management University of Idaho



Name and Title	RMP Responsibility	Experience	Education
Suzy Cavanagh Assistant Project Manager, Geologist	Project Coordination, Soils, Mineral Resources, Air Quality, Lands and Realty, Recreation, Transportation	URS 5 years Other 5 years	B.S. Geology M.S. Geology Boise State University
Brandt Elwell GIS Analyst	GIS	URS 2 years Other 10 years	B.S. Geography M.S. Forest Resources University of Idaho
Aaron English Project Manager Wildlife Biologist NEPA Specialist	Project Management Fish and Wildlife and Special Status Animals	URS 4 years Other 10 years	B.S. Wildlife Biology The Evergreen State College
Dan Green Economist	Socio-economic Analysis	15 Years	Ph.D. Forest Resources University of Idaho
Hank Robinson Economist	Socio-economic Analysis	30 Years	Ph.D. Economics University of Utah.
Charlie McKetta Economist	Socio-economic Analysis	30 Years	Ph.D. Forest Management Economics University of Washington.
Amy Jerome Realty Specialist	Lands and Realty	URS 2 years Other 6 years	B.S. Environmental Science M.B.A. Business Bellevue University
Kavi Koleini Biologist	Fire and Fuels Visual Resources Water Quality and Riparian	URS 1 year BLM 4 years Other 1 year	B.S. Environmental Science Humboldt State University
Dautis Pearson Land Use Planner	Recreation Transportation	URS 6 years Other 14 years	B.A. Biology Boise State University
Mark Plew Cultural and Tribal Resources	Cultural and Tribal Resources	Professor and Chair of the Dept. of Anthropology at BSU	PhD. Archeology Indiana University
Dave Schwarz Technical Editor	Technical Editor	URS 2 years Other 18 years	Ph.D. Geology University of Iowa
Sandra Steele Project Administrator	Project Administration	URS 17 years Other 3 years	B.B.A. Marketing Boise State University



Supporting Specialists

BLM – Boise District

Joe Bucher, Supervisory Geographic Information Specialist
MJ Byrne, Public Affairs Officer
Jean Fend, Resource Advisor
Ray Pease, Rangeland Management Specialist
Glen Secrist, Former District Manager
Jerry Taylor, District Manager
Rosemary Thomas, Four Rivers Field Office Manager
Joan Watkins, Budget Assistant
Kimberly Werven, Administrative Records Specialist

BLM – Idaho State Office

John Augsburger, Wildlife Biologist
K. Lynn Bennett, Idaho State Director
Kim Buxton, BLM Website Coordinator
Jon Foster, Supervisory Resource Manager
Ervin Cowley, Rangeland Management Specialist
Karl Gebhardt, Hydrologist/Environmental Engineer
Susan Giannettino, Deputy State Director for Resource Services
Terry Heslin, Outdoor Recreation Planner
Kurt Kotter, Associate State Director
Stan McDonald, Archaeologist
Tom Miles, Rangeland Management Specialist
Barry Rose, Supervisory Public Affairs Specialist
Roger Rosentreter, Botanist
Signe Sather-Blair, Wildlife Biologist
Kay Schiepan, Outdoor Recreation Planner
Gary Wyke, Planning Coordinator

Idaho Army National Guard

Jake Fruhlinger, Archaeologist
Nick Nydegger, GIS Manager
Dana Quinney, Natural Resource Specialist
Stacey Shaffer, GIS Specialist
Jay Weaver, Natural Resources Technician

Others

Chad Gibson, Owyhee County
Karen Steenhof, US Geological Survey
Michael Kochert, US Geological Survey



APPENDIX 17. REFERENCES

- Alzerrca-Angelo, H., E. W. Schupp, and S. G. Kitchen. 1998. Sheep grazing and plant cover dynamics of a shadscale community. *J. Range Manage.* 51:214-222.
- Anderson, J. E. and K. E. Holte. 1981. Vegetation development over 25 years without grazing on sagebrush-dominated rangeland in Southeastern Idaho. *J. Range Manage.* 34:25-29.
- Anderson, J. E. and R. S. Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. *Ecol. Monogr.* 71:531-556.
- Anderson, J. E. and M. L. Shumar. 1986. Impacts of black-tailed jackrabbits at peak population densities on sagebrush-steppe vegetation. *J. Range Manage.* 39:152-156.
- Anderson R., M. Morrison, K. Sinclair, and D. Strickland. 1999. Studying Wind Energy/Bird Interactions: A Guidance Document. National Wind Coordinating Committee. December 1999. 88 pp.
- APLIC (Avian Power Line Interaction Committee). 1994. Mitigating bird collisions with power lines: the state of the art in 1994. Edison Electric Institute. Washington, DC.
- Argonne National Laboratory. 2004. Characterization on the effects of use authorizations on soil, vegetation, prey and raptors at the Orchard Training Area, Idaho. Environmental Assessment Division, Argonne National Laboratory, Argonne, IL. 205 pp.
- Baker T., Boren J., Allison C. D. 2001. Strategies for Livestock Management in Riparian Areas in New Mexico. College of Agriculture and Home Economics Guide B-119. New Mexico State University, Las Cruces, NM. Available: http://cahe.nmsu.edu/pubs/_b/b-119.pdf. 4 pp.
- Balph, D. F. and J. C. Malechek. 1985. Cattle trampling of crested wheatgrass under short-duration grazing. *J. Range Manage.* 38:226-227.
- Baskin, Y. 1993. Trumpeter swans relearn migration. *BioScience* 43:76-79.
- Bates, K. K., and M. R. Fuller. 2006. Wind Resource Development Area Guidance for the Snake River Birds of Prey National Conservation Area. Final report, February, 2006, from Boise State University Raptor Research Center to Bureau of Land Management - Snake River Birds of Prey National Conservation Area. 11 pp.
- Bechard, M. J. 2000. Adult turnover, productivity, and nest-tree status of Swainson's hawks in and adjacent to the Snake River Birds of Prey Conservation Area. Technical Bulletin No. 03-2, Idaho Bureau of Land Management, Boise, ID. 19 pp.
- Beecham, J. J. Jr. 1970. Nesting ecology of the golden eagle southwestern Idaho. M.S. Thesis. Univ. of Idaho, Moscow, ID. unk pp.
- Bellows, B. C. 2003. Managed grazing in riparian areas. National Sustainable Agriculture Information Service, Fayetteville, AR.



- Belnap, J. 1995. Surface disturbances and their role in accelerating desertification. *Environmental Monitoring and Assessment* 37:39-57.
- Belnap, J., J. H. Kaltenecker, R. Rosentreter, J. Williams, S. Leonard, and D. Eldridge. 2001. Biological soil crusts: ecology and management. TR 1730-2. USDI, Bureau of Land Management, BLM/ID/ST-01/001+1730. 110 pp.
- Bert, W. H. and R. P. Grossenheider. 1959. A field guide to the mammals. Houghton Mifflin Co. Boston, MA. 200 pp.
- Blackburn, W. H., T. L. Thurow, and C. A. Taylor, Jr. 1986. Soil erosion on rangeland. pp. 31-39 in *Proceedings of Symposium on Use of Cover, Soils and Weather Data in Rangeland Monitoring*. Society for Range Management, Denver, CO.
- Blair, C. 1997. C. J. Strike habitat evaluation procedure study. CH2MHILL. Prepared for the Idaho Power Co. Tech. Report Appendix E.3.2-N, C. J. Strike FERC No. 2055. 73 pp.
- Blaisdell, P. and J. Pechanec. 1949. Effects of herbage removal at various dates on vigor of bluebunch wheatgrass and arrowleaf balsamroot. *Ecology* 30:298-305.
- Braun, C. E., M. F. Baker, R. L. Eng, J. S. Gashwiler, and M. H. Schoeder. 1976. Conservation committee report on effects of alteration of sagebrush communities on the associated avifauna. *Wilson Bull.* 88:165-173.
- Brown, J. H. and E. J. Heske. 1990. Control of a desert-grassland transition by a keystone rodent guild. *Science* 250:1705-1707.
- Buehler, D.A. 2000. Bald eagle *Haliaeetus leucocephalus*. No. 506 in *The Birds of North America*, A. Poole and F. Gill eds. The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington, DC.
- Burkhardt, J. W. 1996. Herbivory in the intermountain west. Station Bulletin 58. Idaho Forest, Wildlife and Range Experimental Station, Moscow, ID.
- Burt, W. and R. Grossenheider. 1959. A field guide to mammals. Houghton Mifflin Co. Boston, MA. 200 pp.
- Cadwell, L. L., D. D. Dauble, J. L. Downs, M. A. Simmons and B. L. Tiller. 1998. Ecosystem Monitoring (Plants and Wildlife). in Hanford Site 1997 Environmental Report. PNNL-11795. Pacific Northwest National Laboratory, Richland, WA.
- Callihan, R. H. and T. W. Miller. 1994. Idaho's Noxious Weeds. Agri. Comm. Center, Univ. of Idaho, Moscow, ID. 75 pp.
- CDC (Idaho Conservation Data Center). 2003. Special status plants in Owyhee and Ada County. Available: http://fishandgame.idaho.gov/cms/tech/CDC/county_spp_lists/owyhee_plants.cfm
- Colorado Weed Management Association. 1999. Noxious weeds and non-native plants; Russian olive (tree) (*Eleagnus angustifolia*). Available: http://www.cwma.org/russ_olive.html. 2 pp.



- Cook, C. W. and R. D. Child. 1971. Recovery of desert plants in various states of vigor. *J. Range Manage.* 22:339-343.
- Cordell, H. K., G. T. Betz, S. Green, *et.al.* 2004. Outdoor recreation for 21st century America: a report to the nation: the national survey on recreation and the environment. Venture Publishing, State College, PA, 293 pp.
- Diller, L. V. and D. R. Johnson. 1982. Ecology of reptiles in the Snake River Birds of Prey Area. USDI, Bureau of Land Management, Boise, ID. 107 pp.
- Doremus, J. H. 1992. Nest box use in the Snake River Birds of Prey Area. pp. 355-357 *in* Snake River Birds of Prey Research Project Annual Report, K. Steenhof, ed. USDI, Bureau of Land Management, Boise, ID.
- Doremus, J. H. and M. Blew 1988. Abundance of lagomorphs and rodents in the Snake River Birds of Prey Area. pp. 92-99 *in* Snake River Birds of Prey Area 1988 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Doremus, J. H., M. Blew, and S. T. Knick. 1989. Abundance of lagomorphs and rodents in the Snake River Birds of Prey Area. pp. 89-95 *in* Snake River Birds of Prey Research Project Annual Report, K. Steenhof, ed. USDI, Bureau of Land Management, Boise, ID.
- Doremus, J. H. and J. Bolln. 1987. Abundance of black-tailed jackrabbits and Kangaroo rats in the Snake River Birds of Prey Area. pp. 115-120 *in* Snake River Birds of Prey Area 1987 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Doremus, J. H., L. Kading, and K. Steenhof. 1986. Abundance of black-tailed jackrabbits and kangaroo rats in the Snake River Birds of Prey Area. pp. 138-140 *in* Snake River Birds of Prey Research Project Annual Report 1986, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Doremus, J. H. and J. S. Marks. 1982. Western screech-owl reproduction, food habits, and use of nest boxes in the Snake River Birds of Prey Area. *in* Snake River Birds of Prey Research Project Annual Report 1982, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID. 53 pp.
- Doremus, J. H. and C. Schroer. 1985. Abundance of black-tailed jackrabbits and kangaroo rats in the Snake River Birds of Prey Area. pp 149-151 *in* Snake River Birds of Prey Research Project Annual Report 1985, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Dunstan, T. C., J. H. Harper, and K. B. Phipps. 1978. Habitat use and hunting strategies of prairie falcons, red-tailed hawks, and golden eagles. Western Illinois Univ. Macomb, Ill. USDI, Bureau of Land Management Contract 52500-CT5-1013. 152 pp.
- Ehrlich, P. R., D. S. Dobkin and D. Wheye. 1988. The birder's handbook, a field guide to the natural history of North American birds. Simon and Schuster Inc., New York. 785 pp.
- Eldridge, D. J. and R. S. B. Green. 1994. Microbiotic soil crusts: a review of their roles in soil and ecological processes in rangelands of Australia. *Australia J. Soil Res.* 32:389-415.



- Ellis, J. E. 1970. A computer analysis of fawn survival in the pronghorn antelope. Ph.D. Dissertation, Univ. of California, Davis. 70 pp.
- Engel, K. A., L. S. Young, W. G. Kell, and A. J. Brody. 1987. Implications of communal roosting by common ravens to operation and maintenance of the Malin to Midpoint 5000 kV transmission line. pp. 34-55 *in* Snake River Birds of Prey Area 1987 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- England, A. S., M. J. Bechard and C. S. Houston. 1997. Swainson's hawk *Buteo swainsonii*. No. 265 *in* The birds of North America, A. Poole and F. Gill eds. The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington, DC.
- Erickson, W. P., G. D. Johnson, D. P. Young Jr., M. D. Strickland, R. E. Good, M. Bourassa, K. Bay, and K. J. Sernka. 2002. Synthesis and comparison of baseline avian and bat use, raptor nesting and mortality information from proposed and existing wind developments. WEST Inc. Prepared for Bonneville Power Administration. 108 pp. + appendices.
- Farmer, A. M. 1993. The effects of dust on vegetation - a review. *Environmental Pollution* 79:63-75.
- Federal Register. 1992. U.S. Fish and Wildlife Service final rule: endangered and threatened wildlife and plants; determination of endangered or threatened status for five aquatic snails in south central Idaho. December 14, 1992, Vol. 57, No. 240, pp. 59244-59247.
- Fremont, J. C. 1845. Report on the exploring expedition to the Rocky Mountains in the year of 1842, and to Oregon and north California in the years 1843-44. Gales and Seaton, Washington, DC. 693 pp.
- Frest, T. J. 2002. Native snails: indicators of ecosystem health. *Wild Earth* 12:44-50.
- Frest, T. J., P. A. Bowler, and R. Hershler. 1991. The ecology, distribution, and status of relict lake Idaho mollusks and other endemics in the Middle Snake River. Preliminary Status Report. 18 pp.
- Gano, K. A. and W. H. Rickard. 1982. Small mammals of a bitterbrush-cheatgrass community. *Northwest Sci.* 56:1-7.
- Gebhardt, K. A., M. Boltz, S. Frazier, L. Mangan, M. Miller, M. Pellant, R. Rosentreter, and D. Taylor. 1987. Greenstripping handbook, Idaho BLM. USDI, Bureau of Land Management, Boise, ID. 81 pp.
- Gibbs, R. 1976. Beckoning the bold, story of the dawning of Idaho. Univ. of Idaho Press. Moscow, ID. 267 pp. *as cited in* Yensen, D. 1982. A grazing history of Southwestern Idaho, with an emphasis on the Snake River Birds of Prey Area. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Gilman, E. F. and D. Watson. 1993. *Elaeagnus angustifolia*: Russian Olive. Univ. of Florida. Available: <http://edis.ifas.ufl.edu/BODY%20ST233>. 5 pp.



- Governor's Office of Species Conservation, Idaho Department of Fish and Game, Idaho Department of Lands, Idaho National Guard, Ted Hoffman (Non-governmental Cooperator Representative), and Bureau of Land Management. 2003. Candidate conservation agreement for slickspot peppergrass (*Lepidium papilleiferum*). Governor's Office of Species Conservation, Boise, ID. 140 pp.
- Grantham, W. P., E. F. Redente, C. F. Bagley, and M. W. Paschke. 2001. Tracked vehicle impacts to vegetation structure and soil erodibility. *J. Range Manage.* 54:711-716.
- Grossman, M. L. and J. Hamlet. 1964. *Birds of Prey of the World*. Clarkson N. Potter, Inc. New York. 496 pp.
- Groves, C. R. 1989. Idaho's amphibians and reptiles: description, habitat and ecology. Nongame Wildlife Leaflet No. 7. Idaho Dept. of Fish and Game. Boise, ID. 12 pp.
- Groves, C. R., and K. Steenhof. 1988. Responses of small mammals and vegetation to wildfire in shadscale communities of southwestern Idaho. *Northwest Sci.* 62:205-210.
- Groves, C. R., B. Butterfield, A. Lippincott, B. Csuti and J. M. Scott. 1997. *Atlas of Idaho's Wildlife; Integrating Gap Analysis and Natural Heritage Information*. Cooperative project of IDFG, Nature Conservancy, University of Idaho, and US Geological Survey. Boise, ID.
- Hanley, T. H. and J. L. Page. 1981. Differential effects of livestock use on habitat structure and rodent populations. *California Fish and Game* 68:160-173.
- Harrison, S., J. Maron, and G. Huxel. 2000. Regional turnover and fluctuation in populations of five plants confined to serpentine seeps. *Conserv. Biol.* 14:769-779.
- Hart, R. H., J. Bissio, M. J. Samuel, and J. Waggoner, Jr. 1993. Grazing systems, pasture size, and cattle grazing behavior, distribution, and gains. *J. Range Manage.* 46: 81-88.
- Hickman, G. L. 1968. The ecology and breeding biology of the golden eagle in southwestern Idaho and southeastern Oregon. USDI, Bureau of Sport Fisheries and Wildlife, Washington, DC.
- Hoag, J. C. 1998. Establishment Techniques for Woody Vegetation in Riparian Zones of the Arid and Semi-arid West. USDA, Natural Resources Conservation Service, Aberdeen Plant Materials Center, Aberdeen, ID. 5 pp. (20 KB) (ID# 1057)
- Hoffman, C. 1998. Peregrine to soar off endangered list. *Endangered Species Bulletin* 23:20-21.
- Hoffmann, R. S., C. G. Anderson, R. W. Thorington, Jr., and L. R. Heany. 1993. Family *Sciuridae*. pp. 419-465 in *Mammal species of the world: a taxonomic and geographic reference*, D. E. Wilson and D. M. Reeder eds. Smithsonian Institution Press, Washington, DC. 1206 pp.
- Holechek, J. L., R. D. Pieper, and C. Herbel. 2001. *Range management: principles and practices*. 4th Edition. Prentice Hall, Upper Saddle River, NJ. 587 pp.
- Holt, D. W. and S. M. Leasure. 1993. Short-eared owl. No. 62 in *The Birds of North America*, A. Poole and F. Gill eds. The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington, DC.



- Holthuijzen, A. M. A. 1989. Behavior and productivity of nesting prairie falcons in relation to construction activities at Swan Falls Dam: Final Report. Idaho Power Co, Boise, ID. 77 pp.
- Hooper, D. U. and P. M. Vitousek. 1997. The effects of plant composition and diversity on ecosystem processes. *Science* 277:1302-1305.
- Hunter, L. M., R. S. Krannich, and M. D. Smith. 2002. Rural migration, rapid growth, and fear of crime. *Rural Sociology* 67:71-89.
- Hutchings, S. and G. Stewart. 1953. Increasing forage yields and sheep production on intermountain winter ranges. USDA Circ. 925.
- Idaho Soil Conservation Commission and Idaho Department of Environmental Quality. 2003. Idaho Agricultural Pollution Abatement Plan: a guidance document addressing nonpoint source water quality pollution. Available: <http://www.scc.state.id.us/PDF/AgPlan.pdf> 87 pp.
- IDPR (Idaho Department of Parks and Recreation). 2003. Statewide comprehensive outdoor recreation and tourism plan 2003. Available: <http://www.idahoparks.org/assets/content/docs/2003-2007-final.pdf>.
- _____. 2002. Results from 2002 Mid-Winter Recreation Survey report to the Idaho Parks and Recreation Board Meeting. April 30, 2002.
- Jalkotzy, M. G., P. I. Ross and M. D. Nasserden. 1997. The effects of linear developments on wildlife: a review of selected scientific literature. Prepared for the Canadian Association of Petroleum Producers. Arc Wildlife Services Ltd., Calgary.
- Johnsgard, P. 1990. Hawks, eagles and falcons of North America. Smithsonian Institution Press. Washington, DC. 403 pp.
- Johnson, D. R. and W. E. Melquist. 1975. Population ecology and habitat requirements of Townsend's ground squirrels. pp. 156-176 *in* Snake River Birds of Prey Annual Report 1975. USDI, Bureau of Land Management, Boise District, ID. 193 pp.
- Johnson, D. R., N. C. Nydigger, D. L. Yensen, and E. Langril. 1984. Abundance and demography of prey populations in the Snake River Birds of Prey Area. pp. 15-19 *in* Snake River Birds of Prey Research Project Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Johnson, D. R., N. C. Nydigger, J. L. Nye, S. S. Sundseth, and D. L. Yensen. 1983. Abundance and demography of prey populations in the Snake River Birds of Prey Area. pp. 19-35 *in* Snake River Birds of Prey Research Project Annual Report 1983, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- Johnson, D. R., N. C. Nydigger, R. Feldman, S. S. Sundeth, and D. L. Yensen. 1982. Abundance and demography of prey populations in the Snake River Birds of Prey Area. pp. 20-34 *in* Snake River Birds of Prey Research Project Annual Report 1982, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.



- Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative view. *Western N. Am. Nat.* 60:155-164
- Jones, D. S. and M. Kunze. 2004. Tracked vehicle impacts on plant community characteristics at Gowen Field Training Area, Idaho 1995-2003: update of 1995-2001 report. Center for Env. Manage. of Military Lands, CEMML TPS 04-03, Colorado State Univ., Fort Collins, CO. 63 pp.
- Joyce, L. 1989. An analysis of the range forage situation in the United States: 1989-2040. USDA, Forest Service, GTR-RM-180.
- Jules, E. S. 1998. Habitat fragmentation and demographic change for a common plant: *Trillium* in old-growth forest. *Ecology* 79:1645-1656.
- Keeley, J. E., C. J. Fotheringham, and M. Morais. 1999. Reexamining fire suppression impacts on brushland fire regimes. *Science* 284:1829-1832
- Kimball, S. and P. M. Schiffman. 2003. Differing effects of cattle grazing on native and alien plants. *Conserv. Biol.* 17:1681-1693.
- Kindschy, R. R.; Sundstrom, C. and J. D. Yoakum. 1982. Wildlife habitat in managed rangelands - the Great Basin of southeast Oregon. USDA, Forest Service Northwest Forest and Range Exp. Sta., Portland, OR. Gen Tech Rep. PNW-145. 18 pp.
- King, R.A. 1996. Post-fledging dispersal and behavioral ecology of burrowing owls in Southwestern Idaho. M.S. Thesis. Boise State Univ., Boise, ID. 160 pp.
- Klemmedson, J. O. and J. G. Smith. 1964. Cheatgrass (*Bromus tectorum*). *Botanical Review* 30: 226-262.
- Klute, D. S., W. H. Howe, S. R. Sheffield, L. W. Ayers, S. L. Jones, T. S. Zimmerman, M. T. Green, and J. A. Shaffer. 2003. Status assessment and conservation plan for the western burrowing owl in the United States. USDI, Fish and Wildlife Service, Biol. Tech. Publ. BTP-R6001-2003. US Fish and Wildlife Service, Denver, CO.
- Knick, S. T. 1990. Habitat classification and the ability of habitats to support Townsend's ground squirrel and black-tailed jackrabbit populations. pp. 59-77 *in* Snake River Birds of Prey Area 1990 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise ID.
- _____. 1991. Habitat Classification and the ability of habitats to support populations of Townsend's ground squirrels and black-tailed jackrabbits. pp. 158-180 *in* Snake River Birds of Prey 1991 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- _____. 1992. Habitat Classification and the ability of habitats to support populations of Townsend's ground squirrels and black-tailed jackrabbits. pp. 247-2?? *in* Snake River Birds of Prey 1992 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.



- _____. 1993. Habitat classification and the ability of habitats to support populations of Townsend's ground squirrels and black-tailed jackrabbits. pp. 237-263 *in* Snake River Birds of Prey Area 1993 Annual Report, K. Steenhof ed. USDI, Bureau of Land Management, Boise District, Boise, ID.
- _____. 1999. Forum: requiem for a sagebrush ecosystem? *Northwest Science* 73:47-51.
- Knick, S. T., D. S. Dobkin, J. T. Rotenberry, M. A. Schroeder, W. M. Vander Haegen, and C. Van Riper III. 2003. Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. *The Condor* 105:611-634.
- Knick, S. T. and D. L. Dyer. 1997. Distribution of black-tailed jackrabbit habitat determined by GIS in southwestern Idaho. *J. of Wildl. Manage.* 61:75-85.
- Knick, S. T. and J. T. Rotenberry. 1995. Landscape characteristics of fragmented shrubsteppe habitats and breeding passerine birds. *Cons. Biol.* 9:1059-1071.
- _____. 1999. Spatial distribution of breeding passerine bird habitats in a shrubsteppe region of southwestern Idaho. *Studies in Avian Biology* 19:104-111.
- _____. 2000. Ghosts of habitat pasts: contribution of landscape change to current habitats used by shrubland birds. *Ecology* 81:220-227.
- Kochert, M. N. 1972. Population status and chemical contamination in golden eagles in southwestern Idaho. M.S. Thesis. Univ. of Idaho, Moscow, ID. 101 pp.
- Kochert, M. N., A. R. Bammann, J. H. Doremus, M. DeLate, and J. Wyatt. 1976. Reproductive performance, food habits and population dynamics of raptors in the Snake River Birds of Prey natural Area. *in* Snake River Birds of Prey Research Project Annual Report. USDI, Bureau of Land Management, Boise, ID.
- Kochert, M. N., A. R. Bammann, R. P. Howard, J. H. Doremus, M. DeLate, and D. Donahue. 1975. Reproductive performance, food habits, and population dynamics of raptors in the Snake River Birds of Prey Natural Area. pp 1-50 *in* Snake River Birds of Prey Research Project Annual Report 1975. USDI, Bureau of Land Management, Boise District, Boise, ID. 193 pp.
- Kochert, M.N. and K. Steenhof. 2003. Long-term nesting population and productivity changes of prairie falcons and golden eagles in the Snake River Birds of Prey NCA: 2002 report. USGS, Forest Rangeland Ecosystem Science Center, Snake River Field Station, Boise, ID. 20 pp.
- _____. 2004a. Abundance and productivity of prairie falcons and golden eagles in the Snake River Birds of Prey National Conservation Area 2003 annual report. USGS, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, Boise, ID.
- _____. 2004b. Responses of prairie falcons and golden eagles to loss of shrub habitat in the Snake River National Conservation Area. Presentation at 2004 Annual Meeting of the Raptor Research Foundation, 13 Nov 2004, Bakersfield, CA.



- _____. 2005. Nesting territory and productivity of golden eagles in the Snake River Birds of Prey National Conservation Area: 2004 annual report. USGS, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, Boise, ID. 20 pp.
- Kochert, M.N., K. Steenhof, C.L. McIntyre and E.H. Craig. 2002. Golden eagle (*Aquila chrysaetos*). No. 684 in *The birds of North America*, A. Poole and F. Gill eds. The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington DC
- Kotler, B. 1984. Risk of predation and the structure of desert rodent communities. *Ecology* 65:689-701.
- Laycock, W. A. 1991. Stable states and thresholds of range condition on North American rangelands: A viewpoint. *J. Range Manage.* 44:427-433.
- Laycock, W. A., and P. W. Conrad. 1981. Responses of vegetation and cattle to various systems of grazing on seeded and native mountain rangelands in eastern Utah. *J. Range Manage.* 53:52-59.
- Laymon, S. A. 1998. California Partner's in Flight riparian habitat Joint Venture Bird Conservation Plan for the yellow-billed cuckoo. Administrative Report to California Partner's in Flight, Riparian Habitat Joint Venture, Sacramento, CA.
- Lehman, R. N., L. B. Carpenter, M. N. Kochert, and K. Steenhof. 1996a. Effects of fire and habitat alterations on ferruginous hawks. Ch. 4K 19 pp. in USDI. 1996 Effects of Military Training and Fire in the Snake River Birds of Prey National Conservation Area. BLM/IDARNG Research Project Final Report. USGS, Biological Resources Division, Snake River Field Station, Boise, ID.
- _____. 1996b. Raptor use of burned habitats in the Snake River Birds of Prey National Conservation Area. Ch. 4L 10 p. in USDI. 1996 Effects of Military Training and Fire in the Snake River Birds of Prey National Conservation Area. BLM/IDARNG Research Project Final Report. USGS, Biological Resources Division, Snake River Field Station, Boise, ID.
- _____. 1998. Assessing relative abundance and reproductive success of shrubsteppe raptors. *J. Field Ornithol.* 69:244-256.
- Longland, W. S. and S. L. Bateman. 2002. Viewpoint: the ecological value of shrub islands on disturbed sagebrush rangelands. *J. Range Manage.* 55:571-575.
- Lysne, S. J. 2003. The life history and ecology of two endangered Snake River gastropods: Utah valvata (*Valvata utahensis*: Call) and Idaho springsnail (*Pyrgulopsis idahoensis*: Pilsbry). M.S. Thesis, Boise State University, Boise, ID.
- Marks, J. S. 1981. Productivity, nest site characteristics, and food habits of long-eared owls in the Snake River Birds of Prey Area. pp. 28-36 in *Snake River Birds of Prey Research Project Annual Report 1981*, K. Steenhof ed. USDI, Bureau of Land Management. Boise District, ID.
- _____. 1984. Feeding ecology of breeding long-eared owls in southwestern Idaho. *Can. J. Zool.* 62: 1528-1533.



- Marks, J. S. and J. H. Doremus. 1988. Breeding-season diet of northern saw-whet owls in southwestern Idaho. *Wilson Bull.* 100:690-694.
- Marks, J. S. and C. D. Marti. 1984. Feeding ecology of sympatric barn owls and long-eared owls in Idaho. *Ornis Scandinavica* 15:135-143.
- Marti, C. D. 1988. A long-term study of food-niche dynamics in the common barn-owl: comparisons within and between populations. *Can. J. Zool.* 66:1803-1812.
- Marti, C. D. 2002. Enhancing raptor populations. a techniques manual. The Peregrine Fund, Boise, ID.
- Marti, C. D., K. Steenhof, M. N. Kochert, and J. S. Marks. 1993. Community trophic structure: the roles of diet, body size, and activity time in vertebrate predators. *Oikos* 67:6-18.
- Marzluff, J. M., B. A. Kimsey, L. S. Schueck, M. E. McFadzen, M. S. Vekasy, and J. C. Bednarz. 1997a. The influence of habitat, prey abundance, sex, and breeding success on the ranging behavior of prairie falcons. *The Condor* 99:567-584.
- Marzluff, J. M., S. T. Knick, M. S. Vekasy, L. S. Schueck, and T. J. Zarriello. 1997b. Spatial use and habitat selection of golden eagles in southwestern Idaho. *The Auk* 114:673-687.
- Miller, A. I., T. D. Counihan, M. J. Parsley, and L. G. Beckman. 2004. Columbia River Basin white sturgeon. Available: <http://biology.usgs.gov/s+t/noframe/e065.htm>. 7 pp.
- Miller, R. F. and L. Eddleman, 2001. Spacial and temporal changes of sage grouse habitat in the sagebush biome. Technical Bulletin 151, Oregon State University, Agricultural Experiment Station. 35 pp.
- Montan, J. R. Jr. 1977. Rodent density and species composition in the Snake River Birds of Prey Natural Area, Idaho. M.S. Thesis, Utah State University, Logan, UT. 44 pp.
- Munger, J. C., S. L. Small, M. Olson, P. E. Bartelt, and C. R. Peterson. 1993. A preliminary survey of the herpetofauna of Bruneau Resource Area, Boise District. Final report. Tech. Bull. No. 93-2. USDI, Bureau of Land Management, Idaho State Office, Boise, ID. 61 pp.
- National Research Council. 1994. Rangeland health: new methods to classify, inventory, and monitor rangelands. National Academy Press, Washington, DC. 182 pp.
- Neff, J. C., R. L. Reynolds, J. Belnap, and P. Lamothe. 2005. Multi-decadal impacts of grazing on soil physical and biochemical properties in southeast Utah. *Ecological Applications* 15:87-95.
- Nelson, M. 1975. Inventory and analysis of critical peregrine falcon (*Falco peregrinus*) habitat in regards to possible reintroduction in Idaho. pp187-192 in Snake River Birds of Prey Research Project Annual Report 1975. USDI, Bureau of Land Management, Boise District, Boise, ID. 193 pp.



- New Mexico Department of Game and Fish. 2004. Guidelines for management of grazing in New Mexico's riparian areas—towards protection of wildlife and fisheries resources. Available: http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/ripariangrazingguidelines.pdf. 3 pp.
- Nydegger, N. C. and G. W. Smith. 1986. Prey populations in relation to *Artemisia* vegetation types in southwestern Idaho. pp 152-156 in Proceedings - symposium on the biology of *Artemisia* and *Chrysothamnus*, 1984 July 9-13, Provo, UT, E. D. McArthur and B. L. Welch comps. USDA, Forest Service, GTR- INT-200:152-156.
- Ogden, V. T. 1973. Nesting density and reproductive success of the prairie falcon (*Falco mexicanus*) in southwestern Idaho. M.S. Thesis, Univ. of Idaho, Moscow, ID.
- Olendorff, R. R., A. D. Miller, and R. N. Lehman. 1981. Suggested practices for raptor protection on power lines. The state of the art in 1981. Raptor Research Report No. 4. Raptor Research Foundation, Inc. 110 pp.
- Oregon State University. 2003. Russian olive (*Elaeagnus angustifolia*). Available: <http://oregonstate.edu/dept/ldplants/elan-i.htm>. 1 p.
- OTA. 2004. Gowen Field/ Orchard Training Area-Idaho Army National Guard. Integrated natural resource management plan and environmental assessment. Idaho Army National Guard, Gowen Field, Boise, ID.
- Pappani, J. W. and R. Inouye. 2003. Water quality impacts of the Ted Trueblood Wildlife Area wetland. Center for Ecological Research and Education, Idaho State University, Pocatello, ID. pp.20-21.
- Pashley, D. and T. Rich. 2004. Conserving the "Last of the Least". Bird Conservation. Am. Bird Conservancy. 13 pp.
- Pechanec, J. and G. Stewart. 1949. Grazing spring-fall sheep ranges in southern Idaho. USDA Circ. 808
- Pellant, M. 2000. Fuels Management in the Snake River Birds of Prey National Conservation Area. pp. 103-107 in Proceedings: sagebrush steppe ecosystems symposium, P. G. Entwistle, A. M. DeBolt, J. H. Kaltenecker, and K. Steenhof, comps. USDI, Bureau of Land Management, Publication No. BLM/ID/PT-001001+1150, Boise, ID. 145 pp.
- Peters, E. F. and S. C. Bunting. 1994. Fire conditions pre- and post occurrence of annual grasses on the Snake River Plain. pp 31-36 in Ecology and management of annual rangelands – proceedings, S. B. Monsen and S. G. Kitchen eds. USDA, Forest Service, Gen.Tech. Rep. INT-GTR-313.
- Peterson, R. 1990. Peterson Field Guides: Western Birds. Houghton Mifflin Co., Boston and New York. 432 pp.
- Piemeisel, R. L. 1951. Causes affecting change and rate of change on a vegetation of annuals in Idaho. Ecology 32:53-72.



- Plew, M. 2000. Archeology of the Snake River Plain, Dept. of Anthropology Boise State University, Boise, ID.
- Pope, V. and J. Munger. 2003. Threats to collared lizards in Idaho. Tech. Bull. No. 2003-04. USDI, Bureau of Land Management, Boise, ID. 12 pp.
- Pyke, D. A. 2000. Invasive exotic plants in sagebrush ecosystems of the intermountain west. pp. 43-54. *in* Proceedings: sagebrush steppe ecosystems symposium, P. G. Entwistle, A. M. DeBolt, J. H. Kaltenecker, and K. Steenhof comps. USDI, Bureau of Land Management, Publication No. BLM/ID/PT-001001+1150, Boise, ID. 145 pp.
- Quinney, D. 2000. Then and now: changes in vegetation and land use practices in southwestern Idaho sagebrush lands, with emphasis on sagebrush and former sagebrush lands of the Snake River Birds of Prey National Conservation Area north of the Snake River. pp 91-97 *in* Proceedings: sagebrush steppe ecosystems symposium, P. G. Entwistle, A. M. DeBolt, J. H. Kaltenecker, and K. Steenhof comps. USDI, Bureau of Land Management, Publication No. BLM/ID/PT-001001+1150, Boise, ID. 145 pp.
- Rains, C. 1998. Niche overlap, and nearest-neighbor distances of northern saw-whet owls (*Aegolius acadicus*) and western screech-owls (*Otus kennicottii*) in southwestern Idaho. M.S. Thesis, Boise State University, Boise, ID. 106 pp.
- Reheis, M. C. 1995. Dust deposition in southern Nevada and California, 1984-1989: Relations to climate, source area, and source lithology. J. Geophysical Res. 100:8893-8918.
- Reynolds, T. D. and T. D. Rich. 1978. Reproductive ecology of the sage thrasher (*Oreoscoptes montanus*) on the Snake River Plain in south-central Idaho. Auk 95: 580-582.
- Rosentreter, R. 1994. Displacement of rare plants by exotic grasses. pp. 170-175 *in* Proceedings-ecology and management of annual rangelands; 1992 May 18-21; Boise, ID, S. B. Monson and S. G. Kitchen comps. Gen. Tech. Rep. INT-GTR-313. Ogden, UT. USDA, Forest Service, Intermountain Research Station:
- Rosenzweig, M. L., and J. Winakur. 1969. Population ecology of desert rodent communities: habitats and environmental complexity: Ecology 50 558-572.
- Rosgen, D. L. 1996. Applied River Morphology. Wildland Hydrology Press, Pagosa Springs, CO. 350 pp.
- Sallabanks, R. 2002. Idaho bald eagle nesting report 2001. Idaho Dept. of Fish and Game. Boise, ID. 16 pp.
- Saltonstall, K. 2002. Cryptic invasion by a non-native genotype of the common reed, *Phragmites australis*, into North America. Proc. Nat. Acad. Sciences. 99:2445-2449.
- Sauer, J. R., J. E. Hines, and J. Fallon. 2001. The North American breeding bird survey, results and analysis 1966-2000. Version 2001.2, USGS, Patuxent Wildlife Research Center, Laurel, MD. Available: <http://www.mbr-pwrc.usgs.gov/bbs/bbs00.html>



- Schoeberl, B. C. 2003. Influence of fragmentation on shrubsteppe-obligate passerines. M.S. Thesis, Boise State University, Boise, ID. 114 pp.
- Serpe, M. D., J. M. Orm, T. Barkes, and R. Rosentreter. 2005. Germination and seed water status of four grasses on moss-dominated biological soil crusts from arid rangelands. *Plant Ecology* 185:163-178.
- Sheley, R. L., M. Manoukian, and G. Marks. 1999. Preventing noxious weed invasion. pp. 69-72 in *Biology and management of noxious rangeland weeds*, R. L. Sheley and J. K. Petroff eds. Oregon State University Press, Corvallis, OR. 438 pp.
- Shinn, D. C. 2002. Snake River ESA snail colony evaluation, additional survey and laboratory studies: 2001 (with supplemental analyses). Idaho Power Environmental Affairs. Section 10 Permit, PRT #799558. Idaho Power Company, Boise, ID. 27 pp.
- Sibley, D. 2000. *The Sibley guide to birds*. Alfred A. Knopf, Inc. New York, NY. 544 pp.
- Smith, G. W. and D. R. Johnson. 1985. Demography of a Townsend's ground squirrel population in southwestern Idaho. *Ecology* 66:171-178.
- Smith, G. W. and N. C. Nydegger. 1985. A spotlight, line-transect method for surveying jack rabbits. *J. Wildl. Manage.* 49:699-702.
- Smith, M. D., R. S. Krannich, and L. M. Hunter. 2001. Growth, decline, stability, and disruption: a longitudinal analysis of social well-being in four western rural communities. *Rural Sociology* 66:425-50.
- Stebbins, R. C. 1966. *A field guide to western reptiles and amphibians*. Houghton Mifflin Co. Boston. 279 pp.
- Steenhof, K. 1998. Prairie falcon *Falco mexicanus*. No. 346 in *The birds of North America*, A. Poole and F. Gill eds. The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington, DC
- Steenhof, K., and M. N. Kochert. 1988. Dietary responses of three raptor species to changing prey densities in a natural environment. *J. Anim. Ecol.* 57:37-48.
- Steenhof, K., M. N. Kochert, L. B. Carpenter, and R. N. Lehman. 1999. Long-term prairie falcon population changes in relation to prey abundance, weather, land uses, and habitat conditions. *Condor* 101:28-41.
- Steenhof, K., M. N. Kochert, L. B. Carpenter, R. N. Lehman, and J. M. Marzluff. 2000. Effects of wildfires and military training on raptors. pp. 100-101 in *Proceedings: sagebrush steppe ecosystems symposium*, P. G. Entwistle, A. M. DeBolt, J. H. Kaltenecker, and K. Steenhof comps. USDI, Bureau of Land Management, Publication No. BLM/ID/PT-001001+1150, Boise, ID. 145 pp.
- Steenhof, K., M. N. Kochert, and T. L. McDonald. 1997. Interactive effects of prey and weather on golden eagle reproduction. *J. Anim. Ecol.* 66:350-362.



- Steenhof, K., M. N. Kochert, and J. A. Roppe. 1993. Nesting by raptors and ravens on an electrical transmission line. *J. Wildl. Manage.* 57:271-281.
- Steenhof, K., M. N. Kochert, E. Yensen, and K. L. Gage. 2004. Population status of Piute ground squirrels in the Snake River Birds of Prey National Conservation Area, 2003. USGS, Snake River Field Station, Forest and Rangeland Ecosystem Science Center. Boise, ID. pp. 1-28.
- Stephens, D., and S. Sturts. 1998. Idaho bird distribution. Special Publ. No. 13, Idaho Museum of Natural History, Pocatello, ID. 77 pp.
- Stream Net. 2001. Inland Columbia Basin redband trout presence - Snake Upper Middle Subbasin. Owyhee Subbasin. Oregon Department of Fish and Wildlife. Available: <http://rainbow.dfw.state.or.us/nrimp/information/fishdistmaps.htm>. 8 pp.
- Thomas, J. W., C. Maser, and J. E. Rodick. 1979. Wildlife habitats in managed rangeland - the Great Basin of southeastern Oregon. Riparian Zones. USDA, Forest Service and USDI, Bureau of Land Management, General Tech. Rep. PNW-80. Spec. Edition, Mar. 1986. 17 pp.
- Thomas, A. 2001. Amphibians of the eleven contiguous western states and Alaska. USDI, Bureau of Land Management, Idaho State Office and Idaho Department of Fish and Game. Boise, ID. Available: <http://www.blm.gov/wildlife/amphibian/guide.htm>
- Thompson, D. Q., R. L. Stuckey, and E. B. Thompson. 1987. Spread, impact, and control of purple loosestrife (*Lythrum salicaria*) on North American wetlands. USDI, Fish and Wildlife Service. 55 pp. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. Available: <http://www.npwrc.usgs.gov/resource/1999/loosstrf.htm> (Version 04JUN99).
- Tilman, D., J. Knops, D. Wedin, P. Reich, M. Ritchie, and E. Siemann. 1997. The influence of functional diversity and composition on ecosystem processes. *Science* 277:1300-1302.
- Townsend, J. 1839. Narrative of a journey across the Rocky Mountains to the Columbia River. reprinted in *Early western travels- Vol. 2*, R. Thwaites ed. 1906. Arthur H. Clark Co., Cleveland OH. pp. 107-639, as cited in Yensen, D. 1982. A grazing history of Southwestern Idaho, with an emphasis on the Snake River Birds of Prey Area. USDI, Bureau of Land Management, Lower Snake River District, Boise, ID.
- Trombulak, S. C. and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conserv. Biol* 14:18-30.
- Trost, C. H., and A. Gerstell. 1994. Status and distribution of colonial nesting waterbirds in southern, Idaho, 1993. Tech. Bul. No. 94-6, USDI, Bureau of Land Management, Idaho State Office, Boise, ID. 89 pp.
- Ulmschneider, H. 1990. Post-nesting ecology of the long-eared owl (*Asio otus*) in southwestern Idaho. M.S. Thesis. Boise State University, Boise, ID. 106 pp.
- US Bureau of the Census. June 2002. Profile of selected economic characteristics.
- _____. March 2001. Provided by Idaho Department of Commerce, (208) 334-2470. Available: <http://www.idoc.state.id.us>



- USDA (US Department of Agriculture). 2003. National range and pasture handbook. USDA, Natural Resources Conservation Service. Washington, DC.
- _____. 2004. Restoring western ranges and wildlands. S. B. Monsen, R. Stevens, and N. L. Shaw comps. USDA, Forest Service, Gen. Tech. Rep. RMRS-GTR-136.
- USDA (US Department of Agriculture) and USDI (US Department of the Interior). 1997. Upper Columbia River Basin Draft Environmental Impact Statement. Interior Columbia Basin Ecosystem Management Project.
- USDI (US Department of the Interior). 1979. Snake River birds of prey special research report to the Secretary of the Interior. USDI, Bureau of Land Management. Boise, ID. 142 pp.
- _____. 1993. Riparian area management: process for assessing proper functioning condition. TR 1737-9. USDI, Bureau of Land Management, BLM/SC/ST-93/003+1737, Service Center, CO. 60 pp.
- _____. 1994. Stone Cabin Mine: Volume 1 of 2, Final Environmental Impact Statement. USDI, Bureau of Land Management, Boise District, Boise, ID. 400 pp.
- _____. 1995a. Snake River Birds of Prey National Conservation Area Management Plan. USDI, Bureau of Land Management, Lower Snake River District, Boise, ID. 142 pp.
- _____. 1995b. Threatened and endangered species: peregrine falcon. p. 37 *in* Snake River Birds of Prey National Conservation Area Management Plan. USDI, Bureau of Land Management, Lower Snake River District, Boise, ID. 170 pp.
- _____. 1996a. Effects of fire and habitat alteration on golden eagle occupancy and nesting success in southwestern Idaho. BLM/IDARNG Research Project Final Report. US Geological Survey, Biological Resources Division, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, Boise, ID. 130pp.
- _____. 1996b. Effects of military training and fire in the Snake River Birds of Prey National Conservation Area. BLM/IDARNG Research Project Final Report. USDI, Geological Survey, Biological Resources Division, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, Boise, ID. 130pp.
- _____. 1997a. Grazing to reduce cheatgrass fuel loads. Environmental Assessment 97077. USDI, Bureau of Land Management, Lower Snake River District, Boise, ID. 4 pp.
- _____. 1997b. Riparian area management: grazing management for riparian-wetland areas. USDI, Bureau of Land Management, BLM/RS/ST-97/002+1737, National Applied Resource Sciences Center, CO. 80 pp.
- _____. 1998. A user guide to assessing proper functioning condition and the supporting science for lotic areas. Tech. Ref.-1737-15. 125 pp.
- _____. 1999a. A user guide to assessing proper functioning condition and the supporting science for lentic areas. Tech. Ref.-1737-16. 109 pp.



- _____. 1999b. Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement. USDI, Bureau of Land Management, Lower Snake River District, Boise, ID.
- _____. 2000a. Proceedings: sagebrush steppe ecosystem symposium. Entwistle, P.G. , A.M. De-Bolt, J.H. Kaltanecker, and K. Steenhof comps. USDI, Bureau of Land Management, Publication No. BLM/ID/PT-001001+1150, Idaho State Office, Boise, ID. 145 pp.
- _____. 2000b. The Great Basin: healing the land. USDI ,Bureau of Land Management. 36 pp.
- _____. 2003. Sensitive species supplement to the master memorandum of understanding between the Idaho Department of Fish and Game and the Bureau of Land Management. BLM MOU ID 253. Supp. 3. 18 pp.
- _____. 2004a. Biological assessment of ongoing grazing in the Bruneau Arm, Hagerman Group and Flat Iron allotments on three endangered and one threatened snail and the threatened bald eagle. USDI, Bureau of Land Management. 40 pp.
- _____. 2004b. Boise District Fire Management Plan. USDI, Bureau of Land Management. NW-ID-2004-010. 374 pp.
- _____. 2005a. Biological assessment of the Bureau of Land Management, Boise District and the Jarbidge Field Office of the Twin Falls District, grazing activities on four endangered snails, one threatened snail, and the threatened bald eagle. USDI, Bureau of Land Management, Boise District Office, Boise, ID. 151 pp.
- _____. 2005b. Final report: a survey for yellow-billed cuckoo in recorded and other likely locations in Idaho. USDI, Bureau of Land Management, Technical Bulletin 2005-05, Idaho State Office, Boise, ID. 34 pp.
- _____. 2005c. Landcover classification of the lower Snake River area: methods and documentation. Pacific Northwest National Laboratory report for USDI, Bureau of Land Management, Boise District Office, Boise, ID. 16 pp.
- USFWS (US Fish and Wildlife Service). 1995. Snake River Aquatic Species Recovery Plan. Snake River Basin Office, Ecological Services, Boise, ID. 92 pp.
- _____. 2002. Threatened, endangered, proposed, and candidate species: biological information and guidance. USDI, Fish and Wildlife Service, Snake River Basin Office, Boise, ID. 170 pp.
- _____. 2003. Interim guidelines to avoid and minimize wildlife impacts from wind turbines. USDI, Fish and Wildlife Service. Washington, DC. 55 pp.
- USGS (US Geological Survey). 2002. Ospreys in Oregon and the Pacific Northwest. USDI, Geological Survey, Forest and Range Ecosystem Center. Corvallis, OR. 3 pp.
- Vale, T. 1975. Pre-settlement vegetation in the Intermountain west. *J. Range Manage.* 28: 32-36
- Vallentine, J. 1989. Range development and improvements. 3rd. Edition. Academic Press Inc., San Diego, CA. 524 pp.



- Van Horne, B. and P. B. Sharpe. 1998. Effects of tracking by armored vehicles on Townsend's ground squirrels in the Orchard Training Area, Idaho, USA. *Environmental Management* 22:617-623.
- Van Horne, B., G. S. Olson, R. L. Schooley, J. G. Corn, and K. P. Burnham. 1997. Effects of drought and prolonged winter on Townsend's ground squirrel demography in shrubsteppe habitats. *Ecol. Monogr.* 67:295-315.
- Van Horne, B., R. L. Schooley, and P. B. Sharpe. 1998. Influence of habitat, sex, age, and drought on the diet of Townsend's ground squirrels. *J. Mammal.* 79:521-537.
- Warren, S. D., W. H. Blackburn, and C. A. Taylor, Jr. 1986a. Soil hydrologic response to number of pastures and stocking density under intensive rotation grazing. *J. Range Manage.* 39:500-504.
- Warren, S. D., T. L. Thurow, W. H. Blackburn, and N. E. Garza. 1986b. The influence of livestock trampling under intensive rotation grazing on soil hydrologic characteristics. *J. Range Manage.* 39:491-495.
- Washington Department of Fish and Wildlife. 2003. Baseline and monitoring studies for wind projects, wind project habitat mitigation, and wind power alternative mitigation pilot program. 10 pp.
- Watts, S. E., and S. T. Knick. 1994. Habitat classification and the ability of habitats to support populations of Townsend's ground squirrels and black-tailed jackrabbits. pp. 212-231 *in* Snake River Birds of Prey National Conservation Area research and monitoring annual report 1994, K. Steenhof ed. USDI, Bureau of Land Management and National Biological Survey, Boise, ID.
- Whisenant, S. G. 1990. Changing fire frequencies on Idaho's Snake River plains: ecological and management implications. pp. 4-10 *in* Cheatgrass invasion, shrub die-off, and other aspects of shrub biology and management – proceedings, E. D. McArthur, E. M. Romney, S. D. Smith, and P. T. Tueller comps. USDA, Forest Service, Gen. Tech. Rep. INT-276, Ogden, UT.
- Wier, S. 2002. Non-native trees invading the southern Rockies. Available: <http://home.earthlink.net/~swier/exotics.html>. 3 pp.
- Woods, C. P. 1994. The loggerhead shrike in southwestern Idaho. M.S. Thesis. Boise State University, Boise, ID. 199 pp.
- Yensen, D. 1981. The 1900 invasion of alien plants into southern Idaho. *Great Basin Nat.* 41:176-183
- _____. 1982. A grazing history of southwestern Idaho with emphasis on the Birds of Prey Study Area. USDI, Bureau of Land Management Report, Boise, ID. 82 pp.
- Yensen, E. 2001. The ecological role of ground squirrels and a "field guide" to northwestern species. pp. 1-3 *in* Conservation biology of ground squirrels and shrub-steppe ecosystem: abstracts. Idaho Academy of Science meeting, Albertson's College of Idaho. Caldwell, ID. 33 pp.
- Yensen, E., and D. L. Quinney. 1992. Can Townsend's ground squirrels survive on a diet of exotic annuals? *Great Basin Nat.* 52:269-277.



- Yensen, E., D. L. Quinney, K. Johnson, K. Timmerman, and K. Steenhof. 1992. Fire, vegetation changes, and population fluctuations of Townsend's ground squirrels. *Amer. Midland Nat.* 128:299-312.
- Yensen, E. and P. Sherman. 2003. Ground dwelling squirrels of the Pacific Northwest. USDI, US Fish and Wildlife Service, Snake River Fish and Wildlife Office, Boise, ID, USDI, Bureau of Land Management, Spokane District, Spokane, WA, and USDI, Bureau of Land Management, Oregon State Office, Portland, OR. 28 pp.
- Yeo, J. 2005. Effects of grazing exclusion on rangeland vegetation and soils, east central Idaho. *West. N. Am. Nat.* 65:91-102.
- Young, J. A., R. A. Evans, and J. Major. 1972. Alien plants in the Great Basin. *J. Range Manage.* 25:194-201.
- Young, J. and R. A. Evans. 1978. Population dynamics after wildfires in sagebrush grasslands. *J. Range Manage.* 31:283-289.

