

Bruce E. Rieman  
Fish Ecology, Fisheries and Habitat Management, Conservation Biology

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I am a recently retired research scientist and program manager and retain an Emeritus Scientist status with the U.S. Forest Service, Rocky Mountain Research Station in Boise, Idaho (see <http://www.fs.fed.us/rm/boise>). I have 34 years experience in research, management and research program administration dealing with fishes, fisheries, and conservation biology. My work has extended throughout much of the Interior Columbia River Basin, but also has influenced aquatic natural resource management in the interior west. My most recent focus has been in collaboration with a team of physical and biological scientists investigating fish population dynamics, habitat relationships, and factors influencing persistence of local and regional populations. The implications of wildfire and climate change have been important elements of this work. I have authored more than 120 technical publications and given many presentations to both lay and technical audiences. I have been recognized as an outstanding science communicator. I am particularly interested in further work synthesizing existing knowledge and theory to facilitate more effective applications in natural resource management in general and the conservation management of native fishes in particular.

**Education:**

BS: Zoology, University of Idaho 1973  
M.S. Fisheries Management, University of Idaho 1976  
Ph.D. Forestry, Wildlife and Range Sciences, University of Idaho 1987  
Sabbatical leave: University of Montana Wild Trout and Salmon genetics  
laboratory; course work in conservation genetics and fish ecology 1999-2000

**Professional Experience:**

1974-1976: Research Associate, U of I, Moscow, ID  
1976-1983: Fisheries Research Biologist, Idaho Department of Fish and Game,  
Coeur d'Alene, ID  
1983-1985: Regional Fisheries Manager, Idaho Department of Fish and Game, Coeur  
d'Alene, ID  
1986: Instructor and Research Associate, College of Forestry Wildlife and Range  
Sciences, U of I Moscow, ID  
1986-1988: Fish Research Biologist 3, Oregon Department of Fish and Wildlife,  
Clackamas, OR  
1988-1992: Principal Fisheries Research Biologist, Idaho Department of Fish and  
Game, Boise, ID

1992-2007: Research Fishery Scientist; Team Leader; Project Leader and Director's Representative, U.S. Forest Service Rocky Mountain Research Station, Boise Aquatic Sciences Laboratory

**Professional Recognition:**

Most Significant Paper published in the Transactions of the American Fisheries Society, Volume 120 (1991)  
Alumni Achievement Award, University of Idaho, College of Forestry, Wildlife and Range Sciences, Commencement 1997  
U.S. Forest Service Chief's "New Century of Service" award for "integrity, leadership, and unique approaches to fisheries issues", 2003  
Robert L. Kendall Award for Best Paper in the Transactions of the American Fisheries Society, Volume 132 (2004)  
American Fisheries Society "President's Fishery Conservation Award", Anchorage Alaska 2005, "for advancing understanding of fishes and fisheries management in the Columbia River Basin"  
Idaho Chapter American Fisheries Society, "Richard L. Wallace, Native Species Conservation Award" for contributions to the conservation management of Idaho fishes, 2006  
Courtesy appointments as affiliate or adjunct faculty: University of Montana, University of Idaho, Utah State University

**Selected Publications:**

Rieman, B.E., and C.M. Falter. 1981. Effects of the establishment of Mysis relicta on the macro-zooplankton of a large lake. Transactions of the American Fisheries Society 110:613-620.  
Beamesderfer, R.C. and B.E. Rieman. 1988. Size selectivity and bias in estimates of population statistics of smallmouth bass, walleye, and northern squawfish in a Columbia River reservoir. North American Journal of Fisheries Management 8:505-510  
Rieman, B.E. and R.C. Beamesderfer. 1990. Dynamics of a northern squawfish population and the potential to reduce predation on juvenile salmonids in a Columbia River reservoir. North American Journal of Fisheries Management 10: 228-241.  
Beamesderfer, R.C. and B.E. Rieman, S. Vigg, and L.J. Bledsoe. 1990. Management implications of a model of predation by a resident fish on juvenile salmonids migrating through a Columbia River Reservoir. North American Journal of Fisheries Management 10:290-304.  
Rieman, B.E. and R.C. Beamesderfer. 1990. White sturgeon in the lower Columbia River: is the stock overexploited? North American Journal of Fisheries Management 10:388-396  
Rieman, B.E., R.C. Beamesderfer, S. Vigg, and T.P. Poe. 1991. Estimated loss of juvenile salmonids to predation by northern squawfish, walleyes, and smallmouth bass in John Day Reservoir, Columbia River. Transactions of the American Fisheries Society 120:448-458.

- Rieman, B.E., and D.L. Myers. 1992. Influence of fish density and relative productivity on growth of kokanee in 10 oligotrophic lakes and reservoirs in Idaho. *Transactions of the American Fisheries Society* 121:178-191.
- Rieman, B.E. and J.D. McIntyre. 1993. Demographic and habitat requirements for the conservation of bull trout *Salvelinus confluentus*. USDA Forest Service Intermountain Research Station, General Technical Report INT-302, Ogden, UT.
- Rieman, B.E., D.L. Myers, and R.L. Nielsen. 1994. The use of otolith microchemistry to discriminate *O. nerka* of resident and anadromous origin. *Canadian Journal of Fisheries and Aquatic Sciences* 51:68-77.
- Rieman, B.E. and M. Maiolie. 1995. Kokanee population density and resulting fisheries. *North American Journal of Fisheries Management* 15: 229-237.
- Rieman, B.E. and J.D. McIntyre. 1995. Occurrence of bull trout in naturally fragmented habitat patches of varied size. *Transactions of the American Fisheries Society* 124: 285-296.
- Lee, D.C. and B. E. Rieman. 1997. Population viability assessment of salmonids by using probabilistic networks. *North American Journal of Fisheries Management* 17:1144-1157.
- Rieman, B.E., D. C. Lee, and R. F. Thurow. 1997. Distribution, status, and likely future trends of bull trout within the Columbia River and Klamath basins. *North American Journal of Fisheries Management* 17:1111-1125.
- Rieman, B. E., and J. Clayton. 1997. Fire and fish: issues of forest health and conservation of native fishes. *Fisheries* 22(11):6-15.
- Lee, D.C., J.R. Sedell, B.E. Rieman, R.F. Thurow, and J.E. Williams. 1998. Aquatic species and habitat in the Interior Columbia River Basin. *Journal of Forestry* 96(10): 16-21.
- Dunham, J. B., and B.E Rieman. 1999. Metapopulation structure of bull trout: influences of physical, biotic, and geometrical landscape characteristics. *Ecological Applications* 9(2):642-655.
- Rieman, B. E. and J.B. Dunham. 2000. Metapopulation and salmonids: a synthesis of life history patterns and empirical observations. *Ecology of Freshwater Fish* 9:51-64.
- Rieman, B. E., D.C. Lee, R.F. Thurow, P.F. Hessburg, and J.R. Sedell. 2000. Toward an integrated classification of ecosystems: defining opportunities for managing fish and forest health. *Environmental Management* 25(4):425-444.
- Rieman, B.E., J.T. Peterson, J.L. Clayton, P. Howell, R.F. Thurow, W. Thompson and D.C. Lee. 2001. Evaluation of potential effects of federal land management alternatives on trends of salmonids and their habitats in the interior Columbia River basin. *Forest Ecology and Management* 153 (1-3):43-62
- Dunham, J.B., B.E. Rieman, and K. Davis. (2001). Sources and magnitude of sampling error in redd counts for bull trout. *North American Journal of Fisheries Management*. 21:343-352.
- Rieman, B.E. and F.W. Allendorf. 2001. Effective population size and genetic conservation criteria for bull trout. *North American Journal of Fisheries Management*. 21:330-338.

- Rieman, B.E.; D. Lee, D. Burns, R. Gresswell, M. Young, R. Stowell, and P. Howell. 2003. Status of native fishes in the Western United States and issues for fire and fuels management. *Forest Ecology and Management*. 178(1-2):19-212.
- Bisson, P.A., B.E. Rieman, C. Luce, P.F. Hessburg, D.C. Lee, J.L. Kershner, G.H. Reeves, and R.E. Gresswell. 2003. Fire and aquatic ecosystems of the western USA: Current knowledge and key questions. *Forest Ecology and Management* 178 (1-2): 213-229
- Dunham, J.B., M.K. Young, R.E. Gresswell, and B.E. Rieman, B.E. 2003. Effects of fires on fish populations: landscape perspectives on persistence of native fishes and nonnative fish invasions. *Forest Ecology and Management* 178 (1-2): 183-196.
- Rieman, B.E., R.E. Gresswell, M.K. Young and C. Luce. 2003. Introduction to the Effects of Wildland Fire on Aquatic Ecosystems in the Western USA. *Forest Ecology and Management* 178 (1-2): 1-3.
- Isaak, D.E., R.F. Thurow, B.E. Rieman, and J.B. Dunham. 2003. Temporal variation in synchrony among Chinook salmon redd counts from a wilderness area in central Idaho. *Canadian Journal of Fisheries and Aquatic Sciences* 60:840-848.
- Rich, C., T. McMahon, B. Rieman, and W. Thompson. 2003. Influence of local habitat, watershed, and biotic features on bull trout occurrence in Montana streams. *Transactions of the American Fisheries Society* 132:1053-1064.
- Wells, B.K., B.E. Rieman, Clayton, J., Horan, D. and C.M. Jones. 2003. Relationships between water, otolith, and scale chemistries of westslope cutthroat trout from the Coeur d'Alene River, Idaho: the potential application of hard-part chemistry to describe movements in fresh water. *Transactions of the American Fisheries Society* 132:409-424.
- Rieman, B., J. Dunham, C. Luce, A. Rosenberger. 2005. Implications of changing fire regimes for aquatic ecosystems. Pp. 187-192, *In* Taylor, L.; Zelnik, J., Cadwallader, S., Hughes, B. (eds) *Mixed Severity Fire Regimes: Ecology and Management, Proceedings of the Conference, Spokane WA. November 15-19, 2004.*
- Whiteley, A., Spruell, P., Rieman, B., and Allendorf, F. 2006. Fine-scale genetic structure of bull trout at the southern distribution limit. *Transactions of the American Fisheries Society*. 135:1238-1253
- Neville, H., D.J. Isaak, R.F. Thurow, J.B. Dunham, and B.E. Rieman. 2006. Individual-based genetic autocorrelation analysis uncovers fine-scale genetic structure related to geomorphic context and sex in Chinook salmon. *Molecular Genetics* 15:4589-4902.
- Neville, H., D. J. Isaak, R. Thurow, J. Dunham, and B. Rieman. 2007. Microsatellite variation reveals weak genetic structure and retention of genetic variability in threatened Chinook salmon (*Oncorhynchus tshawytscha*) within a Snake River watershed. *Conservation Genetics* 8(1):133-147.
- Thurow, R.F., B.E. Rieman, D.C. Lee, P. J. Howell, and R.D. Perkinson. In Press. Distribution and status of redband trout in the Interior Columbia River basin and Portions of the Klamath River and Great Basins. Pages x-xx , J. Hall

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- Reeves, G., P. Bisson, B. Rieman, and L. Benda. 2006. Post-Fire Logging in Riparian Areas. *Conservation Biology* 20:994-1004.
- Rieman, B.E., J.D. Dunham, and J. Clayton. 2006. Emerging concepts for management of river ecosystems and challenges to applied integration of physical and biological sciences in the Pacific Northwest. *Journal of River Basin Management* 4(2):85-97.
- Rieman, B.E., J.T. Peterson, and D.L. Myers. 2006. Have brook trout displaced bull trout along longitudinal gradients in central Idaho streams? *Canadian Journal of Fisheries and Aquatic Sciences*. 63:63-78.
- Rieman, B.E., D. Isaak, S. Adams, D. Horan, D. Nagel, and C. Luce. In Press. Anticipated climate warming effects on bull trout habitats and populations across the Interior Columbia River basin. *Transactions of the American Fisheries Society* 00:000-000.
- Peterson, D., B. Rieman, J. Dunham, K. Fausch, and M. Young. In Review. Analysis of tradeoffs between threats of invasion by nonnative trout and intentional isolation for native westslope cutthroat trout. Submitted to *Canadian Journal of Fisheries and Aquatic Sciences*