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Dudley W. Reiser  
*R2 Resource Consultants*

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**DUDLEY W. REISER, Ph.D. – PRESIDENT**  
**Senior Fisheries Scientist**

Dr. Reiser is a fisheries scientist and the President of R2 Resource Consultants, and has more than 30 years experience designing, implementing, and managing fisheries and aquatic ecology projects, and habitat and instream flow assessments. His particular areas of expertise include fish ecology (anadromous and resident species), habitat assessments and criteria development, endangered species evaluations, assessments of flow regulation on fish populations and habitats, fisheries habitat enhancement, fisheries engineering, instream flow studies, assessments of sedimentation impacts on aquatic ecosystems, and flushing flow studies (related to sediment deposition).

**EDUCATION**

Ph.D. (Forestry, Wildlife and Range Sciences – major in fishery resources) University of Idaho, 1981  
M.S. (Water Resources) University of Wyoming, 1976  
B.A. (Zoology) Miami University, Ohio, 1972

**PROFESSIONAL AFFILIATIONS AND CERTIFICATIONS**

Certified USFWS IFIM Course - Computer Modeling (201), IFIM:IFG210, SNTEMP (310)  
Certified USFWS Course - Expert Witness Seminar  
Certified SCUBA DIVER - PADI and YMCA  
American Fisheries Society (AFS), Certified Fisheries Scientist (No. 1447), Re-Certified (No. 2463)  
Society of Environmental Toxicology and Chemistry  
Co-editor, Sustainable Fisheries – Pacific Salmon, Lewis Publishers.  
Past Member, Editorial Board, "Rivers: Studies in the Science, Environmental Policy, and Law of Flowing Waters" (ongoing member since 1992)  
Member, Independent Science Panel (ISP) – Washington State – appointed by Governor Gary Locke to serve on Salmon Recovery Science Panel, Term: 1999-2003; reappointed by Governor Gregoire through 2006.

**EMPLOYMENT HISTORY**

R2 Resource Consultants, Inc., Redmond, Washington, President, Senior Fisheries Scientist, 1992-Present  
EA Engineering, Science, and Technology, Redmond, Washington, Vice President, Senior Fisheries Scientist, 1987-1992  
Bechtel Corporation, San Francisco, California, Senior Fisheries Scientist, 1982-1987  
Camp Dresser and McKee Inc., Denver, Colorado, Senior Fisheries Scientist, 1980-1982  
Idaho Cooperative Fishery Research Unit, Moscow, Idaho, 1977-1980  
Wyoming Water Resources Research Institute, Laramie, Wyoming, 1974-1977

## EXPERIENCE

***Habitat Modeling, Instream Flow and Flushing Flow Determinations:*** Extensive experience in the area of habitat and instream flow assessments in Alaska, California, Colorado, Idaho, Montana, New York, Vermont, North Carolina, Oregon, Washington, and Wyoming. Has applied a variety of IF methods including the USFWS IFIM/PHABSIM, Tennant (Montana) Method, Wetted Perimeter (WP), Trout Cover Rating (TCR), Toe-width, R-2 Cross Method, and the New England Method. Project Manager and Principal-in-charge of one of the largest instream flow studies conducted in North America; the study was conducted as part of the Snake River Basin Adjudication and included over 1100 basins within the Salmon and Clearwater basins of Idaho. Other ongoing and recent instream flow projects directed by Dr. Reiser include: instream flow and lake level recommendations related to the Klamath River Basin Adjudication (for the BIA), determination of flow recommendations for the Duck Valley Indian Reservation, Nevada and Idaho (for the BIA), instream flow studies related to a large mine in Alaska, an assessment of instream flow requirements below Madison Dam, Montana (conducted for the Montana Power Company), and instream flow studies on Ward Creek below Connell Dam and Whitman Creek below Whitman Dam near Ketchikan, Alaska (conducted for Ketchikan Public Utility). Dr Reiser is also the Project Manager of a national instream flow support contract to the U.S. Forest Service to provide technical assistance related to instream flow issues associated with hydroelectric relicensing. He was also involved in a study for the Chelan PUD evaluating instream flow and passage flows within a bypass reach below Lake Chelan. Project Manager of a study conducted for Alberta Environment focused on developing an approach for determining instream flow needs for streams throughout the province. Completed four studies related to flushing flows, including the development of guidelines for recommending flushing flows, and formulation of specific flow recommendations for two California streams and two major river systems in Montana.

***Habitat Assessments and Habitat Suitability Curve Development:*** Principal investigator of a comparative habitat study evaluating limiting factors within the Clark Fork River, Montana. Applied a variety of habitat quantification methods including IFIM, Habitat Quality Index (HQI), Habitat Suitability Index system (HSI), and Trout Cover Rating (TCR). Project Manager of a comprehensive aquatic ecosystem assessment (conducted for the U.S. Fish and Wildlife Service) of the South Fork Coeur d'Alene River watershed, focused on evaluating factors controlling wild trout production. Collected, analyzed, and developed habitat suitability (Category II) curves for brown and brook trout, bull trout, Chinook salmon, pink salmon, chum salmon, and steelhead trout. Invited participant in bull trout experts meeting to develop Habitat Suitability Curves (Category I) for bull trout spawning, juvenile rearing, adult holding, and fry. Organized and conducted three habitat suitability curve workshops designed to review and develop Category I curves for anadromous and resident salmonid species for drainages in Oregon and Idaho. Principal investigator of a microhabitat study to define habitat utilization of coho and Chinook salmon, and steelhead trout in the White River, Washington; data were collected by direct observation using snorkeling techniques.

***Endangered Species Issues:*** Direct experience in working on endangered species issues related to resource developments, including those that influence streamflow, temperature, habitat quality and quantity. Project Manager of technical studies on bull trout for Seattle Water Department (SWD); assisted in coordination of studies for integration into SWD Habitat Conservation Plan (HCP). Invited

member of Independent Scientific Review Panel by USFWS to evaluate the current risk of extinction of Lost River and shortnose suckers in the Klamath Basin, Oregon. Project Manager for Tri-County Urban Issues ESA response project focused on evaluating restoration options for listed Chinook salmon within urban watersheds. Project Manager of an HCP developed for the J.L. Storedahl & Sons Daybreak Mine located near the East Fork Lewis River, Washington, and more recently an HCP for the City of Kent's water supply. Project Manager for development of restoration plans for reintroducing the federally listed endangered Snake River Chinook salmon into the Panther Creek drainage in Idaho. Project Manager for a bull trout evaluation for the Seattle City Light in connection with the Boundary Hydroelectric Project and Ross Lake Project. Appointed by Washington Governor Gary Locke and re-appointed by Governor Gregoire to serve on five member Independent Science Panel focused on salmon recovery in the State of Washington.

***Fish Population Assessments:*** Directed numerous studies focused on determining fish population abundance and dynamics in streams and rivers. These have most recently included fish studies conducted for the City of Kent pertaining to the Green River Natural Resources Area, and streams that may be influenced by the revised Critical Areas Ordinance; General Electric (Housatonic River, Massachusetts), the Seattle Water Department (Lake Chester Morse and Cedar watershed), Montana Power Company (Holter and Hauser reservoirs; Missouri River), Atlantic Richfield Company (Clark Fork River and tributaries), U.S. Fish and Wildlife Service (Coeur d'Alene basin and St. Regis Rivers), J.L. Storedahl Company (series of gravel ponds adjacent to the East Fork Lewis River), and Ketchikan Public Utilities (Whitman and Connell lakes, and tributaries). Dr. Reiser has recently initiated a study for the City of Seattle evaluating the effects of reservoir management on bull trout redds and egg survival. Fishery surveys often include use of a variety of gear types including electrofishing, seining, gill netting, trapping, hook and line, and snorkeling.

***Fisheries Habitat Enhancement:*** Project manager for a mine reclamation fishery habitat enhancement project for the Bonneville Power Administration (BPA) for Panther Creek, Idaho; a fisheries engineering habitat enhancement project on the Yankee Fork of the Salmon River, Idaho, for the Shoshone-Bannock Indian Tribes; a habitat enhancement project on the East Fork Salmon River Idaho for the Shoshone-Bannock Tribes, a tributary improvement study for Pacific Gas and Electric Company (PG&E) in California; a feasibility study for developing an artificial spawning channel in Montana; a gravel supplementation study to evaluate options for increasing brown and rainbow trout spawning success within the Madison River below Madison Dam (for Montana Power Company); and most recently, development of habitat restoration options designed to restore runs of Chinook salmon back to Panther Creek (conducted for NMFS). Enhancement measures included instream structures, bank stabilization, spawning channel development, spawning gravel supplementation, rearing pond development (low-technology and natural), and barrier removal, mine tailings pond stabilization, and dam removal. Project Manager of biomonitoring studies of the Mill-Willow Bypass channel in Montana, a channel that was completely reconstructed following the removal of mine tailings and floodplain construction. The studies have included assessments of habitat, monitoring of invertebrate communities, water quality and fish recolonization.

***Fish Passage:*** Awarded Outstanding Technical Paper award (Bechtel) for work involving the development of a procedure for assessing fish passage problems at low head hydro projects. Evaluated

passage problems and barrier potential (chinook salmon and steelhead) of the Lake Redding project in California. Developed conceptual designs of fish passage facilities for salmon (Atlantic salmon) at two hydro projects in Connecticut. Assessed barrier potential (chinook salmon and steelhead) of falls in two Idaho streams, and formulated plans for removal of an abandoned power dam in the East Fork Salmon River drainage in Idaho. Designed barrier analysis study for potential flow-dependent barriers located in Ward Creek, below Connell Dam near Ketchikan, Alaska. Involved in the development of concepts for upstream and downstream fish passage (steelhead trout) on the Carmel River in California. Reviewed and assessed suitability of upstream and downstream passage facilities for the Milford Dam on the Penobscot River.

**Hydroelectric Project Licensing Studies:** Dr. Reiser has worked on licensing/relicensing studies on over 20 hydroelectric projects. These have included most recently, the Henry M. Jackson Hydroelectric Project (Washington), Boundary Hydroelectric Project (Washington), Skagit Project (Washington), White River (Washington), Clackamas (Oregon), Deschutes (Oregon), Carmen-Smith (Oregon), Connell and Whitman (Alaska), Cooper Lake (Alaska), Upper American River (California), Big Creek (California), Tapoco (North Carolina), Natahala (North Carolina), and Missouri-Madison (Montana). He has provided both technical and strategic support on many of these projects and has worked from the utility, stakeholder, and the FERC perspective. His working experience on these projects has involved the traditional, ALP, and ILP relicensing procedures. In addition, for the Clackamas Project, he served as the aquatic and fisheries resource lead for a 3rd party DEIS prepared for the FERC. Dr. Reiser also recently served as the Project Manager of a national technical support contract with the U.S. Forest Service where he participated in instream flow related studies associated with hydroelectric relicensing involving a number of resource issues including fish flows, impacts of flow fluctuations, impacts of whitewater flows on aquatic biota, and sediment transport issues. Most recently, he is directing three studies being completed as part of the ILP process for the Jackson Hydroelectric Project.

**Book and Manuscript Reviews:** Technical manuscript reviewer for Fisheries, Rivers, Transactions of the American Fisheries Society, North American Journal of Fisheries Management, and Environmental Management. Has reviewed technical reports for the U.S. Fish and Wildlife Service, U.S. Geological Survey, the U.S. Forest Service, National Marine Fisheries Service, and various State resource agencies. Member of the Editorial Board for "Rivers," a journal focused on addressing instream flow issues. Published several formal reviews of books in "Rivers" and "Fisheries."

### **TESTIMONY AT HEARINGS, TRIAL AND DEPOSITIONS**

State of Washington, Shoreline Hearings Board; Daybreak Mining and Habitat Enhancement Project; Provided testimony on behalf of the J.L. Storedahl Company, August 2005.

Clark County, Washington, Public Land Use Hearings regarding Daybreak Mining and Habitat Enhancement; Case No. REZ98-011; CUP20004-00002. Provided testimony on behalf of the J.L. Storedahl Company, May and June 2004.

United States of America vs. ASARCO Inc. et al. (Case No. 96-0122-N-EJL and Case No. 91-9342-N-EJL) (District of Idaho) (Testimony provided on behalf of the United States, Department of Justice, U.S. Fish and Wildlife Service).

- 1) Provided testimony during depositions – (Seattle, Washington) (December 15-16, 1999).
- 2) Provided testimony during trial in United States District Court, District of Idaho, Boise Idaho, February 28-March 1, 2001.

State of Montana vs. Atlantic Richfield Company (No. CF-83-317-HLN-PGH) (District of Montana)  
(Testimony provided on behalf of Atlantic Richfield Company)

- 1) Provided testimony during depositions – (Seattle, Washington) (January 18-20, 1996).
- 2) Provided testimony during trial (United States District Court, District of Montana – Great Falls, Montana) (April 21-24, 1997).

Snake River Basin Adjudication (Case No. 39576) (District Court of the Fifth Judicial District of the State of Idaho, in and for the County of Twin Falls) (Testimony provided on behalf of the United States, Department of Justice, Bureau of Indian Affairs)

- 1) Provided testimony during depositions – (Lynnwood, Washington) (April 27-30, 1999).
- 2) Provided Declarations/Affidavits in support of instream flow claims developed on behalf of the Bureau of Indian Affairs, June 1995 and April 1998.

Klamath Basin Adjudication (before the Water Resources Director of Oregon)

- 1) Provided Affidavit in support of instream flow claims for Klamath River; submitted on behalf of Bureau of Indian Affairs, 2006.
- 2) Provided Affidavit in support of instream flow claims for streams in the Upper Klamath River Basin, submitted on behalf of Bureau of Indian Affairs, 2006.
- 3) Provided Affidavit in support of instream flow claims developed on behalf of the Bureau of Indian Affairs, 1997.

Puget Sound Energy, Inc. – Federal Energy Regulatory Commission (White River Project No. 2494-002)

- 1) Provided Declaration in support of Puget’s request for a license order stay (March 13, 1998).

California State Water Resources Control Board – 1995.

- 1) Provided oral testimony regarding proposed Salinity standards for San Francisco Bay – Delta, California

## **SELECTED PUBLICATIONS AND TECHNICAL REPORTS**

Reiser, D.W. 2008. Enhancing Salmonid Populations via Spawning Habitat Restorative Actions. 2008. Pp 349-376. In. D. Sear and P. DeVries, (eds). Salmonid Spawning Habitat in Rivers: Physical Controls, Biological Responses, and Approaches to Remediation. American Fisheries Society, Symposium Publication No. 365. Bethesda, Maryland.

Reiser, D.W., M. Gagner, C. Huang, T. Sullivan, S. Beck, T. Nightengale, and C. Morello. 2008. Determination and evaluation of habitat – flow relationships in the Sultan River, Washington.

Sultan River Instream Flow Study. Prepared by R2 Resource Consultants, for Public Utility District No. 1 of Shohomish County and City of Everett.

T.J. Sullivan, D.W. Reiser, M.Gagner, and S.M. Beck. 2008. Penny Creek fish passage feasibility study: Phase 2 – assessment of Penny Creek anadromous salmonid production potential and fish passage technical considerations. Report prepared for U.S. Fish and Wildlife Service, under contract to MWH Americas.

Reiser, D.W, T. Nightengale, N. Hendrix, and S. Beck. 2008. Effects of pulse-type flows resulting from hydroelectric operations on aquatic biota. Hydro Review. May Issue.

Reiser, D.W. 2007. Species distributions, life history strategies and habitat-flow requirements of anadromous salmonid populations in the Yukon River Basin, Alaska. Report prepared for the Native American Rights Fund. Anchorage, Alaska.

DeVries, P., D. Reiser, C. Huang, S. Beck, M. Ramey, A. Olson, N. Hendrix, K. Oliver, T. Nightengale, J. Reilly, T. Kenward, and M. Palmer. 2007. North Coast instream flow policy: scientific basis and development of alternatives protecting anadromous salmonids. Task 3 Report – Administrative Draft. Prepared for California State Water Resources Control Board.

Souchon, Y., C. Sabaton, R. Deibel, D. Reiser, J. Kershner, M.I Gard, C. Katopodis, P. Leonard, N. Poff, W. Miller, and B. Lamb. 2007. Detecting biological responses to flow management: missed opportunities: future directions. River Research and Applications, 24: 506-518.

Reiser, D.W., C. Morello, and A. Olson. 2006. Monitoring the Green River Natural Resource Area for salmonid utilization – 2005/2006 survey results. Report prepared by R2 Resource Consultants for City of Kent, Washington.

DeVries, P., D. Reiser, and N. Hendrix. 2006. Tests of regional Habitat Suitability Index curves: validation of Snake River Basin Adjudication curves with empirical data and comparison of curves developed independently for the Big Creek and Upper American River projects, Sierra Nevada, California. Technical Memorandum No. 2. Prepared for U.S. Forest Service, Fort Collins, Colorado.

Reiser, D.W., C. Morello, M. Gagner, and T. Nightengale. 2006. Fish, habitat, and benthic macroinvertebrate surveys of selected streams within the City of Kent, Washington. Technical Report prepared for City of Kent, Washington.

Reiser, D.W., C. Huang, S. Beck, M. Gagner, and E. Jeanes. 2006. Defining flow windows for upstream passage of adult anadromous salmonids at cascades and falls. Transactions of the American Fisheries Society; 135:668-679.

Beck, S. and D. Reiser. 2006. Monitoring of gravel quality in the Sultan River, Washington. Report prepared by R2 Resource Consultants for Snohomish County Public Utility District.

- Reiser, D.W, T. Nightengale, N. Hendrix, and S. Beck. 2005. Effects of pulse-type flows on benthic macroinvertebrates and fish: a review and synthesis of information. Report prepared by R2 Resource Consultants for Pacific Gas and Electric Company, San Ramon, California.
- Harvey, B., S. McBain, D. Reiser, L. Rempel, and L. Sklar. 2005. Key uncertainties in gravel augmentation: geomorphological and biological research needs for effective river restoration. Prepared by CALFED Science Program and Ecosystem Restoration Program and Gravel Augmentation Panel, Sacramento, California.
- Nightengale, T., and D. Reiser. 2005. Comparison of benthic macroinvertebrates in spring- vs run-off dominated streams in the Upper Klamath Basin, Oregon. Report prepared by R2 Resource Consultants for Bureau of Indian Affairs, Portland, Oregon.
- Nightengale, T., N. Hendrix, S. Beck, and D. Reiser. 2005. Macroinvertebrate data analysis for Tule River and Rock Creek-Cresta (FERC No. 1962) Projects. Prepared for Pacific Gas and Electric Company, San Ramon, California. Prepared by R2 Resource Consultants, Inc. Redmond, Washington.
- Reiser, D.W. 2005. Instream flows for fish and aquatic biota: a review of technical considerations and commonly applied methodologies. Technical Paper, R2 Resource Consultants, prepared for Seattle City Light and Seattle Public Utilities.
- Reiser, D.W., C. Morello, M. Appy, E. Jeanes, and A. Olson. 2005. Monitoring the Green River Natural Resource Area for salmonid utilization. Report prepared by R2 Resource Consultants for City of Kent, Washington.
- Loftus, M.E., and D. Reiser. 2004. Evidence of Repetitive Spawning Activity of Lost River and Shortnose Suckers from USBR Radio-telemetry Studies, 1993 – 1999, Technical Memorandum; in R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon.
- Helser, T., M. Loftus, and D. Reiser. 2004. A Statistical Model of Upper Klamath Lake Adult Sucker Depth Utilization; Technical Memorandum; in R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon.
- Helser, T., M. Loftus, N. Hendrix, and D. Reiser. 2004. Risk Analysis of Unsuitable Dissolved Oxygen Concentrations in Upper Klamath Lake: Model Development and Application; Technical Memorandum; in R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon.



- Loftus, M.E., K. Oliver, and D. Reiser. 2004. An Evaluation of Water Quality in the Near Shore Areas of Upper Klamath Lake, Oregon; *in* R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon
- Loftus, M.E., and D. Reiser. 2004. Estimating the Effect of Aging Uncertainty On Observed Fish Age-Frequency Distributions *in* R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon.
- Helser, T. ,and D. Reiser. 2004. Calculation of a New Relative Abundance Index For Klamath Lake Lost River and Shortnose Suckers Based on Female Spawning Reproductive Potential *in* R2 Resource Consultants. 2004. A compendium of technical memoranda related to water quality and shortnose (*Chasmistes brevirostris*) and Lost River (*Delistes luxatus*) suckers population demographics in Upper Klamath Lake, Oregon. Prepared for Bureau of Indian Affairs, Portland, Oregon.
- Reiser, D.W., D. Chapin, P. DeVries, and M. Ramey. 2004. Flow regime and ecosystem interactions in spring-dominated streams: implications for selecting instream flow methods. *Hydroecologie appliquee*. Volume 1: pages 93-104.
- Reiser, D.W., E. Greenberg, T. Helser, M. Branton, and K. Jenkins. 2004. In situ reproduction, abundance and growth of young-of-year and adult largemouth bass in a population exposed to polychlorinated hydrocarbons. *Environmental Toxicology and Chemistry*, Volume 23, No. 7.
- Reiser, D.W., D. Chapin, and C. Huang. 2004. Ecosystem characteristics and flow regime interactions in spring-dominated streams: a synthesis of existing information relevant to streams in the upper Klamath Basin, Oregon. Prepared for the Bureau of Indian Affairs, Portland, Oregon.
- Reiser, D.W., D.F. Woodward, E. Jeanes, D. Harper, A. Farag., and E. Connor. (in press). Defining the determinants of wild trout production in the South Fork Coeur d'Alene River, Idaho using a reference stream approach. Submitted to *North American Journal of Fisheries Management*.
- Reiser, D.W., D. Chapin, P. DeVries, and M. Ramey. 2003. Flow regime and ecosystem interactions in spring dominated streams: implications for selecting instream flow methods. In *Proceedings of International IFIM Conference*, June 2003, Fort Collins, Colorado.
- Demko, D., A. Olson, M. Simpson, G. Kopp, and D. Reiser. 2003. Acoustic tracking technology and potential applications for salmonid research within the San Francisco Bay and Sacramento- San Joaquin Delta. Prepared for California Urban Water Agencies, Sacramento, California.
- Reiser, D.W., C. Huang, S. Beck, M. Gagner, and E. Jeanes. 2003. Assessment of instream flow alternatives for fish and aquatic habitat within Ward Creek, Alaska below Connell Dam. Prepared by R2 Resource Consultants for U.S. Forest Service, Ketchikan, Alaska.

- Reiser, D.W., E. Jeanes, M. Gagner, C. Huang, S. Beck, and E. Greenberg. 2002. Assessment of fish and aquatic habitats potentially affected by the Whitman Lake Hydroelectric Project, Alaska. Prepared by R2 Resource Consultants, for Ketchikan Public Utilities, under subcontract to WESCORP.
- Greenberg, E., D. Reiser, M. Loftus, and W. Coughlin. 2002. Evaluation of largemouth bass habitat, population structure, and reproduction in the upper Housatonic River, Massachusetts. Prepared by R2 Resource Consultants, for General Electric Company, Pittsfield, Massachusetts.
- Reiser, D.W. 2002. Effects of the White River Hydroelectric Project on water temperatures relative to Chinook salmon life history requirements. Prepared by R2 Resource Consultants for Lake Tapps Task Force and Perkins Coie, Bellevue, Washington.
- Reiser, D. W. and K. Oliver. 2002. Review of projects employing conventional fish screens: existing information analysis. Prepared by R2 Resource Consultants, for Portland General Electric.
- Jepsen, D. and D. Reiser. 2001. Fish passage existing information analysis for the Clackamas River Hydroelectric Project (Oak Grove Project – FERC No. 135 and North Fork Project – FERC No. 2195). Prepared by R2 Resource Consultants for Portland General Electric.
- Kvam, B., E. Connor, E. Greenberg, D. Reiser, and C. Eakin. 2001. Lower Deschutes River macroinvertebrate and periphyton monitoring report, fall 1999 and spring 2000 sampling. Prepared for Portland General Electric. Prepared by R2 Resource Consultants.
- Connor, E., D. W. Reiser, E. Greenberg, S. Beck, and K. Binkley. 2001. Fisheries study of Chester Morse Lake, Masonry Pool, and major tributaries of the Cedar River Watershed, Washington. Report prepared by R2 Resource Consultants, Inc. for Seattle Public Utilities, Seattle, Washington.
- DeVries, P., B. Kvam, S. Beck, D. Reiser, M. Ramey, C. Huang, and C. Eakin. 2001. Kerr Hydroelectric Project Lower Flathead River ramping rate study. Report prepared by R2 Resource Consultants, Inc. for Confederated Salish and Kootenai Tribes of the Flathead Nation.
- Reiser, D. W., M. Loftus, D. Chapin, E. Jeanes, and K. Oliver. 2001. Effects of water quality and Lake Level on the biology and habitat of selected fish species in Upper Klamath Lake. Report prepared by R2 Resource Consultants Inc. for Bureau of Indian Affairs, Portland, Oregon.
- Grant, G., and D. W. Reiser. 2000. Oak Grove Fork and Clackamas River geomorphology/fisheries habitat reconnaissance survey, September 13-14, 2000, Preliminary Findings. Report prepared for the Clackamas Project Fish and Wildlife Committee, Portland General Electric.
- Reiser, D. W. 2000. Review and evaluation of brown trout fecundity data relevant to the Upper Clark Fork River, Montana. Report prepared by R2 Resource Consultants, Inc. for ARCO Environmental Remediation, L.L.C., Anaconda, Montana.
- DeVries, P., M. P. Ramey, and D. W. Reiser. 2000. Technical review of NMFS Draft recommended guidelines for maintaining instream flows to protect fisheries resources in tributaries of the Russian

River and recommendations for the Northwest Region. Review prepared by R2 Resource Consultants, Inc., for the National Marine Fisheries Service, Seattle, Washington.

Ramey, M. P., D. W. Reiser, S. Beck, and C. Huang. 2000. Feasibility study for sediment bypass on Lee Vining, Walker, and Parker creeks, Mono Basin, California. Report prepared by R2 Resource Consultants, Inc. for Los Angeles Department of Water and Power.

Reiser, D. W., P. DeVries, E. Jeanes, M. Loftus, M. P. Ramey, and E. Connor. 2000. Technical review of the State of Montana's fish population studies for the Clark Fork River, Montana relied upon in the Draft December 1999 Clark Fork River ecological risk assessment. Report prepared by R2 Resource Consultants, Inc. for ARCO Environmental Remediation, L.L.C., Anaconda, Montana.

Jeanes, E. and D. W. Reiser. 1999. Fall spawning surveys in the upper Clark Fork River Basin – 1999 summary report. Report prepared for ARCO Environmental Remediation, L.L.C., Anaconda, Montana.

Reiser, D. W. 1999. Rebuttal Report. Prepared for the Department of Justice related to U.S. vs. ASARCO Inc. et al., Natural Resource Damages Assessment, Coeur d'Alene Basin, Idaho.

Reiser, D. W., E. Jeanes, E. Connor and K. Binkley. 1999. Application of a limiting factors analysis for defining the determinants of reduced wild trout production in the South Fork Coeur d'Alene River, Idaho. R2 Resource Consultants, Inc., Redmond, Washington.

Reiser, D. W. 1999. Expert Report of Dudley W. Reiser. Report prepared for the Department of Justice related to U.S. vs. ASARCO Incorporated et al., Natural Resource Damages Assessment, Coeur d'Alene Basin, Idaho.

Reiser, D. W., M. P. Ramey, and P. DeVries. 1999. Development of options for the reintroduction and restoration of chinook salmon into Panther Creek, Idaho. Pages 565-581 in E. Knudsen, C. Steward, D. MacDonald, J. Williams, and D. Reiser, editors. Sustainable Fisheries Management – Pacific Salmon. Lewis Publishers, Boca Raton, Florida. 724 p.

Reiser D. W., E. Jeanes, E. Connor, E. Greenberg, and S. Beck. 1999. Mill-Willow Bypass, Montana, Biomonitoring Report, 1997/1998. Final Report prepared by R2 Resource Consultants, Inc., for ARCO Environmental Remediation, LLC, Anaconda, Montana.

Ramey, M. P., S. Beck, D. W. Reiser, and J. Templeton. 1999. Fish habitat evaluation with unsteady flow. *In Proceedings of Water Power 99*. Las Vegas, Nevada.

DeVries, P., D. W. Reiser, and M. P. Ramey. 1999. A proposed classification program for determining regional instream flow needs in Alberta. Report prepared by R2 Resource Consultants for Alberta Environmental Protection. 34 p.

- Reiser, D. W. 1998. Why fish need water: life history strategies and habitat requirements of salmonid populations in the Snake, Salmon, and Clearwater River Basins of Idaho. Expert Report prepared for the Department of Justice, Denver, Colorado.
- Reiser, D. W., A. Olson, and K. Binkley. 1998. Sediment deposition in fry emergence traps, a confounding factor in estimating survival to emergence. *N. Amer. Journal of Fisheries Management* Vol. 18, No. 3, 713-719 p.
- Reiser, D. W. 1998. Sediment in gravel bed rivers: ecological and biological considerations. Pages 199-228 in P. Klingeman, R. Beschta, P. Komar, and J. Bradley, editors. *Gravel Bed Rivers in the Environment*. Water Resources Publications, LLC.
- Reiser, D. W., E. Connor, K. Binkley, K. Lynch, and D. Paige. 1997. An evaluation of spawning habitat used by bull trout in the Cedar Watershed, Washington. *In Proceedings of Friends of the Bull Trout Conference*, Trout Unlimited, Calgary, Alberta.
- Connor, E., D. W. Reiser, K. Binkley, K. Lynch, and D. Paige. 1997. Life history and ecology of an unexploited bull trout population in the Cedar River watershed, Washington. *In Proceedings of Friends of the Bull Trout Conference*, Trout Unlimited, Calgary, Alberta.
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**PRESENTATIONS/SEMINARS/WORKSHOPS**

- Reiser, D.W., T. Nightengale, N. Hendrix, and S. Beck. 2006. Effects of pulse-type flows resulting from hydroelectric operations on aquatic biota. Paper presented at 2006 Hydrovision, Portland, Oregon.
- Reiser, D.W. and N. Hendrix. 2006. Translation of incremental changes in flow/habitat to changes in population size/viability – What new science process understanding is open for development. Invited Keynote speaker at U.S. Geological Survey workshop on – Analysis Of Flow And Habitat For Instream Flow Aquatic Communities: Tools And Approaches For Decision-Making And Resource Management. April 18-19, 2006, Fort Collins, Colorado.
- Reiser, D.W., M.E. Loftus, T. Helsler, and N. Hendrix. 2005. Relationship of adult Lost River and Shortnose Sucker habitat in Upper Klamath Lake to changes in lake level elevation. Paper presented at American Fisheries Society 135<sup>th</sup> Annual Meeting, Anchorage, Alaska.
- Reiser, D.W. E. Jeanes, D. Woodward, and A. Farag. 2004. A reference stream approach for identifying resource injury in the South Fork Coeur d’Alene River, Idaho. Paper presented at Fourth SETAC World Congress. Portland, Oregon.
- Reiser, D.W., P. DeVries, P. Sampson, and M. Ramey. 2004. Development of basin-wide instream flow recommendations using statistical and extrapolation techniques. Paper presented at Annual Meeting of North Pacific International Chapter of the American Fisheries Society.
- Reiser, D.W., D. Chapin, P. DeVries, and M. Ramey. 2003. Flow regime and ecosystem interactions in spring dominated streams: implications for selecting instream flow methods. Paper presented at International IFIM Conference, June 2003, Fort Collins, Colorado.
- Reiser, D.W., E. Jeanes, M. Ramey, and S. Beck. 2003. Comparison of salmonid spawning habitat quality, quantity and utilization before and after channel reconstruction at a Superfund site. Presented at American Fisheries Society 133rd Annual Meeting, Quebec City, Quebec, Canada.
- Reiser, D.W. 2003. Streamflows and salmonids. Invited paper presented at specialty conference - Instream Flow Science and Management: Developing a Comprehensive, Ecosystem Based Approach, May 28-29, 2003, University of Washington, Seattle, Washington.
- Reiser, D.W., C. Huang, M. Gagner, E. Jeanes, and M. Ramey. 2003. Assessing the passage potential of five natural falls in Ward Creek, Alaska, under varying flow conditions. Presented at Western Division American Fisheries Society Annual Meeting, San Diego, California.
- Reiser, D.W. 2002. Instream flows: what do fish need? Invited paper presented at the Ninth Annual Regional Conference on The Endangered Species Act. January 24-25, 2002, Seattle, Washington.

- Reiser, D. W., and E. Greenberg. 2002. Largemouth bass reproduction and population dynamics in the Housatonic River, Massachusetts. Society of Environmental Toxicology and Chemistry, Annual Meeting, Salt Lake City, Utah. November 17-20, 2002.
- DeVries, P., D. W. Reiser, S. Beck, M. Ramey, and B. Kvam. 2002. Effects of ramping rates on fish stranding and invertebrate density in Lower Flathead River, below Kerr Dam, Montana. Presented at American Fisheries Society 132nd Annual Meeting, Baltimore, Maryland.
- Reiser, D. W. 2002. Instream flow requirements: finding methods that work. Presented at Instream Flow Needs specialty conference, HydroVision 2002, Portland, Oregon.
- Reiser, D. W., and E. Jeanes. 2002. Defining salmonid carrying capacity in a newly constructed stream channel. Presented at Western Division American Fisheries Society Annual Meeting, Spokane, Washington.
- Reiser, D. W. 2001. Invited Participant. USDA Forest Service Workshop on Amphibian Habitat Modeling and Instream Flow Incremental Methodology Advanced Technology Concepts, April 11-12, 2001, Sacramento, California.
- Reiser, D. W. 2001. Invited Panel Member. Society for Ecological Restoration, Northwest Chapter. Restoration Objectives. April 5-6, 2001, Bellevue, Washington.
- Reiser, D. W. 2000. Biological and ecological considerations in river restoration. Short course seminar presented at American Society of Civil Engineers national meeting – short course – Planning for River Restoration, October 2000. Seattle, Washington. (Co-instructors, Peter Klingeman and Jeff Bradley).
- Grant, G., and D. W. Reiser. 2000. Identification of geomorphology issues relative to the Clackamas River Hydroelectric Project. Presentation to Clackamas Fish and Aquatics Group, Portland, Oregon.
- Reiser, D. W., and D. Jepsen. 2000. Review of fish passage alternatives for the Clackamas Hydroelectric Project, and a review of existing information on fish passage studies. Presentation to Fish Passage Sub-group, Clackamas Fish and Aquatics Group, Portland, Oregon.
- Reiser, D. W. 2000. Overview of the Tri-County ESA urban issues study. Presentation to Tri-County Executive Committee, Seattle, Washington.
- Reiser, D. W. 2000. Summary of the Tri-County ESA urban issues study. Presentation to Puget Sound Business Coalition, Seattle, Washington.
- Reiser, D. W., E. Jeanes, and E. Connor. 2000. Defining The Determinants Limiting Wild Trout Production in the South Fork Coeur d’Alene Basin, Idaho; using a Reference Stream Approach. Paper presented at Idaho Chapter American Fisheries Society Meeting. Coeur d’Alene, Idaho.

- Greenberg, E., M. Gagner, and D. W. Reiser. 1999. Application of the Urban Stream Baseline Evaluation Method for assessing stream habitats in urban settings. Paper presented at Annual meeting of the American Water Resources Association. Seattle, Washington.
- Reiser, D. W. 1999. Development of instream flow claims for the Salmon and Clearwater basins of Idaho, an ecosystem based approach. Invited paper presented at BC Hydro specialty conference on instream flow methods, June 1999, New Westminster, B.C.
- Reiser, D. W. 1999. Development of instream flow claims for streams in the Upper Klamath Basin, Oregon. Presentation to Oregon Water Resources Department, Salem, Oregon. July 1999.
- Reiser, D. W., E. Greenberg, and M. Gagner. 1999. Urban Issues Study Habitat Assessment Workshop; Review of Urban Stream Baseline Evaluation Method. July 19, 1999. Mercer Island, Washington.
- DeVries, P. and D. W. Reiser. 1998. Sediment intrusion within the streambed of the Clark Fork River, a potential factor controlling trout production. Paper presented at Annual Meeting of the Western Division of the American Fisheries Society, Anchorage, Alaska.
- Reiser, D. W. 1997. Determining basin wide instream flow needs of anadromous and resident salmonid stocks in the Salmon and Clearwater drainages of Idaho. Paper presented at 127th Annual Meeting of the American Fisheries Society, Monterey, California.
- DeVries, P., D. W. Reiser, and M. Loftus. 1997. Evaluating carrying capacity and habitat limitations with data envelopes. Paper presented at 127th Annual meeting of the American Fisheries Society. Monterey, California.
- Reiser, D. W., P. DeVries, and M. Loftus. 1997. Defining scientifically defensible and rational baselines for quantifying injury in freshwater ecosystems for NRD assessments. Invited paper presented at 18th Annual Meeting of the Society of Environmental Toxicology and Chemistry. San Francisco, California.
- Reiser, D. W. 1997. Application of PHABSIM in evaluating the effects of spawning gravel supplementation in the Madison River, Montana. Paper presented at the Annual Meeting of the North Pacific Division of the American Fisheries Society. Everett, Washington.
- Reiser, D. W. 1996. Presentation on "instream flows," technical session presented to a group of Japanese engineers and hydrologists. Washington Department of Fish and Wildlife, December 6, 1996.
- Reiser, D. W. 1996. Characteristics of bull trout spawning habitat in the upper Cedar Watershed. Invited Paper presented at the Salvelinus Confluentus Curiosity Society meeting. October 17, 1996. Eugene, Oregon.
- Reiser, D. W. 1996. Presentation to the State of Idaho and other water user groups on the development of instream flow recommendations/claims for the Salmon and Clearwater Basins, Idaho, on behalf of the Department of Justice and Bureau of Indian Affairs.



- Reiser, D. W. 1996. Review of the "Alberta IFN Method" for determining instream flows in Alberta. Presentation to Alberta Environment, Calgary, Alberta.
- Reiser, D. W. 1996. Presentation to Trout Unlimited (Montana Chapter) regarding factors influencing trout populations in the Clark Fork River, Montana.
- Reiser, D. W. 1995. Hazardous substance impacts on fish resources: problems in quantifying injuries on fisheries. Session chair and presenter at Law Seminars International, Natural Resource Damages Conference, Bellevue, Washington, September 21-22, 1995.
- Reiser, D. W. 1995. Presentation on flushing flow requirements in the Madison River, Montana; presentation to agencies and stakeholders; work conducted in support of the relicensing of the Madison – Missouri Hydroelectric Project, Montana Power Company.
- Reiser, D. W. 1994. Provided testimony to California State Water Resources Control Board regarding "other factors" influencing aquatic ecosystem of San Francisco Bay – Delta system. Testimony prepared on behalf of California Urban Water Agencies.
- Reiser, D. W. 1994. Served as technical representative of California Urban Water Agencies on interagency committee to review technical basis of proposed EPA salinity standard for the San Francisco Bay – Delta system.
- Reiser, D. W. 1994. Served as technical representative of California Urban Water Agencies on interagency committee to evaluate and develop monitoring programs for San Francisco Bay – Delta system.
- Reiser, D. W., and E. Connor. 1994. Invited presenters at Cedar River watershed – Bull trout workshop. Seattle Water Department. November 18, 1994.
- Reiser, D. W., E. Connor, K. Binkley, K. Lynch, and D. Paige. 1994. An evaluation of spawning habitat used by bull trout in the Cedar River watershed, Washington. Paper presented at "Friends of the Bull Trout" conference, Calgary, Alberta.
- Connor, E., D. W. Reiser, K. Binkley, K. Lynch, and D. Paige. 1994. Life history and ecology of an unexploited bull trout population in the Cedar River watershed, Washington. Paper presented at "Friends of the Bull Trout" conference, Calgary, Alberta.
- Reiser, D. W., and J. B. Bradley. 1993. Fine sediment intrusion and salmonid habitat. Paper presented at Advances in Hydrosience and Engineering; Symposium Sponsored by ASCE, Washington, D.C. June 1993.
- Reiser, D. W., and A. Olson. 1992. Sediment Deposition within fry emergence traps: a confounding factor in estimating survival to emergence (STE). Paper presented at the Annual Meeting of the Western Division of the American Fisheries Society, Fort Collins, Colorado.

- Reiser, D. W. 1992. Sedimentation Impacts on the Aquatic Ecosystems; Instructor for Short Course for state and federal agencies, and industry. Bellevue, Washington.
- Reiser, D. W. 1992. Instream flow needs (IFN) practices in North America. Invited paper presented at the IFN Special Session sponsored by Alberta Environment, Edmonton, Alberta.
- Reiser, D. W. 1992. Technical considerations related to Natural Resource Damage Assessments. Paper presented to Tacoma Chamber of Commerce, Environmental Concerns Committee. Tacoma, Washington.
- Gift, J. J., D. F. Ludwig, and D. W. Reiser. 1991. Key issues related to Natural Resource Damage Assessments. Paper presented at short course sponsored by Preston, Thorgrimson, Shindler, Gates and Ellis, Seattle, Washington.
- Reiser, D. W. 1991. Impacts of sedimentation on salmonid ecology. Instructor for Short Course presented to the Tongass National Forest, Alaska.
- Reiser, D. W., M. P. Ramey, S. K. Beck, T. R. Lambert, and R. E. Geary. 1989. Flushing flow recommendations for maintenance of salmonid spawning gravels in a steep, regulated stream. Paper presented at the Fifth (5th) International Symposium on Regulated Streams, University of Loughborough, England.
- Reiser, D. W. 1989. Use of the Whitlock-Vibert Box for monitoring fine sediment deposition in streams. Paper presented at the Annual Meeting of the Montana Chapter American Fisheries Society; Warm Springs, Montana.
- Reiser, D. W., and M. P. Ramey. 1989. Yankee Fork Habitat Restoration. Paper presented at the Annual Review meeting of the Bonneville Power Administration (BPA), Columbia Basin Fish and Wildlife Program. Portland, Oregon.
- Reiser, D. W., P. DeVries, and G. Lewis. 1989. Application of the IFIM for assessing the benefits of sediment reduction on anadromous fish habitat. Paper presented at the Annual meeting of the Western Division of the American Fisheries Society, Seattle, Washington, July 1-9, 1989.
- Reiser, D. W. 1988. Instream Flow Legislation in North America. Poster Session – National Meeting of the American Fisheries Society; Toronto, Canada.
- Reiser, D. W., T. A. Wesche, and S. Running. 1987. Use of Whitlock-Vibert Boxes for quantifying intergravel sediment deposition in salmonid spawning gravels. Paper presented at the Twenty Third (23rd) Annual Meeting of the California-Nevada Chapter of the American Fisheries Society, Ventura, California, February 4-6, 1988.
- Reiser, D. W., and M. P. Ramey. 1987. Panther Creek Habitat Restoration. Paper presented at the Annual Review meeting of the Bonneville Power Administration (BPA), Columbia Basin Fish and Wildlife Program, Portland, Oregon.

- Reiser, D. W., M. P. Ramey, and T. Lambert. 1987. Considerations in assessing flushing flow requirements in regulated rivers. Paper presented at the Fourth (4th) International Symposium on Regulated Rivers. Edmonton, Alberta.
- Reiser, D. W. 1986. Invited Panel Member - Land use activities and impacts to fisheries - mining; Twenty-fifth (25th) Annual Meeting of the Idaho Chapter of the American Fisheries Society Meeting.
- Reiser, D. W. 1986. Panther Creek Habitat Rehabilitation. Paper presented at the Twenty-fourth (24th) Annual Meeting of the Idaho Chapter of the American Fisheries Society, Boise, Idaho.
- Reiser, D. W. 1986. Fish passage considerations at small hydroelectric projects. Invited seminar presented to the Fisheries Engineering Session, Washington State University, Pullman, Washington.
- Reiser, D. W., and R. Peacock. 1985. A technique for assessing upstream fish passage problems at small-scale hydropower developments. Paper presented at the Symposium on Small Hydro and Fisheries, Denver, Colorado.
- Reiser, D. W., and M. P. Ramey. 1985. Integration of the IFIM with reservoir operation studies for assessing impacts of water withdrawals on anadromous salmonids. Paper presented at the Twelfth (12th) Annual meeting of the Alaska Chapter of the American Fisheries Society, Kodiak, Alaska. November 18-22, 1985.
- Reiser, D. W. 1984. Design and implementation of instream flow studies: the consultants perspective. Paper presented at the California Trout Instream Flow Symposium. Sacramento, California.
- Reiser, D. W. 1983. Stream flow regulation below dams: effects on salmonid egg incubation and fry development. Paper presented at the Forty-fifth Annual Meeting of the Pacific Fishery Biologists Conference. Dalles, Oregon.
- Reiser, D. W., M. W. Vitter, and J. Todd. 1982. Reclamation of a Colorado stream impacted by acid mine drainage. Paper presented at the Seventeenth Annual Meeting of the Colorado-Wyoming Chapter of the American Fisheries Society.
- Reiser, D. W., M. W. Vitter, and J. Todd. 1982. Re-establishment of fish and aquatic invertebrate populations in a stream severely impacted by acid mine drainage. Paper presented at the 1982 Western Division American Fisheries Society Meeting. Las Vegas, Nevada.
- Reiser, D. W. 1982. Best Management Practices for riparian habitat resources: Mining. Paper presented at the Land Resources Technical Session of the Annual Conference of the Western Association of Fish and Wildlife Agencies. Las Vegas, Nevada.
- Reiser, D. W., M. W. Vitter, J. Todd, and G. Andes. 1982. Treatment of acid mine drainage effluent entering a Colorado stream. Paper presented at the Trace Element Mobilization in Western Energy Regions Symposium. Denver, Colorado.

Reiser, D. W., and R. G. White. 1981. The effects of hydroelectric power peaking on chinook salmon egg incubation and fry quality. Paper presented at the 1981 National Meeting of the American Fisheries Society. Albuquerque, New Mexico.

Reiser, D. W. 1980. Effects of chronic low streamflow on chinook salmon egg incubation and fry quality. Paper presented at the Eighteenth Annual Meeting of the Idaho Chapter of the American Fisheries Society.

Reiser, D. W. 1980. *In situ* dewatering of salmonid eggs: effects on hatching success and fry quality. Paper presented at the 1980 Western Division American Fisheries Society Meeting. Kalispell, Montana.

Reiser, D. W., and R. G. White. 1979. Evaluation of instream flow needs for salmonid egg incubation. Paper presented at the 1979 Federation of Fly Fishermen Conclave. Steamboat Springs, Colorado.

Reiser, D. W. 1978. Spawning preferences of brown and brook trout. Paper presented at the Sixteenth Annual Meeting of the Idaho Chapter of the American Fisheries Society.

Wesche, T. A., D. W. Reiser, W. F. Wichers, and D. L. Wichers. 1977. Proposed water development in the upper Little Snake River drainage – potential instream flow impacts and recommendations. Paper presented at the Twelfth Annual Meeting of the Colorado-Wyoming Chapter of the American Fisheries Society.

Reiser, D. W. 1976. The determination of hydraulic and physical preferences of brown and brook trout in the selection of spawning locations. Paper presented at the Eleventh Annual Meeting of the Colorado-Wyoming Chapter of the American Fisheries Society.