

## 8 References

- Alaska Department of Fish and Game. 1993. Letter to Merritt Tuttle, National Marine Fisheries Service, dated October 25, 1993. Mid-Columbia summer chinook ESA Administrative Record III. E.2.e. 21 p.
- Allee, B.A. 1981. The role of Interspecific competition in the distribution of salmonids in strams. In E.L. Brannon and E.O. Salo, editors, Salmon and trout migratory behaviour symposium.
- Allen, R. L. and T. K. Meekin. 1980. Columbia River sockeye salmon study, 1971-1974. Washington Department of Fisheries Progress Report No. 120. 75 pp.
- Anas, R. E., and J. R. Gauley. 1956. Blueback salmon (*Oncorhynchus nerka*) age and length at seaward migration past Bonneville Dam. U. S. Fish and Wildlife Service, Spec. Sci. Rept. Fish. No. 185. 46 pp.
- Anderson, S. and K. Gutzwiller. 1996. Habitat Evaluation Methods. Pages 592-606 in: T. A. Bookhout, ed. Research and Management Techniques for Wildlife and Habitats. Fifth ed., rev. The Wildlife Society, Bethesda, Maryland.
- Andonaegui, C. 1999. Salmon and steelhead habitat limiting factors report for the Entiat Watershed Water Resource Inventory Area (WRIA) 46, Version 3. Washington State Conservation Commission, Headquarters Office, Olympia, Washington.
- Archibald, P. 2001. Fisheries biologist, Entiat Ranger District, USDA Forest Service, Entiat, Washington. Personal Communication.
- Archibald, P., and E. Johnson. 2002. 2002 bull trout spawning survey of Mad River. USFS, Entiat District, Entiat, Washington. 5 pp.
- Ashley, P.A., Stovall. 2004. Southeast Washington Subbasin Planning Ecoregion Wildlife Assessment. Eagle, Idaho.
- Avery, T.E. 1975. Natural resource measurements (second edition). McGraw Hill Book Company. New York, New York.
- Barnhart, R. A. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest) -- steelhead. U. S. Fish Wildl. Serv. Biol. Rep. 82(11.60). U. S. Army Corps of Engineers, TR EL-82-4. 21 pp.
- Beak Consultants, Inc. 1980. Environmental impact statement, Dryden Hydroelectric Project, FERC No. 2843. Report for Chelan PUD, Wenatchee, Washington.
- Beamesderfer and A.A. Nigro, eds. 1995. Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam. Vol 1. Final Report to Bonneville Power Administration, Portland, OR.
- Beamish, R. 1980. Adult biology of the river lamprey (*Lampetra ayresi*) and the Pacific lamprey (*Lampetra tridentata*) for the Pacific coast of Canada. Canadian Journal of Fisheries and Aquatic Sciences 37:1906-1923.
- Beamish, R. and C. Levings. 1991. Abundance and freshwater migrations of the anadromous parasitic lamprey, *Lampetra tridentata*, in a tributary of the Fraser River, British Columbia. Canadian Journal of Fisheries and Aquatic Sciences 48:1250-1263.
- Beamish, R. and T. Northcote. 1989. Extinction of a population of anadromous parasitic lamprey, *Lampetra tridentata*, upstream of an impassable dam. Canadian Journal of Fisheries and Aquatic Sciences 46:420-425.
- Beamish, R. J., and D. R. Bouillon. 1993. Pacific salmon production trends in relation to climate. Canadian Journal of Fisheries and Aquatic Sciences 50:1002-1016.
- Behnke, R.J. 2002. Trout and salmon of North America. The Free Press, NY., N.Y. 359 pp.

- . 1992. Native trout of western North America. American Fisheries
- Beiningen, K. T. 1976. Columbia River Fisheries Project: Fish runs. pp. E1-E65. In: Investigative reports of Columbia River Fisheries Project. Pac. NW Reg. Comm. Portland, OR
- Bell, M. 1990. Fisheries handbook of engineering requirements and biological criteria. Fish Passage Development and Evaluation Program, Corp of Engineers, North Pacific Division, Portland, OR.
- Bilton, H. T. 1980. Return of adult coho salmon in relation to mean size and time at release of juveniles to the catch and escapement. Can. Fish. Mar. Ser. Tech. Rep. 941, 41 pp.
- . Maternal influences on the age at maturity of Skeena River sockeye salmon (*Oncorhynchus nerka*). Fish. Res. Bd. Can. Tech. Rep. 167: 20 p.
- BioAnalysts, Inc.. 2003 DRAFT. Movements of bull trout within the mid-Columbia River and tributaries, 2001-2002 DRAFT. Draft report prepared for the Public Utility No. 1 of Chelan County. Wenatchee, Washington. July 2003.
- . 2002. Movements of bull trout within the mid-Columbia River and tributaries, 2002-2003. Final Report. Report prepared for the Public Utility No. 1 of Chelan County. Wenatchee, Washington. November 2002.
- . 2000. A status of Pacific lamprey in the mid-Columbia region. Final report for Chelan PUD. 33p.
- Bjornn, T.C. 1971. Trout and salmon movements in two Idaho streams as related to temperature, food, streamflow, cover, and population density. Trans. Amer. Fish. Soc. 100:423-438.
- . 1957. A survey of the fishery resources of Priest and Upper Priest Lakes and their tributaries. Idaho Department of Fish and Game, Job Completion Report, Project F-24-R, Boise in Mauser, G.R. R.W. Vogelsang and C.L. Smith. 1988. Lake and reservoir investigations: Enhancement of trout in large north Idaho lakes, Idaho Department of Fish and Game, Study Completion Report Project, F-73-R-10, Boise.
- Bjornn, T. C., D. R. Craddock, and D. R. Corley. 1968. Migration and survival of Redfish Lake, Idaho, sockeye salmon, *Oncorhynchus nerka*. Transaction of the American Fisheries Society 97:360-373.
- Bjornn, T. C., and J. Mallet. 1964. Movements of planted and wild trout in and Idaho river system. Transactions of the American Fisheries Society 93:70-76.
- Bjornn, T.C. and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. In: W.R. Meehan (Editor), Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society Special Publication 19:38
- Block, W.M., W.L. Kendall, M.L. Morrison, and M.D. Strickland. 2001. Wildlife study design. Springer – Verlag New York, Inc., New York, New York.
- Bonneville Power Administration (BPA), ACOE, USDI, and BOR. 1994. Columbia River systems operation review-draft environmental impact statement. SOR Draft EIS/EIS 0170. BPA. Portland, Oregon.
- . Yakama Nation, and WDFW. 1999. Mid Columbia coho salmon reintroduction feasibility project, preliminary environmental assessment. WDOE/EA-1282.
- Brannon, E., and A. Setter. 1992. Movements of white sturgeon in Lake Roosevelt. Final report 1988-1991. BPA Project No. 89-44, Contract No. DE-BI79-89BP97298.35 pp.
- Brannon, E.L., G.H. Thorgaard, H.A. Wichman, S.A. Cummings, A.L. Setter, T.L. Welsh, and S.J. Rocklage. 1992. Genetic analysis of *Oncorhynchus nerka*. Annual Progress Report to BPA, Contr. No. DE-BI79-90BP12885, Proj. No. 90-93. Portland, OR.

- Brannon, E., M. Powell, T. Quinn, and A. Talbot. 2002. Population structure of Columbia River Basin Chinook salmon and steelhead trout. Final report to National Science Foundation and Bonneville Power Administration. Center for Salmonid and Freshwater Species at Risk, Univ. of ID, Moscow, ID. 178 p.
- Bryant, F. G and Z. E. Parkhurst. 1950. Survey of the Columbia River and its tributaries; area III, Washington streams from the Klickitat and Snake Rivers to Grand Coulee Dam, with notes on the Columbia and its tributaries above Grand Coulee Dam. USFWS, Spec. Sci. Rep. 37, 108 pp.
- Buckland, S.T., D.R. Anderson, K.P. Burnham, and J.L. Laake. 1993. Distance sampling: Estimating abundance of biological populations. Chapman & Hall, London, United Kingdom.
- Bureau of Land Management. 1998. Measuring and monitoring plant populations, BLM Technical Reference 1730 – 1. BLM, Denver, CO. 447p.
- Buchanan, D. V., M. L. Hanson and R. M. Hooten. 1997. 1996 Status of Oregon's bull trout. Draft report. Oregon Department of Fish and Wildlife. Portland, OR.
- Bulkley, R. V. 1967. Fecundity of steelhead trout, *Salmo gairdneri*, from the Alsea River, Oregon. J. Fish. Res. Bd. Can. 24: 917-926.
- Burck, W.A. 1993. Life history of spring chinook salmon in Lookingglass Creek, Oregon. ODFW, Info. Reports No. 94-1.
- . 1965. Ecology of spring chinook salmon. Fish Comm. of OR. Annual progress report. 11/1/63-12/31/64. Portland, OR.
- Burgner, R. L. 1991. Life history of sockeye salmon (*Oncorhynchus nerka*). In C. Groot and L. Margolis, eds. Pacific Salmon Life Histories. University of British Columbia Press, Vancouver. 564 pp.
- . Factors influencing the age and growth of juvenile sockeye salmon (*Oncorhynchus nerka*) in lakes. Pages 129-142 IN H. D. Smith, L. Margolis, and C. C. Wood, eds. Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Can. Spec. Publ. Fish. Aquat. Sci. 96.
- Burner, C.J. 1951. Characteristics of spawning nests of Columbia River salmon. USFWS, Fish. Bull. 61:97-110.
- Busack, C. and A.R. Marshall. 1995. Defining units of genetic diversity in Washington salmonids. IN: (C. Busack and J.B. Shaklee, editors) Genetic diversity units and major ancestral lineages of anadromous salmonids in Washington. WDFW Tech. Rept. #RAD95-2, Olympia, WA.
- Busack, C and J.B. Shaklee. 1995. Genetic diversity units and major ancestral lineages of salmonid fishes in Washington. Technical Report RAD 95-02. Washington Department of Fish and Wildlife, Olympia, WA.
- Busby, P.J., T.C. Wainwright, G.L. Bryant, L. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Department of Commerce, NOAA Tech. Memo. NMFS-NWFSC-27, 261 p.
- Caldwell, B., and H. Beecher. 1995. Entiat and Mad rivers fish habitat analysis using the Instream Flow Incremental Methodology. Washington State Department of Ecology, Olympia. Technical Report #95-166. 71 pp.
- Carie, D. 2001. Fisheries management biologist, U.S. Fish and Wildlife Service, Leavenworth, WA. Personal Communication, September 21.
- . 1996. Spring and summer chinook salmon and sockeye salmon spawning ground surveys on the Entiat River, 1995. U. S. Fish and Wildlife Service, Leavenworth, Washington.

- Carlson, C. D., and G. M Matthews. 1992. Salmon transportation studies -- Priest Rapids Dam, 1991. Annual report. Public Utility District No. 1 of Grant County, Ephrata, WA. and National Marine Fisheries Service, Seattle, WA.
- . 1990. Salmon transportation studies -- Priest Rapids Dam, 1990. Annual report. Public Utility District No. 1 of Grant County, Ephrata, WA. and National Marine Fisheries Service, Seattle, WA.
- Cavender, T. M. 1978. Taxonomy and distribution of the bull trout *Salvelinus confluentus* (Suckley), from the American Northwest. *California Fish and Game* 64:139-174.
- Chapman, D. W. 1993. Mid-Columbia summer chinook as a distinct population segment under the endangered species act. Report to Grant, Douglas, and Chelan Public Utility Districts, Don Chapman Consultants, Inc., Boise, ID. 31 pp.
- . 1986. Salmon and steelhead abundance in the Columbia River in the Nineteenth Century. *Transactions of the American Fisheries Society* 115:662-670.
- Chapman, D.W. and A. Giorgi, T. Hillman, D. Deppert, M. Erho, S. Hays, C. Peven, B. Suzumoto, and R. Klinge. 1994a. Status of late-run chinook salmon in the mid Columbia region. Don Chapman Consultants, Boise, Idaho.
- Chapman, D.W., A. Giorgi, M. Hill, A. Maule, S. McCutcheon, D. Park, W. Platts, K. Pratt, J. Seeb, L. Seeb, and F. Utter. 1991. Status of Snake River chinook salmon. Don Chapman Consultants, Inc., Report to Pacific Northwest Utilities Conference Committee.
- Chapman, D.W. and C. Peven , T. Hillman, A. Giorgi , F. Utter. 1994b. Status of summer steelhead in the mid Columbia River. Don Chapman Consultants, Boise, Idaho.
- Chapman, D.W. and C. Peven , A. Giorgi, T. Hillman, F. Utter. 1995a. Status of spring chinook salmon in the mid Columbia region. Don Chapman Consultants, Boise, Idaho.
- Chapman, D. W. and C. Peven, A. Giorgi, T. Hillman, F. Utter, M. Hill, J. Stevenson, and M. Miller. 1995b. Status of sockeye salmon in the mid Columbia region. Don Chapman Consultants, Inc. Boise, Idaho.
- Chapman, D.W., A. Giorgi, T. Hillman, D. Deppert, M. Erho, S. Hays, C. Peven, B. Suzamoto, and R. Klinge. 1994 CPb. Status of summer/fall chinook salmon in the Mid-Columbia Region. Report prepared for the Mid-Columbia PUDs by Don Chapman Consultants, Inc. Boise, ID.
- Chapman, D.W., J.M. VanHyning, and D.H. McKenzie. 1982. Alternative approaches to base run and compensation goals for Columbia River salmon and steelhead resources. Battelle Pac. NW Labs., report to Chelan, Grant, and Douglas Public Utility Districts.
- Chapman, W. M. 1943. The spawning of chinook salmon in the main Columbia River. *Copeia* 1943:168-170.
- . 1941. Observations on the migration of salmonid fishes in the Upper Columbia River. *Copeia* 1941:240-242.
- Chelan County Conservation District (CCCD). 2004. Entiat Water Resource Inventory Area (WRIA 46) Management Plan. Final draft document prepared for the Entiat WRIA Planning Unit. Chelan County Conservation District, Entiat, Washington.
- . 2002. Entiat valley watershed study: Final coordinated resource management plan / Draft WRIA 46 management plan. Chelan County Conservation District, Entiat, Washington.
- Chelan County Public Utility District Number 1 (CCPUD). 1998. Rocky Reach and Rock Island anadromous fish agreement and habitat conservation plan. Exhibit C, aquatic species and habitat assessment: Entiat, Entiat, Methow, and Okanogan watersheds, Section 6, assessment of habitat conditions in the Entiat watershed. Entiat, Washington.

- Chelan County Conservation District (CCCD). 2004. Entiat Water Resource Inventory Area Management Plan.
- Chelan County Conservation District (CCCD). 2004. Entiat Water Resource Inventory Area (WRIA 46) Management Plan. Final draft document prepared for the Entiat WRIA Planning Unit. Chelan County Conservation District, Entiat, Washington.
- . 2002. Entiat valley watershed study: Final coordinated resource management plan / Draft WRIA 46 management plan. Chelan County Conservation District, Entiat, Washington.
- Chelan County PUD. 2003b. Comprehensive inventory and prioritization of fish passage and screening problems in the Wenatchee and Entiat subbasins. Available: <http://www.cbfwa.org/files/province/cascade/projects/29027.htm>
- . 2002. Columbia Cascade Province Work Plan. Draft FY 2003-2005.
- . 2001. Lake Chelan comprehensive fish management plan. Wenatchee, Washington.
- . 2000. Historical occurrence of anadromous salmonids in Lake Chelan, Washington. Wenatchee, Washington.
- . 1980. Draft environmental impact statement. Dryden hydroelectric project. FERC no. 2843. 174 p. and appendices.
- Chelan County Public Utility District Number 1 (CCPUD). 1998. Rocky Reach and Rock Island anadromous fish agreement and habitat conservation plan. Exhibit C, aquatic species and habitat assessment: Entiat, Entiat, Methow, and Okanogan watersheds, Section 6, assessment of habitat conditions in the Entiat watershed. Entiat, Washington.
- Chilcote, M. W., B. A. Crawford, and S. A. Leider. 1980. A genetic comparison of sympatric populations of summer and winter steelhead. *Trans. Amer. Fish. Soc.* 109: 203-206 chinook (*O. tshawytscha*) interactions in southeast Washington streams. 1992 Final
- Chrisp, E. Y. and T. C. Bjornn. 1978. Parr-smolt transformation and seaward migration of wild and hatchery steelhead trout in Idaho. *Univ. Idaho, Coll. For., Wildl. Range Sci. Rept. No. 80.* Moscow, ID. 118 pp.
- Clanton, R.E. 1913. Feeding fry in ponds. In: *Biennial Rept. Of the Dept. Of Fish. Of the State of Oregon.* Salem, OR.
- Close, D., M. Fitzpatrick, H. Li, B. Parker, D. Hatch, and G. James. 1995. Status report of the Pacific lamprey (*Lampetra tridentata*) in the Columbia River basin. Project No. 94-026, Contract No. 95BI39067. Report to the U.S. Department of Energy, Bonneville Power Administration, Portland, OR. Columbia Basin Fish and Wildlife Authority (CBFWA). 2003a. Chumstick Creek Culvert Replacements. Available: <http://www.cbfwa.org/projects/?qu=20001>
- Columbia River Inter-Tribal Fish Commission (CRITFC). 1995. Wy-Kan-Ush-Mi Wa-Kish-Wit: Spirit of the Salmon. The Columbia River anadromous fish restoration plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Vol. 1, The science and culture, and Vol. 2, Individual subbasin plans. Portland, Oregon.
- Cooney, T.D, and 10 co-authors. 2001. Upper Columbia River Steelhead and Spring Chinook Salmon Quantitative Analysis Report. Run reconstruction and preliminary assessment of extinction risks. DRAFT report. National Marine Fisheries Service.
- Cox, C.B., and V.W. Russell. 1942. Memorandum of reconnaissance survey of the Okanogan, Methow, Entiat, and Wenatchee rivers March 4-6, 1942. U.S. Bur. Reclamation correspondence, numbered 6-30-19-1. Available in a bound volume at Chelan County PUD Fisheries Library, entitled Correspondence Concerning the Building of Grand Coulee Dam and the Associated Program to Rebuild Fish Runs mid-1930s – early 1940s.
- Cooper, Matt. 2003. 2003 Nutrient Enhancement Summary. USFWS. Leavenworth, Washington.

- . 2002. 2002 Salmon Carcass Distribution. USFWS. Leavenworth, Washington.
- Craig, J. A. and A. J. Suomela. 1941. Time of appearance of the runs of salmon and steelhead trout native to the Wenatchee, Entiat, Methow, and Okanogan rivers. Unpub. MS. USFWS.
- Crane, P.A., L.W. Seeb, and J.E. Seeb. 1994. Genetic relationships among *Salvelinus* species inferred from allozyme data. *Can. J. Fish. Aquat. Sci.* 51(Supplement 1):182-197.
- Crawford, B. A. 1979. The origin and history of the trout broodstocks of the Washington Department of Game. Olympia, Washington State Game Department, Fishery Research Report.
- Dawley, E. M., R. D. Ledgerwood, T. H. Blahm, and A. L. Jensen. 1982. Migrational characteristics and survival of juvenile salmonids entering the Columbia River estuary in 1981. National Marine Fisheries Service, Northwest and Alaska Fisheries Center, Montlake, Annual Report to BPA, Agreement No. DE-A179-81BP30578.
- Dennis, B., P. L. Munholland, and J. M. Scott. 1991. Estimation of growth and extinction parameters for endangered species. *Ecological Monographs* 61:115-144.
- DeVore, J. and P. Hirose. 1988. Status and management of Columbia River sockeye salmon, 1983-1987. Prog. Rept. No. 88-20. Washington Department of Fisheries, Battle Ground, WA. 44 pp.
- Dixon, R. D. 1998. An assessment of white-headed woodpeckers in a regional landscape field methodology. Wildlife Resources, College of Forestry, University of Idaho, Moscow, Idaho.
- Dobler, F. C., J. Eby, C. Perry, S. Richardson, and M. Vander Haegen. 1996. Status of Washington's shrub-steppe ecosystem: extent, ownership, and wildlife/vegetation relationships. Phase One Completion Report. Washington Department of Fish and Wildlife. Olympia, Washington.
- Downs, C.C., R.G. White, and B.B. Shepard. 1997. Age at sexual maturity, sex ratio, fecundity, and longevity of isolated headwater populations of Westslope cutthroat trout. *N. Amer. J. Fish. Manage.* 17:85-92.
- Dunham, J. B. and B. E. Rieman. 1999. Metapopulation structure of bull trout: influences physical, biotic, and geometrical landscape characteristics. *Ecological Applications* 9:642-655.
- Edson, Q. A. 1958. Biological report Rocky Reach Fisheries Research Program. Washington Dept. of Fisheries, Olympia.
- Egbers, E. 2001. Washington Department of Fish and Wildlife, Yakima Screen Shop, Yakima, Washington. Personal Communication, September 21.
- Eltrich, R., K. Petersen, A. Mikkelsen, and R. Bugert. 1992. Analysis of 1991 brood salmon production at Rock Island Fish Hatchery Complex. Draft report, Contract FY 93-18 for Chelan County PUD No. 1.
- Farlinger, S. and R. Beamish. 1984. Recent colonization of a major salmon-producing lake in British Columbia by the Pacific lamprey (*Lampetra tridentata*). *Canadian Journal of Fisheries and Aquatic Sciences* 41:278-285.
- Federal Caucus. 2000. Vols. I-II. Conservation of Columbia basin fish, final basinwide salmon recovery strategy. BPA, Portland, Oregon. Available: [http://www.salmonrecovery.gov/Final\\_Strategy\\_Vol\\_1.pdf](http://www.salmonrecovery.gov/Final_Strategy_Vol_1.pdf),
- Fessler, J. L. and H. H. Wagner. 1969. Some morphological and biochemical changes in steelhead trout during the parr-smolt transformation. *J. Fish. Res. Bd. Can.* 26: 2823-2841.
- Fish, F. F., and M. G. Hanavan. 1948. A report on the Grand Coulee Fish Maintenance Project 1938-1947. U.S. Fish and Wildlife Service Special Scientific Report No. 55.

- Foerster, R. E. 1968. The sockeye salmon, *Oncorhynchus nerka*. Fish. Res. Bd. Can. Bull. #162. 422 p.
- . On the relation of adult sockeye salmon, *Oncorhynchus nerka* returns for known seaward migrations. J. Fish. Res. Bd. Can. 11:339-350.
- Foote, C.J., C.C. Wood, and R.E. Withler. 1989. Biochemical genetic comparison of sockeye salmon and kokanee, the anadromous and non-anadromous form of *Oncorhynchus nerka*. Can. J. Fish. Aquat. Sci. 149-158.
- Ford, M., and 12 co-authors. 2001. Upper Columbia River steelhead and spring Chinook salmon population structure and biological requirements. Final report. NMFS, NWFSC, Seattle, WA. 64 p.
- Foster, J. and 32 other authors. 2002. Draft Methow Subbasin Summary Prepared for the Northwest Power Planning Council. Ford, M., and 12 co-authors. 2001. Upper Columbia River steelhead and spring chinook salmon population structure and biological requirements. Final report. NMFS, NWFSC, Seattle, Washington.
- Foster, R. 2001. National Oceanic and Atmospheric Association. Personal Communication, September 26.
- Francis, C.M., and B. Whittam. 2000. Ontario nocturnal owl survey 1999 pilot study final report. unpublished report by Bird Studies Canada for the Wildlife Assessment Program, Ontario Ministry of Natural Resources.
- Fraley, J. and B. Shepard. 1989. Life history, ecology and population status of migratory bull trout (*Salvelinus confluentus*) in the Flathead Lake and River system, Montana. Northwest Science 63:133 143.
- French, R. R. and R. J. Wahle. 1965. Salmon escapements above Rock Island Dam 1954-60. USFWS, Spec. Sci. Rep.: Fish. No. 493.
- Fryer, J.K., C.E. Pearson, and M. Schwartzberg. 1992 CPa. Age and length composition of Columbia Basin spring chinook salmon at Bonneville Dam in 1991. CRITDC, Tech. Rep. 92-1, 18p.
- . 1992 CPb. Identification of Columbia Basin sockeye salmon stocks using scale pattern analyses in 1991. Columbia Inter-Tribal Fish Commission. Technical Report 92-2, Portland, OR. 29 pp.
- Fryer, J. K., and M. Schwartzberg. 1993CPa. Identifying hatchery and naturally spawning stocks of Columbia Basin summer chinook salmon using scale pattern analyses in 1990. Technical Report 93-4, Columbia River Inter-Tribal Fish Commission, Portland, Oregon.
- . 1993CPb. Identification of Columbia Basin sockeye salmon stocks using scale pattern analyses in 1992. Columbia Inter-Tribal Fish Commission. Technical Report 93-2, Portland, OR. 35 pp.
- . 1991. Identification of Columbia Basin sockeye salmon stocks using scale pattern analyses in 1990. Columbia Inter-Tribal Fish Commission. Technical Report 91-2, Portland, OR. 40 pp.
- Fryer, J. K., and M. Schwartzberg. 1994. Identification of Columbia Basin sockeye salmon stocks using scale pattern analyses in 1993. Columbia Inter-Tribal Fish Commission. Technical Report 94-2, Portland, OR. 39 pp.
- Fulton, L.A. 1970. Spawning areas and abundance of steelhead trout and coho, sockeye, and chum salmon in the Columbia River Basin – past and present. NMFS, Spec. Sci. Rept. – Fish No. 618 37p.
- . Spawning areas and abundance of chinook salmon (*Oncorhynchus tshawytscha*) in the Columbia River basin -- past and present. USFWS Special Scientific Report -- Fisheries No. 571.

- Fulton, L. A. and R. E. Pearson. 1981. Transplantation and homing experiments on salmon, *Oncorhynchus* spp., and steelhead trout, *Salmo gairdneri*, in the Columbia River system: Fish of the 1939-44 broods. NOAA. Tech. memo. NMFS, NWC-12. 97 p.
- Gangmark, H. A. and L. A. Fulton. 1952. Status of Columbia River blueback salmon runs, 1951. U. S. Fish and Wildlife Service Spec. Sci. Rept. Fish. No. 74. 29 pp.
- Gartrell, G.N. 1936. November 12, 1936 "Report on salmon streams." Fish. Res. Bd. Can. mimeo. Report.
- Gebhards, S.V. 1960. Biological notes on precocious male chinook salmon parr in the Salmon River drainage, Idaho. Prog. Fish Cult. 22:121-123.
- Gilbert, C.H. 1913. Age at maturity of the Pacific coast salmon of the genus *Oncorhynchus* Bullus Bur. Fish. 32(1912): 1-22.
- . 1912. Age at maturity of the Pacific coast salmon of the genus *Oncorhynchus* Bullus Bur. Fish. 32(1912): 1-22.
- Gilhousen, P. 1990. Migratory behavior of adult Fraser River sockeye salmon. Int. Pac. Salmon Fish. Comm. Prog. Rep. 7:78 p.
- Giorgi, A. 1992. Fall chinook spawning in Rocky Reach pool: effects of a three-foot increase in pool elevation. Don Chapman Consultants, Inc., Research Report to Chelan Public Utility District, Wenatchee, WA.
- Godfrey, H. 1965. Coho salmon in the offshore waters, p 1-39. In: Salmon of the North Pacific Ocean, Part IX. Coho, chinook and masu salmon in offshore waters. Int. North Pac. Fish. Comm. Bull. 16.
- Goetz, F. 1989. Biology of the bull trout, "*Salvelinus confluentus*," a literature review. Willamette National Forest, Eugene, OR.
- Goldar Associates. 2003 CPa. White sturgeon investigations in Priest Rapids and Wanapum reservoirs on the middle Columbia River, Washington, USA. Final report to Grant County PUD, Ephrata, Washington. 91 pages plus appendices.
- . 2003 CPb. Rocky Reach white sturgeon investigation. 2002 study results. Final report to Chelan PUD, Wenatchee, Washington. 29 pages plus appendices.
- Gresswell, R.E. 1997. Introduction to ecology and management of potamodromous salmonids. N. Amer. Fish. Manage. 17(4): 1027-1028.
- Gross, M.R. 1991. Salmon breeding behavior and life history evolution in changing environments. Ecology 72:1180-1186.
- Groves, C., T. Frederick, G. Frederick, E. Atkinson, M. Atkinson, J. Shepherd and G. Servheen. 1997. Density, distribution and habitat of Flammulated Owls in Idaho. Great Basin Naturalist 57:116-123.
- Groves, C., T. Frederick, G. Frederick, E. Atkinson, M. Atkinson, J. Shepherd and G. Servheen. 1997. Density, distribution and habitat of Flammulated Owls in Idaho. Great Basin Naturalist 57:116-123.
- Gustafson, R.G, T.C. Wainwright, G.A. Winans, F.W. Waknitz, L.T. Parker, and R.S. Waples. 1997. Status Review of Sockeye Salmon from Washington and Oregon. NOAA Technical Memorandum NMFS-NWFSC-33. Seattle, WA
- Hamstreet, C.O. and D.G. Carie. 2003. Spring and summer Chinook spawning ground surveys on the Entiat River, 2002. USFWS, Leavenworth, WA. 17 p.
- Hansen, J. 1993. Upper Okanogan River sockeye salmon spawning ground survey - 1992. Colville Confederated Tribes for Douglas County Public Utility District, East Wenatchee, WA. 79 pp.



- Hanski, I, and M.E. Gilpin. 1997. *Metapopulation Biology: Ecology, Genetics & Evolution*. Academic Press, London. 512 pp.
- Hartman, W. L. 1959. Biology and vital statistics of rainbow trout in the Finger Lakes Region, New York. *J. N.Y. Fish and Game* 6: 121-178.
- Hatch, D., A. Ward, A. Porter, and M. Schwartzberg. 1993. The feasibility of estimating sockeye salmon escapement at Zosel Dam using underwater video technology. Report to Public Utility District No. 1 of Douglas County, East Wenatchee, WA.
- Hawkes, L., R. Johnson, W. Smith, R. Martinson, W. Hevlin, and R. Absolon. 1991. Monitoring of downstream salmon and steelhead at federal hydroelectric facilities. Project No. 84-14. Report to the U.S. Department of Energy, Bonneville Power Administration, Portland, OR.
- Hawkes, L., R. Martinson, and R. Absolon. 1993. Monitoring of downstream salmon and steelhead at federal hydroelectric facilities. Project No. 84-14. Report to the U.S. Department of Energy, Bonneville Power Administration, Portland, OR.
- Hawkes, L., R. Martinson, and W. Smith. 1992. Monitoring of downstream salmon and steelhead at federal hydroelectric facilities—1991. Project No. 84-14. Report to the U.S. Department of Energy, Bonneville Power Administration, Portland, OR.
- Hays, S. G., B. D. Leman, M. B. Dell, M. W. Erho, and D. L. Hauk. 1978. Studies of the migrational behavior of salmonid smolts in the mid-Columbia river reservoirs and the use of spill to pass smolts past hydroelectric projects. Public Utility Districts of Chelan (Wenatchee), Douglas (East Wenatchee), and Grant (Ephrata) Counties, Washington.
- Harza/Bioanalysts. 2000. Draft Chelan County Fish Barrier Inventory report. Prepared for Chelan County Planning, Wenatchee, Washington.
- Healey, M. C. 1991. Life history of chinook salmon (*Oncorhynchus tshawytscha*). Pages 313-393 IN: C. Groot and L. Margolis, Editors. *Pacific salmon life histories*. University of British Columbia Press, Vancouver, Canada.
- . 1987. The adaptive significance of age and size at maturity in female sockeye salmon (*Oncorhynchus nerka*), p. 110-117. In H. D. Smith, L. Margolis, and C. C. Wood [ed.] *Sockeye salmon (Oncorhynchus nerka) populations biology and future management*. *Can. Spec. Publ. Fish. Aquat. Sci.* 96.
- . Optimum size and age at maturity in Pacific salmon and effects of size selective fisheries, p. 39-52. In D. J. Meerburg [ed.] *Salmonid age at maturity*. *Can. Spec. Publ. Fish. Aquat. Sci.* 89.
- Healey, M. C., and W. R. Heard. 1984. Inter- and intra-population variation in the fecundity of chinook salmon (*Oncorhynchus tshawytscha*) and its relevance to life history theory. *Canadian Journal of Fisheries and Aquatic Sciences* 41:476-483.
- Healey, M.C. 1991. Life history of chinook salmon (*Oncorhynchus tshawytscha*). In: Groot, C. and L. Margolis (Editors). *Pacific salmon life histories*. University of British Columbia Press, Vancouver, British Columbia.
- Hillman, T. W. and M. D. Miller. 2002. Abundance and total numbers of chinook salmon and trout in the Chiwawa River Basin, Washington 2001. Report to Chelan County Public Utility District, Washington. BioAnalysts, Boise, Idaho.
- . 1993. Summer/fall chinook salmon spawning ground surveys in the Methow and Okanogan River basins, 1992. Report to Chelan County Public Utility District. Don Chapman Consultants, Boise, Idaho.
- Hillman, T. W., and K. E. Ross. 1992. Summer/fall chinook salmon spawning ground surveys in the Methow and Okanogan River basins, 1991. Report to Chelan County Public Utility District.

- Hintze, J.L. 1999. NCSS/PASS 2000. Number cruncher statistical systems. Dr. Jerry L. Hintze. Kaysville, Utah.
- Hoar, W. S. 1976. Smolt transformation: evolution, behavior, and physiology. *Journal of the Fisheries Research Board of Canada* 33:1234-1252.
- Hockersmith, E., J Vella, and L. Stuehrenberg. 1995. Yakima radio-telemetry study rainbow trout. Annual report 1993. BPA proj. No. 89-089, Cont. No. DE-AI79-BP00276.
- Hooton, R. S., B. R. Ward, V. A. Lewynski, M. G. Lirette, and A. R. Facchin. 1987. Age and growth of steelhead in Vancouver Island populations. *Prov. B. C. Fish. Tech. Circ. No. 77*: 39 pp.
- Howell, P., K. Jones, D. Scarnecchia, L. LaVoy, W. Kendra, and D. Ortmann. 1985. Stock assessment of Columbia River anadromous salmonids. Volume I: chinook, coho, chum and sockeye salmon stock summaries. Report to Bonneville Power Administration, Proj. No. 83-335, Contract No. DE-AI79-84BP12737.
- Howell, P., P. Spruell, and R. Leary. 2003. Information regarding the origin and genetic characteristics of westslope cutthroat trout in Oregon and Central Washington.
- Howie, R.R., and R. Ritcey. 1987. Distribution, habitat selection and densities of the Flammulated Owl in British Columbia. Pages 249-254 in R.W. Nero, R.J. Clark, R.J. Knapton and R.H. Hamre, eds. *Biology and conservation of northern forest owls*. USDA For. Serv. Gen. Tech. Rep. RM-142.
- Hubble, J. and D. Harper. 1999. Methow basin spring chinook salmon supplementation plan, natural production study, 1995 annual report. Yakama Indian Nation Fisheries Resource Management Program. Report to Douglas County Public Utility District, East Wenatchee, WA.
- Hutto, R. L. and J. Hoffland. 1996. USDA Forest Service Northern Region Land bird Monitoring Project: Field Methods. Unpubl .
- Interactive Biodiversity Information System (IBIS). 2003. A wildlife information database established and maintained by the Northwest Habitat Institute. Corvallis, Oregon.
- . 2001. Interactive biodiversity information system. Northwest Habitat Institute: Corvallis, Oregon. Available: <http://www.nwhi.org/ibis>
- Interior Columbia Basin Technical Recovery Team (TRT). 2003. Independent populations of chinook, steelhead, and sockeye for listed evolutionary significant units within the interior Columbia River Domain. Working draft, July 2003.
- Jackson, A., D. Hatch, B. Parker, D. Close, M. Fitzpatrick, and H. Li. 1997. Pacific lamprey research and restoration. Annual Report 1997. Project No. 94-026, Contract No. 95BI39067. Report to U.S. Department of Energy, Bonneville Power Administration, Portland, OR.
- Jackson, A., P. Kissner, D. Hatch, B. Parker, M. Fitzpatrick, D. Close, and H. Li. 1996. Pacific lamprey research and restoration. Annual Report 1996. Project No. 94-026, Contract No. 95BI39067. Report to U.S. Department of Energy, Bonneville Power Administration, Portland, OR.
- James, F. C., C. E. McCulloch, and D. A. Wiedenfeld. 1996. New approaches to the analysis of population trends in land birds. *Ecology* 77:13-27.
- Jateff, B. and C. Snow. 2002. Methow River Basin Steelhead Spawning Ground Surveys in 2002. Technical Memo. to Douglas PUD.
- Johnson, D.H. and T.A. O'Neil, eds. 2001. *Wildlife-habitat relationships in Oregon and Washington*. Oregon State University Press, Corvallis, Oregon.
- Johnson, Jr., C., and F. C. Hall. 1990. *Plant Associations of the Blue Mountains*. USDA For. Serv., Pacific Northwest Region. R6-Ecol Area 3-1990.

- Johnson, Jr., C., and S. A. Simon. 1987. Plant Associations of the Wallowa-Snake Province: Wallowa-Whitman National Forest. USDA For. Serv., Pacific Northwest Region R6- ECOL-TP-255B-86-1987.
- Johnson, H.E., 1963. Observations on the life history and movements of cutthroat trout, *Salmo clarki*, in the Flathead River drainage, Montana. *Proceedings of the Montana Academy of Sciences* 23:96-110.
- Kan, T. 1975. Systematics, variation, distribution, and biology of lampreys of the genus *Lampetra* in Oregon. Doctoral dissertation. Oregon State University, Corvallis, OR.
- Kanda, N. 1998. Genetics and conservation of bull trout" Comparison of population genetic structures among different genetic markers and hybridization with brook trout. Doctoral Dissertation. University of Montana, Missoula.
- Kanda, N., and F.W. Allendorf. 2001. Genetic population structure of bull trout from the Flathead River Basin as shown by microsatellites and mitochondrial DNA markers. *Trans. Amer. Fish. Soc.* 130:92-106.
- Kanda, N., R. Leary, and F.W. Allendorf. 1997. Population genetic structure of bull trout in the upper Flathead River drainage. Pages 299-308 in W.C. Mackay, M.K. Brewin and M. Monita, editors. Friends of the bull trout conference proceedings. Bull trout task force (Alberta), c/o Trout Unlimited Calgary, Alberta, Canada.
- Kaputa, M. 2001. Director, Chelan County Watershed Program, Entiat, WA. Personal Communication, September 03.
- Karrer, M., 2004. Personal communication. Leavenworth and Lake Wenatchee Ranger District, Okanogan and Wenatchee NF, Washington.
- Kelly, J. 2001. Fisheries biologist, Bureau of Land Management, Entiat, WA. Personal Communication, September 27.
- Kendra, W. 1985. Assessment of steelhead trout stocks in Washington's portion of the Columbia River. Washington Department of Wildlife, Fish. Manage. Div., Olympia, Washington.
- Kirk, T., P. Kerr, and H. Riddle. 1995. Draft initial watershed assessment, water resources inventory area 46, Entiat River watershed. Washington Department of Ecology Open file Report 95-02, Olympia. 16 pp.
- Lambeck, R. J. 1997. Focal species: a multi-species umbrella for nature conservation. *Conservation Biology* 11:849-856.
- Landers, H.R. and K.A. Henry. 1975. Survival, maturity, abundance, and marine distribution of 1965-1966 brood coho salmon, *Oncorhynchus kisutch*, from Columbia River hatcheries. *NMFS, Fish. Bull.* 71(3): pp 679-695.
- Langness, O. P. 1991. Summer chinook salmon spawning ground surveys of the Methow and Okanogan River Basins, 1990. Report to Chelan County Public Utility District. Confederated Tribes of the Colville Reservation, Nespelem, Washington.
- LaVoy, L. 1992. Run size outlook for Columbia River sockeye salmon in 1992. Columbia River Laboratory Progress Report No. 92-16. Washington Department of Fisheries, Battle Ground, WA. 16 pp.
- Leary, R.F., F.W. Allendorf, and S.H. Forbes. 1993. Conservation genetics of bull trout in the Columbia and Klamath River drainages. *Conservation Biology* 7:856-865.
- Leathe, S.A. and P.J. Graham 1982. Flathead Lake fish food habits study, final report. Montana Dept. Fish, Wildl., and Parks, Kalispell.
- Leman, B.D. 1968. Annual PUD report. Biological Section, Engineering Dept., Public Utility District 1, Chelan County, Wenatchee, WA.

- Lepage, D., C.M. Francis, and V. Deschamps. 1999. Ontario nocturnal owl survey 1998 pilot study final report. Report by Bird Studies Canada for Ontario Ministry of Natural Resources Wildlife Assessment Program. WaP-99-01. 21 pp.
- Lichatowich, Jim. 1999. *Salmon without Rivers: A History of the Pacific Salmon Crisis*. Island Press: Washington, D.C.
- Lichatowich, J.A. and L. E. Moberg. 1995. Analysis of chinook salmon in the Columbia River from an ecosystem perspective. Project No. 92-18, DOE/BPA 25105-2. Prepared for USDOE BPA, Portland, Oregon
- Likness, G.A. and P.J. Graham. 1988. Westslope cutthroat trout in Montana: life history, status, and management. In R.E. Gresswell, editor. *Status and management of cutthroat trout*. Amer. Fish. Soc. Symp. 4, Bethesda, Maryland.
- Link, W.A., and J.R. Sauer. 1998. Estimating population change from count data: application to the North American Breeding Bird Survey. *Ecological Applications* 8:258–268.
- . 1994a. Estimating equations estimates of trends. *Bird Populations* 2:23-32.
- . 1994b. «New approaches to the analysis of population trends in land birds»: a comment on statistical methods. *Ecology* 78:2632-2634.
- Lister, D.B. and H. S. Genoe. 1970. Stream habitat utilization by cohabiting underyearlings of chinook and coho salmon in the Big Qualicum River, British Columbia. *Journal Fish. Res. Board of Canada*. Vol. 27 No. 7:1215-1224.
- Loch, J. J., S. A. Leider, M. W. Chilcote, R. Cooper, and T. H. Johnson. 1988. Differences in yield, emigration timing, size, and age structure of juvenile steelhead from two small western Washington streams. *Calif. Fish and Game* 74: 106-118.
- Lukens, J.R. 1978. Abundance, movement, and age structure of adfluvial Westslope cutthroat trout in the Wolf Lodge Creek drainage, Idaho. Master's Thesis. University of Idaho, Moscow.
- MacDonald, K., S. Noble and J. Haskins. 2000. An assessment of the status of aquatic resources within subbasins on the Okanogan-Wenatchee National Forest. Wenatchee NF, Wenatchee, Washington.
- Maher, F. P. and P. A. Larkin. 1954. Life history of steelhead trout of the Chilliwack River, British Columbia. *Trans. Amer. Fish. Soc.* 84: 27-38.
- Major, R. L. and D. R. Craddock. 1962. Influence of early maturing females on reproduction potential of Columbia River blueback salmon (*Oncorhynchus nerka*). USFWS, Bur. Comm. Fish., *Fish. Bull.* 61, p. 429-437.
- Mallatt, J. 1983. Laboratory growth of larval lampreys (*Lampetra* (*Entosphenus*) *tridentata* Richardson) at different food concentrations and animal densities. *Journal of Fish Biology* 22:293-301.
- Manzer, J.I. and I. Miki. 1986. Fecundity and egg retention of some sockeye salmon (*Oncorhynchus nerka*) stocks in British Columbia. *Can. j. Fish. Aquat. Sci.* 43:1643-1655.
- Markel, D.F. 1992. Evidence of bull trout x brook trout hybrids in Oregon. Pages 58-67 in Howell and Buchanon, eds. *Proceedings of the Gearhart Mountain bull trout workshop*. AFS, Oregon Chapter, Corvallis.
- Marshall, A. R., and S. Young. 1994. Genetic analysis of upper Columbia spring and summer chinook salmon for the Rock Island Hatchery evaluation program. Final report, Washington Department of Fisheries, Olympia.
- Martin, S. W., M.A. Schuck, K. Underwood and A.T. Scholz. 1992. Investigations of bull trout (*Salvelinus confluentus*), steelhead trout (*Oncorhynchus mykiss*), and spring chinook (O.

- tshawytscha) interactions in southeast Washington streams. Project No. 90-53. Contract No. DE-BI79-91BP17758 with for USDOE, BPA, Portland, Oregon.
- Mason, J.C. 1974. Aspects of the ecology of juvenile coho salmon (*Oncorhynchus kisutch*) in Great Central Lake, B.C. Fish. Res. Bd. Can. Tech. Rep. 438:7 p.
- Mathews, S. B., and T. K. Meekin. 1971. Fecundity of fall chinook salmon from the upper Columbia River. Technical Report 6, Washington Department of Fisheries, Olympia, Washington.
- Matthews, G. M. and R. S. Waples. 1991. Status review for Snake River spring and summer chinook salmon. NOAA Tech. Memo. NMFS F/NWC-200. 49 pp.
- Mattson, C. 1949. The lamprey fishery at Willamette Falls, Oregon. Fish Commission of Oregon Research Briefs 2:23-27.
- May, B., and J. Huston. 1983. Kootenai River investigations final report: 1972-1982. Section C, fisheries investigations. Montana Dept. of Fish, Wildl., and Parks report to U.S. Army Corps of Eng., Seattle District, Seattle.
- McCabe, Jr., and Charles A. Tracy 1993. Spawning characteristics and early life history of white sturgeon *Acipenser transmontanus* in the Lower Columbia River. In: R. C. Beamesderfer and A. A. Nigro (editors), Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I, p. 19-46, Bonneville Power Administration, Contract DE-AI79-86BP63584
- McCall, T. C., T. P. Hodgman, D. R. Diefenbach, and R. B. Owen, Jr. 1996. Beaver populations and their relation to wetland habitat and breeding waterfowl in Maine. *Wetlands*. 16:163-172.
- McCallum, D. A., and F. R. Gehlbach. 1988. Nest-Site Preference of Flammulated Owls. *Condor* 90:653-661.
- McDonald, M. 1895. Bulletin of the United States Fish Commission. Vol. XIV.
- McElhany, P., M.H. Ruckelshaus, M.J. Ford, T.C. Wainwright, and E.P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionary significant units. U.S. Dept. Commer. NOAA Tech Memo. NMFS-NWFSC-42. 156 p.
- McGee, J. A., R. Rulifson, C. Heath, R. F. Leland. 1983. Juvenile salmonid monitoring Methow River, Okanogan River and Wells Dam forebay April - May 1983 Summer downstream migrant monitoring June - July 1983. Public Utility District No. 1 of Douglas County, East Wenatchee, WA. 28 pp.
- McGee, J.A, and K. Truscott. 1982. Juvenile salmonid monitoring Okanogan River and Wells Dam forebay, April-May, 1982. Douglas County PUD, East Wenatchee, WA.
- McIsaac, D. O. 1990. Factors affecting the abundance of 1977-79 brood wild fall chinook salmon (*Oncorhynchus tshawytscha*) in the Lewis River, Washington. Ph.D. dissertation, University of Washington, Seattle.
- McPhail, J. D. and J. S. Baxter. 1996. A review of bull trout (*Salvelinus confluentus*) life-history and habitat use in relation to compensation and improvement opportunities. Fisheries management report no. 104. University of British Columbia. Vancouver, B.C.
- McPhail, J.D. and C. Murry. 1979. The early life history and ecology of Dolly Varden (*Salvelinus malma*) in the upper Arrow Lakes. Report to the British Columbia Hydro and Power Authority and Kootenay Dept. of Fish and Wildl. Meekin, T. K. 1967. Report on the 1966 Wells Dam chinook tagging study. Washington Department of Fisheries report to Douglas County Public Utility District, Contract Number 001-01-022-4201.
- Meka, J.M., E. E. Knudsen, D.C. Douglas, and R.B. Benter. 2003. Variable migratory patterns of different adult rainbow trout life history types in a Southwest Alaska watershed. *Trans. Amer. Fish. Soc.* 132:717-732

- Meyers, J.M. and 10 co-authors. 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. US Department of Commerce, NOAA Tech. Memo. NMFS-NWFSC-35.
- Mid Columbia Mainstem Conservation Plan (MCMCP). 1998. Aquatic Species and Habitat Assessment: Wenatchee, Entiat, Methow, and Okanogan watersheds. Available from the Chelan County Public Utility District, Wenatchee, Washington.
- Miller, R.J. and E.L. Brannon. 1982. The origin and development of life history patterns in Pacific salmonids, In: E.L. Brannon and E.O. Salo. [Eds]. Proceedings of the salmon and trout migratory behavior symposium, First International Symposium. University of Washington, School of Fisheries, Seattle, WA.
- Miller, T. 2003. 2002 Upper Columbia River summer chinook spawning ground surveys. Report to Chelan Public Utility District. WDFW, Wenatchee WA. 9 p.
- Monahan, J. 2001a. Progress report for the Entiat WRIA Planning Unit. Washington State Department of Ecology, Olympia. 7pp.
- Monahan, J. 2001b. Watershed lead (support), Washington Department of Ecology, Yakima, WA. Personal Communication, September 25.
- Mongillo, P. E. 1993. The distribution and status of bull trout/Dolly Varden in Washington State. Washington Department of Wildlife. Fisheries Management Division, Report 93-22. Olympia, Washington. 45 pp.
- Montgomery Water Group, Adolfsen Associates, Hong West and Associates, R2 Resource Consultants, Marshall and Associates, and Washington Department of Ecology. 1986. Determinants of sockeye salmon abundance in the Columbia River, 1880s –1982: A review and synthesis. USFWS Biological Report 86 (12). Fisheries Resource Office, Leavenworth NFH, Leavenworth, Washington. 135 pp.
- Moore, J. and J. Mallatt. 1980. Feeding of larval lamprey. Canadian Journal of Fisheries and Aquatic Sciences 37:1658-1664.
- Moursund, R., D. Dauble, and M. Bleich. 2000. Effects of John Day Dam bypass screens and project operations on the behavior and survival of juvenile Pacific lamprey (*Lampetra tridentata*). Pacific Northwest National Laboratory. Report to the U.S. Army Corps of Engineers, Portland, OR
- Mullan, J. W. 1987. Status and propagation of chinook salmon in the mid-Columbia River through 1985. U.S. Fish and Wildlife Service Biol. Rep. 87. 111 p.
- . 1986. Determinants of sockeye salmon abundance in the Columbia River, 1880's-1982: a review and synthesis. U. S. Fish and Wildl. Serv. Biol. Rep. 86(12). 136 pp.
- . Overview of artificial and natural propagation of coho salmon (*Oncorhynchus kisutch*) on the mid-Columbia River. Rept. No. FRI/FAO-84-4. USFWS Leavenworth, WA
- Mullan, J. W. A. Rockhold, and C. R. Chrisman. 1992b. Life histories and precocity of chinook salmon in the mid-Columbia River. *Progressive Fish Cult.* 54:25-28.
- Mullan, J.W., K.R. Williams, G. Rhodus, T.W. Hillman and J.D. McIntyre. 1992. Production and habitat of salmonids in mid Columbia River tributaries. Monograph 1, USFWS, Leavenworth, Washington.
- Murdoch, K., C. Kamphaus, and S. Prevatte. 2004. Feasibility and risks of coho reintroduction to mid-Columbia tributaries: 2002 annual monitoring and evaluation report. Prepared for: Project Number 11996-040-00, Bonneville Power Administration, Portland, OR.
- Murdoch, A., K. Petersen, A. Mikkelsen, and M. Tonseth. 1998 CPa. Freshwater production and emigration of juvenile spring Chinook salmon from the Chiwaw River in 1996. Report No. H97-02. Washington Department of F&W, Olympia, Washington.

- Murdoch, A., K. Petersen, M. Tonseth, T. Miller. 1999. Freshwater production and emigration of juvenile spring Chinook salmon from the Chiwawa River in 1998. Report No. SS99-05. Washington Department of F&W, Olympia, Washington.
- Murdoch, A., K. Petersen, M. Tonseth, T. Miller. 1998 CPb. Freshwater production and emigration of juvenile spring Chinook salmon from the Chiwawa River in 1997. Report No. H98-01. Washington Department of F&W, Olympia, Washington.
- Murdoch, A., K. Petersen, T. Miller, M. Tonseth, and T. Randolph. 2000. Freshwater production and emigration of juvenile spring Chinook salmon from the Chiwawa River in 1999. Washington Department of F&W, Olympia, Washington.
- Narver, D. W. 1969. Age and size of steelhead trout in the Babine River, British Columbia. *J. Fish. Res. Bd. Can.* 26: 2754-2760.
- National Marine Fisheries Service (NMFS). 2000. Anadromous fish agreements and habitat conservation plans for the Wells, Rocky Reach, and Rock Island hydroelectric projects. Draft environmental impact statement. Prepared by Parametrix, Inc., Bellevue, Washington in cooperation with the Douglas County PUD, the Chelan County PUD, and the FERC. Bellevue, Washington.
- . 2000. Section 7, biological opinion on the reinitiation of consultation on operation of the Federal Columbia River Power System. December 21, 2000. Available: <http://www.nwr.noaa.gov/1hydrop/hydroweb/docs/Final/2000Biop.html>
- . 2000a. Section 7, Biological opinion on the reinitiation of consultation on operation of the Federal Columbia River Power System. December 21, 2000. <http://www.nwr.noaa.gov/1hydrop/hydroweb/docs/Final/2000Biop.html>
- Nehlsen, W., J. Williams, and J. Lichatowich. 1991. Pacific salmon at the crossroads: stocks at risk from California, Oregon, Idaho and Washington. *Fisheries* 16(2): 4-21.
- Nerass, L.P., and Spruell. 2001. Fragmentation of riverine systems: the genetic effects of dams on bull trout (*Salvelinus confluentus*) in the Clark Fork River system. *Molecular Ecology* 10:1153-1164.
- Nickelson, T.E. M.F. Solazzi, and S.L. Johnson. 1986. Use of hatchery coho salmon (*Oncorhynchus kisutch*) presmolts to rebuild wild populations in Oregon coastal streams. *Can. J. Fish. Aquat. Sci.* 43:527-535.
- NOAA Fisheries. 2002. Anadromous fish agreements and habitat conservation plans for the Wells, Rocky Reach, and Rock Island hydroelectric projects. Final environmental impact statement. Prepared by Parametrix, Inc., Bellevue, WA, in cooperation with the Douglas County PUD, the Chelan County PUD, and the Federal Energy Regulatory Commission. Bellevue, WA.
- . Technical Memorandum NMFS-NWFSC-42. 2000. "Viable Salmonid Populations and the Recovery of Evolutionary Significant Units." US Department of Commerce.
- Northcote, T.G. 1997. Potamodromy in salmonidae – living and moving in the fast lane. *North. Amer. Journ. Fish Manage.* 17(4): 1029-1045.
- Northwest Power Planning Council. 2003. Artificial Production Review and Evaluation. Available: <http://www.nwppc.org/fw/apre/default.htm>
- . 2002. Entiat subbasin summary. Portland, Oregon.
- . 2001. Technical Guide for Subbasin Planners.
- . 1997. An Integrated Framework for Fish and Wildlife Management in the Columbia Basin.
- Nott, R., D.F. DeSante, and N. Michel. 2003. Monitoring Avian Productivity and Survivorship (MAPS) Habitat Structure Assessment (HAS) Protocol 2003. The Institute for Bird Populations, Pt. Reyes Station, California.

- Nur, N., S. Zack, J. Evens, and T. Gardali. 1997. Tidal marsh birds of the San Francisco Bay region: Status, distribution, and conservation of five Category 2 taxa. Final draft report to National Biological Survey (now US Geological Survey). Available from Point Reyes Bird Observatory, Stinson Beach, CA. Wetlands Regional Monitoring Program Plan 2002 Part 2: Data Collection Protocols Tidal Marsh Passerines.
- Nur, N., S.L. Jones, and G.R. Geupel. 1999. A Statistical Guide to Data Analysis of Avian Monitoring Programs. Biological Technical Publication, US Fish & Wildlife Service, BTP-R6001-1999.
- Oregon Department of Fish and Wildlife et al. 1989. Grande Ronde River subbasin salmon and steelhead production plan, Columbia Basin System Planning, funds provided by NPPC and the Columbia Basin Fish and Wildlife Authority.
- Oligher, R. C. 1958. Progress report on the downstream migrant salmon study at McNary Dam. Unpublished U. S. Army Corps of Engineers Rept. 10 pp.
- Park, D. 1969. Seasonal changes in downstream migration of age-group 0 chinook salmon in the upper Columbia River. Transactions of the American Fisheries Society 98:315-317.
- Park, D. L., and W. W. Bentley. 1968. A summary of the 1967 outmigration of juvenile salmonids in the Columbia Basin. U. S. Bureau of Comm. Fish., Seattle, WA. 14 pp.
- Parks, C. G., E. L. Bull and T. R. Torgersen. 1997. Field Guide for the Identification of Snags and Logs in the Interior Columbia River Basin. USDA Forest Service, Pacific Northwest Research Station, PNW-GTR-390. 40 p.
- Patterson, P. A., K. E. Neiman, and J. R. Tonn. 1985. Field guide to forest plants of northern Idaho. Gen. Tech. Rep. INT-180. Ogden, Utah: Intel-mountain Research Station, Forest Service, U.S. Dept. of Agriculture; 246 pp.
- Pauley, G. B., B. M. Bortz, and M. F. Shepard. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest) -- steelhead trout. U. S. Fish Wildl. Serv. Biol. Rep. 82(11.62). Army Corps of Engineers, TR EL-82-4. 24 pp.
- Payette National Forest. 1993. Region 4 sensitive species broadcast vocalization compact disc. CD use information, (S. Jeffries and L. Ostermiller, tech. coords.). Payette National Forest, McCall, Idaho.
- Peterman, R. M. 1985. Patterns of variation in age at maturity of sockeye salmon (*Oncorhynchus nerka*) in Alaska and British Columbia. Can. J. Fish. Aquat. Sci. 42:1595-1607.
- Peven, C.M. 2003. Population structure, status and life histories of upper Columbia steelhead, spring and late-run chinook, sockeye, coho salmon, bull trout, westslope cutthroat trout, non-migratory rainbow trout, pacific lamprey, and sturgeon. Wenatchee, Washington.
- . 2001. Fish and wildlife supervisor, Chelan Public Utility District, Entiat, Washington. Personal Communication, September 25, 2001.
- . 1992a. Population status of selected stocks of salmonids from the mid Columbia River basin. Chelan County PUD: Wenatchee, Washington.
- . 1992b. Population status of selected stocks of salmonids from the mid Columbia River basin. Chelan County Public Utility District, Wenatchee, Washington.
- . 1991 CPa. Rock Island Dam smolt monitoring, 1991. Report for Bonneville Power Admin. Proj. No. 84-54, Portland, OR.
- . 1991 CPb. The downstream migration of sockeye salmon and steelhead trout past Rock Island Dam 1991. Annual report, Chelan County Public Utility District, Wenatchee, WA.
- . 1990. The life history of naturally produced steelhead trout from the mid-Columbia River basin. M.S. Thesis. Univ. of WA, Seattle.



- . 1989 CPa. The proportion of hatchery and naturally produced steelhead smolts migrating past Rock Island Dam, Columbia River, 1989. Chelan County PUD, Wenatchee, Washington.
- . 1989 CPb. Rock Island Dam smolt monitoring, 1989. Report for Bonneville Power Admin. Proj. No. 84-54, Portland, OR.
- . 1988. The proportion of hatchery and naturally produced steelhead smolts migrating past Rock Island Dam, Columbia River, 1988. Chelan County PUD, Wenatchee, Washington.
- . 1987 CPa. The proportion of hatchery and naturally produced steelhead smolts migrating past Rock Island Dam, Columbia River, 1987. Chelan County PUD, Wenatchee, Washington.
- . 1987 CPb. Downstream migration timing of two stocks of sockeye salmon on the mid-Columbia River. *Northwest Science* 61:186-190.
- Peven, C. M., and N. A. Duree. 1990. Rock Island Dam smolt monitoring, 1990. Report for Bonneville Power Admin. Proj. No. 84-54, Portland, OR.
- Peven, C. M., and P. C. Fielder. 1988. Rock Island Dam smolt monitoring, 1988. Report for Bonneville Power Admin. Proj. No. 84-54, Portland, OR.
- Peven, C. M. and S. G. Hays. 1989. Proportions of hatchery- and naturally produced steelhead smolts migrating past Rock Island Dam, Columbia River, Washington. *N. Amer. J. Fish. Manage.* 9: 53-59.
- Peven, C.M., R.R. Whitney, and K.R. Williams. 1994. Age and length of steelhead smolts from the mid Columbia River basin. *North American Journal of Fisheries Management* 14:77-86.
- Phillips, R.B., K.A. Pleyte, and P.E. Ihssen. 1989. Patterns of chromosomal nucleolar region variation in fishes of the genus *Salvelinus*. *Copeia* 1989:47-53.
- Platts, W.S., M. Hill, T.W. Hillman, and M.D. Miller. 1993. Preliminary status report on bull trout in California, Idaho, Montana, Nevada, Oregon, and Washington. Prepared for Intermountain Forest Industry Association. Don Chapman Consultants, Boise Idaho. 128 pages plus appendices.
- Pletcher, F. 1963. The life history and distribution of lampreys in the Salmon and certain other rivers in British Columbia, Canada. Master's thesis. University of British Columbia, Vancouver, B.C.
- Pleyte, K.A., S.D. Duncan, and R.B. Phillips. 1992. Evolutionary relationships of the salmonids fish genus *Salvelinus* inferred from DNA sequences of the first internal transcribed spacer (ITS 1) of ribosomal DNA. *Molecular Phylogenetics and Evolution* 1(3):223-230.
- Pleyte, K.A., S.D. Duncan, and R.B. Phillips. 1992. Evolutionary relationships of the salmonids fish genus *Salvelinus* inferred from DNA sequences of the first internal transcribed spacer of ribosomal DNA. *Molecular Phylogenetics and Evolution* 1(3):223-230.
- Potter, I. 1980. Ecology of larval and metamorphosing lampreys. *Canadian Journal of Fisheries and Aquatic Sciences* 37:1641-1657.
- Pratt, K.L. 1992. A review of bull trout life history. Pages 5-9 in Howell and Buchannon (1992).
- . 1984. Habitat use and species interactions of juvenile cutthroat trout (*Salmo clarki lewisi*) and bull trout (*Salvelinus confluentus*) in the upper Flathead River basin. Master's thesis. University of Idaho, Moscow.
- Pratt, K. L., D. W. Chapman, and M. Hill. 1991. Potential to enhance sockeye salmon upstream from Wells Dam. Don Chapman Consultants for Douglas County Public Utility District, East Wenatchee, WA. 87 pp.

- Proebstel, D.S., R.J. Behnke, and S.M. Noble. 1998. Identification of salmonid fishes from tributary streams and lakes of the mid-Columbia basin. Joint publication by U.S. Fish and Wildlife Service and World Salmonid Research Institute, Colorado State University. Leavenworth, Washington.
- Proudfoot, G. A. 1996. Miniature video-board camera used to inspect natural and artificial nest cavities. *Wildlife Society Bulletin* 24:528-530.
- Quigley, T. M. and S. J. Arbelbide. Tech. Doc. Eds. 1997. An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Vol. 3. Gen. Tech. Rpt. PNW-GTR-405. Portland, Oregon.
- Quinn, T. P. and K. Fresh. 1984. Homing and straying in chinook salmon (*Oncorhynchus tshawytscha*) from Cowlitz River hatchery, Washington. *Can. J. Fish. Aquat. Sci.* 41:1078-1082.
- Quinn, T.P., and N.P. Peterson. 1996. The influence of habitat complexity and fish size on over-winter survival and growth of individually marked juvenile coho salmon in Big Beef Creek, Washington. *Can. J. Fish. Aquat. Sci.* 53:155-1564.
- Quinn, T.P., and M.J. Unwin. 1993. Variation in life history patterns among New Zealand chinook salmon *Oncorhynchus tshawytscha* populations. *Canadian Journal of Fisheries and Aquatic Sciences* 50:1414-1421.
- Quinn, T.P., M.J. Unwin, and M.T. Kinnison. 2000. Evolution of temporal isolation in the wild: genetic divergences in timing of migration and breeding by introduced chinook salmon populations. *Evolution* 54: 1372-1385.
- Ralph, C.J., S. Droege, and J.R. Sauer. 1995. Managing and monitoring birds using point counts: standards and applications. In C. J. Ralph, J. R. Sauer and S. Droege (Eds.), *Monitoring Bird Populations by Point Counts*. USDA Forest Service Publication, Gen. Tech. Rep. PSW-GTR-149, Albany, California.
- Ralph, C. J., G. R. Geupel, P. Pyle, T. E. Martin and D. F. DeSante. 1993. *Handbook of field methods for monitoring birds*, Pacific Southwest Research Station, Forest Service, U. S. Department of Agriculture, Albany, California.
- Randall, R. G., M. C. Healey, and J. B. Dempson. 1987. Variability in length of freshwater residence of salmon, trout, and char. *Amer. Fish. Soc. Symp.* 1:27-41.
- Raymond, H. L. 1979. Effects of dams and impoundments on migrations of juvenile chinook salmon and steelhead from the Snake River, 1966-1975. *Trans. Amer. Fish. Soc.* 108: 505-529.
- Read, L.J. 1968. A study of ammonia and urea production and excretion in the fresh-water adapted form of the Pacific lamprey, *Entosphenus tridentata*. *Comp. Biochem. Physiol.* 26:455-466.
- Regional Technical Team (RTT). 2003. A biologic strategy to protect and restore salmonid habitat in the upper Columbia region. Upper Columbia Salmon Recovery Board. (Authored by Bob Bugert).
- . 2004. A biologic strategy to protect and restore salmonid habitat in the upper Columbia region. (Authored by Bob Bugert).
- Reynolds, R.T. and B.D. Linkhart. 1984. Methods and materials for capturing and monitoring Flammulated Owls. *Great Basin Naturalist* 44:49-51.
- Reynolds, R. T., J. M. Scott, and R. A. Nussbaum. 1980. A variable circular-plot method for estimating bird numbers. *Condor* 82:309-313. Stnckler, G. S. 1959. Use of the densiometer to estimate density of forest canopy on permanent sample plots. U.S. Dept. Agr'c., For. Serv., Res. Note PNW-180. Volland. L.A. 1988. Plant associations of the central Oregon pumice zone. USDA For. Serv., Pacific Northwest Region. R6-Ecol-104-1985.

- Rich, W.H. 1940CPa. The present state of the Columbia River salmon resource. Proc. 6th Pac. Sci. Cong. 3:425-430
- . 1940CPb. The future of the Columbia River salmon fisheries. Stanford Ichthyological Bull. 2(2):37-47.
- . 1920. Early history and seaward migration of chinook salmon in the Columbia and Sacramento rivers. Bulletin of the Bureau of Fisheries, Vol. 37, 1919-20.
- Richards, J. 1980. Freshwater life history of the anadromous Pacific lamprey, *Lampetra tridentata*. Master's thesis. University of Guilph, Guelph, Ontario.
- Richards, J. and F. Beamish. 1981. Initiation of feeding and salinity tolerance in the Pacific lamprey *Lampetra tridentata*. Marine Biology 63:73-77.
- Ricker, W.E. 1981. Changes in average size and average age of Pacific salmon. Ca, J. Fish. Aquat. Sci. 38:1636-1656.
- . 1976. Review of the rate of growth and mortality of Pacific salmon in salt water, and non-catch mortality caused by fishing. Journal of the Fisheries Research Board of Canada 33:1483-1524.
- . 1972. Hereditary and environmental factors affecting certain salmonid populations. pp. 27-160 In R. C. Simon and P. A. Larkin (eds.). The Stock Concept in Pacific Salmon. H. R. MacMillan Lectures in Fisheries, Univ. of BC, Vancouver, Canada.
- Ridley, M. 1996. Evolution. Blackwell Science, Cambridge, MA, 719 p.
- Rieman, B.E., and F.W. Allendorf. 2001 Effective population size and genetic conservation criteria for bull trout. N. Amer. J. Fish. Manage. 21:756-764.
- Rieman, B.E. and J.B. Dunham. 2000. Ecology of Freshwater 2000: 9: 51-64.
- 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(4): 1111-1125.
- Rieman, B. E., and J. D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. U.S. Forest Service, Intermountain Research Station. General Technical Report INT-302.
- . 1995. Occurrence of bull trout in naturally fragmented habitat patches of varied size. Transactions of American Fisheries Society. Vol. 124 (3): 285-296.
- . 1996. Spatial and temporal variability in bull trout redd counts. N. Amer. J. Fish. Manage. 16: 132-141.
- Roberston, C.H. 1957. Survival of precociously maturing salmon male parr. (*Onchorhynchus tshawytscha*) after spawning. Calif. Fish and Game 43:119-129.
- Rock Island Dam Hydroelectric Facility, Rocky Reach Dam Hydroelectric Facility, and Wells Dam Hydroelectric Facility. 1998. Application for individual incidental take permits filed with the National Marine Fisheries Service, July 30, 1998; Exhibit D - Aquatic species and habitat assessment: Entiat, Entiat, Methow and Okanogan watersheds, April 1998.
- Rogers, D. E. 1987. The regulation of age at maturity in Wood River sockeye salmon (*Oncorhynchus nerka*). In H. D. Smith, L. Margolis, and C. C. Wood [ed.] Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Can. Spec. Publ. Fish. Aquat. Sci. 96.
- Rosgen, D. 1996. Applied river morphology. Wildland Hydrology. Pagosa Springs, Colorado.

- Rotenberry, J. T., and J. A. Wiens. 1980. Habitat structure, patchiness, and avian communities in North American steppe vegetation: A multivariate analysis. *Ecology* 61.
- Rounsefell, G. A. 1957. Fecundity of North American Salmonidae. U. S. Fish Wildl. Serv. Fish. Bull. 122 (57): 451-464.
- Rounsefell, G. A. 1958. Anadromy in North American Salmonidae. U. S. Fish and Wildl. Serv. Fish. Bull. 58(131): 171-185.
- Russell, J., F. Beamish, and R. Beamish. 1987. Lentic spawning by the Pacific lamprey, *Lampetra tridentata*. *Canadian Journal of Fisheries and Aquatic Sciences* 44:476-478.
- Salmon and Steelhead Stock Inventory (SASSI). 1992. 1992 Washington state salmon and steelhead stock inventory. Washington Department of Fisheries, Washington Department of Wildlife, and Western Washington Treaty Indian Tribes.
- Sandercock, F.K. 1991. Life history of coho salmon (*Oncorhynchus kisutch*). Pages 397-445 In C. Groot and L. Margolis, eds. *Pacific Life Salmon Histories*. University of British Columbia Press, Vancouver, Canada.
- Scribner T. and 10 co-authors. 2002. Hatchery and Genetic Management Plan – Mid Columbia coho reintroduction project. Yakama Indian Nation, WDFW, BPA. BPA Project No. 9604000.
- Shaklee, J.B., J. Ames, and L. LaVoy. 1996. Genetic diversity units and major ancestral lineages for sockeye salmon in Washington. Chpt. E (Tech. Rept. RAD 95-02/96) in: (C. Busack and J.B. Shaklee, eds.) *Genetic diversity units and major ancestral lineages of salmonid fishes in Washington*. Tec. Rept. RAD 95-02. WDFW, Olympia, WA 43 p.
- Shapovalov, L., and A. C. Taft. 1954. The life histories of the steelhead rainbow trout (*Salmo gairdneri gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. California Dept. of Fish and Game, Fish. Bull. No. 98. 375 p.
- Shepard, B. B., B. Sanborn, L. Ulmer and D. C. Lee. 1997. Status and risk of extinction for westslope cutthroat trout in the upper Missouri River basin, Montana. *North American Journal of Fisheries Management* 17:1158-1172.
- Shepard, B.B, K.L. Pratt, and P.J. Graham. 1984. Life histories of Westslope cutthroat trout in the upper Flathead River basin, Montana. Montana Dept. of Fish, Wildl., and Parks, Helena.
- Sheppard, D. 1972. The resent status of the steelhead trout stocks along the Pacific coast. Pages 519-556 IN: D.H. Resenberg, ed. *A review of the oceanography and renewable resources of the northern Gulf of Alaska*. Univ. Alaska, Inst. Mar. Sci. IMS Rep. R72-23, Sea Grant Rep. 73-3.
- Silliman, R. P. 1947. The 1947 blueback salmon runs in the Columbia River. USFWS typed rep., Seattle, Wa., 7 p.
- Simpson, J. and R. Wallace. 1978. *Fishes of Idaho*. University Press of Idaho, Moscow, Idaho.
- Slough, B. S., and R. M. F. S. Sadleir. 1977. A land capability classification system for beaver (*Castor Canadensis Kuhl*). *Can. J. Zool.* 55:1324-1335.
- Smith, S. B. 1960. A note on two stocks of steelhead trout, *Salmo gairdneri* in the Capilano River, British Columbia. *J. Fish. Res. Bd. Can.* 17: 739-741.
- Spotts, J.V. 1987. Bull trout surveys conducted in Yakima, Kittitas, and Chelan Counties, Washington 1982-1986. WDW. Unpub. Rep. 22 p.
- Spruell, P. Z. Wilson, and F.W. Allendorf. 2000. Genetic analysis of Lewis River bull trout. Final Report WTSGL-102 to PacifiCorp. Wild Trout and Salmon Genetics Lab, Division of Biological Sciences, University of Montana.

- Spruell, P., B.E. Rieman, K.L. Knudsen, F.M. Utter, and F.W. Allendorf. 1999. Genetic population structure within streams: microsatellite analysis of bull trout populations. *Ecology of Freshwater Fish* 8:114-121.
- Starke, G. and J. Dalen. 1995. Pacific lamprey (*Lampetra tridentata*) passage patterns past Bonneville Dam and incidental observations of lamprey at the Portland District Columbia River dams in 1993. U.S. Army Corps of Engineers, Cascade Locks, OR.
- Stuehrenberg, L.C. G.A. Swan, L.K. Timme, P.A. Ocker, M.B. Eppard, R.N. Iwamoto, B.L. Iverson, and B.P. Sanford. 1995. Migrational characteristics of adult spring, summer, and fall chinook salmon passing through reservoirs and dams of the mid Columbia River. Final report. CZES Division, NOAA-NMFS NWFSC, Seattle, Washington.
- Swan, G. A., L. K. Timme, R. N. Iwamoto, L. C. Stuehrenberg, E. E. Hockersmith, B. L. Overson, and B. P. Sandford. 1994. Wells Dam radio-telemetry study, 1992. National Marine Fisheries Service, Seattle, WA for Douglas County Public Utility District, East Wenatchee, WA. 70 pp.
- Swan, G., E. M. Dawley, R. D. Ledgerwood, W. T. Norman, W. F. Cobb, and D. T. Hartman. 1988. Distribution and relative abundance of deep-water redds for spawning fall chinook salmon at selected study sites in the Hanford Reach of the Columbia River. NMFS, Northwest and Alaska Fisheries Center, Final Report to U.S. Army Corps of Engineers, Contr. E86-87-3082.
- Takats, D.L. 1998b. Volunteer nocturnal owl surveys in Alberta, annual report. Beaverhill.
- Takats, D.L. and G.L. Holroyd. 1997. Owl broadcast surveys in the Foothills Model Forest. In: *Biology and Conservations of Owls of the Northern Hemisphere* by J.R. Duncan, D.H. Johnson, and T.H. Nicholls (eds.). USDA Forest Service.
- Takats, D. L., C. M. Francis, G. L. Holroyd, J. R. Duncan, K. M. Mazur, R. J. Cannings, W. Harris, D. Holt. 2001. Guidelines for Nocturnal Owl Monitoring in North America. Beaverhill Bird Observatory and Bird Studies Canada, Edmonton, Alberta. 32 pp. Available: <http://www.bsc-eoc.org>
- Taylor, E.B. and C.J. Foote. 1991. Critical swimming velocities of juvenile sockeye salmon and kokanee, the anadromous and non-anadromous form of *Oncorhynchus nerka* (Walbaum). *J. Fish. Biol.* 38:407-419.
- Taylor, E.B. 1991. Behavioural interaction and habitat use in juvenile chinook, and coho salmon. *Anim. Behav.* 42:729-744.
- Taylor, E.B., S. Pollard, and D. Louie. 1999. Mitochondrial DNA variation in bull trout (*Salvelinus confluentus*) from northwestern North America: implications for zoogeography and conservation. *Molecular Ecology* 8:1155-1170.
- Technical Advisory Committee (TAC). 1991. Columbia River fish management plan, 1991 All Species Review. May 10, 1991.
- Thomas, L. 1996. Monitoring long term population change: why are there so many analysis methods? *Ecology* 77: 49-58.
- Thompson, G. G. 1991. Determining minimum viable populations under the Endangered Species Act. National Marine Fisheries Service, NOAA Tech. Memo. NMFS F/NWC-198. 78 p.
- Thompson, W. F. 1951. An outline for salmon research in Alaska. University of Washington, Fisheries Research Institute Circular 18, Seattle.
- Thorpe, J. E. 1987. Smolting versus residency: developmental conflict in salmonids. *Amer. Fish. Soc., Symp.* 1:244-252.
- Thurrow, R.F., and T.C. Bjornn. 1978. Response of cutthroat trout populations to the cessation of fishing in the St. Joe River tributaries. University of Idaho, Bulletin No. 25, Moscow.

- Thurrow, R.F., D.C. Lee and B.E.Reiman. 1997. Distribution and status of seven native salmonids in the interior Columbia River Basin and portions of the Klamath River and Great Basins. *North American Journal of Fisheries Management* 17:1094-1110.
- Tonseth, M. 2003. 2001 Upper Columbia River Stock Summary for Sockeye, Spring Chinook, and Summer Chinook. Tech. Memo to Chelan PUD. 8 p.
- Trotter, P.C, B. McMillan, N. Gayeski, P. Spruell, and M. K. Cook 2001, Genetic And Phenotypic Catalog Of Native Resident Trout Of The Interior Columbia River Basin FY-2001 Report: Populations In The Wenatchee, Entiat, Lake Chelan, & Methow
- Trotter, P.C. 1987. *Cutthroat: Native Trout of the West*. Colorado University Associated Press, Boulder, Colorado.
- Truscott, K. 1992. Rock Island Dam smolt monitoring, 1992. Annual report to BPA, Portland OR, contract # DEAI79B6BP61748, 20 p., plus appendices.
- Tuttle, E. H. 1950. Annual report calendar year 1949, Leavenworth National Fish Hatchery. U. S. Fish and Wildlife Service 44 pp.
- Upper Columbia RTT. 2001. A strategy to protect and restore salmonid habitat in the upper Columbia region, a discussion draft report. Upper Columbia Salmon Recovery Board.
- US Census Bureau. 2003. Chelan County Census Data. Available: <http://www.census.gov>
- USDI Geologic Survey. 1902. Forest conditions in the Cascade range; between the Washington and Mount Rainier forest reserves.
- US Fish and Wildlife Service (USFWS). 2004. Draft Bull Trout Recovery Plan.
- . 2002 Bull trout (*Salvelinus confluentus*) draft recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 137 pp.
- . 2000. Adult salmonid returns to Leavenworth, Entiat and Winthrop NFH in 1999. USFWS, Mid Columbia Fisheries Resource Office, Leavenworth, Washington.
- . 2000. Spring and summer chinook salmon spawning ground surveys, Entiat River. U.S. Fish and wildlife Service, Mid-Columbia Fisheries Resource Office, Leavenworth, WA.
- . 1999. A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation watershed Scale.
- . 1999. Status review for westslope cutthroat trout in the United States. USDI, USFWS, Regions 1 and 6, Portland, Oregon and Denver, Colorado.
- . 1998. Draft Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation watershed Scale.
- . 1980a. Habitat as a Basis for Environmental Assessment, Ecological Services Manual (ESM) 101. Division of Ecological Services, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. Unnumbered.
- . 1980b. Habitat Evaluation Procedures (HEP), Ecological Services Manual (ESM) 102. Division of Ecological Services, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. Unnumbered.
- . 1980a. Habitat as a Basis for Environmental Assessment, Ecological Services Manual (ESM) 101. Division of Ecological Services, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. Unnumbered.
- . 1980b. Habitat Evaluation Procedures (HEP), Ecological Services Manual (ESM) 102. Division of Ecological Services, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. Unnumbered.

- U.S. Forest Service (USFS). 2001. Meet the Forest Service; Ranger District information; and Entiat Ranger District. Available: <http://www.fs.fed.us>. Downloaded: 9-26-01.
- . 1996. Watershed assessment, Entiat analysis area, Version 2.0. Entiat National Forest, Entiat Ranger District, Entiat, WA.
- Unwin, M.J., T.P. Quinn, M.T. Kinnison and N.C. Boustead. 2000 Divergence in juvenile growth and life history in two recently colonized and partially isolated chinook salmon populations. *Journal of Fish Biology* 57:943-960.
- Utter, F. M. 1993. A genetic examination of chinook salmon populations of the upper Columbia River. Report to Don Chapman Consultants, Inc., Boise, Idaho.
- Utter, F.M., D.W. Chapman, and A.R. Marshall. 1995. Genetic population structure and history of chinook salmon of the upper Columbia River. *American Fisheries Society Symposium* 17: 149-165.
- Vander Haegen, W. M., and B. walker. 1999. Parasitism by brown-headed cowbirds in the shrubsteppe of eastern Washington. *Studies in Avian Biology* 18:34-40.
- Vander Haegen, W. M., F. C. Dobler, and D. J. Pierce. 2000. Shrubsteppe bird response to habitat and landscape variables in eastern Washington, USA. *Conservation Biology* 14:1145-1160.
- Van Hyning, J. 1968. Factors affecting the abundance of fall chinook salmon in the Columbia River. Doctoral dissertation, Oregon State University, Corvallis.
- Van Woudenberg, A.M., and D.A. Christie. 1997. Flammulated Owl (*Otus flammeolus*) populations and habitat inventory at its northern range limit in the southern interior of British Columbia. Pages 466-476 in J.R. Duncan, D.H. Johnson and T.H. Nicholls, eds. *Biology and conservation of owls of the northern hemisphere. Second international symposium: USDA For. Serv., Gen. Tech. Rep., NC-190. Feb, 5-9, 1997. Winnipeg, Manitoba.*
- Vedan, A. 2002. Traditional Okanogan environmental knowledge and fisheries management. Prepared by Okanogan Nation Alliance, British Columbia.
- Wagner, P., and T. Hillson. 1992. 1992 McNary Dam smolt monitoring program annual report. Washington Department of Fisheries, report prepared for BPA, Proj. No. 87-127, BPA Agreement No. DE-FC79-88BP38906.
- Waknitz, F.W., G.M. Matthews, T. Wainwright, and G.A. Winans. 1995. Status review for Mid-Columbia River summer chinook salmon. NPAA Tech. Mem. NMFS-NWFSC-22, 80 p.
- Wallace, R. and K.W. Ball. 1978. Landlocked parasitic Pacific lamprey in Dworshak Reservoir, Idaho. *Copeia* 1978(3): 545-546.
- Wallis, O.L. 1948. Trout studies and a stream survey of Crater Lake National Park. Masters Thesis. Oregon State University, Corvallis.
- Waples, R.S. 1991. Pacific salmon, *Onchorhynchus* spp., and the definition of "species" under the Endangered Species Act. *Marine Fisheries Review* 53: 11-22.
- Waples, R.S. G.A. Winans, F.M. Utter, and C. Mahnken. 1990. Genetic monitoring of Pacific salmon hatcheries. P. 33-37, In: R.S. Svrjcek, [Ed.], *Genetics in Aquaculture: Proc. 16th U.S. – Japan meeting on aquaculture, October 20-21, 1987, Charleston, SC. NOAA Tech Rep., NMFS, NWSCT, NMFS 92.*
- Waples, R.S., and D.J. Teel. 1990. Conservation of genetics of Pacific salmon. I. Temporal changes in allele frequency. *Consev. Biol.* 4:144-156.
- Waples, R.S., and P.E. Smouse. 1990. Gametic disequilibrium analysis as a means of identifying mixtures of salmon populations. *Am. Fish. Soc. Symp.* 7: 439-458.

- Ward, B. R. and P. A. Slaney. 1988. Life history and smolt-to-adult survival of Keogh River steelhead trout (*Salmo gairdneri*). *Can. J. Fish. Aquat. Sci.* 45: 1110-1122.
- Waknitz, F.W., G.M. Matthews, T. Wainwright, and G.A. Winans. 1995. Status review for mid Columbia River summer chinook salmon. NPAA Tech. Mem. NMFS-NWFSC-22.
- Washington Department of Ecology (WDOE). 1998. 303d List for Water Quality.
- . 1997. Lake Quality Monitoring. Available: [www.egy.wa.gov/programs/eap/fw\\_lakes/lkwench1.html](http://www.egy.wa.gov/programs/eap/fw_lakes/lkwench1.html)
- Washington Department of Fisheries (WDF). 1938. Report of the preliminary investigations into the possible methods of preserving the Columbia River salmon and steelhead at the Grand Coulee Dam. Prepared for U.S. Bureau of Reclamation by WDF in cooperation with the Washington Department of Game and U.S. Bureau of Fisheries. 121 p. processed. Washington Department of Wildlife, Fisheries Management Division, Olympia.
- Washington Department of Fisheries/Washington Department of Wildlife (WDF/WDW). 1993. 1992 Washington state salmon and steelhead stock inventory; Appendix Three, Columbia River stocks. Olympia, Washington.
- Washington Department of Fish and Wildlife (WDFW). 2003. Game Management Plan. 136 pp. Wildlife Management Program. Washington Dept. Fish and Wildlife, Olympia, Washington. WDFW 1994.
- . 2001. Priority species and habitats within WDFW region 2, including Chelan, Entiat, and Entiat subbasins. URL: <http://www.wa.gov/wdfw/hab>. Downloaded: 8-27-2001.
- . 1998. Salmonid Stock Inventory Bull Trout/Dolly Varden. Washington Department of Fish and Wildlife, Olympia. 437 pp.
- . 1993. 1992 Washington State salmon and steelhead stock inventory; Appendix Three, Columbia River stocks. Olympia, WA
- Washington Department of Wildlife, Confederated Tribes and Bands of the Yakama Indian Nation, Confederated Tribes and Bands of the Colville Reservation, and Wash. Dept. Fish. 1989. Methow and Okanogan river subbasin salmon and steelhead production plan. Draft. Columbia Basin System planning funds provided by the NWPPC, and the Agencies and Indian Tribes of the CBFWA.
- Washington State Conservation Commission. 2001. WRIA 45. Limiting Factors Analysis.
- Washington State Conservation Commission (WSCC). 2001. Chelan County Conservation District. WSCC: Lacey, WA. Available: <http://www.conserver.org/modules/selected.php3>. Downloaded: 9-13-01.
- Washington Department of Natural Resources, Natural Heritage Program (WSDNR NHP). 2001. Entiat Slopes Natural Area Preserve. Personal Communication, 9-12.
- Weber, D., and R. J. Wahle. 1969. Effect of fin clipping on survival of sockeye salmon (*Oncorhynchus nerka*) Jour. Fish. Res. Bd. Can. 26: 1263-1271.
- Weitkamp, D.E., and J. Nuener. 1981. 1981 juvenile salmonid monitoring Methow River, Okanogan River and Wells Dam forebay. Parametrix, Inc. prepared for Douglas County PUD, Doc. No. 81-012-001D2.
- Williams, I.V. 1973. Investigations of the prespawning mortality of sockeye in Horsefly River and McKinney Creek in 1969. *Int. Pac. Sal. Fish. Comm. Prog. Rpt. No. 27.* 42 p.
- Williams, J.G. 1990. Effects of hatchery broodstock weirs on natural production. P. 62-64, In: D. L. Park [convenor], Status and future of spring chinook in the Columbia River basin – conservation and enhancement. NOAA Tech. Memo. NMFS F/NWC –187.



- Williams, K.R. 1998. Westslope cutthroat status report for Washington. Unpubl. Rept., Fish Mgmt. Div., Wash. Dept. Fish and Wildlife, Olympia. 25pp.
- Williams, R.N, R.P. Evans, and D.J. Shiozawa. 1997. Mitochondrial DNA diversity in bull trout from the Columbia River basin. Pages 283-297 in W.C. Mackay, M.K. Brewin, and M. Monita, eds. Friends of the Bull Trout Conference Proceedings. Bull Trout Task Force, Trout Unlimited, Calgary, Alberta.
- Williams, R.N. and 11 co-authors. 2000. Return to the river: restoration of salmonid fishes in the Columbia River ecosystem. Development of an Alternative Conceptual Foundation and review and Synthesis of Science underlying the Fish and Wildlife program of the Northwest Power Planning Council, Council Document 2000-12. Portland, OR
- Williams, R.W., R.M. Laramie, and J.J. Ames. 1975. A catalog of Washington streams
- Withler, I. L. 1966. Variability in life history characteristics of steelhead trout (*Salmo gairdneri*) along the Pacific coast of North America. J. Fish. Res. Bd. Can. 23: 365-392.
- Wydoski, R. and R. Whitney. 1979. Inland fishes of Washington. University of Seattle Press, Seattle, WA.
- Wydoski, R. and R. Whitney. Second edition, revised and expanded. 2003. Inland fishes of Washington. University of Seattle Press, Seattle, WA.
- Yakama Nation. 2000. Yakama Nation recommendations for amendments to the Northwest Power Planning Council Fish and Wildlife Program.
- Yakama Nation, Washington Department of Fisheries, Confederated Tribes of the Colville Indian Reservation, Washington Department of Wildlife (YN et al. 1990). Entiat River subbasin, salmon and steelhead production plan. Northwest Power Planning Council. 74 pp.

## 9 Acronyms and Abbreviations

ACOE	US Army Corps of Engineers
AF	acre feet
AFWP	Agriculture Fish and Wildlife Program
BLM	Bureau of Land Management
BPA	Bonneville Power Administration
BOR	Bureau of Reclamation
BiOP	biological opinion
BRT	biological review team
CAA	Clean Air Act
CBFWA	Columbia Basin Fish and Wildlife Authority
CCCD	Chelan County Conservation District
CCD	County Conservation District
CCP	Columbia Cascade Province
CCRP	Continuous Conservation Reserve Program
cfs	cubic feet per second
Colville Tribes	Confederated Tribes of the Colville Reservation
CP	cover practices
CREP	Conservation Reserve Enhancement Program
CRITFC	Columbia River Inter-Tribal Fish Commission
CRMP	Coordinated Resource Management Plan
CRP	Conservation Reserve Program
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DBH	diameter at breast height
DEIS	Draft Environmental Impact Statement
DOI	US Department of the Interior
DPS	distinct population segment
EA	Environmental Assessment

EDT	Ecosystem Diagnostic & Treatment
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
EQUIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
ESU	Ecologically Sensitive Unit
EWPU	Entiat WRIA Planning Unit
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FCRPS	Federal Columbia River Power System
FIP	Forest Incentive Program
FLIR	forward looking infrared
FLPMA	Federal Land Policy and Management Act
FSA	Farm Services Administration
GAP	Gap Analysis Program
GCFMP	Grand Coulee Fish Management Plan
GCDFMP	Grand Coulee Dan Fish Maintenance Project
gpm	gallons per minute
GIS	Geographic Information System
GMA	Growth Management Act
HGMP	Hatchery Genetic Management Plan
IBIS	Interactive Biological Information System
ICBEMP	Interior Columbia Basin Ecosystem Mgmt. Project
ICBTRT	Interior Columbia Basin Technical Recovery Team
ISG	Independent Scientific Group
ISRP	Independent Scientific Review Panel
LFA	limiting factors analysis
LSC	Landowner Steering Committee
LWD	large woody debris
MCMCP	Mid-Columbia Mainstem Conservation Plan

MPRSA	Marine Protection, Research and Sanctuaries Act
MYS	maximum sustained yield
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NF	National Forest
NFMA	National Forest Management Act
NFN	National Fish Hatchery
NFS	National Forest System
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPCC	Northwest Power and Conservation Council
NPPC	Northwest Power Planning Council
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
PHS	priority habitats and species
PPA	Pollution Prevention Act
PUD	Public Utility District
RD	Ranger District
RM	river mile
RMP	Resource Management Plan
ROD	Record of Decision
RTT	Regional Technical Team
SASSI	Washington State Salmon and Steelhead Stock Inventory
SOR	systems operation review
SRMA	Salmon Recovery Management Act
TAC	Technical Advisory Committee
TMDL	total maximum daily load
TRT	Technical Recovery Team

Upper Columbia RUT	Upper Columbia Recovery Unit Team
USDA	United States Department of Agriculture
USDOE	United States Department of Energy
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOR	visual obstruction readings
WAC	Washington Administrative Code
WDNR	Washington Department of Natural Resources
WCC	Washington Conservation Commission
WDOE	Washington Department of Ecology
WDF	Washington Department of Fisheries
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WDOE	Washington Department of Ecology
WDW	Washington Department of Wildlife
WHIP	Wildlife Habitat Improvement Program
WQI	water quality index
WPA	Watershed Planning Act
WRIA	Water Resource Inventory Area
WRP	Wetlands Reserve Program
Yakama Nation	Confederated Tribes and Bands of the Yakama Nation

## 10 Appendices

Appendix A. Ashley and Stovall. 2004. Entiat Wildlife Assessment. WDFW. Olympia, Washington

Appendix B. Hillman et al. 2004. Monitoring Strategy for the Upper Columbia Basin. BioAnalysts, Inc. Eagle, Idaho

Appendix C. BioAnalysts. April 2004. Effects of Hydroelectric Dams on Viability of Wild Fish.

Appendix D. Summary of Artificial Production in the Entiat Subbasin

Appendix E. Peven et al. 2004. Hatchery Information for Subbasin Planning