

PUBLICATIONS LIST

Western Fisheries Research Center

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Last Update: August 15, 2005

- Fish, F.F. 1933. The chemical disinfection of trout ponds. *Trans. Am. Fish. Soc.* 63:158-163.
- Fish, F.F. 1934. A fungus disease in fishes of the Gulf of Maine. *Parasitology* 26(1):1-16.
- Fish, F.F. 1934. Ulcer disease of trout. *Trans. Am. Fish. Soc.* 64:252-258.
- Fish, F.F. 1935. The microscope in the hatchery. *Prog. Fish-Cult.* 3:1-16.
- Fish, F.F. 1935. The bacterial diseases of fish. *Prog. Fish-Cult.* 5:1-9.
- Fish, F.F. 1935. The protozoan diseases of hatchery fish. *Prog. Fish-Cult.* 6:1-4.
- Fish, F.F. 1935. The Bureau of Fisheries Disease Service. *Prog. Fish-Cult.* 8:9-12.
- Fish, F.F. 1935. A western type of bacterial gill disease. *Trans. Am. Fish. Soc.* 65:85-87.
- Fish, F.F. 1936. Founders of fish culture - European origins. *Prog. Fish-Cult.* 16:8-10.
- Fish, F.F. 1937. Furunculosis in wild trout. *Copeia* 1:37-40. SUPPLY EXHAUSTED.
- Fish, F.F. 1938. Treat-think-and be wary, for tomorrow they may die--some advice on the prevention and treatment of fish diseases. *Prog. Fish-Cult.* 39:1-9.
- Fish, F.F. 1939. Simplified methods for the prolonged treatment of fish diseases. *Trans. Am. Fish. Soc.* 68:178-187.
- Fish, F.F. 1939. Disease prevention in the trout hatchery. *Prog. Fish-Cult.* 43:1-7.
- Fish, F.F. 1939. Notes on *Myxobolus inoratus*, n. sp., a Myxosporidian parasitic in the black bass (*Huro floridana*). *Trans. Am. Fish. Soc.* 68:173-7.
- Fish, F.F. 1939. Observations on *Henneguya salminicola* Ward, a myxosporidian parasitic in Pacific salmon. *J. Parasitol.* 25(2):169-172.
- Fish, F.F., and R.E. Burrows. 1939. Notes on the effect of temperature upon eyed eggs. *Prog.*

Fish-Cult. 45:28-31.

Fish, F.F. 1940. Experiments upon the control of Trichodoniasis of salmonid fishes by the prolonged recirculation of formalin solutions. Trans. Am. Fish. Soc. 69:94-100.

Fish, F.F. 1940. An evaluation of trout culture. Trans. Am. Fish. Soc. 69:85-89.

Fish, F.F. 1940. Formalin for external protozoan parasites. A report on the prevention and control of *Costia necatrix*. Prog. Fish-Cult. 48:1-10.

Fish, F.F. 1940. Formalin treatments pass new tests. Additional notes on the control of ectoparasitic protozoa. Prog. Fish-Cult. 49:31-32.

Fish, F.F., and D.L. McKernan. 1940. Calomel versus carbarsone. Prog. Fish-Cult. 51:26-29.

Fish, F.F. 1940. Notes on *Costia necatrix*. Trans. Am. Fish. Soc. 70:441-445.

Fish, F.F. 1942. The anaesthesia of fish by high carbon-dioxide concentrations. Trans. Am. Fish. Soc. 72:25-29.

Fish, F.F., and R.R. Rucker. 1943. Columnaris as a disease of cold-water fishes. Trans. Am. Fish. Soc. 73:32-36.

Ordal, E.J., and R.R. Rucker. 1944. Pathogenic myxobacteria. Soc. Exp. Biol. Med. 56:15-18.

Fish, F.F. 1947. Disease control in hatchery fish. U.S. Dept. Interior, Fish & Wildlife Service, Fishery Leaflet No. 222, 10 pp.

Fish, F.F. 1948. The return on the blueback salmon to the Columbia River. Sci. Monthly 66(4):283-292.

Fish, F.F., and M.G. Hanavan. 1948. A report upon the Grand Coulee Fish Maintenance Project 1939-1947. U.S. Dept. Interior, Fish & Wildlife Service, Special Scientific Report No. (FISHERIES??) 55, 63 pp.

Rucker, R.R. 1948. New compounds for the control of bacterial gill disease. Prog. Fish-Cult. 10(1):19-22.

Rucker, R.R., and E.M. Tuttle. 1948. Removal of excess nitrogen in a hatchery water supply. Prog. Fish-Cult. 10(2):88-90.

Rucker, R.R. 1949. A streptomycete pathogenic to fish. J. Bacteriol. 58(5):659-664.

Rucker, R.R. 1949. Fact and fiction in spawntaking: Addenda. Prog. Fish-Cult. 11(1):75-77.

- Rucker, R.R., H.E. Johnson, and E.J. Ordal. 1949. An investigation of the bactericidal action and fish toxicity of two homologous series of quaternary ammonium compounds. *J. Bacteriol.* 57(2):225-233.
- Fish, F.F., and R.R. Rucker. 1950. Pollution in the lower Columbia Basin in 1948 with particular reference to the Willamette River. U.S. Dept. Interior, Fish & Wildlife Service, Special Scientific Report, Fisheries No. 30, 22 pp.
- Rucker, R.R., and W.J. Whipple. 1951. Effect of bactericides on steelhead trout fry. *Prog. Fish-Cult.* 13(1):43-44.
- Rucker, R.R., A.F. Bernier, W.J. Whipple, and R.E. Burrows. 1951. Sulfadiazine for kidney disease. *Prog. Fish-Cult.* 13(3):135-137.
- Rucker, R.R., H.E. Johnson, and G.M. Kaydas. 1952. An interim report on gill disease. *Prog. Fish-Cult.* 14(1):10-14.
- Rucker, R.R., and P.V. Gustafson. 1953. An epizootic among rainbow trout. *Prog. Fish-Cult.* 15(4):179-181.
- Rucker, R.R., and K. Hodgeboom. 1953. Observations on gas-bubble disease of fish. *Prog. Fish-Cult.* 15(1):24-26.
- Rucker, R.R., W.J. Whipple, J.R. Parvin, and C.A. Evans. 1953. A contagious disease of salmon, possibly of virus origin. U.S. Dept. Interior, Fish & Wildlife Service, *Fish. Bull.* 54:35-46.
- Rucker, R.R., B.J. Earp, and E.J. Ordal. 1954. Infectious diseases of Pacific salmon. *Trans. Am. Fish. Soc.* 83:297-312.
- Watson, S.W. 1954. Virus diseases of fish. *Trans. Am. Fish. Soc.* 83:331-341.
- Watson, S.W., R.W. Guenther, and R.R. Rucker. 1954. A virus disease of sockeye salmon: interim Report. U.S. Dept. Interior, Fish & Wildlife Service, Special Scientific Report Fisheries No. 138, 33 pp.
- Wood, E.M., W.T. Yasutake, and S.F. Snieszko. 1954. Sulfonamide toxicity in brook trout. *Trans. Am. Fish. Soc.* 84:157-160.
- Stunkard, H.W., and J.R. Uzman. 1955. The killifish, *fundulus heteroclitus*, second intermediate host of the trematode, *Ascocotyle (Phagicola) dimunuta*. *Biol. Bull. (Woods Hole)* 109(3):475-483.
- Wood, E.M., S.F. Snieszko, and W.T. Yasutake. 1955. Infectious pancreatic necrosis in brook trout. *A.M.A. Arch. Pathol.* 60:26-28.

- Wood, E.M., W.T. Yasutake, and W.L. Lehman. 1955. A mycosis-like granuloma of fish. *J. Infect. Dis.* 97:262-267.
- Wood, E.M., and W.T. Yasutake. 1955. Histopathology of fish. I. Techniques and principles. *Prog. Fish-Cult.* 17(3):166-171.
- Gustafson, P.V., and R.R. Rucker. 1956. Studies on an *Ichthyosporidium* infection in fish: transmission and host specificity. U.S. Dept. Interior, Fish and Wildlife Service, Special Scientific Report Fisheries No. 166, 8 pp.
- Rucker, R.R., B.J. Earp, and R.E. Burrows. 1956. Lignasan for bacterial gill disease. *Prog. Fish-Cult.* 18(2):75-77.
- Watson, M.E., R.W. Guenther, and R.D. Royce. 1956. Hematology of healthy and virus-diseased sockeye salmon, *Oncorhynchus nerka*. *Zoologica (NY)* 41(Part 1):27-38.
- Wood, E.M., and W.T. Yasutake. 1956. Histopathologic changes of a virus-like disease of sockeye salmon. *Trans. Am. Microsc. Soc.* 75:85-90.
- Wood, E.M., and W.T. Yasutake. 1956. Ceriod in fish. *Am. J. Pathol.* 32:591-603.
- Wood, E.M., and W.T. Yasutake. 1956. Histopathology of kidney disease in fish. *Am. J. Pathol.* 32:845-857.
- Wood, E.M., and W.T. Yasutake. 1956. Tissue damage in salmonids caused by *Halisidota argentata* Packard. *J. Parasitol.* 42(5):544-546.
- Wood, E.M., and W.T. Yasutake. 1956. Histopathology of fish. II. The salmon-poisoning fluke. *Prog. Fish-Cult.* 18(1):22-25.
- Wood, E.M., and W.T. Yasutake. 1956. Histopathology of fish. III. Peduncle ("cold-water") disease. *Prog. Fish-Cult.* 18(2):58-61.
- Wood, E.M., and W.T. Yasutake. 1956. Histopathology of fish. IV. A granuloma of brook trout. *Prog. Fish-Cult.* 18(3):108-112.
- Rucker, R.R. 1957. Some problems of private trout hatchery operators. *Trans. Am. Fish. Soc.* 87:374-379.
- Snieszko, S.F., E.M. Wood, and W.T. Yasutake. 1957. Infectious pancreatic necrosis in trout. *A.M.A. Arch. Pathol.* 63:229-233.
- Stern, J.A., D. Chakravarti, J.R. Uzmann, and M.N. Hesselholt. 1957. The rapid quantification of anisakine worms in salmon flesh by high temperature peptic digestion.
- Uzmann, J.R., and M.N. Hesselholt. 1957. New host and locality record for *Triaenophorus*

crassus forel (Cestoda: pseudophyllidea). J. Parasitol. 43(2):205.

Uzmann, J.R., and M.N. Hesselholt. 1957. Terratological hermaphroditism in the chum salmon *Oncorhynchus keta* (Walbaum). Prog. Fish-Cult. 20(4):191-192.

Wood, E.M., and W.T. Yasutake. 1957. Histopathology of fish. V. Gill disease. Prog. Fish-Cult. 19(1):7-13.

Wood, E.M., and W.T. Yasutake. 1957. Acute sulfamethazine toxicity in young salmon. Prog. Fish-Cult. 19(2):64-67.

Wood, E.M., W.T. Yasutake, A.N. Woodall, and J.E. Halver. 1957. The nutrition of salmonid fishes. I. Chemical and histological studies of wild and domestic fish. J. Nutr. 61(4):465-478.

Wood, E.M., W.T. Yasutake, A.N. Woodall, and J.E. Halver. 1957. The nutrition of salmonid fishes. II. Studies on production diets. J. Nutr. 61(4):479-488.

Yasutake, W.T., and E.M. Wood. 1957. Some myxosporidia found in Pacific Northwest salmonids. J. Parasitol. 43(6):633-642.

DeLong, D.C., J.E. Halver, and W.T. Yasutake. 1958. A possible cause of "sunburn" in fish. Prog. Fish-Cult. 20(3):111-113.

Parisot, T.J. 1958. Tuberculosis of fish. Bacteriol. Rev. 22(4):240-245.

Ross, A.J., and T.J. Parisot. 1958. Record of the fungus *Ichthyosporidium* Caullery and Mesnil, 1905, in Idaho. J. Parasitol. 44(4):453-454.

Stern, J.A., D. Chakravarti, J.R. Uzmann, and M. Hesselholt. 1958. Rapid counting of nematoda in salmon by peptic digestion. U.S. Department of Interior, Fish and Wildlife Service, Special Scientific Report Fisheries No. 255, pp. 1-5.

Stunkard, H.W., and J.R. Uzmann. 1958. Studies on digenetic Trematodes of the Genera *Gymnophallus* and *Parvatrema*. Biol. Bull. (Woods Hole) 115(2):276-302.

Uzmann, J.R., and H.J. Rayner. 1958. Record of the parasitic copepod *Lernaea cyprinacea* L. in Oregon and Washington fishes. J. Parasitol. 44(4):452-453.

Uzmann, J.R., R.A. Lander, and M.N. Hesselholt. 1958. Parasitological methods for identification and abundance estimates of downstream migrant races of salmon. Proc. Eighth Alaska Sci. Conf. (Abstract).

Guenther, R.W., S.W. Watson, and R.R. Rucker with addendum by A.J. Ross and R.R. Rucker. 1959. Etiology of sockeye salmon "virus" disease. U.S. Department of Interior, Fish and Wildlife Service, Special Scientific Report Fisheries No. 296, 10 pp.

- Klontz, G.W. 1959. Some serological, cytological and histopathological aspects of the immune response in rainbow trout (*Salmo gairdneri* Walbaum). Master's Thesis.
- Mazuranich, J.J., and W.E. Nielson. 1959. White-spot disease of salmon fry. *Prog. Fish-Cult.* 21(4):172-176.
- Nielson, W.E., and J.J. Mazuranich. 1959. Dry diets for chinook salmon. *Prog. Fish-Cult.* 21(2):86-88.
- Parisot, T.J., and J.W. Wood. 1959. Fish mycobacteriosis (Tuberculosis). U.S. Department of Interior, Fish and Wildlife Service, Fisheries Leaflet No. 494, 3 pp.
- Ross, A.J., and F.P. Brancato. 1959. *Mycobacterium fortuitum* Cruz from the tropical fish *Hyphessobrycon innesi*. *J. Bacteriol.* 78(3):392-395.
- Ross, A.J., B.J. Earp, and J.W. Wood. 1959. Mycobacterial infections in adult salmon and steelhead trout returning to the Columbia River Basin and other areas in 1957. U.S. Department of Interior, Fish and Wildlife Service, Special Scientific Report Fisheries No. 332, 34 pp.
- Rucker, R.R. 1959. *Vibrio* infections among marine and fresh-water fish. *Prog. Fish-Cult.* 21(1):22-25.
- Stunkard, H.W., and J.R. Uzzmann. 1959. The life-cycle of the digenetic trematode, *Proctoeces maculatus* (Looss, 1901) Odhner, 1911 (Syn. *P. rubtenuis* [Linton, 1907] Hanson, 1950), and description of *Cerceria adranocerca* n. sp. *Biol. Bull. (Woods Hole)* 116(1):184-193.
- Klontz, G.W., G.J. Ridgway, and G.P. Wilson. 1960. An illuminator for observing and photographing precipitin reactions in agar. *J. Biol. Photogr. Assoc.* 28:11-14.
- Novotny, A.J., and J.R. Uzzmann. 1960. A statistical analysis of the distribution of a larval Nematode (*Anisakis* sp.) in the musculature of chum salmon (*Oncorhynchus keta* - Walbaum). *Exp. Parasitol.* 10(2):245-262.
- Parisot, T.J., and A.H. Decker. 1960. A comparative study of the causative agent of a mycobacterial disease of salmonid fishes. I. A comparison of the staining characteristics of the fish disease with human tuberculosis in sections stained by the Fite-Faraco and Ziehl-Neelsen methods. *Am. Rev. Respir. Dis.* 81(1):60-67.
- Parisot, T.J., and E.M. Wood. 1960. A comparative study of the causative agent of a mycobacterial disease of salmonoid fishes. II. A description of the histopathology of the disease in chinook salmon (*Oncorhynchus tshawytscha*) and a comparison of the staining characteristics of the fish disease with leprosy and human tuberculosis. *Am. Rev. Respir. Dis.* 82(2):212-222.

- Ross, A.J. 1960. *Mycobacterium salmoniphilum* sp. nov. from salmonoid fishes. Am. Rev. Respir. Dis. 81(2):241-250.
- Ross, A.J., and R.R. Rucker. 1960. A "virus" disease of chinook salmon. U.S. Department of Interior, Bureau Sport Fisheries and Wildlife, Fisheries Leaflet No. 497, 4 pp.
- Ross, A.J., J. Pelnar, and R.R. Rucker. 1960. A virus-like disease of chinook salmon. Trans. Am. Fish. Soc. 89(2):160-163.
- Ross, A.J., P.R. Nordstrom, J.E. Bailey, and J.H. Heaton. 1960. A bacterial disease of yellow perch (*Perca flavescens*). Trans. Am. Fish. Soc. 89(3):310-312.
- Rucker, R.R., J.F. Conrad, and C.W. Dickeson. 1960. Ovarian fluid: its role in fertilization. Prog. Fish-Cult. 22(2):77-78.
- Wood, E.M., W.T. Yasutake, J.E. Halver, and A.N. Woodall. 1960. Chemical and histological studies of wild and hatchery salmon in fresh water. Trans. Am. Fish Soc. 89(3):301-307.
- Ridgway, G.J., and G.W. Klontz. 1961. Blood types in Pacific salmon. Int. North Pac. Fish. Comm. Bull. 5, 9 pp.
- Rucker, R.R. 1961. The use of merthiolate on green eggs of the chinook salmon. Prog. Fish-Cult. 23(3):138-141.
- Rucker, R.R., W.T. Yasutake, and H. Wolf. 1961. Trout hepatoma--a preliminary report. Prog. Fish-Cult. 23(1):3-7.
- Stern, J.A., D. Chakravarti, J.R. Uzman, and M.N. Hesselholt. 1961. Rapid counting of nematoda in salmon by peptic digestion. Int. North Pac. Fish. Comm. Bull. 3, 4 pp.
- Yasutake, W.T., D.R. Buhler, and W.E. Shanks. 1961. Chemotherapy of hexamitiasis in fish. J. Parasitol. 47(1):81-86.
- Parisot, T.J., and J. Pelnar. 1962. An interim report on Sacramento River chinook disease: a virus-like disease of chinook salmon. Prog. Fish-Cult. 24(2):51-55.
- Ridgway, G.J., G.W. Klontz, and C. Matsumoto. 1962. Intraspecific differences in serum antigens of red salmon demonstrated by immunochemical methods. INPFC Doc. No. 396, Int. North Pac. Fish. Comm. Bull. 8, 13 pp.
- Ross, A.J. 1962. Isolation of a pigment-producing strain of *Aeromonas liquefaciens* from silver salmon (*Oncorhynchus kisutch*). J. Bacteriol. 84(3):590-591.
- Ross, A.J., and H.E. Johnson. 1962. Studies of transmission of mycobacterial infections in chinook salmon. Prog. Fish-Cult. 24(4):147-149.

- Stunkard, H.W., and J.R. Uzmann. 1962. The life-cycle of the digenetic Trematode *Stephanoprosia clenticulata*. J. Parasitol. 48:23.
- McGregor, E.A. 1963. Publications on fish parasites and diseases, 330 B.C.-A.D. 1923. Special Scientific Report Fisheries No. 474. U.S. Department of Interior Fish and Wildlife Service.
- Okey, R.W., R.L. Cohen, L.E. Monteith, D.D. Chapman, C.M. Proctor, and G.A. Wedemeyer. 1963. Growth and oxidation kinetics in mixed microbial systems as a function of oxidation-reduction potential. Devel. Ind. Micro. 4:223-234.
- Parisot, T.J. 1963. Sacramento River chinook disease (SRCD). U.S. Department Interior, Bureau Sport Fisheries and Wildlife, Fisheries Leaflet No. 497, 2 pp.
- Parisot, T.J., W.T. Yasutake, and V. Bressler. 1963. A new geographic and host record for infectious pancreatic necrosis. Trans. Am. Fish. Soc. 92(1):63-66.
- Ross, A.J. 1963. Mycobacteria in adult salmonid fishes returning to national fish hatcheries in Washington, Oregon and California in 1958-59. U.S. Department of Interior, Fish and Wildlife Service, Special Scientific Report Fisheries No. 462, 5 pp.
- Ross, A.J., W.T. Yasutake, and G.R. White. 1963. Hermaphroditism in rainbow trout. Trans. Am. Fish. Soc. 92(3):313-315.
- Rucker, R.R. 1963. Status of fish diseases and relation to production. Pages 98-101 in Report of Second Governor's Conference on Pacific Salmon. State of Washington.
- Rucker, R.R., W.G. Taylor, and D.P. Toney. 1963. Formalin in the hatchery. Prog. Fish-Cult. 25(4):203-207.
- Uzmann, J.R., and J.W. Jesse. 1963. The *Hexamita (Octomitus)* problem: a preliminary report. Prog. Fish-Cult. 25(3):141-143.
- Uzmann, J.R., and S.H. Hayduk. 1963. *In vitro* culture of the flagellate protozoan *Hexamita salmonis*. Science 140(3564):290-292.
- Wedemeyer, G.A., and A.M. Dollar. 1963. Co-oxidation of the sulfur-containing amino acids in an autoxidizing lipid system. J. Food Sci. 28:537-540.
- Bullock, G.L., and A.J. Ross. 1964. Crystal formation in furunculosis agar. Prog. Fish-Cult. 26(1):25-26.
- Uzmann, J.R., and S.H. Hayduk. 1964. Larval *Echinochasmus* (Trematoda: Echinostomatidae) in rainbow trout, *Salmo gairdneri*. J. Parasitol. 50(4):586.
- Wedemeyer, G.A., and A.M. Dollar. 1964. The role of free and bound water in irradiation

preservation: free radical damage as a function of the physical state of water. J. Food Sci. 29:525-530.

Parisot, T.J., W.T. Yasutake, and G.W. Klontz. 1965. Virus diseases of the salmonidae in the western United States. I. Etiology and epizootiology. Ann. N.Y. Acad. Sci. 126(1):502-519.

Yasutake, W.T., T.J. Parisot, and G.W. Klontz. 1965. Virus diseases of salmonidae in the western United States. II. Aspects of pathogenesis Ann. N.Y. Acad. Sci. 126(1):520-530.

Klontz, G.W., W.T. Yasutake, and T.J. Parisot. 1965. Virus diseases of the salmonidae in the western United States. III. Immunopathological aspects. Ann. N.Y. Acad. Sci. 126(1):531-542.

Parisot, T.J. 1965. Infectious pancreatic necrosis the trout farmers' dilemma. U.S. Trout News, Jan.-Feb. p. 6.

Post, G. 1965. A review of advances in the study of diseases of fish: 1954-64. Prog. Fish-Cult. 27(1):3-12.

Ross, A.J., and G.W. Klontz. 1965. Oral immunization of rainbow trout (*Salmo gairdneri*) against an etiologic agent of "redmouth disease." J. Fish. Res. Board Can. 22(3):713-719.

Uzmann, J.R., G.J. Paulik, and S.H. Hayduk. 1965. Experimental hexamitiasis in juvenile coho salmon (*Oncorhynchus kisutch*) and steelhead trout (*Salmo gairdneri*). Trans. Am. Fish. Soc. 94(1):53-61.

Conroy, D.A., I.E. Valdez, and A.J. Ross. 1966. A note on the carbohydrate reactions of *Mycobacterium anabanti*. In Spanish. Microbiol. Exp. 19:115-117.

Klontz, G.W., W.T. Yasutake, and A.J. Ross. 1966. Bacterial diseases of the salmonidae in the western United States: pathogenesis of furunculosis of rainbow trout. Am. J. Vet. Res. 27(120):1455-1460.

Ross, A.J., R.R. Rucker, and W.H. Ewing. 1966. Description of a bacterium associated with redmouth disease of rainbow trout (*Salmo gairdneri*). Can. J. Microbiol. 12:763-770.

Rucker, R.R. 1966. Redmouth disease of rainbow trout (*Salmo gairdneri*). Bull. Off. Int. Epizoot. 65(5-6):825-830.

Uzmann, J.R., and J. Douglas. 1966. *Clinostomum marginatum* in steelhead trout (*Salmo gairdneri*) and cutthroat trout (*Salmo clarki*) in a western Washington lake. Trans. Am. Fish. Soc. 95(1):35-38.

Wedemeyer, G. 1966. Uptake of 2, 4-Dichlorophenoxyacetic acid by *Pseudomonas fluorescens*. Appl. Microbiol. 14(4):486-491.

- Wedemeyer, G.A. 1966. Dechlorination of DDT by *Aerobacter aerogenes*. Science 152:647.
- Amend, D.F., J.L. Fryer, and K.S. Pilcher. 1967. A comparison of Oregon pellet and fish-meat diets for administration of sulfamethazine to chinook salmon. Fish. Comm. of Oregon 13(1):20-24.
- Parisot, T.J. 1967. A closed recirculated sea-water system. Prog. Fish-Cult. 29(3):133-139.
- Wedemeyer, G.A. 1967. Biodegradation of ichlorodiphenyltrichloroethane: intermediates in dichlorodiphenylacetic acid metabolism by *Aerobacter aerogenes*. Appl. Microbiol. 15(6):1494-1495.
- Yasutake, W.T., and R.R. Rucker. 1967. Nutritionally induced hepatomagenesis of rainbow trout (*Salmo gairdneri*). Trout Hepatoma Research Conference Papers, U.S. Dept. Interior, Bur. Sport Fisheries & Wildlife, Research Report 20, pp. 39-47.
- Amend, D.F., and J.L. Fryer. 1968. The administration of sulfonamide drugs to adult salmon. Prog. Fish-Cult. 30(3):168-172.
- Keyes, M.C., F.W. Crews, and A.J. Ross. 1968. *Pasteurella multocida* isolated from a California sea lion (*Zalophus californianus*). J. Am. Vet. Med. Assoc. 153(7):803-804.
- Klontz, G.W., 1968. Control of fish diseases. Am. Fishes and U.S. Trout News 13(4):21-22.
- Klontz, G.W., W.T. Yasutake, J.E. Wales, L.M. Ashley, and C. Smith. 1968. The application of hematological techniques to fishery research. 17 pp. Unpublished report.
- Klontz, G.W., and D.P. Anderson. 1968. Fluorescent antibody studies of isolates of *Aeromonas salmonicida*. Bull. Off. Int. Epiz. 69(7-8):1149-1157.
- Ross, A.J., J.E. Martin, and V. Bressler. 1968. *Vibrio anguillarum* from an epizootic in rainbow trout (*Salmo gairdneri*) in the USA. Bull. Off. Int. Epizoot. 69(7-8):1139-1148.
- Rucker, R.R. 1968. Effects of mercurial compounds on fish and humans. Bull. Off. Int. Epizoot. 69(9-10):1431-1437.
- Sinnhuber, R.O., J.H. Wales, J.L. Ayers, R.H. Engebrecht, and D.L. Amend. 1968. Dietary factors and hepatoma in rainbow trout. J. Natl. Cancer Inst. 41(3):711-718.
- Wedemeyer, G. 1968. Partial hydrolysis of dieldrin by *Aerobacter aerogenes*. Appl. Microbiol. 16(4):661-662.
- Wedemeyer, G. 1968. Role of intestinal microflora in the degradation of DDT by rainbow trout (*Salmo gairdneri*). Life Sci. 7:219-222.
- Wedemeyer, G.A., A.J. Ross, and L. Smith. 1968. Some metabolic effects of bacterial

endotoxins in salmonid fishes. J. Fish. Res. Board Can. 26(1):115-122.

Wedemeyer, G.A. 1968. Uptake and distribution of Zn⁶⁵ in the coho salmon egg (*Oncorhynchus kisutch*). Comp. Biochem. Physiol. 26:271-279.

Yasutake, W.T., and C.J. Rasmussen. 1968. Histopathogenesis of experimentally induced viral hemorrhagic septicemia in fingerling rainbow trout (*Salmo gairdneri*). Bull. Off. Int. Epizoot. 69(7-8):977-984.

Amend, D.F. 1969. Oxytetracycline efficacy as treatment for furunculosis in coho salmon. U.S. Department of Interior, Fish and Wildlife Service, Technical Paper of the Bureau of Sport Fisheries and Wildlife No. 36, 6 pp.

Amend, D.F., W.T. Yasutake, and R. Morgan. 1969. Some factors influencing susceptibility of rainbow trout to the acute toxicity of an ethyl mercury phosphate formulation (Timsan). Trans. Am. Fish. Soc. 98(3):419-425.

Amend, D.F., J.L. Fryer, and K.S. Pilcher. 1969. Studies of certain sulfonamide drugs for use in juvenile chinook salmon. Prog. Fish-Cult. 31(4):202-206.

Amend, D.F., W.T. Yasutake, and R.W. Mead. 1969. A hematopoietic virus disease of rainbow trout and sockeye salmon. Trans. Am. Fish. Soc. 98(4):796-804.

Rucker, R.R., and D.F. Amend. 1969. Absorption and retention of organic mercurials by rainbow trout and chinook and sockeye salmon. Prog. Fish-Cult. 31(4):197-201.

Snieszko, S.F., and A.J. Ross. 1969. Columnaris disease of fishes. U.S. Department of Interior, Bureau of Sport Fisheries and Wildlife, Division of Fishery Research, Fish Disease Leaflet 16, 4 pp. (Formerly Fishery Leaflet No. 461, 1958)

Spinelli, J., A.M. Dollar, G.A. Wedemeyer, and E.C. Gallagher. 1969. Irradiation of fish fillets: relation of vapor phase reactions to storage quality. Int. J. Appl. Radiat. Isot. 20:167-175.

Wedemeyer, G. 1969. Stress-induced ascorbic acid depletion and cortisol production in two salmonid fishes. Comp. Biochem. Physiol. 29(3):1247-1251.

Wedemeyer, G. 1969. Pituitary activation by bacterial endotoxins in the rainbow trout (*Salmo gairdneri*). J. Bacteriol. 100(1):542-543.

Wedemeyer, G., A.J. Ross, and L. Smith. 1969. Some metabolic effects of bacterial endotoxins in salmonid fishes. J. Fish. Res. Board Can. 26(1):115-122.

Amend, D.F. 1970. Myxobacterial infections of salmonids: prevention and treatment. Diseases of Fishes & Shellfishes, Am. Fish. Soc., Special Publication No. 5, pp. 258-265.

- Amend, D.F. 1970. Approved procedure for determining absence of infectious hematopoietic necrosis (IHN) in salmonid fishes. Department of Interior, Bureau of Sport Fisheries and Wildlife, Division of Fishery Research, FDL-31, 4 pp.
- Amend, D.F. 1970. Retention of mercury by salmon. *Prog. Fish-Cult.* 32(4):192-194.
- Amend, D.F. 1970. Control of infectious hematopoietic necrosis virus disease by elevating the water temperature. *J. Fish. Res. Board Can.* 27(2):265-270.
- Amend, D.F. 1970. What threat is IHN disease to trout industry? *Am. Fish. and U.S. Trout News* 15:18-30.
- Amend, D.F., and V.C. Chambers. 1970. Morphology of certain viruses of salmonid fishes. I. In vitro studies of some viruses causing hematopoietic necrosis. *J. Fish. Res. Board Can.* 27(7):1285-1293.
- Amend, D.F., and V.C. Chambers. 1970. Morphology of certain viruses of salmonid fishes. II. In vivo studies of infectious hematopoietic necrosis virus. *J. Fish. Res. Board Can.* 27(8):1385-1388.
- Amend, D.F., and A.J. Ross. 1970. Experimental control of columnaris disease with a new nitrofurantoin drug, P-7138. *Prog. Fish-Cult.* 32(1):19-25.
- Amend, D.F., and G.A. Wedemeyer. 1970. Approved procedure for determining absence of infectious pancreatic necrosis (IPN) virus in certain fish and fish products. U.S. Department of Interior, Bureau Sport Fisheries and Wildlife, Division of Fishery Research. FDL-27. 4 pp.
- Anderson, D.P., and G.W. Klontz. 1970. Precipitating antibody against *Aeromonas salmonicida* in serums of inbred albino rainbow trout (*Salmo gairdneri*). *J. Fish Res. Board Can.* 27(8):1389-1393.
- Klontz, G.W., and D.P. Anderson. 1970. Oral immunization of salmonids: a review. *Diseases of Fishes and Shellfishes*, Am. Fish. Soc., Special Publication No. 5. pp. 16-20.
- Ross, A.J. 1970. Mycobacteriosis among Pacific salmonid fishes. *Diseases of Fishes and Shellfishes*, Am. Fish. Soc., Special Publication No. 5. pp. 279-283.
- Ross, A.J. 1970. Vibriosis in fish. U.S. Dept. Interior, Bureau Sport Fisheries & Wildlife, Division of Fishery Research, FDL-29, 3 pp.
- Rucker, R.R., W.T. Yasutake, and G.A. Wedemeyer. 1970. An obscure disease of rainbow trout. *Prog. Fish-Cult.* 32(1):3-8.
- Wedemeyer, G.A. 1970. The role of stress in the disease resistance of fishes. *Diseases of Fishes and Shellfishes*, Am. Fish. Soc., Special Publication No. 5. pp. 30-35.

Wedemeyer, G.A. 1970. Stress of anesthesia with M.S. 222 and benzocaine in rainbow trout (*Salmo gairdneri*). J. Fish. Res. Board Can. 27(5):909-914.

Wedemeyer, G.A., and K. Chatterton. 1970. Some blood chemistry values for the rainbow trout (*Salmo gairdneri*). J. Fish. Res. Board Can. 27(6):1162-1164.

Yasutake, W.T. 1970. Comparative histopathology of epizootic salmonid virus diseases. Diseases of Fishes and Shellfishes, Am. Fish. Soc., Special Publication No. 5. pp. 341-350.

Yasutake, W.T., and H. Wolf. 1970. Occurrence of whirling disease of trout in western United States. J. Fish. Res. Board Can. 27(5):955-956.

Yasutake, W.T., and H. Wolf. 1970. *Myxosoma cerebralis* infection of trout in the western United States. J. Parasitol. 56(4):375-376 (Abstract).

Amend, D.F. 1971. How fish are certified free of disease. The American Fish Farmer & World Aquaculture News, October, pp. 5-8.

Amend, D.F. 1971. Salmon and trout disease research. The Scalpel (South Puget Sound Vet. Med. Assoc., State of Washington). 14(1):5-6.

Amend, D.F. 1971. Methods for disinfecting trout or salmon eggs with wescodyne. 3 pp.

Davis, P.W., and G.A. Wedemeyer. 1971. Inhibition by organochlorine pesticides of Na⁺, K⁺-activated adenosinetriphosphatase activity in the brain of rainbow trout. Proc. West. Pharmacol. Soc. 14:47. (Abstract).

Davis, P.W., and G.A. Wedemeyer. 1971. Na⁺, K⁺ - activated ATPase inhibition in rainbow trout: a site for organochlorine pesticide toxicity? Comp. Biochem. Physiol. 40B:823-827.

Herman, R.L. 1971. Visceral granuloma and nephrocalcinosis. FDL-32.

Holway, J.E., and G.W. Klontz. 1971. A procedure for testing the antigenicity of vaccines for the immunization of fish against furunculosis. Prog. Fish-Cult. 33(1):42-44.

Keyes, M.C., E.J. Barron, and A.J. Ross. 1971. Urine of the northern fur seal (*Callorhinus ursinus*): analyses of 11 pelagic samples. J. Am. Vet. Med. Assoc. 159(5):567-570.

Wedemeyer, G.A. 1971. The stress of formalin treatments in rainbow trout (*Salmo gairdneri*) and coho salmon (*Oncorhynchus kisutch*). J. Fish. Res. Board Can. 28(4):1899-1904.

Wedemeyer, G.A., and K. Chatterton. 1971. Some blood chemistry values for the juvenile coho salmon (*Oncorhynchus kisutch*). J. Fish. Res. Board Can. 28(4):606-608.

Amend, D.F., and J.P. Pietsch. 1972. An improved method for isolating viruses from asymptomatic carrier fish. Trans. Am. Fish. Soc. 101(2):267-269.

Amend, D.F., and J.P. Pietsch. 1972. Virucidal activity of two iodophors to salmonid viruses. *J. Fish. Res. Board of Can.* 29(1):61-65.

Amend, D.F., and J.W. Wood. 1972. Survey for infectious hematopoietic necrosis (IHN) virus in Washington salmon. *Prog. Fish-Cult.* 34(3):143-147.

Amend, D.F., W.T. Yasutake, J.L. Fryer, K.S. Pilcher, and W.H. Wingfield. 1972. Epizootiology of infectious hematopoietic necrosis virus in salmonids. Pages 81-98 in W.A. Dill (ed.), *Report of the Symposium on the Major Communicable Diseases in Europe and Their Control.* Food and Agriculture Organization of U.N. Rome, Italy.

Anderson, D.P. 1972. Virulence and persistence of rough and smooth forms of *Aeromonas salmonicida* inoculated into coho salmon (*Oncorhynchus kisutch*). *J. Fish. Res. Board Can.* 29(2):204-206.

Anderson, D.P. 1972. Investigations of the lipopolysaccharide fractions from *Aeromonas salmonicida* smooth and rough forms. Pages 175-179 W.A. Dill (ed.), *In: Symposium on the Major Communicable Diseases in Europe and Their Control.* EIFAC, FAO Technical Paper 17, Supp. 2.

Anderson, D.P. 1972. Comparative study of Hagerman redmouth disease oral bacterins. *Prog. Fish-Cult.* 34(4):226-228.

Davis, P.W., J.M. Friedhoff, and G.A. Wedemeyer. 1972. Organochlorine insecticide, herbicide and polychlorinated biphenyl (PCB) inhibition of NaK-ATPase in rainbow trout. *Bull. Environ. Contam. Toxicol.* 8(2):69-72.

Ross, A.J. 1972. *In vitro* studies with nifurpirinol (P-7138) and bacterial fish pathogens. *Prog. Fish-Cult.* 34(1):18-20.

Ross, A.J., and C.A. Smith. 1972. Effect of two iodophors on bacterial and fungal fish pathogens. *J. Fish. Res. Board Can.* 29(9):1359-1361.

Rucker, R.R. 1972. Gas-bubble disease of salmonids: a critical review. Department of Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Technical Paper No. 58. 11 pp.

Rucker, R.R. 1972. Fish disease therapy: past, present and future. *Progress in Fishery and Food Science*, University of Washington. College of Fisheries, 50th Anniversary Celebration Symposium, University of Washington Publications in Fisheries--New Series, Vol. V. pp. 135-140.

Wedemeyer, G.A. 1972. Environmental contamination by persistent pesticides. *Progress in Fishery and Food Science*, University of Washington. College of Fisheries, 50th Anniversary Celebration Symposium, University of Washington Publications in Fisheries--New Series, Vol.

V. pp. 69-75.

Wedemeyer, G.A. 1972. Some physiological consequences of handling stress in the juvenile coho salmon (*Oncorhynchus kisutch*) and steelhead trout (*Salmo gairdneri*). J. Fish. Res. Board Can. 29(12):1780-1783.

Yasutake, W.T., and D.F. Amend. 1972. Some aspects of pathogenesis of infectious hematopoietic necrosis (IHN). J. Fish Biol. 4(2):261-264.

Amend, D.F. 1973. Pathophysiology of IHN virus in rainbow trout. Ph.D. dissertation, University of Washington. 102 pp.

Amend, D.F., W.T. Yasutake, J.L. Fryer, K.S. Pilcher and W.H. Wingfield. 1973. Epizootiology of infectious hematopoietic necrosis virus in salmonids. Pages 80-98 in A. Dill (ed.). Symposium on the major communicable fish diseases in Europe and their control. European Inland Fisheries Advisory Commission, Food and Agriculture Organization of the United Nations, FAO Technical Paper 17, Supp. 2. 225 pp.

Crouch, D.E. 1973. Preparing fish disease specimens for laboratory examination.

Crouch, D.E., W.T. Yasutake, and R.R. Rucker. 1973. Open-jaw syndrome in chinook salmon (*Oncorhynchus tshawytscha*) at a hatchery. J. Fish. Res. Board Can. 30(12):1890-1892.

Ossiander, F.J., and G.A. Wedemeyer. 1973. Computer program for sample sizes required to determine disease incidence in fish populations. J. Fish. Res. Board Can. 30(9):1383-1384.

Rucker, R.R. 1973. Effect of sonic boom on fish. Department of Transportation, Federal Aviation Administration., Systems Research and Development Service, Washington, D.C., Report No. FAA-RD-73-29. 67 pp.

Wedemeyer, G.A. 1973. Some physiological aspects of sublethal heat stress in the juvenile steelhead trout (*Salmo gairdneri*) and coho salmon (*Oncorhynchus kisutch*). J. Fish. Res. Board Can. 30(6):831-834.

Ross, A.J., and W.T. Yasutake. 1973. *Scolecobasidium humicola*, a fungal pathogen of fish. J. Fish. Res. Board Can. 30(7):994-995.

Wedemeyer, G.A., and A.J. Ross. 1973. Nutritional factors in the biochemical pathology of corynebacterial kidney disease in the coho salmon (*Oncorhynchus kisutch*). J. Fish. Res. Board Can. 30(2):296-298.

Amend, D.F. 1974. Comparative toxicity of two iodophores to rainbow trout eggs. Trans. Am. Fish. Soc. 103(1):73-78.

Amend, D.F. 1974. Diagnostic and inspection procedures for viral hemorrhagic septicemia.

Amend, D.F. 1974. Diagnostic and inspection procedures for IHN virus.

Amend, D.F. 1974. Infectious hematopoietic necrosis (IHN) virus disease. U.S. Department of Interior, Fish and Wildlife Service, Division of Cultural Methods Research, FDL-39, 6 pp. (Supercedes FDL-14 and FDL-30).

Amend, D.F., and L. Smith. 1974. Pathophysiology of infectious hematopoietic necrosis virus disease in rainbow trout (*Salmo gairdneri*): early changes in blood and aspects of the immune response after injection of IHN virus. J. Fish. Res. Board Can. 31(8):1371-1378.

Anderson, D.P. 1974. Fish Immunology, chapters: 1) Immunology and the study of fish diseases. 2) The fishes mechanisms of protections against disease. 3) Examples of the types of immune responses found in representative fish groups. 4) Techniques used in immunology of fishes. 5) Specific diseases in fishes, diagnosis and prevention of diseases by immunological techniques. Part of a series of books: S.F. Snieszko and H.R. Axelrod (ed.), Dis. of Fishes. T.F.H. Inc. Pub., Neptune, NJ.

Anderson, D.P., and J.R. Nelson. 1974. Comparison of protection in rainbow trout (*Salmo gairdneri*) inoculated with and fed Hagerman redmouth bacterins. J. Fish. Res. Board Can. 31(2):214-216.

Ross, A.J., and R.J. Toth. 1974. Lactobacillus--a new fish pathogen? Prog. Fish-Cult. 36(4):191.

Ross, A.J., and C.A. Smith. 1974. Effect of temperature on survival of *Aeromonas liquefaciens*, *Aeromonas salmonicida*, *Chondrococcus columnaris*, and *Pseudomonas fluorescens*. Prog. Fish-Cult. 36(3):51-52.

Rucker, R.R., and P.M. Kangas. 1974. Effect of nitrogen supersaturated water on coho and chinook salmon. Prog. Fish-Cult. 36(3):152-156.

Wedemeyer, G.A., and W.T. Yasutake. 1974. The stress of formalin treatment in juvenile spring chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*Salmo gairdneri*). J. Fish. Res. Board Can. 31(2):179-184.

Wedemeyer, G.A., and J.W. Wood. 1974. Stress as a predisposing factor in fish diseases. U.S. Department of the Interior, Fish and Wildlife Service, FDL-38, 8 pp.

Adams, B.L., W.S. Zaugg, and L.R. McLain. 1975. Inhibition of salt water survival and Na-K-ATPase elevation in steelhead trout (*Salmo gairdneri*) by moderate water temperatures. Trans. Am. Fish. Soc. 104(4):766-769.

Amend, D.F. 1975. Detection and transmission of infectious hematopoietic necrosis virus in rainbow trout. J. Wildl. Dis. 11:471-478.

Amend, D.F., and L. Smith. 1975. Pathophysiology of infectious hematopoietic necrosis virus

- disease in rainbow trout (*Salmo gairdneri*): hematological and blood chemical changes in moribund fish. *Infect. Immun.* 11(1):171-179.
- Hendricks, J.D., and S.L. Leek. 1975. Kidney disease postorbital lesions in spring chinook salmon (*Oncorhynchus tshawytscha*). *Trans. Am. Fish. Soc.* 104(4):805-807.
- Ross, A.J., and W.T. Yasutake, and S. Leek. 1975. *Phoma herbarum*, a fungal plant saprophyte, as a fish pathogen. *J. Fish. Res. Board Can.* 32(9):1648-1652.
- Rucker, R.R. 1975. Excess nitrogen gas in water not a cause of coagulated yolk disease in chinook salmon. *Prog. Fish-Cult.* 37(2):101-102.
- Rucker, R.R. 1975. Gas bubble disease: mortalities of coho salmon, *Oncorhynchus kisutch*, in water with constant total gas pressure and different oxygen-nitrogen ratios. *Fish. Bull.* 73(4):915-918.
- Wedemeyer, G.A., and N.C. Nelson. 1975. Statistical methods for estimating normal blood chemistry ranges and variance in rainbow trout (*Salmo gairdneri*), Shasta strain. *J. Fish. Res. Board Can.* 32(4):551-554.
- Yasutake, W.T. 1975. Fish viral diseases: clinical, histopathological, and comparative aspects. Pages 247-271 in W.E. Ribelin and G. Migaki (eds.) *The Pathology of Fishes*. University of Wisconsin Press.
- Amend, D.F. 1976. Prevention and control of viral diseases of salmonids. *J. Fish. Res. Board Can.* 33(4), Part 2):1059-1066.
- Hoffman, G.L. 1976. Parasites of freshwater fishes. IV. Miscellaneous. The anchor parasite (*Lernaea elegans*) and related species. FDL-46. 8 pp.
- Wedemeyer, G.A. 1976. Physiological response of juvenile coho salmon (*Oncorhynchus kisutch*) and rainbow trout (*Salmo gairdneri*) to handling and crowding stress in intensive fish culture. *J. Fish. Res. Board Can.* 33(12):2699-2702.
- Wedemeyer, G.A., F.P. Meyer, and L. Smith. 1976. *Environmental stress and fish diseases*. T.F.H. Publications Press, Neptune City, New Jersey. 200 pp.
- Wydoski, R.S., G.A. Wedemeyer, and N.C. Nelson. 1976. Physiological response to hooding stress in hatchery and wild rainbow trout (*Salmo gairdneri*). *Trans. Am. Fish. Soc.* 105(5):601-606.
- Wydoski, R.S., and G.A. Wedemeyer. 1976. Problems in the physiological monitoring of wild fish populations. *Proc. Annu. Conf. West. Assoc. Game Fish. Comm.* 56:200-214.
- Zaugg, W.S., and L.R. McLain. 1976. Influence of water temperature on gill sodium, potassium-stimulated ATPase activity in juvenile coho salmon (*Oncorhynchus kisutch*).

Comp. Biochem. Physiol. 54A:419-421.

Antipa, R., and D.F. Amend. 1977. Immunization of Pacific salmon: comparison of intraperitoneal injection and hyperosmotic infiltration of *Vibrio anhuillarum* and *Aeromonas salmonicida* bacterins. J. Fish. Res. Board Can. 34:203-208.

Croy, T.R., and D.F. Amend. 1977. Immunization of sockeye salmon (*Oncorhynchus nerka*) against vibriosis using the hyperosmotic infiltration technique. Aquaculture 12:317-325.

McIntyre, J.D., and A.K. Johnson. 1977. Relative yield of two transferrin phenotypes in coho salmon. Prog. Fish-Cult. 39(4):175-177.

Wedemeyer, G.A., and W.T. Yasutake. 1977. Clinical methods for the assessment of the effects of environmental stress on fish health. U.S. Department of Interior, Fish and Wildlife Service, Technical Paper 89, 18 pp.

Wedemeyer, G.A., and N.C. Nelson. 1977. Survival of two bacterial fish pathogens (*Aeromonas salmonicida* and the enteric redmouth bacterium) in ozonated, chlorinated, and untreated waters. J. Fish. Res. Board Can. 34(3):429-432.

Wedemeyer, G.A. 1977. Environmental requirements for fish health. Pages 41-55 in D. Amend, and J. Fryer (eds.) Proc. Int. Symp. Dis. of Cultured Salmonids, Seattle, WA.

Bouck, G.R., M.A. Cairns, and A.R. Christian. 1978. Effect of capture stress on plasma enzyme activities in rainbow trout (*Salmo gairdneri*). J. Fish. Res. Board Can. 35(11):1485-1488.

Elliott, D.G., and D.F. Amend. 1978. Efficacy of certain disinfectants against infectious pancreatic necrosis virus. J. Fish Biol. 12:277-286.

Ewing, W.H., A.J. Ross, D.J. Brenner, and G.R. Fanning. 1978. *Yersinia ruckeri* sp. nov., the redmouth (RM) bacterium. International Journal of Systematic Bacteriology 28(1):37-44.

Gould, R.W., P.J. O'Leary, R.L. Garrison, J.S. Rohovec, and J.L. Fryer. 1978. Spray vaccination: a method for the immunization of fish. Fish Pathol. 13(1):63-68.

McIntyre, J.D., and D.F. Amend. 1978. Heritability of tolerance for infectious hematopoietic necrosis in sockeye salmon (*Oncorhynchus nerka*). Trans. Am. Fish. Soc. 107(2):305-308.

Nelson, W.R. 1978. Implications of water management and Lake Oahe for the spawning success of coolwater fishes. Am. Fish. Soc., (Spec. Publ.) No. 11. pp. 154-158.

Nelson, W.R. 1978. Reservoir ecosystems and western coal development in the Upper Missouri River Basin. FWS/OBS - 78/25. 13 pp.

Nelson, W.R., D.B. Martin, L.G. Beckman, D.W. Zimmer, and D.J. Highland. 1978.

Reservoir ecosystems and Western coal development in the Upper Missouri River. EPA-908/4-78-006. 90 pp. Available through NTIS, Springfield, VA 22161.

Wedemeyer, G.A., and W.T. Yasutake. 1978. Prevention and treatment of nitrite toxicity in juvenile steelhead trout (*Salmo gairdneri*). *J. Fish. Res. Board Can.* 35(6):822-827.

Wedemeyer, G.A., N.C. Nelson, and C.A. Smith. 1978. Survival of the salmonid viruses infectious hematopoietic necrosis (IHNV) and infectious pancreatic necrosis (IPNV) in ozonated, chlorinated, and untreated waters. *J. Fish. Res. Board Can.* 35(6):875-879.

Wedemeyer, G.A., N. Nelson, and W.T. Yasutake. 1978. Potentials and limits for the use of ozone as a fish disease control agent. In: *Inter. Ozone Inst., 2nd Workshop of Marine and Freshwater Applications of Ozone*. Orlando, Florida.

Bouck, G.R. 1979. Histochemistry of leucine aminoaphthylamidase (LAN) in rainbow trout (*Salmo gairdneri*). *Trans. Am. Fish. Soc.* 108(1):57-62.

Bouck, G.R., and D.A. Johnson. 1979. Medication inhibits tolerance to seawater in coho salmon smolts. *Trans. Am. Fish. Soc.* 108(1):63-66.

Bouck, G.R., and S.D. Smith. 1979. Mortality of experimentally descaled smolts of coho salmon (*Oncorhynchus kisutch*) in fresh and salt water. *Trans. Am. Fish. Soc.* 108(1):67-69.

Gould, R.W., R. Antipa, and D.F. Amend. 1979. Immersion vaccination of sockeye salmon (*Oncorhynchus kisutch*) with two pathogenic strains of *Vibrio anguillarum*. *J. Fish. Res. Board Can.* 26:222-225.

Hauck, A.K., M.J. Fallon, and C.V. Burger. 1979. New host and geographical records for the leech *Acanthobdella peledina* Grube 1851 Hirudinea, Acanthobdellidae). *J. Parasitol.* 65(6):989.

Kincheloe, J.W., G.A. Wedemeyer, and D.L. Koch. 1979. Tolerance of developing salmonid eggs and fry to nitrate exposure. *Bull. Environm. Contam. Toxicol.* 23:575-578.

MacMillan, J.R., M. Landolt, and D. Mulcahy. 1979. An erythroleukemic-like disease in fish. Page 219 in D.S. Yohn, D.A. Lapin, and J.R. Blakeslee (eds.), *Proceedings of the 9th International Symposium on Comparative Leukemia and Related Diseases*. *Advances in Comparative Leukemic Research*, Elsevier-North-Holland, New York.

MacMillan, J.R., and D. Mulcahy. 1979. Artificial transmission to and susceptibility of Puget Sound fish to viral erythrocytic necrosis (VEN). *J. Fish. Res. Board Can.* 36(9):1097-1101.

Maciolek, J.A., and F.G. Howarth. 1979. *Megalagrion paludicola*, a new species of damselfly (Odonata: Zygoptera: Coenagrionidae) from Kauai. *Pac. Insects* 21(2-3):165-171.

Nelson, W.R., and L.G. Beckman. 1979. Entrainment of ichthyoplankton by irrigation

withdrawal systems. FWS/OBS - 79/16. 29 pp.

Smith, S.D. 1979. Pen-rearing of silver salmon (*Oncorhynchus kisutch*) in San Francisco Bay. Master's Thesis, San Francisco State University. AVAILABLE ON LOAN.

Wedemeyer, G.A., N.C. Nelson, and W.T. Yasutake. 1979. Physiological and biochemical aspects of ozone toxicity to rainbow trout (*Salmo gairdneri*). *J. Fish. Res. Board Can.* 36(6):605-614.

Wedemeyer, G.A., N.C. Nelson, and W.T. Yasutake. 1979. Potentials and limits for the use of ozone as a fish disease control agent. *Ozone: Sci. Engineer.* 1:295-318.

Yasutake, W.T. 1979. Histopathology of yearling sockeye salmon (*Oncorhynchus nerka*) infected with infectious hematopoietic necrosis (IHN). *Fish Pathol.* 14(2):59-64.

Antipa, R., R. Gould, and D.F. Amend. 1980. *Vibrio anguillarum* vaccination of sockeye salmon *Oncorhynchus nerka* (Walbaum) by direct and hyperosmotic immersion. *J. Fish Dis.* 3:161-165.

Bouck, G.R. 1980. Air supersaturation in surface water: a continuing engineering and biological problem. Proceedings of the Symposium on Surface Water Impoundments ASCE/June 2-5, 1980/Minneapolis, MN.

Bouck, G.R. 1980. Concentrations of leucine aminoaphthylamidase (LAN) and soluble protein in tissues of rainbow trout, *Salmo gairdneri*. *Can. J. Fish. Aquat. Sci.* 37(1):116-120.

Bouck, G.R. 1980. Etiology of gas bubble disease. *Trans. Am. Fish. Soc.* 109:703-707.

Bouck, G.R., B. D'Aoust, W.J. Ebel, and R. Rulifson. 1980. Atmospheric gas supersaturation: educational and research needs. *Trans. Am. Fish. Soc.* 109:769-771.

Burke, J.A., and D. Mulcahy. 1980. Plaquing procedure for infectious hematopoietic necrosis virus. *Appl. Environ. Microbiol.* 39(4):872-876.

Davis, S.K., J.L. Congleton, and R.W. Tyler. 1980. Modified fyke net for the capture and retention of salmon smolts in large rivers. *Prog. Fish-Cult.* 42(4):235-237.

DeGange, A.R., and T.C. Newby. 1980. Mortality of seabirds and fish in a lost salmon driftnet. *Mar. Pollut. Bull.* 11:322-323.

Gill, R., Jr., and C.M. Handel. 1980. First record of the Common Cuckoo from mainland North America. *Condor* 82:472.

Gosting, L.H., B.W. Grinnell, and M. Matsumoto. 1980. Physio-chemical and morphological characteristics of avian encephalomyelitis virus. *Vet. Microbiol.* 5:87-100.

- Maciolek, J.A., and A.S. Timbol. 1980. Electroshocking in tropical insular streams. *Prog. Fish-Cult.* 42(1):57-58.
- Maciolek, J.A. 1980. Anchialine pool crustaceans of Cape Hinaiu Maui. *Am. Zool.* 20(4):754. (Abstract).
- MacMillan, J.R. 1980. Pathologic manifestations of viral erythrocytic necrosis in fish. Ph.D. Dissertation, University of Washington.
- McIntyre, J.D. 1980. Selection to increase yield of coho salmon, *Oncorhynchus kisutch*. Pages 305-308 in D.C. Himsworth and W.J. McNeil (eds.), *Salmonid Ecosystems of the North Pacific Ocean*, Oregon State University Press, Corvallis.
- Petersen, M.R. 1980. Observations of wing-feather moult and summer feeding ecology of Steller's Eiders at Nelson Lagoon, Alaska. *Wildfowl* 31:99-106.
- Reisenbichler, R.R., and N.A. Hartmann, Jr. 1980. Effect of number of marked fish and years of repetition on precision in studies of contribution to a fishery. *Can. J. Fish. Aquat. Sci.* 37:576-582.
- Sowls, A.L., A.R. DeGange, J.W. Nelson, and G.S. Lester. 1980. Catalog of California seabird colonies. U.S. Department of the Interior, Fish and Wildlife Service, Biological Services Program. FWS/OBS-80/37. 371 pp.
- Wedemeyer, G.A., R.L. Saunders, and W.C. Clarke. 1980. Environmental factors affecting smoltification and early marine survival of anadromous salmonids. *Mar. Fish. Rev.* 43:1-14.
- Winter, G.W., C.B. Schreck, and J.D. McIntyre. 1980. Resistance of different stocks and transferrin genotypes of coho salmon, *Oncorhynchus kisutch*, and steelhead trout, *Salmo gairdneri*, to bacterial kidney disease and vibriosis. *Fish. Bull.* 77(4):795-802.
- Yasutake, W.T. 1980. Histopathology of selected diseases of salmonids. Ph.D. Dissertation, University of Tokyo. No Longer Available.
- Ainley, D.G., A.R. DeGange, L.L. Jones, and R.J. Beach. 1981. Mortality of seabirds in high-seas salmon gillnets. *Fish. Bull.* 79:800-806.
- Bouck, G.R. 1981. Easily constructed, economical seawater intake and supply system. *J. World Maricul. Soc.* 13(1):51-58.
- Davis, S.K. 1981. Determination of body composition, condition and migration timing of juvenile chum and chinook salmon in the lower Skagit River, Washington. Master's Thesis, University of Washington.
- Forsell, D.J., and P.J. Gould. 1981. Distribution and abundance of marine birds and mammals

wintering in the Kodiak area of Alaska. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. FWS/OBS-81/13. 72 pp.

Gill, R.E., Jr., and C.M. Handel. 1981. Shorebirds of the Eastern Bering Sea. Pages 719-738 D.W. Hood, and J.A. Calder (eds.), *The Eastern Bering Sea Shelf: Oceanography and Resources*. Vol. 2. University of Washington Press, Seattle.

Gill, R.E., Jr., M.R. Petersen, and P. Jorgensen. 1981. Birds of the northcentral Alaska Peninsula. *Arctic* 34:286-306.

Gosting, L., and R.W. Gould. 1981. Thermal inactivation of infectious hematopoietic necrosis and infectious pancreatic necrosis virus. *Appl. Environ. Microbiol.* 41(4):1081-1082.

Gosting, L.H., D.M. Mirando, and R.W. Gould. 1981. Antigen-binding cells in the peripheral blood of sockeye salmon, *Oncorhynchus nerka*.

Walbaum, induced by immersion or intraperitoneal injection of *Vibrio languarum* bacterin. *J. Fish Biol.* 19:83-86.

Gould, D.M. 1981. Physiological and immunological differences among three stocks of coho salmon, *Oncorhynchus kisutch*. Master's Thesis, University of Washington. Not available.

Hahnel, G.B. 1981. Serological comparison of isolates of *Aeromonas salmonicida* ssp. *salmonicida*. Master's Thesis, University of Washington. Not available.

Handel, C.M., M.R. Petersen, R.E. Gill, Jr., and C.J. Lensink. 1981. An annotated bibliography of literature on Alaska water birds. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. FWS/OBS-81/12. 515 pp.

Hunt, G.L., Jr., P.J. Gould, D.J. Forsell, and H. Peterson, Jr. 1981. Pelagic distribution of marine birds in the Eastern Bering Sea. Pages 689-718 in D.W. Hood and J.A. Calder (eds.), *The Eastern Bering Sea Shelf: Oceanography and Resources*, Vol. 2. University of Washington Press, Seattle.

Leong, J.C., Y.L. Hsu, H.M. Engelking, and D. Mulcahy. 1981. Strains of infectious hematopoietic necrosis (IHN) virus may be identified by structural protein differences. *International Symposium on Fish Biologics: Serodiagnostics and Vaccines*, Leetown, WV. *Dev. Biol. Stand.* 49:43-55.

Maciolek, J., and R. Yamada. 1981. Vai Lahi and other lakes of Tonga. *Verh. Internat. Verein. Limnol.* 21:693-698.

Maciolek, J.A. 1981. Consumer trophic relations in a tropical insular estuary. *Bull. Mar. Sci.* 31(3):702-711.

Maciolek, J.A., and A.S. Timbol. 1981. Environmental features and macrofauna of Kahana

Estuary, Oahu, Hawaii. *Bull. Mar. Sci.* 31(3):712-722.

Nichols, J.W. 1981. Effects of chronic exposure to arsenic trioxide on smoltification, downstream migration, and seawater adaptation of coho salmon (*Oncorhynchus kisutch*). Master's Thesis, University of Washington, Seattle. Not available.

Petersen, M.R. 1981. Populations, feeding ecology and molt of Steller's Eiders. *Condor* 83(3):256-262.

Rondorf, D.W. 1981. Reproduction and early life history of fishes in a cooling lake. Master's Thesis, University of Wisconsin, Madison. Not available.

Allen, eds. *BioEngineering in Fisheries*. Special Pub. Amer. Fish. Soc., Washington, D.C.

Wedemeyer, G.A. 1981. The physiological response of fishes to the stress of intensive aquaculture in recirculation systems. Pages 3-18 in K. Tiews, (ed.) *Proc. World. Symp. on Aquaculture in Heated Effluents and Recirculation Systems*. European Inland Fisheries Advisory Commission, FAO, United Nations, Rome. Vol. II.

Wedemeyer, G.A., and D.L. McLeay. 1981. Methods for determining the tolerance of fishes to environmental stressors. Pages 247-275 in A. Pickering, (ed.) *Stress and Fish*, Academic Press, London.

Barbour, D.B., and A.R. DeGange. 1982. Communal roosting in the Hooded Merganser. *J. Field Ornith.* 53:279-280.

Barbour, D.B., and A.R. DeGange. 1982. Reciprocal allopreening in the Brownheaded Nuthatch. *Auk* 99:171.

Bouck, G.R. 1982. Gasometer: an inexpensive device for continuous monitoring of dissolved gases and supersaturation. *Trans. Am. Fish. Soc.* 111(4):505-516.

Burke, J.A. 1982. Aspects of the pathogenesis of infectious hematopoietic necrosis virus in two-year-old sockeye salmon *Oncorhynchus nerka*. Ph.D. Dissertation, University of Washington, Seattle.

Fox, A.C. 1982. The importance of the environment, stress, and disease relationship in aquaculture. In: Carl J. Sindermann (ed.), *Proceedings of the eleventh U.S.-Japan meeting on aquaculture, salmon enhancement, Tokyo, Japan, October 19-20, 1982*, pp. 15-19. NOAA Tech. Rep. NMFS 27.

Gould, R.W., A.N. Palmisano, S.D. Smith, C.V.W. Mahnken, W.S. Zaugg, and E. Prentice. 1982. Seawater acclimation of pre-migratory (presmolt) fall chinook salmon: a possible new management strategy? In: Carl J. Sindermann (ed.), *Proceedings of the eleventh U.S.-Japan meeting on aquaculture, salmon enhancement, Tokyo, Japan, October 19-20, 1982*, pp. 15-19. NOAA Tech. Rep. NMFS 27.

- Gould, P.J., D.J. Forsell, and C.J. Lensink. 1982. Pelagic distribution and abundance of seabirds in the Gulf of Alaska and eastern Bering Sea. U.S. Fish and Wildlife Service, FWS/OBS-82/48, 294 pp.
- Hahnel, G.B., and R.W. Gould. 1982. Effects of temperature on biochemical reactions and drug resistance of virulent and avirulent *Aeromonas salmonicida*. *J. Fish Dis.* 5:329-337.
- Handel, C.M. 1982. Breeding ecology of the black turnstones: a study in behavior and energetics. Master's Thesis, University of California, Davis. 96 pp. Not available.
- Hasegawa, H., and A.R. DeGange. 1982. The short-tailed Albatross: its status, distribution and natural history. *Am. Birds.* 36:806-814.
- Maciolek, J.A. 1982. Lakes and lake-like waters of the Hawaiian Archipelago. *Occ. Pap. Bernice P. Bishop Mus.* 25(1):1-14.
- Mulcahy, D.M., J. Burke, R.J. Pascho, and C.K. Jenes. 1982. Pathogenesis of infectious hematopoietic necrosis virus in adult sockeye salmon (*Oncorhynchus nerka*). *Can. J. Fish. Aquat. Sci.* 39(8):1144-1149.
- Nigro, A.A., and J.J. Ney. 1982. Reproduction and early-life accommodations of landlocked alewives to a southern range extension. *Trans. Am. Fish. Soc.* 111:559-569.
- Persons, W.R., and R.V. Bulkly. 1982. Feeding activity and spawning time of striped bass in the Colorado River Inlet, Lake Powell, Utah. *N. Am. J. Fish. Manag.* 2(4):403-408.
- Petersen, M.R. 1982. Predation on seabirds by red foxes at Shaiak Island, Alaska. *Can. Field-Nat.* 96(1):41-45.
- Reisenbichler, R.R., J.D. McIntyre, and R.J. Hallock. 1982. Relation between size of chinook salmon, *Oncorhynchus tshawytscha*, released at hatcheries and returns to hatcheries and ocean fisheries. *Calif. Fish Game* 68(1):57-59.
- Sanger, G.A., and R.D. Jones, Jr. 1982. The winter feeding ecology and trophic relationships of marine birds in Katchemak Bay, Alaska. Pages 161-294 in *Environmental Assessment of the Alaska Continental Shelf: Final Report of Principal Investigators, Vol. 16*. NOAA and BLM. 603 pp.
- Terrell, T.T. 1982. Responses of plankton communities to the introduction of grass carp into some Georgia ponds. *J. Freshwater Ecol.* 1(4):395-406.
- Wedemeyer, G.A. 1982. Effects of environmental stressors in aquacultural systems on quality, smoltification and early marine survival of anadromous fish. Pages 155-170 in B. Melteff and R. Neve (eds.), *Proceedings of the North Pacific Aquaculture Symposium*. University of Alaska, Sea Grant Report 82-2, Fairbanks.

- Bouck, G.R., and R.E. King. 1983. Tolerance to gas supersaturation in freshwater and seawater by steelhead trout (*Salmo gairdneri*). *J. Fish Biol.* 23:293-300.
- Burke, J., and D. Mulcahy. 1983. Retention of infectious haematopoietic necrosis virus infectivity in fish tissue homogenates and fluids stored at three temperatures. *J. Fish Dis.* 6:543-547.
- Carmichael, G., G. Wedemeyer, J. McCrearen, and M. Millard. 1983. Physiological effects of hauling and handling stress on smallmouth bass (*Micropterus dolomieu*). *Prog. Fish-Cult.* 45(2):110-113.
- Gray, G.A., D.E. Palmer, B.L. Hilton, P.J. Connolly, H.C. Hansel, J.M. Beyer, and G.M. Sonnevil. 1983. Feeding activity, rate of consumption, daily ration and prey selection of major predators in the John Day Pool. Annual Report to the Bonneville Power Administration, Contract Number D1-A179-82BP34796.
- Hahnel, G.B., R.W. Gould, and E.S. Boatman. 1983. Serological comparison of selected isolates of *Aeromonas salmonicida* ssp. *salmonicida*. *J. Fish Dis.* 6:1-11.
- Lucchetti, G.L. 1983. The production of brook trout (*Salvelinus fontinalis*) in four headwater streams in the James River Basin of Virginia and West Virginia. Master's Thesis, Virginia Polytechnic Institute and State University, Blacksburg. 62 pp. Not available.
- Maciolek, J.A. 1983. Distribution and biology of Indo-Pacific insular hypogeal shrimps. *Bull. Mar. Sci.* 33(3):606-618.
- Mulcahy, D., and K. Bauersfeld. 1983. Effect of loading density of sockeye salmon, *Oncorhynchus nerka* (Walbaum), eggs in incubation boxes on mortality caused by infectious haematopoietic necrosis. *J. Fish Dis.* 6:189-193.
- Mulcahy, D., R.J. Pascho, and C.K. Jenés. 1983. Detection of infectious haematopoietic necrosis virus in river water and demonstration of waterborne transmission. *J. Fish Dis.* 6:321-330.
- Mulcahy, D., R. Pascho, and C.K. Jenés. 1983. Mortality due to infectious hematopoietic necrosis of sockeye salmon (*Oncorhynchus nerka*) fry in streamside egg incubation boxes. *Can. J. Fish. Aquat. Sci.* 40(9):1511-1516.
- Mulcahy, D., R.J. Pascho, and C.K. Jenés. 1983. Titre distribution patterns of infectious haematopoietic necrosis virus in ovarian fluids of hatchery and feral salmon populations. *J. Fish Dis.* 6:183-188.
- Peterson, M.R. 1983. Populations, feeding ecology and molt of steller's eiders. *Condor* 83:256-262.

Scoppettone, G.G., G.A. Wedemeyer, M. Coleman, and H. Burge. 1983. Reproduction by the endangered cui-ui in the lower Truckee River. *Trans. Am. Fish. Soc.* 112:788-793.

Washington, P.M. 1983. An analysis of factors affecting the production of coho salmon in the Columbia River. Ph.D. Dissertation, University of Washington, Seattle.

Wedemeyer, G.A., and C.P. Goodyear. 1983. Diseases caused by environmental stressors. *Diseases of Fishes*.

Wedemeyer, G.A., R.W. Gould, and W.T. Yasutake. 1983. Some potentials and limits of the leucocrit test as a fish health assessment method. *J. Fish Biol.* 23:711-716.

Yasutake, W.T., and J.H. Wales. 1983. Microscopic anatomy of salmonids: an atlas. U.S. Fish Wildl. Serv., Resource Publ. 150. 189 pp.

Fox, A.C. 1984. Waste water management techniques at the United States national fish hatcheries. Paper presented at the 13th Annual Aquaculture Panel of the United States/Japan Natural Resources Meeting, Osaka, Japan, October-November 1984.

Gray, G.A., D.E. Palmer, B.L. Hilton, P.J. Connolly, H.C. Hansel, J.M. Beyer, P.T. Lofy, and G.M. Sonnevil. 1984. Feeding activity, rate of consumption, daily ration, and prey selection of major predators in the John Day Pool. Annual Report to the Bonneville Power Administration, Contract Number D1-A179-82BP34796, 44 pp.

Gray, G.A., and D.W. Rondorf. 1984. Use of Columbia River Reservoirs for rearing by juvenile fall chinook salmon and some management implications. Pages 310-312 in *Proceedings of the Third Annual Conference of North American Lake Management Society*. EPA 440/5/84/001.

Lofy, P.T., S.D. Duke, M.J. Parsley, M.G. Mesa, G.M. Sonnevill, and L.A. Prendergast. 1984. Preliminary evaluation of predation control measures for major predators in the Columbia River. Annual Report to Bonneville Power Administration: Section II. Contract Number DI-A179-82BP34796, pp. 45-163.

Maciolek, J.A. 1984. Exotic fishes in Hawaii and other islands of Oceania. Pages 131-161 in W.R. Courtenay, Jr., and J.R. Stauffer, Jr. (eds.), *Distribution, Biology, and Management of Exotic Fishes*. Johns Hopkins Univ. Press, Baltimore.

McIntyre, J.D. 1984. Differentiation of anadromous salmonid stocks. Pages 9-16 in J.M. Walton and D.B. Houston (eds.), *Proceedings of the Olympic Wild Fish Conference*, Port Angeles, Washington, March 23-25, 1983.

Mulcahy, D., C.K. Jenes, and R. Pascho. 1984. Appearance and quantification of infectious hematopoietic necrosis virus in female sockeye salmon (*Oncorhynchus nerka*) during their spawning migration. *Arch. Virol.* 80:171-181.

Mulcahy, D., and R.J. Pascho. 1984. Adsorption to fish sperm of vertically transmitted fish

viruses. *Science* 225(4659):333-335.

Mulcahy, D., R.J. Pascho, and C.K. Jenes. 1984. Comparison of in vitro growth characteristics of ten isolates of infectious hematopoietic necrosis virus. *J. Gen. Virol.* 65:2199-2207.

Nichols, J.W., G.A. Wedemeyer, F.L. Mayer, W.W. Dickhoff, S.V. Gregory, W.T. Yasutake, and S.D. Smith. 1984. Effects of freshwater exposure to arsenic trioxide on the parr-smolt transformation of coho salmon (*Oncorhynchus kisutch*). *Environ. Toxic. Cham.* 3:143-149.

Reisenbichler, R.R. 1984. Outplanting: potential for harmful genetic change in naturally spawning salmonids. Pages 33-40 in J.M. Walton and D.B. Houston (eds.), *Proc of the Olympia Wild Fish Conference, Port Angeles, Washington, March 23-25, 1983.*

Rondorf, D.W., G.A. Gray, and W.R. Nelson. 1984. Effects of hydropower development on Columbia River salmonids. *Proc of the Int'l. Conf on Hydropower. Waterpower '83*, 3:1201-1212.

Wedemeyer, G.A., and C.P. Goodyear. 1984. Stress and disease in the aquatic environment: individual and population-level responses. Pages 424-434 in O. Kinne (ed.), *Diseases of marine animals. Volume IV, Part 1. Introduction and pisces.* Biologische Anstalt Helgoland, Hamburg, Federal Republic of Germany.

Wedemeyer, G.A., D. McLeay, and C.P. Goodyear. 1984. Assessing the tolerance of fish and fish populations to environmental stress: the problems and methods of monitoring. Pages 164-195 in Cairns, Hodson, and Nrigau (eds.). *Contaminant effects on fisheries.* Wiley and Sons, New York, NY.

Beckman, L.G., J.F. Novotny, W.R. Persons, and T.T. Terrell. 1985. Assessment of the fisheries and limnology in Lake F.D. Roosevelt, 1980-1983. Final Report, U.S. Bureau of Reclamation.

Burger, C.V., and R.L. Wilmot. 1985. Biological and hydrological evaluation of the fish ladder at Brooks River Falls, Alaska. Final report, U.S. Dept. of Interior, National Park Service.

Burger, C.V., R.L. Wilmot, and D.B. Wangaard. 1985. Comparisons of spawning areas and times for two runs of Chinook salmon (*Oncorhynchus tshawytscha*) in the Kenai River, Alaska. *Can. J. Fish. Aquat. Sci.* 42(4):693-700.

Eib, Douglas. 1985. The effects of Cortisol and Actinomycin D injections on choloride cells and branchial $N^{++}K^{+}$ -ATPase in rainbow trout (*Salmo gairdneri*). *Gen. Comp. Endocrinol.* 59:449-452.

Goldberg, S.R., W.T. Yasutake, and R.L. West. 1985. A histopathological survey of four fish species from the Beaufort Lagoon, Alaska. Final Report, Fishery Resources Office, U.S. Fish

and Wildlife Service, Fairbanks, Alaska.

Konkel, G.W. (with a group of agency representatives). Geographic Information System Task Force Report and Recommendations. Bonneville Power Administration, Office of Power and Resources Management, Division of Power Resource Planning, August 1985.

McIntyre, J.D. 1985. A model for estimating deficits in the size of spawning stocks for spring chinook salmon in tributaries of the upper Columbia River basin. Final Report, U.S. Fish and Wildlife Service (Region 1), Portland, Oregon.

McIntyre, J.D. 1985. Smolt quality and the effectiveness of Columbia River hatcheries. Paper presented at Bonneville Power Administration smoltification workshop, Warm Springs, Oregon, May 1985.

Mulcahy, D., and R.J. Pascho. 1985. Vertical transmission of infectious haematopoietic necrosis virus in sockeye salmon, *Oncorhynchus nerka* (Walbaum): isolation of virus from dead eggs and fry. *J. Fish Dis.* 8:393-396.

Novotny, J.F. 1985. Effects of a Kentucky flood-control reservoir on macroinvertebrates in the tailwater. *Hydrobiologia* 126:143-153.

Ochiai, T., W.T. Yasutake, and R.W. Gould. 1985. Direct fluorescent antibody technique for the detection of bacterial kidney disease in paraffin-embedded tissues. *Fish Pathology* 19(4):271-272 (in Japanese).

Rondorf, D.W., M.S. Dutchuk, A.S. Kolok, and M.L. Gross. 1985. Bioenergetics of juvenile salmon during the spring outmigration. Annual Report to U.S. Dept. of Energy, Bonneville Power Administration, 1983.

Swink, W.D. and J.F. Novotny. 1985. Invertebrate colonization rates in the tailwater of a Kentucky flood-control reservoir. *J. Freshwater Ecol.*, (Vol. 3, No. 1).

Wedemeyer, G.A., A. Palmisano, and L. Salsbury. 1985. Development of an effective transport media for juvenile spring chinook salmon to mitigate stress and improve smolt survival during Columbia River fish hauling operations. Final Report, Bonneville Power Administration, Portland, Oregon.

Wilmot, R.L., and C.V. Burger. 1985. Genetics of sockeye salmon in Katmai National Park and Preserve, Alaska. Final Report, U.S. Department of Interior, National Park Service.

Wilmot, R.L., and C.V. Burger. 1985. Genetics of sockeye salmon in Katmai National Park and Preserve, Alaska. Final Report, U.S. Department of Interior, National Park Service.

Bjornn, T.C., and J.D. McIntyre. 1986. Four reports to the Northwest Power Planning Council: Task 1 Report: Review of Council Research Issues; Task 2 and 3 Report: Overview of Progress and Recommended Actions; Task 4 Report: Summary and Recommendations for

Council Research Program.

Connolly, P.J., and B.E. Rieman. 1986. Population dynamics of walleye and smallmouth bass and potential predation on salmonid smolts in John Day Reservoir. Pages 307-348 in T.P. Poe and B.E. Rieman, editors. Predation by resident fish on juvenile salmonids in John Day Reservoir, 1983-1986. Project number 82-3, prepared for Bonneville Power Administration, Portland, Oregon.

Goldberg, S.R., W.T. Yasutake, and R.L. West. 1986. A hermaphroditic Arctic flounder, *Liopsetta glacialis* (Pleuronectidae), from Alaska. *Copeia* 1986(4):1024.

Gray, G.A., and D.W. Rondorf. 1986. Predation on juvenile salmonids in Columbia basin reservoirs. Pages 178-185 in G.E. Hall and M.J. Van Der Aryle (eds.), Reservoir Fisheries Management: Strategies for the 80's. Reservoir Committee, Southern Division, American Fisheries Society, Bethesda, Maryland.

Hamilton, S.J., A. Palmisano, G.A. Wedemeyer, and W.T. Yasutake. 1986. Impacts of selenium on early life stages and smoltification of fall chinook salmon. *Trans. 51st N.A. Wildl. and Nat. Res. Conf.*, pp. 343-356.

Hemmingsen, A.R., J.D. McIntyre, and J.L. Fryer. 1986. Susceptibility of progeny from crosses among three stocks of coho salmon to infection by *Ceratomyxa shasta*. *Trans. Am. Fish. Soc.* 115(3):492-495.

Lichatowich, J.A., and J.D. McIntyre. 1986. Use of hatcheries in hatchery fish management. In: *Common Strategies of Anadromous and Catadromous Fishes: an International Symposium (Proceedings)*. Northeastern Division, Am. Fish. Soc.

Lofy, P.T., S.D. Duke, M.J. Parsley, M.G. Mesa, G.M. Sonnevill, and L.A. Predergast. 1986. Feeding activity, rate of consumption, daily ration, and prey selection of major predators in John Day Reservoir - Section II, Predation Control Measures. Annual report to Bonneville Power Administration, Portland, Oregon.

McIntyre, J.D. 1986. Stream productivity for salmonids in the Snake River basin. Annual Progress Report. National Fishery Research Center, Seattle.

McIntyre, J.D. 1986. A computer model to facilitate decision making by the Northwest Power Planning Council regarding their research program.

McIntyre, J.D., and R.R. Reisenbichler. 1986. A model for selecting harvest fraction for aggregate populations of hatchery and wild anadromous salmonids. Pages 179-189 in *Fish Culture in Fisheries Management*, Richard M. Stroud, (ed.). Proceedings of a symposium on the role of fish culture in fisheries management, Fish Culture Section and Fisheries Management Section of the American Fisheries Society, Bethesda, Maryland.

Mulcahy, D., and R.J. Pascho. 1986. Sequential tests for infectious hematopoietic necrosis

virus in individuals and populations of sockeye salmon. *Can. J. Fish. Aquat. Sci.* 43(12):2515-2519.

Mulcahy, D., and J. Wood. 1986. A natural epizootic of infectious haematopoietic necrosis in imported Atlantic salmon, *Salmo salar* L., reared in the enzootic region. *J. Fish Dis.* 9:173-175.

Mullan, J.W., and J.D. McIntyre. 1986. Growth and survival of salmon and steelhead in a controlled section of Icicle Creek. Info. Report FRI/FAO-86-14.

Novotny, J.F., T.L. Macy, J.P. Gardnier, and J.W. Beeman. 1986. Pen rearing and imprinting of fall chinook salmon. Annual Report 1986 to Bonneville Power Administration, Portland, OR. Contract Number DE-A1-84BP13084, 78 pp.

Palmer, D.E., H.C. Hansel, J.M. Beyer, S.C. Vigg, W.T. Yasutake, P.T. Lofy, S.D. Duke, M.J. Parsley, M.G. Mesa, L.A. Prendergast, R. Burkhardt, C. Burley, D. W. Eib, and T.P. Poe. 1986. Feeding activity, rate of consumption, daily ration, and prey selection of major predators in John Day Reservoir. Annual Report to Bonneville Power Administration, Portland, Oregon.

Poe, T.P., C.O. Hatcher, C.L. Brown, and D.W. Schloesser. 1986. Comparison of species composition and richness of fish assemblages in altered and unaltered littoral habitats. *J. Freshwater Ecology* 3:525-536.

Poe, T.P., D.E. Palmer, H.C. Hansel, S.C. Vigg, R.W. Burkhardt, and C.C. Burley. 1986. Feeding activity, rate of consumption, daily ration, and prey selection of major predators in John Day Reservoir. Annual report to Bonneville Power Administration. 50 pp.

Reiman, B.E., R.C. Beamsderfer, A.A. Nigro, S.C. Vigg, H.C. Hansel, and D.E. Palmer. 1986. Preliminary estimates of loss of juvenile anadromous salmonids to predators in John Day Reservoir and development of a predation model. Interim report to Bonneville Power Administration. 53 pp.

Reisenbichler, R.R. 1986. Use of spawner recruit relations to evaluate the effect of degraded environment and increased fishing on the abundance of fall run chinook in several California streams. Ph.D. Dissertation, University of Washington, Seattle.

Reisenbichler, R.R., and S.R. Phelps. 1986. Genetic structure of steelhead trout, *Salmo gairdneri*, from the north coast of Washington State. Final Report to the National Park Service. 54 pp.

Reisenbichler, R.R., and S.R. Phelps. 1986. Genetic structure of chinook salmon, *Oncorhynchus tshawytscha*, and coho salmon, *O. kisutch*, from the north coast of Washington State.

Reisenbichler, R.R., and J.D. McIntyre. 1986. Requirements for integrating natural and artificial production of anadromous salmonids in the Pacific Northwest. Pages 365-374 in *Fish*

Culture in Fisheries Management, Richard H. Stroud, (ed.). Proceedings of a symposium on the role of fish culture in fisheries management, Fish Culture Section and Fisheries Management Section of the American Fisheries Society, Bethesda, Maryland.

Scoppettone, G.G., M. Coleman, and G. Wedemeyer. 1986. Life history and status of the endangered cui-ui of Pyramid Lake, Nevada. *Fish and Wildlife Research* 1. 23 pp.

Simon, R.C., J.D. McIntyre, and A.R. Hemmingsen. 1986. Family size and effective population size in a hatchery stock of coho salmon (*Oncorhynchus kisutch*). *Can. J. Fish. Aquat. Sci.* 43(12):2434-2442.

Yasutake, W.T., J.D. McIntyre, and A.R. Hemmingsen. 1986. Parasite burdens in experimental families of coho salmon. *Trans. Am. Fish. Soc.* 115:636-640, 1986.

Beckman, L.G., D.E. Palmer, and M.J. Parsley. 1987. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Pages 38-40 in A.A. Nigro (ed.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Report to Bonneville Power Administration (Project 86-50), Portland, Oregon.

Elliott, D.G., and T.Y. Barila. 1987. Membrane filtration-fluorescent antibody staining procedure for detecting and quantifying *Renibacterium salmoninarum* in coelomic fluid of chinook salmon (*Oncorhynchus tshawytscha*). *Can. J. Fish. Aquat. Sci.* 44:206-210.

Emlen, J.M. 1987. Evolutionary ecology and the optimality assumption. Pages 163-177 in *The Latest on the Best, Essays on Evolution and Optimality*, J. Dupre, (ed.), MIT Press, Cambridge, MA.

Goldberg, S.R., W.T. Yasutake, and R.L. West. 1987. Summer spawning in the fourhorn sculpin, *Myoxocephalus quadricornis*, from Alaska. *Can. Field-Nat.* 101:457.

Jacobs, K.E., W.D. Swink, and J.F. Novotny. 1987. Minimum tailwater flows in relation to habitat suitability and sport-fish harvest. *No. Am. J. Fish. Manage.* 7:569-574.

June, F.C., L.G. Beckman, J.H. Elrod, G.K. O'Bryan, and D.A. Vogel. 1987. Limnological and fishery studies on Lake Sharpe, a main-stem Missouri River reservoir, 1964-1975. U.S. Fish & Wildlife Service, Fish Wildl. Tech. Rep. 8, 83 pp.

Kent, M.L., S.R. Wellings, W.T. Yasutake, and R.A. Elston. 1987. Cranial nodules associated with skull fenestrations in juvenile Atlantic salmon, *Salmo salar*. *J. Fish Dis.* 10(5):419-421.

Kolok, A.S., and D.W. Rondorf. 1987. Effect of differential gastric evacuation and multispecies prey items on estimates of daily energy intake in juvenile chinook salmon. *Environ. Biol. Fishes* 19:131-137.

Konkel, G.W., and J.D. McIntyre. 1987. Trends in spawning populations of Pacific

- anadromous salmonids. U.S. Fish & Wildlife Service, Fish Wildl. Tech. Rep. 9, 25 pp.
- Lichatowich, J.A., and J.D. McIntyre. 1987. Use of hatcheries in the management of Pacific anadromous salmonids. Pages 131-136 in *Common Strategies of Catadromous and Anadromous Fishes*. Am. Fish. Soc. Symposium 1.
- Maciolek, J.A., and J.I. Ford. 1987. Macrofauna and environment of the Nanpil-Kiepw River, Ponape, Eastern Caroline Islands. *Bull. Mar. Sci.* 41(2):623-632.
- Mulcahy, D., and W.N. Batts. 1987. Infectious hematopoietic necrosis virus detected by separation and incubation of cells from salmonid cavity fluid. *Can. J. Fish. Aquat. Sci.* 44(5):1071-1075.
- Mulcahy, D., R.J. Pascho, and W.N. Batts. 1987. Testing of male sockeye salmon (*Oncorhynchus nerka*) and steelhead trout (*Salmo gairdneri*) for infectious hematopoietic necrosis virus. *Can. J. Fish. Aquat. Sci.* 44(5):1075-1078.
- Mullan, J.W., and J.D. McIntyre. 1987. Growth and survival of salmon and steelhead in a controlled section of Icicle Creek. Info. report FRI/FAO 87-05.
- Nester, R.T. and T.P. Poe. 1987. Visual observations of historical lake trout spawning grounds in western Lake Huron. *N. Am. J. Fish. Manage.* 7:418-424.
- Novotny, J.F., T.L. Macy, M.P. Faler, and J.W. Beeman. 1987. Pen rearing and imprinting of fall chinook salmon, Annual Report 1987. Prepared by U.S. Fish and Wildlife Service for Bonneville Power Administration, Portland, Oregon, Contract DE-AI79-83BP13084.
- Palmer, D.E., L.G. Beckman, and M.J. Parsley. 1987. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Nigro, A. A. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Portland, Oregon. Bonneville Power Administration (Project 86-50).
- Palmisano, A.N. 1987. Tolerance of juvenile fall chinook salmon to selenium exposure from water and the food chain: impacts on smoltification and early marine survival. Annual report to Bureau of Reclamation-FWS Kesterson Program and San Joaquin Valley Drainage Program Intra-agency Agreement. Work Unit 972-11.
- Palmisano, A.N. 1987. Effects of dietary selenium on smolting in chinook salmon. In: *Proceedings of the Fourth Selenium Symposium, Selenium and Agricultural Drainage: Implications for San Francisco Bay and the California Environment*.
- Pascho, R.J., D.G. Elliott, R.W. Mallett, and D. Mulcahy. 1987. Comparison of five techniques for the detection of *Renibacterium salmoninarum* in adult coho salmon. *Trans. Am. Fish. Soc.* 116(6):882-890.

Pascho, R.J., and D. Mulcahy. 1987. Enzyme-linked immunosorbent assay for a soluble antigen of *Renibacterium salmonarum*, the causative agent for salmonid bacterial kidney disease. *Can. J. Fish. Aquat. Sci.* 44: 183-191.

Poe, T.P. 1987. Predation as a component of reservoir mortality: information needs. In *Proceedings of the Reservoir Mortality Workshop, Columbia Basin Fish and Wildlife Authority, Portland, Oregon.* 38 pp.

Poe, T.P., D.E. Palmer, H.C. Hansel, S. Vigg, P.T. Lofy, S.D. Duke, M.J. Parsley, L.A. Prendergast, R. Burkhardt, and C. Burley. 1987. Feeding activity, rate of consumption, daily ration, and prey selection of major predators in John Day Reservoir. Annual report to Bonneville Power Administration, Portland, Oregon.

Reisenbichler, R.R., and S.R. Phelps. 1987. Basis for managing the harvest of chinook salmon. *No. Am. J. Fish. Manage.* 7(4):589-591.

Reisenbichler, R.R., and S.R. Phelps. 1987. Genetic variation in chinook, *Oncorhynchus Tshawytscha*, and coho, *O. kisutch*, salmon from the north coast of Washington. *Fish. Bull.* 85(4):681-701.

Scoppettone, G.G. 1987. Life history and ecology requirements of the Moapa dace (*Moapa coracea*). Fish & Wildlife Service Completion Report, Endangered Species Recovery Plan Research Project.

Scoppettone, G.G. 1987. Study of endangered fishes, herps, mollusks. Life history and habitat requirements of listed and candidate fishes and invertebrates in western desert aquatic ecosystems: endemic catostomid populations of the Klamath River Basin. Interagency agreement contract.

Smith, S.D., R.W. Gould, W.S. Zauug, L.W. Harrell, and C.V.W. Mahnken. 1987. Safe pre-release disease treatment with formalin for fall chinook salmon smolts. *Prog. Fish-Cult.* 49(2):96-99.

Smith, S.D., R.R. Stickney, W.W. Dickoff, S. Kaimer, and L.H. Wu. 1987. Can Pacific halibut (*Hippoglossus stenolepis*) be cultured in captivity? Pages 148-151 in *Proceedings of the 28th Annual Northwest Fish Culture Conference, Tacoma, WA.*

Yasutake, W.T. 1987. Collection and preparation of fish specimens for histological examination. USFWS Fish and Wildlife Leaflet 11. Washington D.C.

Yasutake, W.T. 1987. Standardization of stain used for diagnosing erythrocytic inclusion body syndrome (EIBS). *FHS/AFS Newsletter* 15(2):7.

Ahne, W., and J.R. Winton. 1988. Advanced methods for prevention of infectious diseases in aquaculture. Pages 53-62 in E. Grimaldi and H. Rosenthal (eds.), *Efficiency in Aquaculture Production: Disease Control. Proceedings of Acquacoltura '86, Verona, Italy.* Edizioni del

Sole 24 Ore, Milan.

Beyer, J.M., G. Lucchetti, and G. Gray. 1988. Digestive tract evacuation in northern squawfish (*Ptychocheilus oregonensis*). *Can. J. Fish. Aquat. Sci.* 45(1):548-553.

Brown, C.L., T.P. Poe, J.R.P. French III, and D.W. Schloesser. 1988. Relationships of phytomacrofauna to surface area in naturally occurring macrophyte stands. *J. No. Am. Benthol. Society* 7(1):129-139.

Coleman, M.E., and V.K. Johnson. 1988. A summary of trout management at Pyramid Lake with special emphasis on Lahontan cutthroat trout, 1954-1987. Pages 107-115 in *Status and Management of Interior Stocks of Cutthroat Trout*, Am. Fish. Soc. Symp. 4.

Faler, M.P., L.M. Miller, and K.I. Welke. 1988. Effects of variation in flow on distribution of northern squawfish (*Ptychocheilus oregonensis*) below McNary Dam on the Columbia River. *No. Am. J. Fish. Manage.* 8(1):30-35.

Gadomski, D.M., and J.H. Petersen. 1988. Effects of food deprivation on the larvae of two flatfishes. *Marine Ecology Progress Series* 44: 103-111.

Hansel, H.C., S.D. Duke, P.T. Lofy, and G.A. Gray. 1988. Use of diagnostic bones to identify and estimate original lengths of ingested prey fishes. *Trans. Am. Fish. Soc.* 117(1):55-62.

Hoffman, R.J., and G.G. Scoppettone. 1988. Effect of water quality on survival of Lahontan cutthroat trout eggs in the Truckee River, West-Central Nevada and Eastern California. U.S. Geological Survey Water-Supply Paper 2319. 21 pp.

Leong, J.C., J.L. Fryer, and J.R. Winton. 1988. Vaccination against infectious hematopoietic necrosis. Pages 193-203 In A.E. Ellis (ed.), *Fish Vaccination* Academic Press, London.

Lucchetti, G.L., and G.A. Gray. 1988. Water reuse systems: a review of the principal components. *Prog. Fish-Cult.* 50(1):1-6.

Lucchetti, G.L., and G.A. Gray. 1988. Prototype water reuse system. *Prog. Fish-Cult.* 50(1):46-49.

McIntyre, J.D., A.R. Hemmingsen, and R.C. Simon. 1988. Selection to increase survival of smolts in four successive broods of coho salmon. *Trans. Am. Fish. Soc.* 117(1):90-92.

McIntyre, J.D., R.R. Reisenbichler, J.M. Emlen, R.L. Wilmot, and J.E. Finn. 1988. Predation of Karluk River sockeye salmon by coho salmon and char. *Fish. Bull.* 86(3):611-616.

Palmer, D.E., M.J. Parsley, and L.G. Beckman. 1988. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Report C in A.A. Nigro (ed.). *Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam.* Report to Bonneville Power Administration

(Project 86-50), Portland, Oregon.

Palmisano, A.N., P. Swanson, H. Kawauchi, S. Moriyama, and W.W. Dickhoff. 1988. Radioimmunoassay of salmon growth hormone (GH) using recombinant chum salmon GH. *Am. Zool.* 28(4):144A.

Palmisano, A.N. and C.V. Burger. 1988. Use of a portable electric barrier to estimate chinook salmon escapement in a turbid Alaskan river. *N. Am. J. of Fish. Mngt.* 8(4):475-480.

Poe, T.P. and B.E. Rieman. 1988. Predation by resident fish on juvenile salmonids in John Day Reservoir. Final report 1983-86. Bonneville Power Administration, Portland, Oregon.

Reisenbichler, R.R. 1988. Relation between distance transferred from natal stream and recovery rate for hatchery coho salmon, *Oncorhynchus kisutch*. *No. Am. J. Fish. Manage.* 8(2):172-174.

Rohovec, J.S., J.R. Winton, and J.L. Fryer. 1988. Potential hazard for spread of infectious disease by transplantation of fish. Pages 171-175 in *Salmon Production, Management, and Allocation*, W.J. McNeil, (ed.), Oregon State Univ. Press, Corvallis.

Rondorf, D.W., J.W. Beeman, M.E. Free, and D.E. Liljegren. 1988. Correlation of biological characteristics of smolts with survival and travel time, Annual Report 1987. Portland, Oregon, Bonneville Power Administration. Contract DE-AI79-97BP35245.

Scopettone, G.G., and M.E. Coleman. 1988. Growth and longevity of the cui-ui and longevity of other catostomids and cyprinids in western North America. *Trans. Am. Fish. Soc.* 117:301-307.

Winton, J.R., C.K. Arakawa, C.N. Lannan, and J.L. Fryer. 1988. Neutralizing monoclonal antibodies recognize antigenic variants among isolates of infectious hematopoietic necrosis virus. *Dis. Aquat. Org.* 4:199-204.

Ahne, W., J.R. Winton, and T. Kimura. 1989. Prevention of infectious diseases in aquaculture. *J. Vet. Med. B* 36:561-567.

Arakawa, C.K., D.A. Hursh, C.N. Lannan, J.S. Rohovec, and J.R. Winton. 1989. Preliminary characterization of a virus causing infectious anemia among stocks of salmonid fish in the western United States. Pages 442-450 in W. Ahne (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.

Arkush, K.D., G. Bovo, P. deKinkelin, J.R. Winton, W.H. Wingfield, and R.P. Hedrick. 1989. Biochemical and antigenic properties of the first isolates of infectious hematopoietic necrosis virus from salmonid fish in Europe. *J. Aquat. Anim. Health* 1:148-153.

Bartholomew, J.L., J.S. Rohovec, and J.L. Fryer. 1989. Development, characterization, and use of monoclonal and polyclonal antibodies against the myxosporean, *Ceratomyxa shasta*. *J.*

Protozool. 36:397-401.

Bartholomew, J.L., C.E. Smith, J.S. Rohovec, and J.L. Fryer. 1989. Characterization of the host response to the myxosporean parasite, *Ceratomyxa shasta* (Noble), by histology, scanning electron microscopy, and immunological techniques. *J. Fish Dis.* 12:509-522.

Batts, W.N., and J.R. Winton. 1989. Concentration of infectious hematopoietic necrosis virus from water samples by tangential flow filtration and polyethylene glycol precipitation. *Can. J. Fish. Aquat. Sci.* 46:964-968.

Batts, W.N., and J.R. Winton. 1989. Enhanced detection of infectious hematopoietic necrosis virus by pretreatment of cell monolayers with polyethylene glycol. *J. Aquat. Ani. Health* 1:261-267.

Burley, C.C., and S. Vigg. 1989. A method to directly measure maximum volume of fish stomachs or digestive tracts. *J. Fish Biol.* 34:707-714.

Edsall, T.A., T.P. Poe, R.T. Nester, and C.L. Brown. 1989. Side scan sonar mapping of lake trout spawning habitat in the Great Lakes. *N. Am. J. Fish. Manage.* 9:269-279.

Elliott, D.G., R.J. Pascho, and G.L. Bullock. 1989. Developments in the control of Bacterial Kidney Disease of salmonid fishes. *Dis. Aquat. Org.* 6:201-215.

Emlen, J.M. 1989. Terrestrial population models for ecological risk assessment: A state-of-the-art review. *Environ. Toxicol. Chem.* 8:831-842.

Emlen, J.M., D.C. Freeman, and F. Wagstaff. 1989. Interaction assessment: Rationale and a test using plants. *Evol. Ecol.* 3:115-149.

Emlen, J.M., and E.K. Pikitch. 1989. Animal population dynamics: Identification of critical components. *Ecol. Model.* 44:253-273.

Hornig, S., A. Sterling, and S. Smith. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest)--ghost and blue mud shrimp. U.S. Fish and Wildlife Service Biological Report 82(11.93). U.S. Army Corps of Engineers, TR EL-82-4.

Kaattari, S.L., D.D. Rockey, G.D. Weins, L.L. Gilkey, J.R. Winton, J.L. Bartholomew, J.M. Lehner-Fournier and R.L. Diehm. 1989. ELISA-based segregation of adult spring chinook salmon for control of bacterial kidney disease. Annual report prepared for the U.S. Department of Energy, Bonneville Power Administration (R. Morinaka, Contracting Officer). 48 pp.

Kent, M.L., D.G. Elliott, J.M. Groff, and R.P. Hedrick. 1989. *Loma salmonae* (Protozoa: Microspora) infections in seawater reared coho salmon *Oncorhynchus kisutch*. *Aquaculture* 80:211-222.

- Kent, M.L., J.M. Groff, J.K. Morrison, W.T. Yasutake, and R.A. Holt. 1989. Spiral swimming behavior due to cranial and vertebral lesions associated with *Cytophaga psychrophila* infections in salmonid fishes. *Dis. Aquat. Org.* 6:11-16.
- Lannan, C.N., C.K. Arakawa, J.R. Winton, and J.L. Fryer. 1989. Persistent infections of fish cell lines by paramyxovirus isolates from chinook salmon (*Oncorhynchus tshawytscha*). Pages 309-316 in W. Ahne, (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.
- Liu, H.W., R.R. Stickney, and S.D. Smith. 1989. Preliminary results of spawning Pacific halibut (*Hippoglossus stenolepis*). *Northwest Environmental Journal* 5:1979-180.
- Maciolek, J.A. 1989. Tundra ponds of the Yukon Delta, Alaska, and their macroinvertebrate communities. *Hydrobiologia* 172:193-206.
- McIntyre, J.D. 1989. Methods for developing new stocks of Atlantic salmon. Pages 19-21 in H.L. Kincaid and J.G. Stanley (eds.). *Atlantic salmon brood stock management and breeding handbook*. U.S. Fish Wildlife Service, Biol. Rep. 89(12). 42 pp.
- Mesa, M.G., and C.B. Schreck. 1989. Electrofishing mark-recapture and depletion methodologies evoke behavioral and physiological changes in cutthroat trout. *Trans. American Fish. Soc.* 118:644-658.
- Novotny, J.F., and T.L. Macy. 1989. Construction and emplacement of a large enclosure for rearing fish off-station. *Prog. Fish-Cult.* 51:52-54.
- Parsley, M.J., D.E. Palmer, and R.W. Burkhardt. 1989. Variation in capture efficiency of a beach seine for small fishes. *N. Am. J. Fish. Manage.* 9:239-244.
- Parsley, M.J., S.D. Duke, T.J. Underwood, and L.G. Beckman. 1989. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Pages 101-166 in A.A. Nigro (ed.). *Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam*. Report to Bonneville Power Administration (Project 86-50), Portland, Oregon.
- Pascho, R.J., and D.G. Elliott. 1989. Juvenile fish transportation: Impact of bacterial kidney disease on survival of spring/summer chinook salmon stocks. *Ann. Rep.*, 1988 (Contract E86880047) prepared by the U.S. Fish and Wildlife Service, Seattle, Washington, for the U.S. Army Corps of Engineers, Walla Walla, Washington.
- Petersen, J.H. 1989. Modeling the impact of SONGS on kelp beds: Application of RAMAS-K. Southern California Edison Co. Annual Report, Rosemead, California.
- Petersen, J.H., M. Burgman, V. Gerard, and L. Ginzburg. 1989. Development of a population model of giant kelp. In: *Report on 1988 Data, Marine Environmental Analysis and Interpretation*, San Onofre Nuclear Generating Station, Southern California Edison Company.

Petersen, J.H. 1989. Assessing the longterm impacts of SONGS and natural phenomena upon the San Onofre kelp bed: Application of a population model of giant kelp. In: Report on 1988 Data, Marine Environmental Analysis and Interpretation, San Onofre Nuclear Generating Station, Southern California Edison Company.

Reisenbichler, R.R. 1989. Utility of spawner-recruit relations for evaluating the effect of degraded environment on the abundance of chinook salmon, *Oncorhynchus tshawytscha*. Pages 21-32 in C.D. Levings, L.B. Holtby, and M.A. Henderson, (eds.), Proceeding of the National Workshop on Effects on Habitat Alterations on Salmonid Stocks. Canadian Special Publication of Fisheries and Aquatic Sciences Symposium 105.

Reisenbichler, R.R., and S.R. Phelps. 1989. Genetic variation in steelhead (*Salmo gairdneri*) from the north coast of Washington. *Can. J. Fish. Aquat. Sci.* 46(1):66-73.

Rondorf, D.W., J.W. Beeman, J.C. Faler, M.E. Free, and E.J. Wagner. 1989. Assessment of smolt condition for travel time analysis, Annual Report 1988. Portland, Oregon, Bonneville Power Administration. contract DE-AI79-97BP35245.

Winton, J.R. Picornaviruses and reoviruses of fishes. 1989. Pages 217-226 in W. Ahne (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.

Winton, J.R., C.K. Arakawa, C.N. Lannan, and J.L. Fryer. 1989. Isolation of a reovirus from coho salmon (*Oncorhynchus kisutch*) in Oregon, USA. Pages 257-269 in W. Ahne (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.

Winton, J.R. C.N. Lannan, M. Yoshimizu, and T. Kimura. 1989. Response of salmonid fish to artificial infection with chum salmon virus. Pages 270-278 in W. Ahne (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.

Yamamoto, T., C.K. Arakawa, W.N. Batts, and J.R. Winton. 1989. Comparison of infectious hematopoietic necrosis in natural and experimental infections of spawning salmonids by infectivity and immunohistochemistry. Pages 411-429 in W. Ahne (ed.), *Viruses of Lower Vertebrates*, Springer, Berlin.

Arakawa, C.K., R.E. Deering, K.H. Oshima, and J.R. Winton. 1990. Polymerase chain reaction (PCR) amplification of a nucleoprotein gene sequence of infectious hematopoietic necrosis virus. *Dis. Aquat. Org.* 8:(3):165-170.

Batts, W. 1990. Inactivation of infectious hematopoietic necrosis virus by low levels of iodine. MS Thesis, University of Washington, Seattle, Washington.

Beamesderfer, R.C., B.E. Rieman, L.J. Bledsoe, and S. Vigg. 1990. Management implications of a model of predation by a resident fish on juvenile salmonids migrating through a Columbia River reservoir. *N. Am. J. Fish. Mgmt.* 10:290-304.

Beeman, J.W., and J.F. Novotny. 1990. Pen rearing and imprinting of fall chinook salmon,

Annual Report 1989. Prepared by U.S. Fish and Wildlife Service for Bonneville Power Administration, Portland, Oregon, Contract No. DE-A179-83BP13084.

Beeman, J.W., D.W. Rondorf, J.C. Faler, M.E. Free, and P.V. Haner. 1990. Assessment of smolt condition for travel time analysis, Annual Report 1989. Contract No. DE-A179-97BP35245 BPA, Portland, Oregon.

Bledsoe, L.J., S. Vigg, and J.H. Petersen. 1990. Simulation estimates of salmonid predation loss to northern squawfish in a Columbia River reservoir. Appendix D-1 in A.A. Nigro (ed.). Developing a predation index and evaluating ways to reduce salmonid losses to predation in the Columbia River Basin, Final Report. Bonneville Power Administration, Portland, Oregon.

Caddell, S.M., D.M. Gadomski, and L.R. Abbott. 1990. Induced spawning of the California halibut, *Paralichthys californicus* (Pisces: Paralichthyidae), under artificial and natural conditions. in C.W. Haugen, (ed.), The California halibut, *Paralichthys californicus*, resource and fisheries. Calif. Dept. Fish Game, Fish. Bull. 174: 175-198.

Duke, S.D., T.J. Underwood, G.M. Asbridge, R.G. Griswold, M.J. Parsley, and L.G. Beckman. 1990. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Pages 78-148 in A.A. Nigro (ed.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Annual Report to Bonneville Power Administration (project 86-50), Portland, Oregon.

Emlen, J.M., R.R. Reisenbichler, A.M. McGie, and T.E. Nickelson. 1990. Density-dependence at sea for coho salmon (*Oncorhynchus kisutch*). Can. J. Fish. and Aquat. Sci. 47:1765-1772.

Gadomski, D.M., S.M. Caddell, L.R. Abbott, and T.C. Caro. 1990. Growth and development of larval and juvenile California halibut, *Paralichthys californicus*, reared in the laboratory in C.W. Haugen, (ed.). The California halibut, *Paralichthys californicus*, resource and fisheries. California Department of Fish and Game, Fish Bul. 174:85-98.

Mesa, M.G., S.D. Duke, and D.L. Ward. 1990. Spatial and temporal variation in proportional stock density and relative weight of smallmouth bass in a reservoir. J. Fresh. Ecol. 5(3):323-339.

Mulcahy, D., D. Klaybor, and W.N. Batts. 1990. Isolation of infectious hematopoietic necrosis virus from a leech (*Piscicola salmositica*) and a copepod (*Salmincola* sp.), ectoparasites of sockeye salmon *Oncorhynchus nerka*. Dis. of Aquat. Organisms 8:29-34.

Novotny, J.F., and J.W. Beeman. 1990. Use of the "Utah Index" in Assessing the Health and Condition of Juvenile Chinook Salmon. Prog. Fish-Cult. 52:162-170.

Palmisano, A.N. 1990. Tolerance of juvenile fall chinook salmon to selenium exposure from water and the food chain: Impacts on smoltification and early marine survival. Pages 105-141 in Agricultural irrigation drainwater studies in support of the San Joaquin Valley Drainage

Program, Final Report. U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Fisheries Contaminant Research Center, Columbia, Missouri. Intra-agency Agreement 6-AA-20-0417 between U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service.

Petersen, J.H., M.G. Mesa, J. Hall-Griswold, W.C. Schrader, G.W. Short, and T.P. Poe. 1990. Magnitude and dynamics of predation on juvenile salmonids in Columbia and Snake River reservoirs. Annual Report 1989 (Contract DE-AI79-88BP91964) Bonneville Power Administration, Portland, Oregon.

Petersen, J.H., D.B. Jepsen, R.D. Nelle, R.S. Shively, R.A. Tabor, and T.P. Poe. 1990. System-wide significance of predation on juvenile salmonids in Columbia and Snake River reservoirs. Ann. Rpt. (Contract DE-AI79-90BP07096) BPA, Ptl., OR.

Rondorf, D.W., G.A. Gray, and R.B. Fairly. 1990. Feeding ecology of subyearling chinook salmon in riverine and reservoir habitats of the Columbia River. *Trans. Am. Fish. Soc.* 119:16-24.

Wedemeyer, G.A., Barton, B.B., and McLeay, D.J. 1990. Stress and acclimation. Pages 451-489 in C.B. Schreck and P.B. Moyle, (eds.). *Methods for fish biology.* Am. Fish. Soc., Bethesda, MD.

Yamamoto, T., W.N. Batts, C.K. Arakawa, and J.R. Winton. 1990. Multiplication of Infectious Hematopoietic Necrosis Virus in Rainbow Trout following Immersion Infection: Whole-Body Assay and Immunohistochemistry. *J. Aquat. An. Health* 2:271-280.

Bartholomew, J.L., M.R. Arkoosh and J.S. Rohovec. 1991. Demonstration of the salmonid humoral response to *Renibacterium salmoninarum* using a monoclonal antibody against salmonid immunoglobulin. *J. of Aquat. An. Health* 3:254-259.

Batts, W.N., M.L. Landolt, J.R. Winton. 1991. Inactivation of infectious hematopoietic necrosis virus by low levels of iodine. *Appl. and Environ. Microbiol.* 57:1379-1385.

Batts, W.N., G.S. Traxler, and J.R. Winton. 1991. Factors affecting the efficiency of plating for selected fish rhabdoviruses. *Proceedings of the Second International Symposium on Viruses of Lower Vertebrates.* July 29-31, 1991. Corvallis, Oregon.

Beamesderfer, R.C., L.J. Bledsoe, B.E. Rieman, and S. Vigg. 1991. Simulation of predation by resident fish on juvenile salmonids in a mainstem Columbia River Reservoir. *Trans. Am. Fish. Soc.*

Beaman, J.W., D.W. Rondorf, J.C. Faler, P.V. Haner, S.T. Sauter, and D.A. Venditti. 1991. Assessment of smolt condition for travel time analysis, Annual Report 1990. Prepared by U.S. Fish and Wildlife Service of Bonneville Power Administration, Portland, Oregon, Contract No. DE-A179-97BP35245.

- Beeman, J.W., D.W. Rondorf, J.C. Faler, M.E. Free, P.V. Haner, S.T. Sauter, and D.A. Venditti. 1991. Assessment of smolt condition for travel time analysis. Portland, Oregon. Bonneville Power Administration.(Contract DE-A179-87BP35245) .
- Bernard, J., M. Bremont, and J.R. Winton. 1991. Sequence homologies between the N genes of the 07-71 and makah isolates of viral hemorrhagic septicemia virus. Proceedings of the Second International Symposium on Viruses of Lower Vertebrates. July 29-31, 1991. Corvallis, Oregon.
- Beyer-Rogers, J.M., and C.C. Burley. 1991. A sigmoid model to predict gastric evacuation rates of smallmouth bass (*Micropterus dolomieu*) fed juvenile salmon. *Can. J. Fish. Aquat. Sci.* 48:933-937.
- Caddell, S.M., D.M. Gadomski, and L.R. Abbott. 1991. Induced spawning of the California halibut, *Paralichthys californicus* (Pisces: Paralichthyidae), under artificial and natural conditions. in C.W. Haugen, ed. *The California halibut, Paralichthys californicus, resource and fisheries.* California Department of Fish and Game, Fish Bul. 174.
- Deering, R.E., C.K. Arakawa, K.H. Oshima, P.J. O'Hara, M.L. Landolt, and J.R. Winton. 1991. Development of a biotinylated DNA probe for detection of infectious hematopoietic necrosis virus. *Dis. Aquat. Organisms* 11:57-65.
- Elliott, D.G., and R.J. Pascho. 1991. Juvenile fish transportation: Impact of bacterial kidney disease on survival of spring/summer chinook salmon stocks. *Ann. Rep., 1989 (Contract E86880047)* prepared by the U.S. Fish and Wildlife Service, Seattle, Washington, for the U.S. Army Corps of Engineers, Walla Walla, Washington.
- Emlen, J.M. 1991. Heterosis and outbreeding depression: A multi-locus model and an application to salmon production. *Fish. Res.* 12:187-212.
- Fox, A.C., C.K. Arakawa, and J.R. Winton. 1991. The application of current techniques in molecular biology for detection and control of infectious diseases in salmonid aquaculture. in: *Proceedings of the U.S.-Japan Natural Resources Council, 1988, Mie, Japan.* NOAA Technical Report NMFS 102:165-169.
- Gadomski, D.M., and S.M. Caddell. 1991. Effects of temperature on early-life-history stages of California halibut *Paralichthys californicus*. *Fish. Bull., U.S.* 89:567-576.
- Gustavson, A.W., Wydoski, R.S., and G.A. Wedemeyer. 1991. Physiological response of largemouth bass to angling stress: severity and time to recovery. *Trans. Am. Fish. Soc.* 120:286-309.
- Jorgensen, P.E.V., N.J. Olesen, N. Lorenzen, J.R. Winton, and S. Ristow. 1991. Infectious hematopoietic necrosis (IHN) and viral hemorrhagic septicemia (VHS): detection of the trout antibodies to the causative viruses by means of plaque neutralization, immunofluorescence, and enzyme-linked immunosorbent assay. *J. of Aquat. Anim. Health* 3:100-108.

- McCabe, G.T. and L.G. Beckman. 1991. Use of an artificial substrate to collect white sturgeon eggs. *California Fish and Game* 76:248-250.
- McIntyre, J.D. 1991. Culture of Salmon Fishes. Pacific salmon culture for stocking. CRC Press. (ed.) R. Stickney.
- Mesa, M.G. 1991. Variation in feeding, aggression, and position choice between hatchery and wild cutthroat trout in an artificial stream. *Trans. Am. Fish. Soc.* 120:723-727.
- Meyers, T.R., J. Sullivan, E. Emmenegger, J. Follet, S. Short, W. Batts, and J.R. Winton. 1991. Isolation of viral hemorrhagic septicemia virus from Pacific cod *Gadus macrocephalus* in Prince William Sound Alaska. Pages 83-92 in *Proceedings of the Second International Symposium on Viruses of Lower Vertebrates*, July 27-31, 1991, Oregon State University, Corvallis, Oregon.
- Miller, A. I., P.J. Anders, M.J. Parsley, C.R. Sprague, J.J. Warren, and L.G. Beckman. 1991. Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Pages 82-144 In A.A. Nigro (ed.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam. Annual Progress Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.
- Nishizawa, T., M. Yoshimizu, J.R. Winton, W. Ahne, and T. Kimura. 1991. Characterization of structural proteins of hirame rhabdovirus, HRV. *Dis. of Aquat. Org.* 10:167-172.
- Nishizawa, T., M. Yoshimizu, J. Winton, and T. Kimura. 1991. Comparative analysis of genome size and rate of protein synthesis of hirame rhabdovirus, infectious hematopoietic necrosis virus, and viral hemorrhagic septicemia virus. *Fish Pathol.* 26:77-81.
- Novotny, J.F., and T.L. Macy. 1991. Pen rearing of juvenile fall chinook salmon in the Columbia River: alternative rearing scenarios. *Proceedings of the Fisheries Bioengineering Symposium*, Portland, Oregon. *Am. Fish. Soc. Sym.* 10:539-547.
- Pascho, R.J., D. Elliott, and J. Streufert. 1991. Broodstock segregation of spring chinook salmon *Oncorhynchus tshawytscha* by use of the enzyme-linked immunosorbent assay (ELISA) and the fluorescent antibody technique (FAT) affects the prevalence and levels of *Renibacterium salmoninarum* infection in progeny. *Dis. of Aquat. Organisms* 12:25-40.
- Petersen, J.H., D.B. Jepsen, R.D. Nelle, R.S. Shively, R.A. Tabor, and T.P. Poe. 1991. System-wide significance of predation on juvenile salmonids in the Columbia and Snake River reservoirs. Annual Report 1990. Bonneville Power Administration, Portland, Oregon.
- Poe, T.P., H.C. Hansel, S. Vigg, D.E. Palmer, and L.A. Prendergast. 1991. Feeding of predaceous fishes on out-migrating juvenile-salmonids in John Day Reservoir, Columbia River. *Trans. Am. Fish. Soc.* 120:405-420.

Rieman, B.E., R.C. Beamesderfer, S. Vigg, and T.P. Poe. 1991. Estimated loss of juvenile salmonids to predation by northern squawfish, walleyes, and smallmouth bass in John Day Reservoir, Columbia River. *Trans. Am. Fish. Soc.* 120:448-458.

Roberti, K.W., J.R. Winton, and J.S. Rohovec. 1991. Variants of infectious hematopoietic necrosis virus selected with glycoprotein-specific monoclonal antibodies. Pages 33-42 in *Proceedings of the Second International Symposium on Viruses of Lower Vertebrates*, July 27-31, 1991, Corvallis, Oregon.

Rogers, J.B., C.C. Burley. 1991. A sigmoid model to predict gastric evacuation rates of smallmouth bass (*Micropterus dolomieu*) fed juvenile salmon. *Can. J. of Fish. and Aquat. Sci.* 48:933-937.

Scoppettone, G.G., and G. Vinyard. 1991. Life history and management of four endangered lacustrine suckers. Chapter 18 in W.L. Mickley and J.E. Deacon (eds.). *Battle Against Extinction: Native Fish Management in the American West*. Arizona State University Press.

Shively, R.S., R.A. Tabor, R.D. Nelle, D.B. Jepsen, J.H. Petersen, S.T. Sauter, and T.P. Poe. 1991. System-wide significance of predation on juvenile salmonids in the Columbia and Snake River reservoirs. Annual report 1991. Bonneville Power Administration, Portland, Oregon.

Stickney, R.R., H.W. Liu, and S.D. Smith. 1991. Recent advances in halibut (*Hippoglossus* spp.) culture. in *Marine ranching: proceedings of the Seventeenth U.S.-Japan meeting on aquaculture*; Ise, Mie Prefecture, Japan, October 16, 17, and 18, 1988. Ralph S. Svrjcek (ed.). NOAA Technical Report NMFS 102.

Vigg, S., and C.C. Burley. 1991. Temperature-dependent maximum daily consumption of juvenile salmonids by northern squawfish (*Ptychocheilus oregonensis*) from the Columbia River. *Can. J. of Fish. Aquat. Sci.* 48:2491-2498.

Vigg, S., T.P. Poe, L.A. Prendergast, and H.C. Hansel. 1991. Rates of consumption of juvenile salmonids and alternative prey fish by northern squawfish, walleyes, smallmouth bass, and channel catfish in John Day Reservoir, Columbia River. *Trans. Am. Fish. Soc.* 120:421-438.

Winton, James R. 1991. Recent advances in detection and control of infectious hematopoietic necrosis virus in aquaculture. *Annual Rev. of Fish Diseases* 83-93.

Winton, J.R., W.N. Batts, R. Brunson, K. Hopper, T. Nishizawa, and C. Stehr. 1991. Pages 43-50 in *Characteristics of the first North American isolates of viral hemorrhagic septicemia virus*. *Proceedings of the Second International Symposium on Viruses of Lower Vertebrates*, July 27-31, 1991, Corvallis, Oregon.

Zaugg, W.S., W.W. Dickhoff, B.R. Beckman, C.V.W. Mahnken, G.A. Winans, T.W.

- Newcomb, C.B. Schreck, A.N. Palmisano, R.M. Schrock, G.A. Wedemeyer, R.D. Ewing, and C.W. Hopley. 1991. Annual Report to Bonneville Power Administration (BPA), Portland, Oregon. Smolt quality assessment of spring chinook salmon. Project No. 89-046, Contract No. DE-AI79-89BP97300.
- Beeman, J.W., and D.W. Rondorf. 1992. Effects of flow and smoltification on the migration rates of spring chinook salmon and steelhead. Pages 77-83 in Proceedings of the Atlantic Salmon Workshop, U.S. Fish and Wildlife Service, Lamar, Pennsylvania.
- Bernard, J., M. Bremont, and J.R. Winton. 1992. Comparison of the N genes of European and North American isolates of viral hemorrhagic septicemia virus. *Gen. Virol.* 73:1011-1014.
- Byrne, A., T. Bjornn, and J. McIntyre. 1992. Modeling the response of native steelhead to hatchery supplementation programs in an Idaho River. *N. Am. J. Fish. Manage.*
- Chien, M-S., T.A. Gilbert, C. Huang, M.L. Landolt, P.J. O'Hara, and J.R. Winton. 1992. Molecular cloning and sequence analysis of the gene coding for the 57kDa soluble antigen of the salmonid fish pathogen *Renibacterium salmoninarum*. *FEMS Microbiology Letters.* 96:259-266.
- Edsall, T.A., C.L. Brown, G.W. Kennedy, and T.P. Poe. 1992. Lake trout spawning habitat in the Six Fathom Bank-Yankee Reef lake trout sanctuary, Lake Huron. *J. of Great Lakes Res.* 18:70-90.
- Elliott, D.G. 1992. Impact of bacterial kidney disease on chinook salmon smolts during migration, collection, and transportation. Pages 191-202 in Proceedings of the Chinook Salmon Smolt Survival Workshop presented by the Idaho Chapter, American Fisheries Society, Idaho Water Resources Institute, Idaho Cooperative Fish and Wildlife Research Unit. University of Idaho, Moscow, February 26, 1992.
- Emlen, J.M., D.C. Freeman, J. Li. 1992. Interaction assessment II: A tool for population and community management. *J. of Wild. Mngt.* 56(4):708-717.
- Emlen, J.M. 1992. Interaction Assessment III. Predicting population-level impacts of toxicants and pesticides. ASTM Symposium, Spring, 1991, on Environmental Risk Assessment.
- Emlen, J.M., S. Trekel, C.C. Buchanan. 1992. Probabilistic Projections for Recovery of the Endangered Cui-UI. *N. Am. J. of Fish. Mngt.*
- Gadomski, D.M., and J.A. Hall-Griswold. 1992. Predation by northern squawfish on live and dead juvenile chinook salmon. *Trans. Am. Fish. Soc.* 121:680-685.
- Gadomski, D.M., and J.A. Hall-Griswold. 1992. Predation by northern squawfish on live versus dead juvenile salmonids. Pages 8-23 in T.P. Poe (ed.). Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia

and Snake River reservoirs. Annual report by the U.S. Fish and Wildlife Service to the Bonneville Power Administration, Portland, Oregon.

Gadomski, D.M., and A.M. Murphy. 1992. Reproduction and early life history of northern squawfish in the Columbia River. Pages 89-100 in T.P. Poe (ed.). Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report by the U.S. Fish and Wildlife Service to the Bonneville Power Administration, Portland, Oregon.

Gadomski, D.M., and T.M. Olson. 1992. Effects of experimental descaling on juvenile salmonid vulnerability to northern squawfish. Pages 42-51 in T.P. Poe (ed.). Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report by the U.S. Fish and Wildlife Service to the Bonneville Power Administration, Portland, Oregon.

Haney, D.C., D.A. Hursh, and J.R. Winton. 1992. Physiological and hematological changes in chum salmon (*Oncorhynchus keta*) infected with erythrocytic necrosis virus. *J. of Aquat. An. Health* 4:48-57.

Hatcher, C.O., R.E. Ogawa, T.P. Poe, and J.R.P. French III. 1992. Trace elements in lake sediment, macrozoobenthos, and fish near a coal ash disposal basin. *J. Freshwater Ecol.* 7:257-269.

Jeney Z., G. Jeney, and A.G. Maule. 1992. Cortisol measurements in fish. Pages 157-166 in J.S. Stolen, T.C. Fletcher, D.P. Anderson, S.L. Kaattari, and A.F. Rowley, editors. *Techniques in Fish Immunology (Vol. 2)*. SOS Publications, Fair Haven, NJ.

Martinez, P.J., and K.F. Tiffan. 1992. Fabrication of stainless steel spherical anodes for use with boat-mounted boom electroshockers. *N. Am. J. Fish. Manage.* 12: 840-843.

Mesa, M.G., D.M. Gadomski, and T.M. Olson. 1992. The vulnerability of juvenile chinook salmon to predation by northern squawfish. Pages 173-179 in *Passage and survival of juvenile chinook salmon migrating from the Snake River basin*. Proceedings of a technical workshop, University of Idaho, February 26-28, 1992.

Meyers, T.R., J. Sullivan, E. Emmenegger, J. Follet, S. Short, W. Batts, and J.R. Winton. 1992. Identification of viral hemorrhagic septicemia virus isolated from Pacific cod *Gadus macrocephalus* in Prince William Sound Alaska, USA. *Dis. Aquat. Organisms* 12:167-175.

Nishizawa, T., M. Yoshimizu, J.R. Winton, and T. Kimura. 1992. Comparison of structural proteins of fish rhabdoviruses. Pages 72-79 in T. Kimura (ed.), *Salmonid Diseases*. Hokkaido University Press, Sapporo, Japan.

Parsley, M.J. 1992. Use of a raster structured GIS in fisheries research activities on the Columbia River in F. D'archia, editor, *Proceedings of the Third National U.S. Fish and Wildlife Service Geographic Information Systems Workshop*. May 1992, LaCorse,

Wisconsin.

Pascho, R.G. 1992. Bacterial kidney disease in wild and hatchery spring and summer chinook salmon juveniles in the Snake River Basin. Pages 220-230 in Proceedings of the chinook smolt survival workshop presented by the Idaho Chapter, American Fisheries Society, Idaho Water Resources Institute, Idaho Cooperative Fish and Wildlife Research Unit. University of Idaho, Moscow, February 26, 1992.

Petersen, J.H., and D.L. DeAngelis. 1992. Functional response and capture timing in an individual-based model: predation by northern squawfish (*Ptychocheilus oregonensis*) on juvenile salmonids in the Columbia River. *Can. J. of Fish. and Aquat. Sci.* 49:2551-2565.

Petersen, J.H., and D.M. Gadomski. 1992. Effects of light intensity on northern squawfish capture of juvenile salmonids in the laboratory. Pages 101-114 in Poe, T.P. (ed.). Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report, Bonneville Power Administration, Portland, Oregon.

Petersen, J.H., D.M. Gadomski, and T.P. Poe. 1992. Northern squawfish predation on live and dead juvenile salmonids in the Bonneville Dam tailrace. Pages 24-41 in Poe, T.P. (ed.). Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report, Bonneville Power Administration, Portland, Oregon.

Petersen, J.H., and T.P. Poe. 1992. Approaches to estimating predation losses in a large river system: predation upon juvenile salmonids in the Columbia River. Pages 13-18 in C.D. Levings, G.A. Hunter and Department of Fisheries and Oceans, West Vancouver, BC [Canada], Biol. Sci. Branch (eds.). An account of the workshop on research approaches to predation/competition questions in river fish communities. *Can. Manuscr. Rep. Fish. Aquat. Sci./Rapp. Manuser. Can. Sci. Halieut. Aquat.* No. 2150, 70 pp.

Parsley, M.J. 1992. Use of a raster-structured GIS in fisheries research activities on the Columbia River. Pages 74-81 in F. D'erchia, (ed.). Proceedings of the Third National U.S. Fish and Wildlife Service Geographic Information Systems Workshop. May, 1992. LaCrosse, Wisconsin.

Poe, T.P. 1992. Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report 1991, to the Bonneville power Administration, Portland, Oregon. Use of a raster-structured GIS in fisheries research activities on the Columbia River. Pages 74-81 in F. D'erchia, (ed.) Proceedings of the Third National U.S. Fish and Wildlife Service Geographic Information Systems Workshop. May, 1992. LaCrosse, Wisconsin.

Reisenbichler, R.R., J.D. McIntyre, M.F. Solazzi, and S.W. Landino. 1992. Genetic variation in steelhead of Oregon and northern California. *Trans. Am. Fish. Soc.* 121:158-169.

- Sanders, J.E., J.S. Long, C.K. Arakawa, J.L. Bartholomew, and J.S. Rohovec. 1992. Prevalence of *Renibacterium salmoninarum* among downstream-migrating salmonids in the Columbia River. *J. of Aquat. Anim. Health* 4:72-75.
- Ward, D.L., and T.P. Poe. 1992. Predation on juvenile salmonids by northern squawfish in Columbia and Snake River reservoirs. Pages 65-69, in *Workshop Proceedings - Passage and survival of juvenile chinook salmon migrating from the Snake River Basin*. Am. Fish. Soc., Idaho Chapter, Moscow, Idaho.
- Wedemeyer, G.A. 1992. Transporting and handling smolts. *World Aquaculture* 23:4.
- Winton, J.R. 1992. Evolution of fish rhabdoviruses. Pages 88-95 in T. Kimura (ed.), *Salmonid Diseases*. Hokkaido University Press, Sapporo, Japan.
- Winton, J.R. 1992. The application of molecular biology to the detection of infectious hematopoietic necrosis virus. In *Proceedings of U.S.-Japan Meeting on Aquaculture*, Mie, Japan. NOAA Technical Report NMFS III. pp. 53-56.
- Yamamoto, T., W.N. Batts and J.R. Winton. 1992. In vitro infection of salmonid epidermal tissues by infectious hematopoietic necrosis virus and viral hemorrhagic septicemia virus. *J. Aquat. Anim. Health* 4:231-239.
- Anders, P.J., and L.B. Beckman. 1993. Comparisons of white sturgeon egg mortality and juvenile deformity among four areas of the Columbia River. Pages 355-364 in R.C. Beamesderfer and A.A. Nigro, (eds.). *Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.*
- Anders, P.J., and L.B. Beckman. 1993. Location and timing of white sturgeon spawning in three Columbia River impoundments. Pages 47-60 in R.C. Beamesderfer and A.A. Nigro, (eds.). *Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.*
- Anders, P.J., and L.B. Beckman. 1993. White sturgeon spawning cues in an impounded reach of the Columbia River. Pages 123-140 in R.C. Beamesderfer and A.A. Nigro, (eds.). *Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.*
- Anders, P.J., and L.B. Beckman. 1993. Feasibility of radio telemetry to document fish movement and habitat use in Lower Columbia River impoundments. Pages 47-54 in R.C. Beamesderfer and A.A. Nigro, (eds.). *Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.*

Batts, W.N., C.K. Arakawa, J. Bernare, and J.R. Winton. 1993. Isolates of viral hemorrhagic septicemia virus from North America can be detected and distinguished by DNA probes. *Dis. Aq. Org.* 17:67-71.

Brady, Y.J., J.A. Plumb, and J.R. Winton. 1993. Survival in pond water of four reoviruses isolated from aquatic animals. *J. of Appl. Aquacult.* 2:85-91.

Chang, H., and J.M. Emlen. 1993. Population dynamics, distribution patterns and morph frequency in a North American population of the land snail, *Cepaea nemoralis*. *Oecologia* 93:501-507.

Christie, K.E., B. Hjeltnes, I. Uglenes, and J.R. Winton. 1993. Determination of buoyant density and sensitivity to chloroform and freon for the etiological agent of infectious salmonid anaemia. *Dis. Aquat. Org.* 15:225-228.

Freeman, S., and R.J. Rodriguez. 1993. Genetic conversion of a fungal plant pathogen to a non-pathogenic, endophytic mutualist. *Science* 260:75-78.

Freeman, S., M.H. Pham, and R.J. Rodriguez. 1993. Genotyping *Colletotrichum* species using a nuclear DNA repetitive element, restriction enzyme digestion patterns of A + T rich DNA, and arbitrarily primed PCR. *Exper. Mycol.* 17:309-322.

Freeman, S., and R.J. Rodriguez. 1993. A rapid reliable technique for assessing pathogenicity of *Fusarium oxysporum* f. Sp. *Niveum* and *Fusarium oxysporum* f. Sp. *Melonis* on cucurbits. *Plant Dis.* 77:1198-1201.

Gadomski, D.M., A.M. Murphy, and C.A. Barfoot. 1993. Reproduction and early life history of northern squawfish *Ptychocheilus oregonensis* in the Columbia River. Pages 26-42 in Petersen, J.H. and T.P. Poe (eds.). System-wide significance of predation on juvenile salmonids in Columbia and Snake River reservoirs. Annual report by the U.S. Fish and Wildlife Service to the Bonneville Power Administration, Portland, OR.

Graham, J.H., D.C. Freeman, and J.M. Emlen. 1993. Developmental stability and its applications in ecotoxicology. *Ecotoxicology* 2:175-184.

Halver, J.E., S. Felton, and A.N. Palmisano. 1993. Efficacy of L-ascorbyl-2-sulfate as a vitamin C source for rainbow trout. In *Fish Nutrition in Practice*. S. Kanshik, (ed.), Institute Nationale Recherches Agriculture, Ministry of Agriculture, France.

McCann, J.A., H.L. Burge and W.P. Connor. 1993. Evaluation of PIT tagging of subyearling chinook salmon. Pages 63-85 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1991, Portland, Oregon.

Maule, A.G., C.B. Schreck, and C.S. Sharpe. 1993. Seasonal changes in cortisol sensitivity and glucocorticoid receptor affinity and number in leukocytes of coho salmon. *Fish Physiol.*

Biochem. 10:497-506.

Mesa, M.G., and T.M. Olson. 1993. Prolonged swimming performance of northern squawfish: can water velocity be used to reduce predation on juvenile salmonids at Columbia River Dams? *Trans. Am. Fish. Soc.* 122:1104-1110.

Miller, A.I. and L.G. Beckman. 1993. Age and growth of juvenile white sturgeon in the Columbia River downstream from McNary Dam. Pages 201-216 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Miller, A.I. and L.G. Beckman. 1993. A recruitment index for white sturgeon in the Columbia River downstream from McNary Dam. Pages 141-166 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Miller, A.I. and L.G. Beckman. 1993. Predation on white sturgeon eggs by sympatric fish species in three Columbia River impoundments. Pages 343-354 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final Report (contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Miller, A.I. T.D. Counihan, M.J. Parsley, and L.G. Beckman. 1993 Effects of mitigative measures on productivity of white sturgeon populations in Columbia River downstream from McNary Dam. Pages 52-57 in R.C. Beamesderfer and A.A. Nigro, (eds.). Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam. Annual Report to Bonneville Power Administration (project 86-50) Portland, Oregon.

Nelson, W.R., L.K. Freidenburg, and D.W. Rondorf. 1993. Swimming behavior of subyearling chinook salmon. Pages 30-51 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1991, Portland, Oregon.

Nelson, W.R., P.G. Wagner, D.W. Rondorf. 1993. Subyearling chinook salmon marking at McNary Dam to estimate adult contribution. Pages 52-62 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1991, Portland, Oregon.

Oshima, K., K. Higman, C. Arakawa, T. Meyers, P.E. Vestergard Jorgensen, P. de Kinklein, and J.R. Winton. 1993. Genetic comparison of viral hemorrhagic septicemia isolates from North America and Europe. *Dis. Aquat. Org.* 17:73-80.

Parsley, M.J., L.G. Beckman, and G.T. McCabe Jr. 1993. Spawning and rearing habitat use by white sturgeons in the Columbia River downstream from McNary Dam. *Trans. Am. Fish. Soc.* 122:217-227.

Parsley, M.J., and L.G. Beckman. 1993. An evaluation of spawning and rearing habitat for white sturgeon in the Columbia River downstream from McNary Dam. pages 231-261 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Parsley, M.J., J. Anders, A.I. Miller, L.G. Beckman, and G.T. McCabe, Jr. 1993. Factors affecting spawning and recruitment of white sturgeon in the Columbia River downstream from McNary Dam. Pages 61-82 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Parsley, M.J., G.T. McCabe, Jr., and L.G. Beckman. 1993. Habitat use by spawning and rearing white sturgeon in the Columbia River downstream from McNary Dam. Pages 207-230 in R.C. Beamesderfer and A.A. Nigro, (eds.). Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I. Final Report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Pascho, R.G., D.G. Elliott and S. Achord. 1993. Monitoring of in-river migration of smolts from two groups of spring chinook salmon (*Oncorhynchus tshawytscha*) with different profiles of *Renibacterium salmoninarum* infection. Broodstock Management and Egg and Larval Quality: A Science in Aquaculture International Conference. University of Stirling, Scotland. Elsevier Publishing Company. Blackwell Scientific Publications Limited.

Perring, T.M., A.D. Cooper, R.J. Rodriguez, C.A. Farrar, and T.S. Bellows. 1993. Genomic and behavioral studies identify a white fly species critical to agricultural ecosystems. *Science* 259:74-77.

Petersen, H. and T.P. Poe. 1993. System-wide significance of predation on juvenile salmonids in the Columbia and Snake River reservoirs. Report of research, 1992. Bonneville Power Administration, Portland, Oregon.

Poe, T.P., and D.M. Gadomski. 1993. Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake River reservoirs. Annual report by the U.S. Fish and Wildlife Service to the Bonneville Power Administration, Portland, Oregon.

Poe, T.P., M.G. Mesa, R.S. Shively, and R.D. Peters. 1993. Development of biological criteria for siting and operation of juvenile fish bypass systems: Implications for protecting

juvenile salmonids from predation. Pages 169-176, in Fish Passage Responsibility and Technology. Symposium Proceedings. American Fisheries Society Annual Meeting, 1993. Portland, Oregon.

Rodriguez, R.J. 1993. Polyphosphate present in DNA preparations from fungal species of *Collectotrichum* inhibits restriction endonucleases and other enzymes. *Anal. Biochem.* 209:291-297.

Scopettone, G. 1993. Interaction between native and nonnative fish of the upper Muddy River, Nevada. *Trans. Am. Fish. Soc.*

Scopettone, G., M.E. Buettner, P.R. Rissler. 1993. Effect of four fluctuating temperature regimes on cui-ui (*Chasmistes cujus*) survival from egg fertilization to swim-up and size of larvae produced. *Environ. Biol. of Fishes.*

Sprague, C.R., and L.G. Beckman. 1993. Prey selection by juvenile white sturgeon in reservoirs of the Columbia River. Pages 229-244 in R.C. Beamesderfer and A.A. Nigro (eds.). Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume II. Final report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Tabor, R.A., R.S. Shively, and T.P. Poe. 1993. Predation of juvenile salmonids by smallmouth bass and northern squawfish in the Columbia River near Richland, Washington. *N. Am. J. Fish. Manage.* 13:831-838.

Van der Knaap, E., R.J. Rodriguez, and D.W. Freckman. 1993. Differentiation of bacterial feeding Nematodes in soil ecological studies by means of arbitrarily primed PCR. *Soil Biol. Biochem.* 25:1141-1151.

Vijayan, M.M., A.G. Maule, C.B. Schreck, and T.W. Moon. 1993. Hormonal control of hepatic glycogen metabolism in food-deprived, continuously swimming coho salmon (*Oncorhynchus kisutch*). *Can. J. Fish. Aquat. Sci.* 50:1676-1682.

Warren, J.J. and L.G. Beckman. 1993. Fishway use by white sturgeon to bypass mainstem Columbia River dams. Pages 119-136 in R.C. Beamesderfer and A.A. Nigro (eds.). Status and habitat requirements of the white sturgeon populations in the Columbia River downstream from McNary Dam, Volume I. Final report (Contract DE-A179-86BP63584) to Bonneville Power Administration, Portland, Oregon.

Warren, J.J. and L.G. Beckman. 1993. Fishway use by white sturgeon to bypass mainstem Columbia River dams. Washington Sea Grant, Columbia River series WSG-AS-93-02.

Adams, N.S., W.J. Spearman, C.V. Burger, K.P. Currens, C.B. Schreck, and H.W. Li. 1994. Variation in mitochondrial DNA and allozymes discriminates early and late forms of chinook salmon (*Oncorhynchus tshawytscha*) in the Kenai and Kasilof Rivers, Alaska.

Alados, C.L., J. Escos, and J.M. Emlen. 1994. Scale asymmetry: A tool to detect developmental instability under the fractal geometry scope, pp. 25-36 in M.M. Novak (ed.). Fractals in the Natural and Applied Sciences, Proceedings Second IFIP Working Conference on Fractals in Natural and Applied Sciences, London, U.K.

Alados, C.L., J. Escos, and J.M. Emlen. 1994. Developmental instability as an indicator of natural stress on the Pacific Hake (*Merluccius productus*). Fish. Bull. 91:587-593.

Arakawa, C.K., W.N. Batts, R.E. Deering, and J.R. Winton. 1994. Application of DNA technology to the detection and identification of two rhabdoviruses of Pacific salmon. in: Park, L.K., P. Moran and R.S. Waples (eds.), Application of DNA Technology to the Management of Pacific Salmon. NOAA Technical Memorandum NMFS-NWFSC-17 pp. 113-117.

Barfoot, C.A., D.M. Gadomski, A.M. Murphy, and G.T. Schultz. 1994. Reproduction and early life history of northern squawfish *Ptychocheilus oregonensis* in the Columbia River. Pages 7-40 in Gadomski, D.M. and T.P. Poe (eds.). System-wide significance of predation on juvenile salmonids in Columbia and Snake River reservoirs and evaluation of predation control measures. Annual report by the National Biological Survey to the Bonneville Power Administration, Portland, Oregon.

Bartholomew, J.L., R.J. Rodrugiez, and C.K. Arakawa. 1994. Development of a DNA probe for the myxosporean parasite, *Ceratomyxa shasta*, using the polymerase chain reaction with arbitrary primers. Dis. Aquat. Org. 21:215-220.

Beeman, J.W., D.W. Rondorf, and M.E. Tilson. 1994. Assessing smoltification of juvenile spring chinook salmon (*Oncorhynchus tshawytscha*) using changes in body morphology. Can. J. Fish. Aquat. Sci. 51:836-844.

Beeman, J.W. and J.F. Novotny. 1994. Pen rearing and imprinting of fall chinook salmon: final report. Bonneville Power Administration, Portland, Oregon. Contract DE-AI79-83BP13084.

Burley, C.C., and T.P. Poe. 1994. Significance of predation in the Columbia River from Priest Rapids Dam to Chief Joseph Dam. Report prepared for Mid-Columbia Public Utility Districts, Contract No. 430-486.

Cech, J.J. Jr., D.T. Castleberry, T.E. Hopkins, and J.H. Petersen. 1994. Northern squawfish *Ptychocheilus oregonensis*, O₂ consumption rate: effects of temperature and body size. Can. J. Fish. Aquat. Sci. 51:8-12.

Cech, J.J. Jr., D.T. Castleberry, T.E. Hopkins. 1994. Temperature and CO₂ effects on blood O₂ equilibria in Northern squawfish *Ptychocheilus oregonensis*. Can. J. Fish. Aquat. Sci. 51:13-19.

Chilmonczk, S. and J.R. Winton. 1994. Involvement of rainbow trout leucocytes in the

pathogenesis of infectious hematopoietic necrosis virus. *Dis. Aquat. Org.* 19:89-94.

Elliott, D.G. 1994. General procedures for bacteriology. In J. Thosen [ed.], *Procedures for the detection and identification of fish pathogens*, 4th edition, Fish Health Section, American Fisheries Society.

Elliott, D.G., and R.J. Pascho. 1994. Juvenile fish transportation: impact of bacterial kidney disease on survival of spring/summer chinook salmon stocks. Annual Report, 1992 (Contract E86920048) prepared by the U.S. Fish and Wildlife Service, Seattle, WA, for the U.S. Army Corps of Engineers, Walla Walla, Washington.

Emlen, J.M., D.C. Freeman and J.H. Graham. 1994. Nonlinear growth dynamics and the origin of fluctuating asymmetry. *Genetica* 89:77-96.

Escos, J.M., C.L. Alados, and J.M. Emlen. 1994. Application of the stage-projection model with density-dependent fecundity to the population dynamics of Spanish ibex. *Can. J. Zool.* 72:731-737.

Freeman, D.C., J.M. Emlen, J.H. Graham, R.A. Hough, and T.A. Bannon. 1994. Biological monitoring of environmental quality: The use of developmental instability. *J. Env. Eng. Manage.* 4:6-11.

Freeman, D.C., J.H. Graham, and J.M. Emlen. 1994. Developmental stability in plants: symmetries, stress and epigenesis, pp. 99-122 In T.A. Markow (ed.). *Developmental Instability: Its Origins and Evolutionary Implications*, Kluwer Acad. Publ., Boston.

Gadomski, D.M., M.G. Mesa, and T.M. Olson. 1994. Vulnerability to predation and physiological stress responses of experimentally descaled juvenile chinook salmon, *Oncorhynchus tshawytscha*. *Env. Biol. Fish.* 39:191-199.

Gadomski, D.M., and T.P. Poe. 1994. System-wide significance of predation on juvenile salmonids in Columbia and Snake River reservoirs and evaluation of predation control measures. Annual report by the national Biological Survey to the Bonneville Power Administration, Portland, Oregon.

Graham, J.H., D.C. Freeman, and J.M. Emlen. 1994. Antisymmetry, directional asymmetry, and chaotic morphogenesis. Pp. 9123-140 In T.A. Markow (ed.). *Developmental Instability: Its Origins and Evolutionary Implications*, Kluwer Acad. Publ.

Huang, C., M.-S. Chien, M. Landolt, and J.R. Winton. 1994. Characterization of the glycoprotein of infectious hematopoietic necrosis virus using neutralizing monoclonal antibodies. *Dis. Aquat. Org.* 18:29-35.

Key, L.O., R. Garland, and E.E. Kofoot. 1994. Nearshore habitat use by subyearling chinook salmon in the Columbia and Snake Rivers. Pages 74-107 in D.W. Rondorf and K.F. Tiffan, (eds.). *Identification of the spawning, rearing, and migratory requirements of fall chinook*

salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1993, Portland, Oregon.

Key, L.O., R. Garland, and E.E. Kofoot. 1994. Nearshore habitat use by subyearling chinook salmon in the Columbia and Snake Rivers. Pages 120-150 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1992, Portland, Oregon.

Key, L.O., J.A. Jackson, C.R. Sprague, and E.E. Kofoot. 1994. Near shore habitat use by subyearling chinook salmon in the Columbia and Snake Rivers. Rondorf, D.W., and W.H. Miller, editors. Identification of the spawning, rearing, and migratory requirements of fall Chinook salmon in the Columbia River basin. Portland, Oregon. Bonneville Power Administration.

Kim, C.H., J.R. Winton, and J.C. Leong. 1994. Neutralization-resistant variants of infectious hematopoietic necrosis virus have altered virulence and tissue tropism. *J. Virol.* 68:8447-8453.

Kofoot, E.E., D.H. Feil, and W.S. Stastny. 1994. Comparison of field and In Situ acoustic target strengths of juvenile fall chinook salmon and american shad. Pages 132-1500 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1993, Portland, Oregon.

Kurath, G., and J.A. Dodds. 1994. A cross protection-like phenomenon occurs in plants between cloned sequence variants of satellite tobacco mosaic virus. *Virology* 202:1065-1069.

McAllister, P.E., and W.N. Batts. 1994. Viral hemorrhagic septicemia in J. Thosen (ed.), Procedures for the detection and identification of certain fish pathogens, 4th edition. Fish Health Section, American Fisheries Society.

McCann, J.A., E.E. Kofoot, C.R. Sprague, J.A. Jackson, and D.H. Feil. 1994. Distribution of juvenile chinook salmon and american shad in McNary and John Day Reservoirs. Pages 151-170 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1992, Portland, Oregon.

McCann, J.A., D.W. Rondorf, H.L. Burge, and W.P. Connor. 1994. Evaluation of PIT tagging of subyearling fall chinook salmon during 1991 and 1992. Pages 63-91 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1992, Portland, Oregon.

Maule, A.G. and M.G. Mesa. 1994. Efficacy of electrofishing to assess plasma cortisol concentration in juvenile chinook salmon passing hydroelectric dams on the Columbia River. *N. Am. J. Fish. Manage.* 14:334-339.

Maule, A.G. J. Beeman, R.M. Schrock, and P.V. Haner. 1994. Assessment of smolt condition for travel time analysis. 1991-1992 report. Project number 87-401, Contract number DE-A179-87BP35245, Bonneville Power Administration, Portland, Oregon.

Mesa, M.G. 1994. Effects of multiple acute stressors on the predator avoidance ability and physiology of juvenile chinook salmon. *Trans. Am. Fish. Soc.* 123:786-793.

Mesa, M.G., T.P. Poe, D.M. Gadomski, and J.H. Petersen. 1994. Are all prey created equal? A review and synthesis of differential predation on prey in substandard conditions. *J. Fish Biol.* 45(Supl. A):81-96.

Meyers, T.R., S. Short, K. Lipson, W.N. Batts, J.R. Winton, J. Wilcock, and E. Brown. 1994. Association of viral hemorrhagic septicemia with epizootic hemorrhages of the skin in Pacific herring *Clupea harengus pallasii* from Prince William Sound and Kodiak Island, Alaska, USA. *Dis. Aquat. Org.* 19:27-37.

Nelson, W.R., L.K. Freidenburg, and D.W. Rondorf. 1994. Swimming performance of subyearling chinook salmon. Pages 39-62 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1992, Portland, Oregon.

Oshima, K., K. Higman, C. Arakawa, M. Landolt, S. Nichol, and J.R. Winton. 1994. The genetic diversity and epizootiology of infectious hematopoietic necrosis virus. *J. Virol.* 35:123-141.

Oshima, K., K. Higman, C. Arakawa, T. Meyers, P.E. Vestergard Jorgensen, P. de Kinklein, and J.R. Winton. 1994. Genetic comparison of viral hemorrhagic septicemia isolates from North America and Europe. *Dis. Aq. Org.* 17:73-80.

Parsley, M.J., L.G. Beckman. 1994. White sturgeon spawning and rearing habitat in the lower Columbia River. *N. Am. J. Fish. Manag.* 14:812-827.

Parsley, M.J., T.D. Counihan, and A.I. Miller. 1994. Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam, and status and habitat requirements of white sturgeon populations in the Columbia and Snake rivers upstream from McNary Dam. Beiningen, K. Portland, Oregon. Bonneville Power Administration.

Pascho, R.J., and D.G. Elliott. 1994. Bacterial kidney disease. In J. Thosen (ed.), *Procedures for the detection and identification of certain fish pathogens*, 4th edition. Fish Health Section, American Fisheries Society.

Petersen, J.H. 1994. Importance of spatial pattern in estimating predation on juvenile salmonids in the Columbia River. *Trans. Am. Fish. Soc.* 123:924-930.

- Petersen, J.H., D.M. Gadomski. 1994. Light-mediated predation by northern squawfish on juvenile chinook salmon. *J. Fish Biol.* 45(Supl. A):227-242.
- Petersen, J.H., D.M. Gadomski, and T.P. Poe. 1994. Differential predation by northern squawfish (*Ptychocheilus oregonensis*) on live and dead juvenile salmonids in the Bonneville Dam tailrace (Columbia River). *Can. J. Fish. Aquat. Sci.* 51:1197-1204.
- Poe, P.P., R.S. Shively, and R.A. Tabor. 1994. Ecological consequences of introduced piscivorous fishes in the lower Columbia and Snake Rivers. Pages 347-360 in D. J. Stouder, K.L. Fresh, and R.J. Feller (eds.). *Theory and Application in Fish Feeding Ecology*, Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina Press.
- Poe, T.P., and R.S. Shively. 1994. Development of biological criteria for design of juvenile fish bypass systems: Protecting anadromous juvenile salmonids from predation in Columbia River reservoirs. *Lake Reserv. Manage.* 9:104.
- Prusky, D., S. Freeman, R.J. Rodriguez, and N.T. Keen. 1994. Induced resistance in Avocado fruits to *Colletotrichum gloeosporioides* by a non-pathogenic mutant of *Colletotrichum magna*. *Mol. Plant-Microbe Interact.* 7:326-333.
- Redman, R.S., and R.J. Rodriguez. 1994. Factors affecting the efficient transformation of *Colletotrichum* species. *Exp. Mycol.* 18:230-246.
- Rodriguez-Alvarado, G., G. Kurath, and J.A. Dodds. 1994. Satellite tobacco mosaic virus modifies the symptoms of helper tobamoviruses in pepper in a cultivar-specific manner. *Phytopathology* 84:617-621.
- Rondorf, D.W., and M.J. Banach. 1994. Migrational characteristics of juvenile Chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River. Walla Walla, Washington. Army Corps of Engineers, Contract E 86930151.
- Schrock, R.M., J.W. Beeman, D.W. Rondorf, and P.V. Haner. 1994. A microassay for gill sodium, potassium-activated ATPase in juvenile Pacific salmon. *Trans. Am. Fish. Soc.* 123:223-229.
- Scopettone, G.G., and H.L. Burge. 1994. Moapa dace (*Moapa coriacea*) growth, emigration, survivorship and density in a controlled stream channel. *Southwest Nat.*
- Shively, R.S., T.P. Poe, and R. Peters. 1994. Integration of radio telemetry and hydraulic model data for siting and operating juvenile bypass systems on the Columbia River to reduce predation. Pages 549-561 in *Proceedings of the 1st International Symposium on Habitat Hydraulics*, The Norwegian Institute of Technology, Trondheim, Norway, August 18-20, 1994.
- Shively, R.S., S.R. Hirtzel, L.L. Mann, T.L. McGuire, and G. Holmberg. 1994. Movements and distribution of radio-tagged northern squawfish near The Dalles Dam. Annual report of

research 1992. Bonneville Power Administration, Portland, Oregon.

Smith, S.D., A.G. Maule, and T.P. Poe. 1994. The effects of incidental electrofishing on adult spring chinook salmon. Proceedings the International Fish Physiology Symposium, July 16-21, 1994. Pages 443-444.

Thorarinsson, R., M.L. Landolt, D.G. Elliott, R.J. Pascho, and R.W. Hardy. 1994. Effect of dietary vitamin E and selenium on growth, survival and prevalence of *Renibacterium salmoninarum* infection in chinook salmon (*Oncorhynchus tshawytscha*). *Aquaculture* 121:343-358.

Tiffan, K.F., P.G. Wagner. 1994. Osmoregulatory performance and marking of subyearling chinook salmon at McNary Dam to estimate adult contribution. Pages 108-131 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1993, Portland, Oregon.

Tiffan, K.F., D.W. Rondorf, and P.G. Wagner. 1994. Osmoregulatory performance and marking of subyearling chinook salmon at McNary Dam to estimate adult contribution. Pages 171-190 in D.W. Rondorf and W.H. Miller, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1993, Portland, Oregon.

Whitesel, T.A., P.T. Lofty, R.W. Carmichael, R.T. Messmer, M.W. Flesher, and D.W. Rondorf. 1994. A comparison of the performance of acclimated and direct stream released, hatchery-reared steelhead smolts in northeast Oregon. Pages 87-92 in Don D. MacKinlay, (ed.). High Performance Fish, Proceedings of an International Fish Physiology Symposium. Fish Physiology Association and Physiology Section, American Fisheries Society, Bethesda, Maryland.

Alados, C.L., J. Escos, and J.M. Emlen. 1995. Fluctuating asymmetry and fractal geometry of the sagittal suture: Two tools for detecting developmental instability caused by inbreeding in north african gazelles. *Can. J. Zool.*

Barfoot, C.A., D.M. Gadomski, J.M. Bayer, and G.T. Schultz. 1995. Early life history of northern squawfish *Ptychocheilus oregonensis* in the Columbia River. System-wide significance of predation on juvenile salmonids in Columbia and Snake River reservoirs and evaluation of predation control measures. Annual report by the National Biological Survey to the Bonneville Power Administration, Portland, OR.

Bascuro, b., P. Vende, A.F. Monnier, J. Winton, P. DeKinkelin, and A. Benmansour. 1995. Genetic diversity and phylogenetic classification of viral hemorrhagic septicemia virus. *Vet. Res.* 26:460-463.

Beeman, J.W. and J.F. Novotny. 1995. Adult production of Fall chinook salmon reared in net-pens in backwaters of the Columbia River. Pages 261-266 in H.L. Schramm and R.G.

- Piper, editors. Uses and effects of cultured fishes in aquatic ecosystems. American Fisheries Society Symposium 15:261-266. American Fisheries Society, Bethesda, MD.
- Beeman, J.W., D.W. Rondorf, M.D. Tilson, and D.A. Venditti. 1995. A non-lethal measure of smolt status of juvenile steelhead based on body morphology. *Trans. Am. Fish. Soc.* 12:764-769.
- Bergstedt, R.A., and J.G. Seelye. 1995. Evidence for lack of homing by sea lampreys. *Trans. Am. Fish. Soc.* 124:235-239.
- Bjorklund, H.V., E.J. Emmenegger, and G. Kurath. 1995. Comparison of the polymerases (L genes) of spring viirenira of carp virus and infectious hematopoietic necrosis virus. *Vet. Res.* 26:394-398.
- Bovo, G., N.J. Olesen, P.E.V. Jorgensen, W. Ahne, and J.R. Winton. 1995. Characterization of a rhabdovirus isolated from carpione (*Salmo trutta carpio*) in Italy. *Dis. Aquat. Org.* 21:115-122.
- Connolly, P.J. 1995. Wind River steelhead restoration project: with special emphasis on the Trout Creek Basin. Prepared for Columbia River Research Laboratory, National Biological Service, Cook, WA.
- Counihan, T.D., A.I. Miller, M.J. Parsley, and L.G. Beckman. 1995. Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam and Status and habitat requirements of white sturgeon populations in the Columbia and Snake Rivers upstream from McNary Dam. Pages 90-134 in K.T. Beiningen, (ed.). Annual Report to Bonneville Power Administration (project 86-50), Portland, Oregon.
- Elliott, D.G., R. Pascho, and A.N. Palmisano. 1995. Broodstock segregation for the control of bacterial kidney disease can affect mortality of progeny of chinook salmon (*Oncorhynchus tshawytscha*) in seawater. *Aquaculture* 132:133-144.
- Elliott, D.G., and R.J. Pascho. 1995. Juvenile fish transportation: impact of bacterial kidney disease on survival of spring/summer chinook salmon stocks. Annual Report, 1993 (Contract E86920048) prepared by the U.S. Fish and Wildlife Service, Seattle, WA, for the U.S. Army Corps of Engineers, Walla Walla, Washington.
- Emlen, J.M. 1995. Population viability of the Snake River spring chinook salmon (*Oncorhynchus tshawytscha*). *Can. J. Fish. Aquat. Sci.* 52:1442-1448.
- Emmenegger, E., M. Landolt, S. LaPatra, and J. Winton. 1995. Immune response to synthetic peptides representing antigenic sites on the glycoprotein of infectious hematopoietic necrosis virus. *Vet. Res.* 26:374-378.
- Escos, J.M., C.L. Alados, and J.M. Emlen. 1995. Application of the stage-projection model with density-dependent fecundity to the population dynamics of Spanish ibex. *Can. J. Zool.*

72:731-737.

Escos, J.M., C.L. Alados, and J.M. Emlen. 1995. Developmental instability in the Pacific Hake parasitized by the myxosporean *Kudoa*. *Trans. Am. Fish. Soc.*

Escos, J. C.L. Alados, and J.M. Emlen. 1995. Fractal structures and fractal functions as disease indicators. *OIKOS* 74:310-314.

Fredricks, K.T., and J.G. Seelye. 1995. Flowing-recirculated water system for inducing spawning phase sea lampreys to spawn in the laboratory. *Prog. Fish-Cult.* 57:297-301.

Freeman, D.C., and J.M. Emlen. 1995. Assessment of interspecific interactions in plant communities: An illustration from the cold desert saltbush grasslands of North America. *J. Arid Env.* 31:179-198.

Freeman, S., and R.J. Rodriguez. 1995. Differentiation of *Colletotrichum* species responsible for anthracnose of strawberry by arbitrarily primed PCR. *Mycol. Res.* 99:501-504.

Haner, P.V., J.C. Faler, R.M. Schrock., D.W. Rondorf, and A.G. Maule. 1995. Skin reflectance as a non-lethal measure of smoltification for juvenile salmonids. *N. Am. J. Fish. Manage.* 15:814-822.

Hansel, H.C., R.S. Shively, G. Holmberg, T.P. King, and M. Sheer. 1995. Movements and distributions of radio-tagged northern squawfish near the Dalles and John Day dams. Annual report of research, 1993. Bonneville Power Administration, Portland, Oregon.

Houck, A., B. Kaufman, and J. Petersen. 1995. Smallmouth bass in the Horseshoe Bend Reach of the San Joaquin River: Limiting factors and bioenergetic modeling. Report prepared for Southern California Edison Company, Rosemead, California.

Jorgensen, P.E.V., K. Einer-Jensen, K.H. Higman, and J.R. Winton. 1995. Genetic diversity of the central portion of the glycoprotein of VHSV. *Dis. Aquat. Org.* 23:77-82.

Kurath, G., and C. Robaglia. 1995. Genetic variation and evolution of satellite viruses and satellite RNAs. Pages 385-403 in A. Gibbs, C. Calisher, and F. Garcia-Arenal (eds.), *Molecular Basis of Virus Evolution*. Cambridge Press, Cambridge, U.K.

Kurath, G., and J.A. Dodds. 1995. Mutational analyses of molecularly cloned satellite tobacco mosaic virus during serial passage in plants: Evidence for hotspots of genetic change. *RNA* 1:491-500.

Kurath, G., K.H. Higman, and H.V. Bjorklund. 1995. The NV genes of fish rhabdoviruses: development of RNase protection assays for rapid assessment of genetic variation. *Vet. Res.* 26:477-485.

Link, J., J.H. Selgeby, M.H. Hoff, and C. Haskell. 1995. Winter diet of lake herring

(*Coregonus artedi*) in western Lake Superior. *J. Great Lakes Res.* 21(3):395-399.

Martinelli, T.L., R.S. Shively, and T.P. King. 1995. Mobile tracking of radio-tagged northern squawfish near The Dalles and John Day dams. In Poe, T.P. (ed.) Significance of selective predation and development of prey protection measures for juvenile salmonids in the Columbia and Snake River reservoirs. Annual report of research, 1994. Bonneville Power Administration, Portland, Oregon.

Meyers, T.R. and J.R. Winton. 1995. Viral hemorrhagic septicemia virus in North America. *Annual Review of Fish Disease.* *Annual Review of Fish Diseases* 5:3-24.

Miller, A.I., T.D. Counihan, M.J. Parsley, and L.G. Beckman. 1995. Columbia River Basin white sturgeon. Pages 154-158 in E.T. LaRoe, (ed.). Our living resources: a report to the nation on the distribution, abundance, and health of U.S. plants, animals, and ecosystems. U.S. Department of the Interior, National Biological Service, Washington D.C.

Morzunov, S.P., J.R. Winton, and S.T. Nicol. 1995. The complete genome structure and phylogenetic relationship of infectious hematopoietic necrosis virus. *Virus Res.* 38:175-192.

Nichol, S.T., J.E. Rowe, and J.R. Winton. 1995. Molecular epizootiology and evolution of the glycoprotein and non-virion protein genes of infectious hematopoietic necrosis virus, a fish rhabdovirus. *Virus Res.* 38:159-173.

Nishizawa, T., G. Kurath, and J. Winton. 1995. Nucleotide sequence of the M1 and M2 protein genes of hirame rhabdovirus (HRV), a fish rhabdovirus. *Vet. Res.* 26:408-412.

Pascho, R.J., M.L. Landolt, and J.E. Ongerth. 1995. Inactivation of *Renibacterium salmoninarum* by chlorine. *Aquaculture* 131:165-175.

Poe, T.P. (Ed.). 1995. Significance of selective predation and development of prey protection measures for juvenile salmonids in Columbia and Snake river reservoirs. Annual Report, 1993, to the Bonneville Power Administration, Portland, Oregon.

Quinn, T.P., A.P. Hendry, and L.A. Wetzel. 1995. The influence of life history trade-offs and the size of the incubation gravels on egg size variation in sockeye salmon (*Onchorhynchus nerka*). *OIKOS* 74:425-438.

Reisenbichler, R.R., and G.S. Brown. 1995. Is genetic change from hatchery rearing of anadromous fish really a problem? (Extended Abstract). *American Fisheries Society Symposium* 15:578-579.

Rodriguez, R.J., S. Foott, and J. Williamson. 1995. Long-term storage of salmon tissue samples for DNA extraction and genetic analysis. *National Biological Service Information Bulletin* #15.

Rodriguez-Alvarado, G., G. Kurath, and J.A. Dodds. 1995. Heterogeneity in pepper isolates

of cucumber mosaic virus. *Plant Dis.* 79:450-455.

Scholefield, R.J., J.G. Seelye, and K.S. Slaght. 1995. Comparison of 3-trifluoromethyl-4-nitrophenol (TFM) toxicities to sea lampreys, rainbow trout, and mayfly nymphs in continuous and interrupted 9-h exposures. Great Lakes Fishery Commission Technical Report 61:9-31.

Shively, R.S., M.B. Sheer, G.S. Holmberg. 1995. Description and performance of an automated radio telemetry system to monitor the movement and distribution of northern squawfish at Columbia River dams. In Poe, T.P. (ed.), Significance of selective predation and development of prey protection measures for juvenile salmonids in the Columbia and Snake River reservoirs. Annual report of research 1993. Bonneville Power Administration, Portland, Oregon.

Smith, S.D., R.W. Gould, W.S. Zaugg, L.W. Herell, and C.V.W. Mahnken. 1995. Prerelease disease treatment with potassium permanganate for Fall chinook salmon smolts. *AFS-Prog. Fish Cult.* 57:102-106.

Tracy, M., D.C. Freeman, J.M. Emlen, J.H. Graham, and R.A. Hough. 1995. Developmental instability as a biomonitor of environmental stress: an illustration using aquatic vegetation (invited submission to F.M. Butterworth (ed.). *Biomonitoring and biomarkers as indicators of environmental change.* Plenum Press.

Ward, D.L., J.H. Petersen, and J.J. Loch. 1995. Index of predation on juvenile salmonids by northern squawfish in the lower and middle Columbia River and in the lower Snake River. *Trans. Am. Fish. Soc.* 124:321-334.

Adams, N.S., S.D. Evans, J.E. Kelly, M.J. Banach, and M.A. Tuell. 1996. Behavior of radio-tagged chinook salmon and steelhead in Lower Granite Reservoir, Washington, during spring 1994. Pages 30-75 in D.W. Rondorf, and M.J. Banach, (ed.). *Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River.* Annual Report 1994 to U.S. Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, and M.J. Banach. 1996. *Migrational characteristics of juvenile chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River.* Eighth Progress Report 1991-1994. North Pacific Division, U.S. Army Corps of Engineers, Portland, Oregon.

Alados, C.L., J.M. Escos, and J.M. Emlen. 1996. Fractal structure of time distribution activities: an indicator of stress. *Anim. Behav.* 51:437-443.

Bjorklund, H.V., K.H. Higman, and G. Kurath. 1996. The glycoprotein genes and gene junctions of the fish rhabdoviruses spring viremia of carp virus and hirame rhabdovirus; analysis of relationships with other rhabdoviruses. *Virus Res.* 42:65-80.

Emlen, J.M. 1996. Population viability of the Snake River spring chinook salmon

Oncorhynchus tshawytscha. *Can. J. Fish. Aquat. Sci.* 52:1442-1448.

Felton, S.P., M.L. Landolt, R. Grace, and A.N. Palmisano. 1996. Effects of selenium dietary enhancement on hatchery-reared coho salmon, *Oncorhynchus kisutch* (Walbaum), when compared with wild coho: hepatic enzymes and seawater adaptation evaluated. *Aquacult. Res.* 27:135-142.

Gadomski, D.M., and S.M. Caddell. 1996. Effects of temperature on the development and survival of eggs of four coastal California fishes. *Fish. Bull.* 94:41-48.

Huang, C., M-S. Chien, M. Landolt, W. Batts, and J. Winton. 1996. Mapping the neutralizing epitopes on the glycoprotein of infectious haematopoietic necrosis virus, a fish rhabdovirus. *J. Gen. Vir.* 77:3033-3040.

Kelly, J.E., and N.S. Adams. 1996. Range tests on radio tags considered for use in Lower Granite Reservoir, Washington. Pages 14-29 in D.W. Rondorf, and M.J. Banach, (eds.). Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River. Annual Report 1994 to U.S. Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Key, L.O., R.D. Garland, and K. Kappenman. 1996. Nearshore habitat use by subyearling chinook salmon and non-native piscivores in the Columbia River. Pages 64-79 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1994, Portland, Oregon.

Kofoot, E.E., D.H. Feil, R.D. Garland, M.E. Hanks, and D.W. Rondorf. 1996. Use of hydroacoustics in assessing migrational behavior of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir. Pages 76-107 in D.W. Rondorf, and M.J. Banach, (eds.). Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River. Annual Report 1994 to U.S. Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Maule, A.G., R.M. Schrock, C. Slater, M.S. Fitzpatrick, and C.B. Schreck. 1996. Immune and endocrine responses of adult spring chinook salmon during freshwater migration and sexual maturation. *Fish & Shellfish Immunol.* 6:221-233.

Maule, A.G., D.W. Rondorf, J.W. Beeman, and P.V. Haner. 1996. Epizootiology of *Renibacterium salmoninarum* in juvenile hatchery spring chinook salmon in Columbia and Snake rivers. *J. Aquat. Anim. Health* 8:37-46.

Maule, A.G., D.W. Rondorf, J.W. Beeman, and P.V. Haner. 1996. Incidence of *Renibacterium salmoninarum* in juvenile hatchery spring chinook salmon in the Columbia and Snake Rivers. *J. Aquat. Anim. Health* 8:37-46.

Maule, A.G., J.W. Beeman, K.M. Hans, M.G. Mesa, P.V. Haner, and J.J. Warren. Gas bubble

trauma monitoring and research of juvenile salmonids, 1996 Annual Report. Prepared by U.S. Geological Survey for Bonneville Power Administration, Portland, Oregon, Contract 96-AI-93279.

Miller, A.I., and L.G. Beckman. 1996. First record predation on white sturgeon eggs by sympatric fishes. *Trans. Am. Fish. Soc.* 125:338-340.

Parsley, M.J., T.D. Counihan, A.I. Miller, M.N. Morgan, and D. Gallion. 1996. Report C in K. Beiningen (ed.). Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam and status and habitat requirements of white sturgeon populations in the Columbia and Snake rivers upstream from McNary Dam. Annual Report to the Bonneville Power Administration.

Reisenbichler, R.R. 1996. Effects of supplementation with hatchery fish on carrying capacity and productivity of naturally spawning populations of steelhead. Pages 81-92 in G.E. Johnson, D.A. Neitzel, and W.V. Mavros (eds.). Proceedings from a Workshop on Ecological Carrying Capacity of Salmonids in the Columbia Basin: Measure 7.1A of the Northwest Power Planning Council's 1994 Fish and Wildlife Program Report 3 and 4. Bonneville Power Administration, Portland, Oregon.

Shively, R.S., T.P. Poe, and S.T. Sauter. 1996. Feeding response by northern squawfish to a hatchery release of juvenile salmonids in the Clearwater River, Idaho. *Trans. Am. Fish. Soc.* 125:230-236.

Shively, R.S., T.P. Poe, M.B. Sheer, and R. Peters. 1996. Criteria for reducing predation by northern squawfish near juvenile salmonid bypass outfalls at Columbia River Dams. *Regul. Rivers Res. Manag.* 12:493-500.

Tiffan, K.F., R.D. Garland, and P.G. Wagner. 1996. Osmoregulatory performance and markings of subyearling chinook salmon at McNary Dam to estimate adult contribution. Pages 99-128 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1994, Portland, Oregon.

Venditti, D.A., and R.D. Garland. 1996. Nearshore movement and feeding behaviors of juvenile fall chinook salmon in the Columbia River. Pages 80-98 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1994, Portland, Oregon.

Wedemeyer, G.A. 1996. *Physiology of Fish in Intensive Culture*. Chapman and Hall. NY ISBN 0-412-07801.

Wedemeyer, G.A. 1996. Transportation and Handling of Salmonids. Pages 727-758 In W. Pennel (ed.), *Principles of Salmonid Aquaculture*. Elsevier. The Netherlands. ISBN 0-444-82152-X.

Adams, N.S., D.W. Rondorf, S.E. Evans, J.E. Kelly, and R.W. Perry. 1997a. Effects of surgically and gastrically implanted radio transmitters on growth and feeding behavior of juvenile chinook salmon. Pages 1-16 in Adams et al., (eds.). 1997. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1996 surface bypass collector tests. Annual Report 1996 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, S.E. Evans, J.E. Kelly, and R.W. Perry. 1997b. Effects of surgically and gastrically implanted radio transmitters on swimming performance and predator avoidance of juvenile chinook salmon. Pages 17-33 in Adams et al., (eds.). 1997. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1996 surface bypass collector tests. Annual Report 1996 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, S.E. Evans, J.E. Kelly, and R.W. Perry. 1997c. Behavior of radio-tagged juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam as determined from fixed-site receiving stations. Pages 51-116 in Adams et al., (eds.). 1997. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1996 surface bypass collector tests. Annual Report 1996 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Benmansour, A., B. Bascuro, A.F. Monnier, P. Vende, J.R. Winton, and P. De Kinkelin. 1997. Sequence variation of the glycoprotein gene identifies three distinct lineages within field isolates of viral hemorrhagic septicemia virus, a fish rhabdovirus. *J. Gen. Virol.* 78:2837-2846.

Campbell, W.B., and J.M. Emlen. 1997. Developmental instability analysis of BKD-infected spring chinook salmon (*Onchorhynchus tshawytscha*) prior to seawater exposure. *Oikos* 77:540-548.

Carmichael, R., L. Lestelle, L. Mobrand, D. Statler, R. Carter, N. Hoefs, D. Bennet, J. Chandler, K. Lepla, T. Cochnauer, J. DeVore, T. Rien, R. McMullin, M.J. Parsley, and A. Seamans. 1997. Upper Snake River white sturgeon biological risk assessment. Final Report to the Nez Perce Tribe, 83 p.

Clifton, D.R., and R.J. Rodriguez. 1997. Characterization and application of a quantitative DNA marker that discriminates sex in chinook salmon (*Oncorhynchus tshawytscha*). *Can. J. Fish. Aquat. Sci.* 54:2647-2652.

Connolly, P.J. 1997. Influence of stream characteristics and age class interactions on populations of coastal cutthroat trout. Pages 173-174 in J.D. Hall, P.A. Bisson, and R.E. Gresswell, editors. *Sea-run cutthroat trout: biology, management, and future conservation.* Oregon Chapter, American Fisheries Society, Corvallis.

Connolly, P.J. 1997. Status of juvenile steelhead rearing in Trout and Panther creeks of the Wind River Basin. Prepared for Washington Trout, Duvall, WA.

Connolly, P.J., R.P. Hanten, and J.H. Petersen. 1997. Juvenile steelhead in Trout and Panther creeks of the Wind River basin sampled in August-September 1997. Prepared for Washington Trout, Duvall, WA.

Connor, W.P., T.C. Bjornn, H.L. Burge, A.P. Garcia, and D.W. Rondorf. 1997. Early life history and survival of natural subyearling fall chinook salmon in the Snake and Clearwater Rivers. Pages 18-47 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1995, Portland, Oregon.

Elliott, D. G., and C.L. McKibben. 1997. Comparison of two fluorescent antibody techniques (FATs) for detection and quantification of *Renibacterium salmoninarum* in coelomic fluid of spawning chinook salmon *Oncorhynchus tshawytscha*. *Dis. Aquat. Org.* 30:37-43.

Elliott, D. G., R.J. Pascho, and L.M. Jackson, G.M. Mathews and J.R. Harmon. 1997. Prevalence and levels of *Renibacterium salmoninarum* in spring/summer chinook salmon (*Oncorhynchus tshawytscha*) smolts at dams on the Columbia and Snake Rivers. *J. Aquat. Anim. Health.* 9:114-126.

Escos, J., C.L. Alados, and J.M. Emlen. 1997. The impact of grazing on plant fractal architecture and fitness of a mediterranean shrub (*Anthyllis cytisoides* L.), *Funct. Ecol.* 11:66-78.

Emmenegger, E., M. Landolt, S. LaPatra, and J. Winton. 1997. Immunogenicity of synthetic peptides representing neutralizing epitopes on the glycoprotein of infectious hematopoietic necrosis virus. *Dis. Aquat. Org.* 28:175-184.

Freeman, Stanley, R.S. Redman, G. Grantham, and R.J. Rodriguez. 1997. Characterization of a linear DNA plasmid from the filamentous fungal plant pathogen *Glomerella musae* [Anamorph: *Colletotrichum musae* (Berk. & Curt.) Arx.]. *Curr Genet.* 32:152-156.

Hoff, M.H., J. Link, and C. Haskell. 1997. Piscivory by Lake Superior lake herring (*Coregonis artedii*) on Rainbow Smelt (*Osmerus morax*) in winter, 1993-1995. *J. Great Lakes Res.* 23(2):210-211.

Kocan, R., M. Bradley, N. Elder, T. Meyers, W. Batts, and J. Winton. 1997. The North American strain of viral hemorrhagic septicemia virus is highly pathogenic for laboratory-reared Pacific herring (*Clupea pallasii*). *J. Aquat. An. Health* 9:279-290.

Kofoot, E.E., M.E. Hanks, and J.B. Oleyar. 1997. Distribution of juvenile salmonids in the forebay of Lower Granite Dam detected during mobile hydroacoustic surveys. Pages 135-183 in Adams et al., (eds.). 1997. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1996 surface bypass collector tests. Annual Report 1996 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

- Kurath, G., K.H. Higman, and H.V. Bjorklund. 1997. Distribution and variation of NV genes in fish rhabdoviruses. *J. Gen. Virol.* 78:113-117.
- Martin, B.A. 1997. Effects of ambient water quality on the endangered Lost River sucker (*Deltistes luxatus*) in Upper Klamath Lake, Oregon. M.S. thesis, Humboldt State University, Arcata, CA. 55 pp.
- Martinelli, T.L., and R.S. Shively. 1997. Seasonal distribution, movements and habitat use of northern squawfish in two lower Columbia River reservoirs. *Regulated Rivers* 13:543-556.
- Maule, A.G., M.G. Mesa, K.M. Hans, J.J. Warren, and M. Peters Swihart. 1997. Gas bubble trauma monitoring and research of juvenile salmonids. 1995 Annual Report. Project Number 87-401. Contract No. DE-A179-87BP35245 Bonneville Power Administration, Portland, OR.
- Maule, A.G., J. Beeman, K.M. Hans, M.G. Mesa, P. Haner, and J.J. Warren. 1997. Gas bubble disease monitoring and research of juvenile salmonids. 1995 Annual Report. Project Number 96-021. Contract No. 96A193279. Bonneville Power Administration, Portland, OR.
- Mesa, M.G., and J.J. Warren. 1997. Predator avoidance ability of juvenile chinook salmon subjected to sublethal exposures to gas supersaturated water. *Can. J. Fish. Aquat. Sci.* 54:757-764.
- Nishizawa, T., G. Kurath, and J.R. Winton. 1997. Sequence analysis and expression of the M1 and M2 matrix protein genes of hirame rhabdovirus (HIRRV). *Dis. Aquat. Org.* 31:9-17.
- Parsley, M.J., A.I. Miller, T.D. Counihan, M.N. Morgan, and D. Gallion. 1997. Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam, and status and habitat requirements of white sturgeon populations in the Columbia and Snake rivers upstream from McNary Dam. Rien, T. and Beiningen, K. Portland, Oregon., Bonneville Power Administration.
- Pascho, R.J., T.D. Goodrich, and C.L. McKibben. 1997. Evaluation by enzyme-linked immunosorbent assay (ELISA) of *Renibacterium salmoninarum* bacterins affected by persistence of bacterial antigens. *J. Aquat. Anim. Health.* 9:99-107.
- Petersen, J.H., and G. Gaston. 1997. Appendix B. Spatial risk modeling for evaluating surface bypass collector systems. In: G.S. Holmberg and eight coauthors, Movement, distribution, and behavior of radio-tagged juvenile chinook salmon in John Day, The Dalles, and Bonneville Dam forebays, 1996. Report submitted to the Army Corps of Engineers, Portland District, Portland, Oregon.
- Reisenbichler, R.R. 1997. Genetic factors contributing to declines of anadromous salmonids in the Pacific Northwest. Pages 223_244 In D. Stouder, P.A. Bisson, R.J. Naiman, and M.G. Duke (eds.). *Proceedings of the Symposium on Pacific Salmon and Their Ecosystems: Status and Future Options.* Seattle, WA, January 10-12, 1994.

Rodriguez, R.J., and R.S. Redman. 1997. Fungal life_styles and ecosystem dynamics: biological aspects of plant pathogens, plant endophytes and saprophytes. *Adv. Bot. Res.* 24:169-193.

Saiki, M.K. 1997. Survey of small fishes and environmental conditions in Mugu Lagoon and tidally influenced reaches of its tributaries. *California Fish and Game* 83(4):153-167.

Schrock, R.M., J.W. Beeman, P.V. Haner, K. Hans, J. Hotchkiss, S. Sauter, S. VanderKooi, and A.G. Maule. 1997. Assessment of smolt condition for travel time analysis. Draft summary report 1987-1997. Report. Project No. 87-401, Contract No. DE-A179-87BP35245 Bonneville Power Administration, Portland, OR. 69 pp.

Sheer, M.B., G.S. Holmberg, R.S. Shively, H.C. Hansel, T.L. Martinelli, T.P. King, C.N. Frost, T.P. Poe, J.C. Snelling, and C.B. Shreck. 1997. Movement and behavior of radio-tagged juvenile spring and fall chinook salmon in The Dalles and John Day dam forebays, 1995. Annual Report, 1996 to the Army Corps of Engineers, Portland District, Portland, Oregon.

Tiffan, K.F., R.D. Garland, and D.W. Rondorf. 1997. Osmoregulatory performance and migration behavior of subyearling chinook salmon. Pages 85-112 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1995, Portland, Oregon.

Venditti, D.A., J.M. Kraut, and D.W. Rondorf. 1997. Behavior of juvenile fall chinook salmon in the forebay of a lower Snake River reservoir. Pages 48-68 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1995, Portland, Oregon.

Venditti, D.A., M.A. Tennier, and D.W. Rondorf. 1997. Nearshore movements of juvenile fall chinook salmon in the Columbia River. Pages 69-84 in D.W. Rondorf and K.F. Tiffan, (eds.). Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River basin. Bonneville Power Administration, Annual Report 1995, Portland, Oregon.

Wedemeyer, G.A. 1997. Effects of Rearing Conditions on the Health and Physiological Quality of Fish in Intensive Culture. Pages 35-72 In G. Iwana (ed.), *Advances in Fishery Research*. Cambridge University Press, London. ISBN 0-521-55518-3.

Winton, J.R. 1997. Immunization with viral antigens: Infectious haematopoietic necrosis. *Dev. Biol. Stand.* 90:211-220.

Winton, J.R. 1997. Molecular tools for the diagnosis of infectious hematopoietic necrosis virus. In: *Proceedings from the Workshop of IHN*. Ministry of Agriculture, Fisheries and Food, Campbell River, B.C., Canada. pp. 39-47.

Winton, J.R. 1997. The application of molecular methods for detection and control of fish rhabdoviruses. In: Proceedings of the NRIA International Workshop on New Approaches to Viral Diseases of Aquatic Animals. January 21_24, 1997. National Research Institute of Aquaculture, Mie, Japan. pp. 1-11.

Yoshimizu, M., K. Suzuki, T. Nishizawa, J.R. Winton, and Y. Ezura. 1997. Antibody screening for the identification of nervous necrosis virus carriers in a flounder broodstock. In: Proceedings of the NRIA International Workshop on New Approaches to Viral Diseases of Aquatic Animals. January 21_24, 1997. National Research Institute of Aquaculture, Mie, Japan. pp. 124-130.

Adams, N.S., S.D. Evans, R.W. Perry, and J.M. Plumb. 1998. Movements and passage routes of radio-tagged juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam as determined from fixed-site receiver stations. Pages 22-77 in Adams et al., (eds.). 1998. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1997 surface bypass collector tests. Final Report for 1997 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, M.A. Tuell, and M.J. Banuch. 1998. Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and tributaries, Snake River. Final report for 1995 to the Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, and M.A. Tuell. 1998. Migrational characteristics of juvenile spring chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1997 surface bypass collector tests. Final Report of 1997 to the Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Adams, N.S., D.W. Rondorf, S.D. Evans, and J.E. Kelly. 1998. Effects of surgically and gastrically implanted radio transmitters on growth and feeding behavior of juvenile chinook salmon. *Trans. Am. Fish. Soc.* 127(1):128-136.

Adams, N.S., D.W. Rondorf, S.D. Evans, J.E. Kelly, and R.W. Perry. 1998. Effects of surgically and gastrically implanted radio transmitters on swimming performance and predator avoidance of juvenile chinook salmon. *Can. J. Fish. Aquat. Sci.* 55:781-787.

Ahne, W., G. Kurath and J.R. Winton. 1998. A ribonuclease protection assay can distinguish spring viremia of carp virus from pike fry rhabdovirus. *Bull. Eur. Assoc. Fish Path.* 18(6):220-224.

Alados, C.L., T. Navarro, B. Cabezudo, J.M. Emlen, and C. Freeman. 1998. Developmental instability of gynodioecious *Teucrium lusitanicum*. *Evol. Ecol.* 12:21-34.

Alados, C.L., J.M. Emlen, B. Wachocki, and D.C. Freeman. 1998. Instability of development and architecture as an index of grazing pressure. *J. Arid Environ.* 38:63-76.

Banach, M.J., N.S. Adams, and D.W. Rondorf. 1998. Movement of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir, Snake River. Pages 215-253 in Columbia River Anadromous Salmonid Rehabilitation and Passage Symposium. Symposium Proceedings, University of Idaho, Moscow, Idaho.

Barnes, M.N., M.L. Landolt, D.B. Powell, and J.R. Winton. 1998. Purification of *Piscirickettsia salmonis* and partial characterisation of antigens. *Dis. Aquat. Org.* 33:33-41.

Beeman, J.W., P.V. Haner, and A.G. Maule. 1998. Evaluation of a new miniature pressure-sensitive radio transmitter. *N. Am. J. Fish. Manage.* 18:458-464.

Campbell, W.B., J.M. Emlen and W.K. Hershberger. 1998. Thermally induced chronic developmental stress in coho salmon: Integrating measures of mortality, early growth and fluctuating asymmetry. *Oikos* 81:398-410.

Chase, D.M., and R.P. Pascho. 1998. Development of a nested polymerase chain reaction for amplification of a sequence of the p57 gene of *Renibacterium salmoninarum* that provides a highly sensitive method for detection of the bacterium in salmonid kidney. *Dis. Aquat. Org.* 34:223-229.

Counihan, T.D., A.I. Miller, M.J. Parsley, and M.G. Mesa. 1998. The effects of dissolved gas supersaturation on white sturgeon larvae. *Trans. Am. Fish. Soc.* 127:316-322.

Darland, T.J., D.H. Feil, B.J. Hausmann, C.D. Smith, D.W. Rondorf, J.D. Serl, and C.F. Morrill. 1998. Evaluation of Directed Flow to Improve Fish Guidance for the Surface Collection Program, Cowlitz Falls Dam. U.S. Army Corps of Engineers, Walla Walla, Washington.

Emlen, J.M., D.C. Freeman, A. Mills, and J.H. Graham. 1998. How organisms do the right thing. *CHAOS* 8(3):717-726.

Evans, S.D., J.E. Kelly, R.W. Perry, and N.S. Adams. 1998. Behavior of radio-tagged juvenile chinook salmon and steelhead in Lower Granite Reservoir as determined from fixed-site receiver stations. Pages 27-60 in Adams et al., (eds.). 1998. Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and Tributaries, Snake River. Final report for 1995 to the U.S. Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Ewing, R.D., M.E. Sheahan, M.A. Lewis, and A.N. Palmisano. 1998. Effects of rearing density and raceway conformation on growth, food conversion, and survival of juvenile spring chinook salmon. *Prog. Fish. Cult.* 60:167-178.

Ferguson, J.W., T.P. Poe, and T.J. Carlson. 1998. The design, development and evaluation of surface oriented juvenile salmonid bypass systems on the Columbia River, USA. Pages in M. Jungwirth, S. Schmutz, and S. Weiss, editors. *Fish migration and fish bypasses: Proceedings of*

the international conference on fish migration and bypass-channels, September 24-26, 1996, Vienna, Austria. Fishing News Books, Blackwell Science, Oxford, England.

Gadomski, D.M., and C.A. Barfoot. 1998. Diel and distributional abundance patterns of fish embryos and larvae in the lower Columbia and Deschutes rivers. *Environ. Biol. Fishes* 51:353-368.

Gharrett, A.J., W.W. Smoker, R.R. Reisenbichler, and S.G. Taylor. 1998. Outbreeding depression in hybrids between odd- and even-broodyear pink salmon. *Aquaculture* 173 (1999):117-129.

Graham, J.H., J.M. Emlen, and D. Carl Freeman. 1998. Developmental invariance, symmetry, and the measurement of developmental instability. *Biol. J. Linn. Soc.* 64:1-16.

Hanks, M.E., K.M. Cash and J.B. Oleyar. 1998. Distribution and movement of juvenile salmonids detected during mobile hydroacoustic surveys in the forebay of Lower Granite Dam. Pages 78-112 in Adams et al., (eds.). 1998. Migrational characteristics of juvenile chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1997 surface bypass collector tests. Final Report for 1997 to Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Hanks, M.E., and E.E. Kofoot. 1998. Distribution of juvenile salmonids and water velocities during hydroacoustic surveys in the forebay of Lower Granite Dam. Pages 61-78 in Adams et al., (eds.). 1998. Migrational characteristics of juvenile spring chinook salmon and steelhead in Lower Granite Reservoir and Tributaries, Snake River. Final report for 1995 to the U.S. Army Corps of Engineers, Contract E86930151, Walla Walla, Washington.

Haskell, C., D. Venditti, M. Tennier, and J. Kraut. 1998. Thermal exposure of juvenile fall chinook salmon migrating through Little Goose Reservoir, 1998. Pages 73-91 in K.F. Tiffan and D.W. Rondorf, editors. Post-release attributes and survival of hatchery and natural fall chinook salmon in the Snake River. 1998 annual report to Bonneville Power Administration, Contract DE-A179-1BP21708, Portland, Oregon.

Hendry, A.P., J.E. Hensleigh, and R.R. Reisenbichler. 1998. Incubation temperature, developmental biology, and the divergence of sockeye salmon (*Oncorhynchus nerka*) within Lake Washington. *Can. J. Fish. Aquat. Sci.* 55(6):1387-1394.

Holmberg, G.S., R.S. Shively, H.C. Hansel, T.L. Martinelle, M.B. Sheer, J.M. Hardiman, B.D. Liedtke, L.S. Blythe, and T.P. Poe. 1998. Movement, distribution, and behavior of radio-tagged juvenile chinook salmon in John Day, The Dalles, and Bonneville Dam Forebays, 1996. Annual Report of Research to the U.S. Army Corps of Engineers, Portland District, Portland, Oregon.

Holmberg, G.S., R.S. Shively, H.C. Hansel, T.L. Martinelli, M.B. Sheer, J.M. Hardiman, B.D. Liedtke, L.S. Blythe, and T.P. Poe. 1998. Movement, distribution, and behavior of radio-tagged juvenile Chinook salmon in John Day, The Dalles, and Bonneville Dam Forebays,

1996. U.S. Army Corps of Engineers. Portland District, Portland, Oregon.

Maita, M., K. Satoh, Y. Fukuda, H-K. Lee, J.R. Winton, and N. Okamoto. 1998. Correlation between plasma component levels of cultured fish and resistance to bacterial infection. *Fish Pathol.* 33:129-133.

Martinelli, T.L., H.C. Hansel, and R.S. Shively. 1998. Growth and physiological responses to surgical and gastric transmitter implantation techniques in subyearling chinook salmon (*Oncorhynchus tshawytscha*). *Hydrobiologia* 371/372:79-87.

Mesa, M.G., T.P. Poe, A.G. Maule, and C.B. Schreck. 1998. Vulnerability to predation and physiological stress responses in muvenile chinook salmon experimentally infected with *Renibacterium salmoninarum*. *Can. J. Fish. Aquat. Sci.* 55:1599-1606.

Parsley, M.J., T.D. Counihan, M.N. Morgan, and D. Gallion. 1998. Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam, and status and habitat requirements of white sturgeon populations in the Columbia and Snake rivers upstream from McNary Dam. D. Ward. Portland, Oregon, Bonneville Power Administration.

Pascho, R.J., D. Chase, and C.L. McKibben. 1998. Comparison of the membrane_filtration fluorescent antibody test, the enzyme_linked immunosorbent assay, and the polymerase chain reaction to detect *Renibacterium salmoninarum* in salmonid ovarian fluid. *J. Vet. Diagn. Invest.* 10:60-66.

Reisenbichler, R.R. 1998. Habitat considerations in the restoration of pacific salmon. Pages 149-156 in G.A. Wedemeyer, J.E. Weaver [editors], *Second US-USSR Symposium, Reproduction, Rearing and Management of Anadromous Fishes*, Seattle, WA.

Roberti, K.W., J.S. Rohovec, and J.R. Winton. 1998. Vaccination of rainbow trout against infectious hematopoietic necrosis virus using attenuated mutants selected by neutralizing monoclonal antibodies. *J. Aquat. Anim. Health* 10:328-337.

Schrock, R.M., J.W. Beeman, P.V. Haner, K.M. Hans, J.D. Hotchkiss, S.T. Sauter, S.P. VanderKooi, W.L. Gale, P.A. Petrusso, and A.G. Maule. 1998. Assessment of smolt condition for travel time analysis. Project review 1987-1997. (Contract DE-A179-87BP35245). Portland, Oregon. Bonneville Power Administration.

Snow, M., G. Kurath, C.O. Cunningham, and D.M. Smail. 1998. Development of an RNase protection assay for rapid detection of genetic variation in the fish rhabdovirus viral haemorrhagic septicaemia virus (VHSV). Pp. 195-202 in "Methodology in Fish Diseases Research", (A.C. Barnes, G.A. Davidson, M.P. Hiney, and D. McIntosh (eds.)). Fisheries Research Services, Aberdeen Scotland.

Wedemeyer, G.A. 1998. Methods for assessing the effects of rearing conditions on the health and physiological quality of anadromous salmonids. Pages 113-124 in G.A. Wedemeyer, J.E.

Weaver [editors], Second US-USSR Symposium, Reproduction, Rearing and Management of Anadromous Fishes, Seattle, WA.

Wertheimer, R.H. and C.A. Barfoot. 1998. Validation of daily increments in otoliths of northern squawfish larvae. Calif. Fish and Game 84(4):170-175.

Winton, J.R. 1998. Recent advances in detection and control of the principal diseases of Pacific salmon. Pages 140-148 in G.A. Wedemeyer, J.E. Weaver [editors], Second US-USSR Symposium, Reproduction, Rearing and Management of Anadromous Fishes, Seattle, WA.

Winton, J.R. 1998. Molecular tools for the diagnosis of infectious hematopoietic necrosis virus. Proceedings of the Infectious Hematopoietic Necrosis Workshop. Ministry of Agriculture, Fisheries and Food, Campbell River, B.C., Canada. March 4, 1996. pp. 31-36.

Winton, J.R. 1998. Molecular approaches to fish vaccines. J. Appl. Ichthyol. 14(1998):153-158.

Adams, N.S., D.W. Rondorf, S.D. Evans, J.E. Kelly, R.W. Perry, J.M. Plumb, and D.R. Kennedy. 1999. Migrational characteristics of radio-tagged juvenile salmonids during operation of a surface collection and bypass system. Pages 105-117 in M. Odeh, editor. Innovations in fish passage technology. American Fisheries Society, Bethesda, Maryland.

Ahne, W., W.B. Batts, G. Kurath, and J.R. Winton. 1999. Comparative sequence analyses of sixteen reptilian paramyxoviruses. Virus Res. 63:65-74.

Barfoot, C.A., D.M. Gadomski, and R.H. Wertheimer. 1999. Growth and mortality of age-0 northern squawfish, *Ptychocheilus oregonensis*, rearing in shoreline habitats of the Columbia River Reservoir. Environ. Biol. Fishes 54:107-115.

Barfoot, C.A., J.H. Petersen, M. Sheer, and T.P. Poe. 1999. John Day Dam Phase I Drawdown: Composition of resident fish communities in near-shore habitats of John Day Reservoir, and potential for changes in predator-prey relationships. Portland District, U.S. Army Corps of Engineers.

Bayer, J.M., and J.G. Seelye. 1999. Characteristics of upstream migrating Pacific lampreys (*Lampetra tridentata*) in the Columbia River. Portland, Oregon. U.S. Army Corps of Engineers.

Beckman, B.R., W.W. Dickhoff, and W.S. Zaugg, C. Sharpe, S. Hirtzel, R. Schrock, D. A. Larsen, R.D. Ewing, A. Palmisano, C.B. Schreck, and C.V.W. Mahnken. 1999. Growth, smoltification, and smolt-to-adult return of spring Chinook salmon from hatcheries on the Deschutes River, Oregon. Trans. Am. Fish. Soc. 128:1125-1150.

Beeman, J.W., T.C. Robinson, S.P. Vanderkooi, and P.V. Haner. 1999. Gas Bubble Trauma Monitoring and Research of Juvenile Salmonids, 1998 Annual Report. Prepared by U.S. Geological Survey for Bonneville Power Administration, Portland, OR, contract 96-AI-93279.

Beeman, J.W., T.C. Robinson, P.V. Haner, S.P. VanderKooi, and A.G. Maule. 1999. Gas Bubble Disease Monitoring and Research of Juvenile Salmonids, 1998. Portland, Oregon, Bonneville Power Administration contract 96-AI-93279. 29

Connolly, P.J., and J.D. Hall. 1999. Biomass of coastal cutthroat trout in unlogged and previously clearcut basins in the central Coast Range of Oregon. *Trans. Am. Fish. Soc.* 128:890-899.

Connolly, P.J., editor. 1999. Wind River watershed project. Project number 9801900, prepared for the Bonneville Power Administration, Portland, OR.

Connolly, P.J. 1999. Juvenile steelhead and rearing conditions. Pages E1-E20 in P.J. Connolly, editor. Wind River watershed project. Volume 1, Project number 9801900, prepared for Bonneville Power Administration, Portland, Oregon.

Corbeil, S., S.E. LaPatra, E.D. Anderson, J. Jones, B. Vincent, Y.-L. Hsu, and G. Kurath. 1999. Evaluation of the protective immunogenicity of the N, P, M, NV and G proteins of infectious hematopoietic necrosis virus in rainbow trout *Oncorhynchus mykiss* using DNA vaccines. *Dis. Aquat. Org.* 39:29-36.

Counihan, T.D., and C.N. Frost. 1999. Influence of externally attached transmitters on the swimming performance of juvenile white sturgeon. *Trans. Am. Fish. Soc.* 128:965-970.

Counihan, T.D., A.I. Miller, and M.J. Parsley. 1999. Indexing the relative abundance of age-0 white sturgeon in an impoundment of the lower Columbia River from highly skewed trawling data. *N. Am. J. Fish. Manage.* 19:520-529.

Counihan, T.D., M.J. Parsley, D. Gallion, C.N. Frost, and M.N. Morgan. 1999. Effects of mitigative measures on productivity of white sturgeon populations in the Columbia River downstream from McNary Dam, and status and habitat requirements of white sturgeon populations in the Columbia and Snake rivers upstream from McNary Dam. D. Ward. Portland, Oregon. Bonneville Power Administration.

Counihan, T.D., J.H. Petersen, N.S. Adams, R.S. Shively, and H.C. Hansel. 1999. Feasibility of Extracting Survival Information from Radio-Telemetry Studies at the John Day Dam.. Portland District. U.S. Army Corps of Engineers.

Duda, J.J., A.J. Krzysik, and J.E. Frelich. 1999. Effects of drought on desert tortoise movement and activity. *J. Wildl. Manag.* 63:1181-1192.

Evans, S.D., N.S. Adams, R.W. Perry, J.M. Plumb, and M.S. Novick. 1999. Movements and passage routes of radio-tagged juvenile Chinook salmon and steelhead in the forebay of Lower Granite Dam as determined from fixed-site receiver stations. Adams, N.S., and D.W. Rondorf, editors. Migrational characteristics of juvenile spring chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 1998 surface bypass collector tests. Walla Walla,

Washington. U.S. Army Corps of Engineers, Contract E 86930151.

Evans, S.D., B.J. Hausmann, N. S. Adams, D. W. Rondorf, C.F. Morril, and J.D. Serl. 1999. Evaluation of strobe lights to improve fish collection efficiency at Cowlitz Falls Dam, Washington. Randle, Washington, Cowlitz Falls Project.

Gale, W.L., M.S. Fitzpatrick, M. Lucero, W.M. Contreras-Sanchez, and C.B. Schreck. 1999. Masculinization of Nile tilapia (*Oreochromis niloticus*) by immersion in androgens. *Aquaculture* 178:349-357.

Gannam, A.L., and R.M. Schrock. 1999. Immunostimulants in Fish Diets. *J. Appl. Aquacult.* 9(4):53-70.

Gharrett, A.J., W.W. Smoker, R.R. Reisenbichler, and S.G. Taylor. 1999. Outbreeding depression in hybrids between odd-and even-broodyear pink salmon. *Aquaculture* 173:117-129.

Hans, K.M., M.G. Mesa, and A.G. Maule. 1999. Rate of disappearance of gas bubble trauma signs in juvenile salmonids. *J. Aquat. Anim. Health* 11:383-390.

Hastein, T., B.J. Hill, and J.R. Winton. 1999. Successful aquatic animal disease emergency programmes. *Rev. Sci. Tech. Off. Int. Epiz.* 18(1):214-227.

Hershberger, P.K., R.M. Kocan, N.E. Elder, T.R. Meyers, and J.R. Winton. 1999. Epizootiology of viral hemorrhagic septicemia virus in Pacific herring from the spawn-on-kelp fishery in Prince William Sound, Alaska, USA. *Dis. Aquat. Org.* 37:23-31.

Holmberg, G.S., R.E. Wardell, M.G. Mesa, A. Powers, M. Wilcoxin, N.S. Adams, and D.W. Rondorf. Evaluation of the new Bonneville Dam Second Powerhouse Juvenile Bypass System, 1999. Annual Report of Research to the U.S. Army Corps of Engineers, Portland District, Portland, Oregon.

House, M.L., J.L. Bartholomew, J.R. Winton, J.L. Fryer. 1999. Relative virulence of three isolates of *Piscirickettsia salmonis* for coho salmon *Oncorhynchus kisutch*. *Dis. Aquat. Org.* 35:107-113.

Kocan, R., P. Hershberger, T. Mehl, N. Elder, M. Bradley, D. Wildermuth, and K. Stick. 1999. Pathogenicity of *Ichthyophonus hoferi* for laboratory-reared Pacific herring (*Clupea pallasii*) and its early appearance in wild Puget Sound herring. *Dis. Aquat. Org.* 35: 23-29.

Martin, B.A., and M.K. Saiki. 1999. Effects of ambient water quality on the endangered Lost River sucker in the Upper Klamath Lake, Oregon. *Trans. Am. Fish. Soc.* 128:953-961.

Martinelli-Liedtke, T.L., R.S. Shively, G.S. Holmberg, M.B. Sheer, and R.M. Schrock. 1999. Nonlethal gill biopsy does not affect juvenile chinook salmon implanted with radio transmitters. *N. Am. J. Fish. Manage.* 19:856-859.

Maule, A.G., and S.P. VanderKooi. 1999. Stress-induced immune-endocrine interaction. Pages 205-245 in P.H.M. Balm (ed.). Stress physiology in animals. Sheffield Academic Press Ltd. And CRC Press, Sheffield, UK and Boca Raton, Florida.

Maule, A.G., J.W. Beeman, M.G. Mesa, K.M. Hans, T.C. Robinson, S.P. Vanderkooi, P.V. Haner, and L. Weiland. 1999. Gas Bubble Trauma Monitoring and Research of Juvenile Salmonids. Portland, Oregon, Bonneville Power Administration. Contract 96-AI-93279.

Mesa, M.G., A.G. Maule, T.P. Poe, and C.B. Schreck. 1999. Influence of bacterial kidney disease on smoltification in salmonids: is it a case of double jeopardy? *Aquaculture* 174:25-41.

Palmisano, A.N., J.R. Winton, and W.W. Dickhoff. 1999. Sequence features and phylogenetic analysis of the stress protein Hsp90 in chinook salmon (*Oncorhynchus tshawytscha*), a Poikilothermic Vertebrate. *Biochem. Biophys. Res. Commun.* 258:784-791.

Parrish, F.A., and T.L. Martinelli-Liedtke. 1999. Some preliminary findings on the nutritional status of the Hawaiian Spiny Lobster (*Panulirus marginatus*). *Pac. Sci.* 53:361-366.

Petersen, J., and D.L. Ward. 1999. Development and corroboration of a bioenergetics model for northern pikeminnow (*Ptychocheilus oregonensis*) feeding on juvenile salmonids in the Columbia River. *Trans. Am. Fish. Soc.* 128:784-801.

Petersen, J., C. Barfoot, S. Sauter, D. Gadomski, P. Connolly, and T. Poe. 1999. Predicting the effects of dam breaching in the lower Snake River on predators of juvenile salmon. Report prepared for the U.S. Army Corps of Engineers, Walla Walla District.

Plumb, J.M., N.S. Adams, and D.W. Rondorf. 1999. Behavior of juvenile Chinook salmon and steelhead relative to the log boom at Lower Granite Dam. Portland, Oregon. U.S. Army Corps of Engineers.

Plumb, J.M., K.S. Gates, M.S. Novick, B.D. Liedtke, and N.S. Adams. 1999. Movement, distribution, and behavior of radio-tagged yearling spring Chinook salmon and hatchery steelhead in the forebay of Bonneville Dam, 1999. Portland, Oregon. U.S. Army Corps of Engineers.

Redman, R.S., S. Freeman, D.R. Clifton, J. Morrel, G.S. Brown, and R.J. Rodriguez. 1999. Biochemical analysis of plant protection afforded by a nonpathogenic endophytic mutant of *Colletotrichum magna*. *Plant Physiol.* 119:795-804.

Reisenbichler, R.R. [ed.] 1999. Elwha River ecosystem restoration: Potential effects and restoration methods -- fisheries investigations. Final Report. U.S. Geological Survey, Western Fisheries Research Center, Seattle, WA 94 p.

Rodriguez, R.J., D. Cullen, C. Kurtzman, and G. Khachatourians. 1999. Estimation of fungal diversity via molecular methods. In: Measuring and monitoring biological diversity: Standard

Methods for Fungi. Mueller, G.M., G.F. Bills, and M.S. Foster [eds.].

Saiki, M.K., D.P. Monda, and B.L. Bellerund. 1999. Lethal levels of selected water quality variables to larval and juvenile Lost River and shortnose suckers. *Environ. Pollut.* 105:37-44.

Scholefield, R.J., K.T. Fredricks, K.S. Slaght, and J.G. Seelye. 1999. Effects of the lampricide 3-trifluoromethyl-4-nitrophenol (TFM) on pH, net oxygen production, and respiration by algae. *Tech. Rep. GLFC 63:1-20.*

Schrock, R.M., P.V. Haner, K.M. Hans, J.W. Beeman, S.P. Vanderkooi, J.D. Hotchkiss, P.A. Petrusso, S.G. Smith, A.G. Maule. 1999. Assessment of smolt condition for travel time analysis. Annual Report, 1993-1994, Bonneville Power Administration, Portland, Oregon. Contract DE-A179-87BP35245.

Schrock, R.M., R.E. Reagan, P.A. Petrusso, and J. Coyle. 1999. Assessment and Analysis of Smolt Condition in the Columbia River Basin, Volume 1: Evaluation of the Effect of a Modified Feeding Strategy on Growth and Smoltification of Summer Steelhead (*Oncorhynchus mykiss*) at Dworshak National Fish Hatchery. Portland, Oregon. Bonneville Power Administration. (Contract DE-AI79-87BP35245) .

Snow, M., C.O. Cunningham, W.T. Melvin, and G. Kurath. 1999. Analysis of the nucleoprotein gene identifies three distinct lineages of viral haemorrhagic septicaemia virus (VHSV) within the European marine environment. *Virus Research* 63:35-44.

Tiffan, K.F., D.W. Rondorf, and H.L. Burge [ed]. 1999. Post-release attributes and survival of hatchery and natural fall chinook salmon in the Snake River. Annual Report to the Bonneville Power Administration (Contract DE-AI79-91BP21708) Portland, Oregon.

Tiffan, K.F., D.W. Rondorf, W.P. Connor, and H.L. Burge (eds.). 1999. Identification of the spawning, rearing, and migratory requirements of fall chinook salmon in the Columbia River Basin. Bonneville Power Administration, Annual Report, 1996-1997, Portland, Oregon.

VanderKooi, S.P. and A.G. Maule. 1999. Prevalence of *Renibacterium salmoninarum* in juvenile spring chinook salmon at Columbia and Snake river hatcheries: 1993-1996. *J. Aquat. Anim. Health* 11:162-169.

Weiland, L.K., M.G. Mesa, and A.G. Maule. 1999. Influence of infection with *Renibacterium salmoninarum* on susceptibility of juvenile spring chinook salmon to gas bubble trauma. *J. Aquat. Anim. Health* 11:123-129.

Weins, G., M.S. Chien, J.R. Winton, and S.L. Kaattari. 1999. Antigenic and functional characterization of p57 produced by *Renibacterium salmoninarum*. *Dis. Aquat. Org.* 37:43-52.

Xia, Z., R. Patino, W.L. Gale, A.G. Maule, and L.D. Densmore. 1999. Cloning, in Vitro expression, and novel phylogenetic classification of a channel catfish estrogen receptor. *Gen. Comp. Endocrinol.* 113:360-368.

Adams, N.S., R.S. Shively, and C. Grant . 2000. Techniques used to monitor radio-tagged juvenile salmonids at Columbia and Snake River Dams. Pages 286-295 in J. E. Eiler, D. J. Alcorn, and M. R. Neuman, editors. *Biotelemetry 15 Proceedings of the 15th International Symposium on Biotelemetry*. International Society on Biotelemetry, Wageningen, Netherlands.

Adams, N.S., R.S. Shively, and D.W. Rondorf. 2000. Advances in biotelemetry technology in the Columbia River Basin and how they are providing behavioral data used to shape fisheries management. Pages 259-268 in J. E. Eiler, D. J. Alcorn, and M. R. Neuman, editors. *Biotelemetry 15: Proceedings of the 15th International Symposium on Biotelemetry*. International Society on Biotelemetry, Wageningen, Netherlands.

Alcorn, S.W., and R.J. Pascho. 2000. Single-dilution enzyme-linked immunosorbent assay for quantification of antigen-specific salmonid antibody. *J. Vet. Diagn. Invest.* 12:245-252.

Anderson, E.D., H.M. Engelking, E.J. Emmenegger, and G. Kurath. 2000. Molecular epidemiology reveals emergence of a virulent infectious hematopoietic necrosis (IHN) virus strain in wild salmon and its transmission to hatchery fish. *J. Aquat. Anim. Health* 12:85-99.

Barfoot, C.A., and R.G. White 2000. Fish assemblages and habitat relationships in a small northern Great Plains stream. *The Prairie Naturalist* 31:87-106.

Bayer, J.M., and J.G. Seelye. 2000. Technical assistance for Pacific lamprey studies: final report of research. Pendleton, Oregon. Umatilla Indian Reservation.

Bjerselius, R., W. Li, J.H. Teeter, J.G. Seelye, P.B. Johnson, P.J. Maniak, G.C. Grant, C.N. Poldinghome, and P.W. Sorensen. 2000. Direct behavioral evidence that unique bile acids released by larval sea lamprey (*Petromyzon marinus*) function as a migratory pherome. *Can. J. Fish. and Aquat. Sci.* 57:557-569.

Coen, M.A., and R.S. Shively. 2000. Monitoring of Lost River and shortnose suckers in Upper Klamath Lake, Oregon to identify shoreline spawning sites. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Corbeil, S., S.E. La Patra, E.D. Anderson, and G. Kurath. 2000. Nanogram quantities of a DNA vaccine protect rainbow trout fry against heterologous strains of infectious hematopoietic necrosis virus. *Vaccine* 18:2817-2824.

Corbeil, S., G. Kurath, and S.E. LaPatra. 2000. Fish DNA vaccine against infectious hematopoietic necrosis virus: efficacy of various routes of immunization. *Fish Shellfish. Immunol.* 10:711-723.

Counihan, T.D., A.I. Miller, M.G. Mesa, and M.J. Parsley. 2000. The effects of dissolved gas supersaturation on white sturgeon larvae. *Trans. Am. Fish. Soc.* 127:316-322.

Cunningham, M.E., and R.S. Shively. 2000. Monitoring of Lost River and shortnose suckers in

the Lower Williamson River, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Elliott, D.G. 2000. The role of biotechnology in the detection of *Renibacterium salmoninarum* infections in salmonid fishes—promises and pitfalls. Bull. Can. Aquacult. Assoc. 100-3:6-12.

Elliott, D.G. 2000. Gross functional anatomy: integumentary system. Pages 95-107 in G.K. Ostrander (ed.). The Laboratory Fish. Academic Press, London, UK.

Elliott, D.G. 2000. Microscopic functional anatomy: integumentary system. Pages 271-306 in G.K. Ostrander (ed.). The Laboratory Fish. Academic Press, London, UK.

Emmenegger, E.G., T.R. Meyers, T.O. Burton, and G.Kurath. 2000. Genetic diversity and epidemiology of infectious hematopoietic necrosis virus in Alaska. Dis. Aquat. Org. 40:163-176.

Escos, J., C.L. Alados, F.I. Pugnaire, J. Puigdefabregas, and J.M. Emlen. 2000. Stress resistance strategy in an arid land shrub: interactions between developmental instability and fractal dimension. J. Arid Env. 45:315-336.

Ewing, R.D., J.E. Sheahan, M.A. Lewis, and A.N. Palmisano. 2000. Effects of rearing density and raceway conformation on growth, food conversion, and survival of juvenile spring chinook salmon. Prog. Fish. Cult. 60:167-178.

Gannam, A.L. and R.M. Schrock. 2000. Immunostimulants in fish diets. J. Appl. Aquacult. 9(4):53-89.

Hansel, H.C., J.W. Beeman, T.D. Counihan, J.M. Hardiman, B.D. Liedtke, M.S. Novick, and J.M. Plumb. 2000. Estimates of fish-, spill-, and sluiceway-passage efficiencies of radio-tagged juvenile steelhead and yearling Chinook salmon at The Dalles Dam, 1999. Portland District, Portland, Oregon, USA, U.S. Army Corps of Engineers.

Hansel, H.C., J.W. Beeman, T.D. Counihan, B.D. Liedtke, M.S. Novick, and J.M. Plumb. 2000. Estimates of fish and spill passage efficiency of radio-tagged juvenile steelhead and yearling Chinook salmon at John Day Dam, 1999. U.S. Army Corps of Engineers, Portland District, Portland, Oregon, USA.

Hansel, H.C., J.W. Beeman, T.D. Counihan, B.D. Liedtke, M.S. Novick, and J.M. Plumb. 2000. Estimates of fish and spill passage efficiency of radio-tagged juvenile steelhead and yearling Chinook salmon at John Day Dam, 1999. U.S. Army Corps of Engineers, Portland District, Portland, Oregon, USA.

Hansel, H.C., J.W. Beeman, T.D. Counihan, B.D. Liedtke, M.S. Novick, and J.M. Plumb. 2000. Movement, distribution, and behavior of radio-tagged sub-yearling Chinook salmon in the forebay of John Day Dam, 1999. Portland District, Portland, Oregon, USA, U.S. Army Corps of Engineers.

Haskell, C.A., K.F. Tiffan, and D.W. Rondorf. 2000. Pre-dredging assessment of Messner Cove, Port of Morrow, Oregon on benthic invertebrate community and subyearling Chinook salmon rearing habitat, 1999. Portland District. U.S. Army Corps of Engineers.

Hayes, B.S., and R.S. Shively. 2000. Monitoring of Lost River and shortnose suckers at shoreline spawning areas in Upper Klamath Lake, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Holmberg, G.S., R.E. Wardell, M.G. Mesa, N.S. Adams, and D.W. Rondorf. 2000. Evaluation of the Bonneville Dam Second Powerhouse Juvenile Bypass System, 2000. Portland, Oregon, U.S. Army Corps of Engineers. Contract W66QKZ00402124.

Holmberg, G.S., R.E. Wardell, M.G. Mesa, N.S. Adams, and D.W. Rondorf. 2000. Evaluation of the Bonneville Dam Second Powerhouse new Juvenile Bypass System. Portland District, Portland, Oregon, U.S. Army Corps of Engineers. Contract W66QKZ90341930.

Johnson, G.E., N.S. Adams, R.L. Johnson, D.W. Rondorf, D.D. Dauble, T.Y. Barila. 2000. Evaluation of the prototype surface bypass for salmonid smolts in Spring 1996 and 1997 at Lower Granite Dam on the Snake River, Washington. *Trans. Am. Fish. Soc.* 129:381-397.

Kappenman, K.M., D.G. Gallion, P.E. Kofoot, and M.J. Parsley. 2000. White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers Upstream from Bonneville Dam. Ward. Portland, Oregon. Bonneville Power Administration.

Kurath, G. 2000. What's a novirhabdovirus? *Am. Fish. Soc., Fish Health Section Newsl.* 28:4-5.

Kurath, G., R.M. Troyer, E.D. Anderson, and E.J. Emmenegger. 2000. Genetic diversity patterns and evolution of an aquatic rhabdovirus. *Proceedings of the Noble Foundation Virus Evolution Workshop, October 1999, Ardmore, Oklahoma.* Available by at <http://www.noble.org/virusevolution/abstracts/KurathProc.htm>.

LaPatra, S.E., S. Corbeil, G.R. Jones, W.D. Shewmaker, and G. Kurath. 2000. The dose-response effect on protection and humoral response to a DNA vaccine against IHN virus in subyearling rainbow trout. *J. Aquat. Anim. Health* 12:181-188, (invited feature article).

LaPatra, S., R. Troyer, W. Shewmaker, G. Jones, and G. Kurath. 2000. Survival of IHN virus in different environments and a molecular tool to monitor virus distribution. Printed proceedings of the International Conference on Risk Analysis in Aquatic Animal Health, Office of International Epizootics, Feb. 2000, Paris.

McKibben, C.L., and R.J. Pascho. 2000. Shedding of *Renibacterium salmoninarum* by infected chinook salmon *Oncorhynchus tshawytscha*. *Dis. Aquat. Org.* 38:75-79.

Martin, B.A., and M.K. Saiki. 2000. Effects of ambient water quality on the endangered Lost

- River sucker in the Upper Klamath Lake, Oregon. *Trans. Am. Fish. Soc.* 128:953-961.
- Martinelli-Liedtke, T.L., R.S. Shively, G.S. Holmberg, M.B. Sheer, and R.M. Schrock. 2000. Nonlethal gill biopsy does not affect juvenile chinook salmon implanted with radio transmitters. *N. Am. J. Fish. Manag.* 19:856-859.
- Maule, A.G., and S.P. Vanderkooi. 2000. Stress-induced immune-endocrine interaction, In P. Balm (ed.). *Stress Physiology*. Sheffield Academic Press Ltd. Sheffield, UK.
- Mesa, M.G., A.G. Maule, T.P. Poe, and C.B. Schreck. 2000. Influence of bacterial kidney disease on smoltification in salmonids: is it a case of double jeopardy? *Aquaculture* 174:25-41.
- Mesa, M.G., A.G. Maule, and C.B. Schreck. 2000. Interaction of infection with *Renibacterium salmoninarum* and physical stress in juvenile chinook salmon: physiological responses, disease progression, and mortality. *Trans. Am. Fish. Soc.* 129:158-173.
- Mesa, M.G., L.K. Weiland, and A.G. Maule. 2000. Progression and severity of gas bubble trauma in juvenile salmonids. *Trans. Am. Fish. Soc.* 129:174-185.
- Mesa, M.G., J.M. Bayer, J.G. Seelye, and L.K. Weiland. 2000. Swimming performance and exhaustive stress in Pacific lampreys (*Lampetra tridentata*): implications for upstream migrations past dams: annual report of research. Portland, Oregon. U.S. Army Corps of Engineers.
- Muir, W.D., G.T. McCabe, M.J. Parsley, and S.A. Hinton. 2000. Diet of first-feeding larval and young-of-the-year white sturgeon in the lower Columbia River. *Northwest Sci.* 74(1):25-33.
- Palmisano, A.N., J.R. Winton, and W.W. Dickhoff. 2000. Tissue-specific induction of Hsp90 mRNA and plasma cortisol response in Chinook salmon following heat shock, seawater challenge and handling challenge. *Mar. Biotechnol.* 2:329-338.
- Parrish, F.A., and T.L. Martinelli-Liedtke. 2000. Some preliminary findings on the nutritional status of the Hawaiian Spiny Lobster (*Panulirus marginatus*). *Pac. Sci.* 53:361-366.
- Parsley, M.J., and K.M. Kappenman. 2000. White sturgeon spawning areas in the Lower Snake River. *Northwest Sci.* 74(3):192-201.
- Pascho, R.J., and J.E. Ongerth. 2000. Method for flow cytometric monitoring of *Renibacterium salmoninarum* inactivation. *Dis. Aquat. Org.* 41:181-193.
- Patino, R., Z. Xia, W.L. Gale, C. Wu, A.G. Maule, and X. Chang. 2000. Novel transcripts of the estrogen receptor alpha gene in channel catfish. *Gen. Comp. Endocrinol.* 120:314-325.
- Petersen, J., C. Barfoot, and S. Sauter. 2000. Population monitoring for *Valvata utahensis* in Lake Walcott, Idaho. Report prepared for the Bureau of Reclamation, Boise, ID.

- Petersen, J.H., and D.L. DeAngelis. 2000. Dynamics of prey moving through a predator field: a model of migrating juvenile salmon. *Math. Biosci.* 165:97-114.
- Redman, R.S., J.C. Ranson, and R.J. Rodriguez. 2000. Conversion of the pathogenic fungus *Colletotrichum magna* to a nonpathogenic, endophytic mutualist by gene disruption. *MPMI* 12(11):969-975.
- Reisenbichler, R.R., and S.P. Rubin. 2000. Genetic changes from artificial propagation of Pacific salmon affect the productivity and viability of supplemented populations. *ICES J. of Marine Science* 56:459-466.
- Rissler, P.H., G.G. Scoppettone, S. Shea, and S. Byers. 2000. Using GIS and GPS to map seasonal distribution and relative density of Independence Valley speckled dace and Independence Valley tui chub. Pages 39-40 in D. A. Hendrickson and L. T. Findley (eds.). *Proceedings of the Desert Fishes Council Volume XXXII*.
- Robinson, T.C., S.A. Tobet, C. Chase, T. Waldron, and S.A. Sower. 2000. Gonadotropin-Releasing hormones in the brain and pituitary of the White Sucker. *Gen. Comp. Endocrinol.* 117:381-394.
- Rodriguez, R.J., and L.W. Parks. 2000. Ergosterol. In "Encyclopedia of Plant Pathology". O.C. Maloy and T.D. Murray, [eds.]. John Wiley & Sons, Inc., pp. 23-25.
- Saiki, M.K. 2000. Assessment of copper, cadmium, and zinc contamination in juvenile Chinook salmon and selected fish-forage organisms (aquatic insects) in the Upper Sacramento River, California. Final Report prepared for U.S. Fish and Wildlife Service, Sacramento, CA.
- Schrock, R.M., P.V. Haner, K.M. Hans, J.W. Beeman, S.P. Vanderkooi, J.D. Hotchkiss, P.A. Petrusso, S.G. Smith, A.G. Maule. 2000. Assessment of smolt condition for travel time analysis. Annual Report, 193-1994, Bonneville Power Administration, Portland, Oregon.
- Schrock, R.M., S.P. VanderKooi, A.G. Maule, J.W. Beeman, R.E. Reagan, and K.M. Hans. 2000. Assessment of Smolt Condition for Travel Time Analysis. Summary Report 1999. Portland, Oregon. Bonneville Power Administration. Contract number DE-A179-87BP35245.
- Scoppettone, G.G., P.H. Rissler, and M.E. Buettner. 2000. Reproductive longevity and fecundity associated with nonannual spawning in Cui-ui. *Trans. Am. Fish. Soc.* 129:658-669.
- Scoppettone, G.G., J.A. Salgado, M.B. Nielsen. 2000. Blue tilapia, *Oreochromis aureus*, predation on native fishes of the Muddy River, Nevada. Page 74 in D. A. Hendrickson and L. T. Findley (eds.). *Proceedings of the Desert Fishes Council Volume XXXII*.
- Shively, R.S., E.B. Neuman, M.E. Cunningham, and B.S. Hayes. 2000. Monitoring of Lost River and shortnose suckers at the Sprague River Dam fish ladder, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Tiffan, K.F., D.W. Rondorf, and H.L. Burge. 2000. Post-release attributes and survival of hatchery and natural fall chinook salmon in the Snake River. Annual Report to the Bonneville Power Administration, Portland, Oregon.

Tiffan, K.F., and D.W. Rondorf. 2000. Physiological development and migratory behavior of subyearling fall Chinook salmon in the Columbia River. *N. Am. J. Fish. Manag.* 20(1):28-40.

Troyer, R.M., S.E. LaPatra, and G. Kurath. 2000. Genetic analyses reveal unusually high diversity of infectious haematopoietic necrosis virus in rainbow trout aquaculture. *J. Gen. Virol.* 81:2823-2832.

VanderKooi, S.P., W.L. Gale, and A.G. Maule. 2000. Preliminary study of gill Na⁺, K⁺-ATPase activity juvenile spring Chinook salmon following electroshock or handling stress. *N. Am. J. Fish. Manag.* 20:528-533.

Venditti, D.A., D.W. Rondorf, and J.M. Kraut. 2000. Migratory behavior in the forebay delay of radio-tagged juvenile fall Chinook salmon in a lower Snake River impoundment. *N. Am. J. Fish. Manag.* 20:41-52.

Venditti, D.A., J.M. Kraut, and D.W. Rondorf. 2000. Thermal exposure of wild juvenile fall Chinook salmon in Little Goose Reservoir, Snake River. Pages 313-232 in J. H. Eiler, D.J. Alcorn, and M.R. Neuman, editors. Proceedings of the 15th International Symposium on Biotelemetry. International Society of Biotelemetry.

Walker, P.J., A. Benmansour, C.H. Calisher, R. Dietzgen, R.X. Fang, A.O. Jackson, G. Kurath, J.C. Leong, S. Nadin-Davies, R.B. Tesh, and N. Tordo. 2000. Family *Rhabdoviridae*, pp.563-583 In "The seventh report of the international committee for taxonomy of viruses". Academic Press, San Diego.

Wertheimer, R.H., and C.A. Barfoot. 2000. Validation of daily increments in otoliths of northern squawfish larvae. *California Fish and Game* 84(4):170-175.

Xia, Z., W.L. Gale, X. Chang, D. Langenau, R. Patino, A.G. Maule, and L.D. Densmore. 2000. Phylogenetic sequence analysis, recombinant expression, and tissue distribution of a channel catfish estrogen receptor beta. *Gen. Comp. Endocrinol.* 118:139-149.

Adams, N.S., G.E. Johnson, D.W. Rondorf, S.M. Anglea, and T. Wik. 2001. Biological evaluation of the behavioral guidance structure at Lower Granite dam on the Snake River, Washington in 1998. Pages 145-160 in C. C. Coutant, editor. Behavioral technologies for fish guidance: Symposium 26. American Fisheries Society, Bethesda, Md.

Alados, C.L., T. Navarro, J.J. Escos, B. Cabezudo, and J.M. Emlen. 2001. Tolerance to water deficit under a humidity gradient and its interaction with grazing: developmental stability and growth pattern in *Anthyllis cytisoides* L., a dryland shrub. *Int. J. Plant Sci.* 162:607-616.

- Allen, B., T.L. Liedtke, A. Daniel, J. Begala, M. Salway, and J. Beeman. 2001. Monitoring tailrace egress in the stilling basin, the ice-trash sluiceway, and the powerhouse of The Dalles Dam, 2000. Portland, Oregon. U.S. Army Corps of Engineers, contract W66QKZ00391996.
- Balfry, S.K., A.G. Maule, and G.K. Iwama. 2001. Coho salmon *Oncorhynchus kisutch* strain differences in disease resistance and non-specific immunity, following immersion challenges with *Vibrio anguillarum*. Dis. Aquat. Org. 47:39-48.
- Bayer, J.M., and T.D. Counihan. 2001. Length Changes in white sturgeon larvae preserved in ethanol or formaldehyde. Collection Forum 15(1-2):57-64.
- Bayer, J.M., and J.G. Seelye. 2001. Olfactory sensitivity of Pacific lampreys to petromyzonol sulfate. Annual Report of Research 2000. Confederated Tribes of the Umatilla Indian Reservation. Pendleton, Oregon. Contract number 406-01 22.
- Bayer, J.M., T.C. Robinson, and J.G. Seelye. 2001. Upstream migration of Pacific lampreys in the John Day River: behavior, timing and habitat use. Presentation of research 2000. Portland, Oregon. Bonneville Power Administration. Project Number 2000-052, Contract Number 00AI26080.
- Bayer, J.M., M.H. Meeuwig, and J.G. Seelye. 2001. Identification of larval Pacific lampreys (*Lampetra tridentata*), river lampreys (*L. ayresi*), and western brook lampreys (*L. richardsoni*) and thermal requirements of early life history stages of lampreys. Bonneville Power Administration, Portland, Oregon. Project Number 2000-029 Contract Number 00AI23249.
- Bayer, J.M., and J. G. Seelye. 2001. Technical Assistance for Pacific Lamprey Studies. D. A. Close. Pacific lamprey Research and Restoration Project. Portland, Oregon. Bonneville Power Administration. Contract DOE/BP-00005455-1.
- Beeman, J.W. and T.D. Counihan. 2001. Using Radiotelemetry to determine fish passage information at large hydroelectric dams: Design and analysis to achieve multiple objectives with a single design. Biotelemetry 16: Proceedings of the 16th international symposium on biotelemetry, Vienna, Austria, May 6-11, 2001. Wageningen, The Netherlands, International Society on Biotelemetry.
- Beeman, J.W., and A.G. Maule. 2001. Residence times and diel passage distributions of radio-tagged juvenile spring Chinook salmon and steelhead in the gateway and fish collection channel of the Columbia River dam. N. Am. J. Fish. Manag. 21:455-463.
- Beeman, J.W., and A.G. Maule. 2001. Use of a miniature pressure-sensitive transmitter to determine the in-situ migration depths of juvenile salmonids in relation to total dissolved gas supersaturation. Proceedings of the 16th international symposium on biotelemetry, Vienna, Austria, May 6-11, 2001.
- Coen, M.A., E.C. Janney, R.S. Shively, B.S. Hayes, and G.N. Blackwood. 2001. Monitoring of Lost River and shortnose suckers in Upper Klamath Lake, Oregon. Annual report submitted to

the Bureau of Reclamation, Klamath Falls, OR.

Connolly, P.J., and I. Jezorek. 2001. Juvenile and resident fish populations in the Wind River watershed. Connolly, P.J. Wind River watershed restoration. Volume III. Bonneville Power Administration, Portland, Oregon. Project number 1998-019-01.

Connor, W.P., T.C. Bjornn, H.L. Burge, A.R. Marshall, H.L. Blankenship, R.K. Steinhorst, and K.F. Tiffan. 2001. Early life history attributes and run composition of PIT-tagged wild subyearling Chinook salmon recaptured after migrating downstream past Lower Granite Dam. *Northwest Sci.* 75:254-261.

Counihan, T.D., and J.H. Petersen. 2001. Survival estimates of migrant juvenile salmonids in the Columbia River from John Day Dam through Bonneville Dam using radio-telemetry. Annual Report of Research 2000.

Counihan, T.D., K. Felton, and G.S. Holmberg. 2001. Estimating the survival of juvenile salmonids passing through The Dalles Dam using radio-telemetry, 2001. U.S. Army Corps of Engineers, Portland District.

Cunningham, M.E., R.S. Shively, E.C. Janney, and G.N. Blackwood. 2001. Monitoring of Lost River and shortnose suckers in the Lower Williamson River, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Dambacher, J.M., P.A. Rossignol, H.W. Li, and J.M. Emlen. 2001. Dam breaching and chinook salmon recovery. *Science* 291:939a.

DeAngelis, D.L., and J. H. Petersen. 2001. Importance of the predator's ecological neighborhood in modeling predation on migrating prey. *Oikos* 94: 315-325.

Elliott, D.G., and R.J. Pascho. 2001. Evidence that Coded-Wire-Tagging Procedures Can Enhance Transmission of *Renibacterium salmoninarum* in Chinook Salmon. *J. Aquat. Anim. Health* 13:181-193.

Elliott, D.G., R.J. Pascho, and C.L. McKibben. 2001. Evaluation of procedures for collection, transportation, downstream passage, and post-release survival of outmigrating salmonids: Preliminary test of the efficacy of a UV system for reduction of bacterial numbers in water of a juvenile fish facility at Lower Granite Dam. Annual Report of Research, 2000. MIPR W68SBV83009063, U.S. Army Corps of Engineers, Walla Walla District.

Evans, S.D., N.S. Adams, and D.W. Rondorf. 2001. Passage behavior of radio-tagged subyearling Chinook salmon at Bonneville Dam associated with the surface bypass program, 2000. Portland, Oregon, U.S. Army Corps of Engineers (Contract W66QKZ00200128).

Evans, S.D., J.P. Plumb, A.C. Braatz, K.S. Gates, N.S. Adams, and D.W. Rondorf. 2001. Passage behavior of radio-tagged yearling Chinook salmon and steelhead at Bonneville Dam associated with the surface bypass program. Portland, Oregon, U.S. Army Corps of Engineers. (Contract W66QKZ00200128).

- Evans, S.D., C.D. Smith, N.S. Adams, and D.W. Rondorf. 2001. Passage behavior of radio-tagged yearling Chinook salmon at Bonneville Dam, 2001. Portland, Oregon, U.S. Army Corps of Engineers.(Contract W66QKZ10442576) .
- Gadomski, D.M., C.A. Barfoot, J.M. Bayer, and T.P. Poe. 2001. Early life history of the northern pikeminnow in the lower Columbia River basin. Trans. Am. Fish. Soc. 130:250-262.
- Gadomski, D.M., and P. Wagner. 2001. Effects of water-level fluctuations on resident fish larvae and age-0 juveniles in the Hanford Reach of the Columbia River during July-September 1998-2000. Bonneville Power Administration.
- Gannam, A.L., and R.M. Schrock. 2001. Immunostimulants in Fish Diets. In "Nutrition and Fish Health" (C. Lim and C.D. Webster, eds.). The Haworth Press, New York.
- Gold, S.E., J.W. Duick, R.S. Redman, and R.J. Rodriguez. 2001. Molecular transformation, gene cloning, and gene expression systems for filamentous fungi. In "Applied Mycology and Biotechnology - volume 1". G.G. Khachatourians, D.P. Arora. [eds.]. Elsevier Science. pp. 199-238.
- Harrahy, L.N.M., C.B. Schreck, and A.G. Maule. 2001. Antibody-producing cells correlated with body weight in juvenile chinook salmon (*Oncorhynchus tshawytscha*) acclimated to optimal and elevated temperatures. Fish Shellfish Immunol. 11:653-659.
- Haskell, C.A., D.W. Rondorf, and K.F. Tiffan. 2001. Spatial, Temporal, and Community Dynamics of Zooplankton in McNary and John Day Reservoirs. Tiffan, K.F., and D.W. Rondorf, editors. Post-release attributes and survival of hatchery and natural fall chinook salmon in the Snake River. Portland, Oregon, Bonneville Power Administration, Contract DE-AI79-1BP21708.
- Hayes, B.S., R.S. Shively, E.C. Janney, and G.N. Blackwood. 2001. Monitoring of Lost River and shortnose suckers at shoreline spawning areas in Upper Klamath Lake, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Hershberger, P.K., N.E. Elder, G.D. Marty, J. Johnson, and R.M. Kocan. 2001. Management of Pacific herring closed pound spawn-on-kelp fisheries to optimize fish health and product quality. N. Am. J. Fish. Manage. 21:550-555.
- Janney, E.C., R.S. Shively, and G.N. Blackwood. 2001. Monitoring of Lost River and shortnose suckers at the Sprague River Dam fish ladder, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Jezorek, I.G., and P.J. Connolly. 2001. Flow, temperature, and habitat conditions in the Wind River watershed. Connolly, P. J. Wind River watershed restoration. Volume IV, Project number 1998-019-01. Portland, Oregon, Bonneville Power Administration.
- Kocan, R.M., P.K. Hershberger, N.E. Elder, and J.R. Winton. 2001. Epidemiology of viral

hemorrhagic septicemia (VHS) among juvenile Pacific herring and Pacific sandlances in Puget Sound, Washington. *J. Aquat. An. Health.* 13:77-85.

Kocan, R.M., P.K. Hershberger, and N.E. Elder. 2001. Survival of the North American strain of viral hemorrhagic septicemia virus (VHSV) in filtered seawater and seawater containing ovarian fluid, crude oil, and serum-enriched culture medium. *Dis. Aquat. Org.* 44: 75-78.

Kurath, G., S. Corbeil, E.D. Anderson, and S.E. LaPatra. 2001. Efficacy of a DNA vaccine against infectious hematopoietic necrosis virus. *Bull. Natl. Res. Inst. Aquacult., Suppl.* 5:27-33.

LaPatra, S.E., S. Corbeil, G.R. Jones, W.D. Shewmaker, N. Lorenzen, E.D. Anderson, G. Kurath. 2001. Protection of rainbow trout against infectious hematopoietic necrosis virus four days after specific or semi-specific DNA vaccine. *Vaccine* 19:4011-4019.

LaPatra, S.E., W.N. Batts, K. Overturf, G.R. Jones, W.D. Shewmaker, and J.R. Winton. 2001. Negligible risk associated with the movement of processed rainbow trout, *Oncorhynchus mykiss* (Walbaum), from an infectious haematopoietic necrosis virus (IHNV) endemic area. *J. Fish Dis.* 24:399-408.

LaPatra, S., R. Troyer, W. Shewmaker, G. Jones, and G. Kurath. 2001. Understanding aquatic animal virus survival and trafficking and its role in risk assessment. *In* Proceedings of the Office International des Epizooties (OIE) International Conference on Risk Analysis in Aquatic Animal Health (C. Rogers, ed.), 8-10 February 2000. Paris. OIE, Paris, 251-258.

LaPatra, S., W. Batts, G. Jones, W. Shewmaker, and J. Winton. 2001. Absence of risk associated with movement of processed rainbow trout from an area where infectious hematopoietic necrosis virus is endemic. *In*: Rogers, C.J. (ed.) Proceedings of an International Conference on Risk Analysis in Aquatic Animal Health. Paris, France 8-10 February, 2000. Office International des Epizooties, Paris pp 240-245.

Lorang, J.M., R.P. Tuori, J.P. Martinez, T.L. Sawyer, J. Rollins, R.S. Redman, K.B. Johnson, R.J. Rodriguez, M. Dickman, T.J. Wolpert, and L.M. Ciuffetti. 2001. Green fluorescent protein is lighting up fungal biology. *Appl. Environ. Microbiol.* 67:1987-1994.

Martin, B.A., and M.K. Saiki. 2001. Gut contents of juvenile chinook salmon from the upper Sacramento River, California, during spring 1998. *California Fish and Game* 87(1):38-43.

Mesa, M.G., J.M. Bayer, J.G. Seelye, and L.K. Weiland. 2001. Swimming performance and exhaustive stress in Pacific lampreys (*Lampetra tridentata*): implications for upstream migrations past dams. Portland, Oregon. U.S. Army Corps of Engineers.

O'Farrell, C.L., D.G. Elliott, and M.L. Landolt. 2001. Mortality and kidney histopathology of Chinook salmon *Oncorhynchus tshawytscha* exposed to virulent and attenuated *Renibacterium salmoninarum* strains. *Dis. Aquat. Org.* 43:199-209.

Palmisano, A.N., and N.E. Elder. 2001. Standardized seawater rearing of Chinook salmon smolts to evaluate hatchery practices showed low statistical power. *Trans. Am. Fish. Soc.* 130:409-416.

Perry, R.W., N.S. Adams, and D.W. Rondorf. 2001. Buoyancy compensation of juvenile Chinook salmon implanted with two different size dummy transmitters. *Trans. Am. Fish. Soc.* 130:46-52.

Petersen, J.H. 2001. Density, aggregation, and body size of northern pikeminnow preying on juvenile salmonids in a large river. *J. Fish Biol.* 58:1137-1148.

Petersen, J.H., and J. F. Kitchell. 2001. Climate regimes and water temperature changes in the Columbia River: bioenergetic implications for predators of juvenile salmonids. *Can. J. Fish. Aquat. Sci.* 58:1831-1841.

Petersen, J.H., C. Barfoot, and M. Sheer. 2001. Predation by northern pikeminnow on juvenile salmonids in The Dalles Dam tailrace: field, laboratory, and habitat modeling studies (FY2000). Portland, Oregon. U.S. Army Corps of Engineers.

Plumb, J.M., M.S. Novick, N.S. Adams, and D.W. Rondorf. 2001. Behavior of radio-tagged juvenile Chinook salmon and steelhead in the forebay of Lower Granite Dam relative to the 2000 surface bypass collector and behavioral guidance structure tests. Walla Walla, Washington. Army Corps of Engineers, Contract E-86930151.

Plumb, J.M., M.S. Novick, A.C. Braatz, N. Lucchesi, N.S. Adams, and D.W. Rondorf. 2001. The migration and reservoir delay of radio-tagged juvenile spring Chinook salmon and steelhead in the Snake River during a drought year. Walla Walla, Washington, U.S. Army Corps of Engineers, Contract 86930151.

Poole, G., J. Dunham, M. Hicks, D. Keenan, J. Lockwood, E. Materna, D. McCullough, C. Mebane, J. Risley, S. Sauter, S. Spaulding, and D. Sturdevant. 2001. Scientific issues relating to temperature criteria for salmon, trout, char native to the Pacific Northwest. Report to the Policy Workgroup of the EPA Region 10 Water Temperature Criteria Guidance Project.

Quinn, T.P., L. Wetzel, S. Bishop, K. Overberg, and D.E. Rogers. 2001. Influence of breeding habitat on bear predation and age at maturity and sexual dimorphism of sockeye salmon populations. *Can. J. Zool.* 79:1782-1793.

Redman, R.S., D.D. Dunigan, and R.J. Rodriguez. 2001. Fungal symbiosis from mutualism to parasitism: who controls the outcome, host or invader? *New Phytol.* 151:705-716.

Rissler P.H., and G.G. Scopettone. 2001. Population viability analysis of Independence Lake Lahontan cutthroat trout. Page 49 *in* D. A. and L. T. Findley (eds.). *Proceedings of the Desert Fishes Council Volume XXXIII.*

Rissler, P.H., G.G. Scopettone, S. Shea, and S. Byers. 2001. Seasonal distribution of

Independence Valley speckled dace, *Rhinichthys osculus lethoporus*, and Independence Valley tui chub, *Gila bicolor isolate*. Final Report to Reno Field Office of U.S. Fish and Wildlife Service. 20 pp.

Rodriguez, R., and R. Redman. 2001. Colletotrichum as a model system for defining the genetic basis of fungal symbiotic lifestyles. Chapter 8 in "Colletotrichum Host Specificity, Pathology, and Host-Pathogen Interaction". Prusky, D. , S. Freeman, and M.B. Dickman (eds.) APS Press. The American Phytopathological Society, St. Paul, Minnesota. Pages 114-130.

Saiki, M.K., B.A. Martin, S.E. Schwarzbach, and T.W. May. 2001. Effects of an agricultural drainwater bypass on fishes inhabiting the Grassland Water District and the lower San Joaquin River, California. N. Am. J. Fish. Manag. 21:624-635.

Saiki, M.K., B.A. Martin, L.D. Thompson, and D. Welsh. 2001. Copper, cadmium, and zinc concentrations in juvenile chinook salmon and selected fish-forage organisms (aquatic insects) in the upper Sacramento River, California. Water, Air, and Soil Pollution 132:127-139.

Saiki, M.K., and B.A. Martin. 2001. Survey of fishes and environmental conditions in Abbotts Lagoon, Point Reyes National Seashore, California. California Fish and Game 87(4):123-138.

Sauter, S.T., L. Crawshaw, and A.G. Maule. 2001. Behavioral thermoregulation in spring and fall Chinook salmon, *Oncorhynchus tshawytscha*, during smoltification. Environ. Biol. Fishes 61:295-394.

Sauter, S., J. McMillan, and J. Dunham. 2001. Salmonid behavior and water temperature. Final report to the Policy Workgroup of the EPA Region 10 Water Temperature Criteria Guidance Project.

Schrock R.M., S.D. Smith, A.G. Maule, S.K. Doulos, J.J. Rockowski. 2001. Mucous lysozyme levels in hatchery coho salmon (*Oncorhynchus kisutch*) and spring chinook salmon (*O. tshawytscha*) early in the parr-smolt transformation. Aquaculture 198:169-177.

Schrock, R. M., Maule, A. G., Campton, D. 2001. Genetic, physiological, and behavioral comparisons among wild and hatchery populations of spring Chinook salmon in the Methow River, Washington. (BRD Science Support to USFWS)

Schrock, R. M., Jones, R., Kenworthy, B. 2001. Effects of beta-glucans on survival and physiology of steelhead in association with vaccination.

Schrock, R. M., Reilly, T. J., Baehr, A. L., C. Ottinger. 2001. Cellular and genetic tracers of transport time in groundwater systems under the direct influence of surface water bodies.

Seelye, J.G., and J.M. Bayer. 2001. Olfactory sensitivity of pacific lampreys to petromyzonol sulfate. Pendleton, Oregon. Confederated Tribes of the Umatilla Indian Reservation. Contract number 406-01.

- Stevens, R., B.L. Kerans, J.C. Lemmon, and C. Rasmussen. 2001. The effects of *Myxobolus cerebralis*, myxospore dose on triactinomyxon production and biology of *Tubifex tubifex* from two geographic regions. *J. Parasitol.* 87(2):315-321.
- Tiffan, K.F., D.W. Rondorf, R.D. Garland, and P.A. Verhey. 2001. Identification of juvenile fall versus spring chinook salmon migrating through the lower Snake River based on body morphology. *Trans. Am. Fish Soc.* 129:1389-1395.
- VanderKooi, S.P., A.G. Maule, and C.B. Schreck. 2001. The effects of electroshock on immune function and disease progression in juvenile spring Chinook salmon. *Trans. Am. Fish Soc.* 130:397-408.
- Venditti, D.A., T.C. Robinson, J.W. Beeman, and A.G. Maule. 2001. Gas bubble disease in resident fish below Grand Coulee Dam. Boise, Idaho, USA. U.S. Bureau of Reclamation.
- Venditti, D.A., T.C. Robinson, J.W. Beeman, B.J. Adams, and A.G. Maule. 2001. Gas bubble disease in resident fish below Grand Coulee Dam: 1999 Annual Report. Boise, Idaho, USA. U.S. Bureau of Reclamation.
- Winton, J.R. 2001. Biography of Dr. John L. Fryer. *J. Fish Dis.* 6:63-66.
- Winton, J.R. 2001. Chapter 9 - Fish Health Management. Pages. 559-640. *In:* Wedemeyer, G. (ed.) *Fish Hatchery Management - 2nd Ed.* American Fisheries Society, Bethesda.
- Young, W.P., C.O. Ostberg, P. Keim, and G.H. Thorgaard. 2001. Genetic characterization of hybridization and introgression between anadromous rainbow trout (*Oncorhynchus mykiss irideus*) and coastal cutthroat trout (*O. clarki clarki*). *Molecular Ecology* 10:921-930.
- Ahne, W., H.V. Bjorklund, S. Essbauer, N. Fijan, G. Kurath, and J.R. Winton. 2002. Spring viremia of carp. *Review, Dis. Aquat. Org.*, 52:261-272.
- Alados, C.L., M.L. Giner, L. Dehesa, J. Escos, F.G. Barroso, and D.C. Freeman. 2002. Developmental instability and fitness in *Periploca laevigata* experiencing grazing disturbance. *Int. J. Plant Sci.* 163:969-978.
- Alcorn, S.W., A.L. Murray, and R.J. Pascho. 2002. Effects of rearing temperature on immune functions in sockeye salmon (*Oncorhynchus nerka*). *Fish Shellfish Immunol.* 12:303-334.
- Alcorn, S.W. and R.J. Pascho. 2002. Antibody responses by chinook salmon (*Oncorhynchus tshawytscha*) and rainbow trout (*Oncorhynchus mykiss*) to various protein antigens. *Fish Shellfish Immunol.* 13:327-33.
- Allen, B.M., E.P. Bergersen. 2002. Factors influencing the distribution of *Myxobolus cerebralis*, the causative agent of whirling disease, in the Cache la Poudre River, Colorado. *Dis. Aquat. Org.* 49:51-60.

Barfoot, C.A., D.M. Gadomski, and J.H. Petersen. 2002. Resident fish assemblages in shallow shorelines of a Columbia River impoundment. *Northwest Sci.* 76:103-117.

Connolly, P.J., and B. Bair. 2002. Watershed restoration for anadromous rainbow trout in Washington's Wind River, USA. Pages 194-208 *in* Proceedings of the 13th International Salmonid Habitat Enhancement Workshop : Westport, Co. Mayo, Ireland : 16th - 19th September, 2002. Central Fisheries Board, Dublin, Ireland.

Connolly, P.J., C.S. Sharpe, and S. Sauter. 2002. Evaluate status of coastal cutthroat trout in the Columbia River above Bonneville Dam, Portland, Oregon. Bonneville Power Administration, Portland, Oregon. Project number 0005678.49.

Cook, A.E., C.T. Martinez, J.S. Sjoberg,, S.C. Goodchild., G.G. Scopettone, G. Clemmer, J.E. Heinrich, and J. French. 2002. Nevada 2002 Area Report. Pages 11-16, *in* Proceedings of the Desert Fishes Council Volume XXXIV.

Counihan, T.D., K. Felton, G.S. Holmberg, and J.H. Petersen. 2002. Estimating the survival of juvenile salmonids passing through The Dalles Dam using radio-telemetry, 2002. Portland District. U.S. Army Corps of Engineers.

Duda, J.J., A.J. Krzysik, and J.M. Meloche. 2002. Spatial organization of desert tortoises and their burrows at a landscape scale. *Chelonian Conserv. Biol.* 4(2):387-397.

Duran, I.N., T.L. Liedtke, and J.H. Petersen. 2002. Predator-prey interactions in The Dalles Dam tailrace. Army Corps of Engineers, Portland, Oregon.

Emmengger, E.J., and G. Kurath. 2002. Genetic characterization of infectious hematopoietic necrosis virus of coastal salmonid stocks in Washington State. *J. Aquat. An. Health* 14:25-34.

Evans, S.D., L.S. Wright, C.D. Smith, R.E. Wardell, N.S. Adams, and D.W. Rondorf. 2002. Passage behavior of radio-tagged yearling Chinook salmon and steelhead at Bonneville Dam. Portland Oregon, U.S. Army Corps of Engineers. (Contract W66QKZ10442576).

Gadomski, D.M., M.J. Parsley, D.G. Gallion, and P. Kofoot. 2002. White sturgeon mitigation and restoration in the Columbia and Snake rivers upstream from Bonneville Dam. Bonneville Power Administration (Project 86-50), 2000-2001.

Gadomski, D.M., M.J. Parsley, D.G. Gallion, and P. Kofoot. 2002. White sturgeon mitigation and restoration in the Columbia and Snake rivers upstream from Bonneville Dam. D.L. Ward. Portland, Oregon, Bonneville Power Administration (Project 86-50), 2000-2001.

Garland, R.D., K.F. Tiffan, D.W. Rondorf, and L.O. Clark. 2002. Comparison of subyearling fall chinook salmon's use of riprap revetments and unaltered habitats in Lake Wallula of the Columbia River. *N. Am. J. Fish. Manage.* 22:1283-1289.

- Haskell, C.A., and J.A. Stanford. 2002. Diet, distribution and life history of *Neomysis mercedis* in John Day Reservoir of the Columbia River (USA). Open File Report 169-02. Flathead Lake Biological Station, The University of Montana, Polson, Montana. Portland, Oregon, Bonneville Power Administration.
- Hayes, B.S., E.C. Janney, and R.S. Shively. 2002. Monitoring of Lost River and shortnose suckers at shoreline spawning areas in Upper Klamath Lake, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Hershberger, P.K., K. Stick, B. Bui, C. Carroll, B. Fall, C. Mork, J.A. Perry, E. Sweeney, J. Whittouck, J. Winton and R.K. Kocan. 2002. Incidence of *Ichthyophonus hoferi* in Puget Sound fishes and its increase with age of Pacific herring. *J. Aquat. Anim. Health* 14:50-56.
- Hoffman, R.L., T.J. Tyler, W.J. Liss, and G.L. Larson. 2002. Changes in the behavior of *Ambystoma gracile* larvae after the removal of fish from a mountain lake. Pages 43-62 in Liss, W.J., Larson, G.L., and Hoffman, R.L. (eds) Ecological impact of introduced trout on native aquatic communities in mountain lakes: Phase III Final Report, USGS.
- Jager, H. I., W. Van Winkle, J. A. Chandler, K. B. Lepla, P. Bates, and T. D. Counihan. 2002. A Simulation Study of Factors Controlling White Sturgeon Recruitment in the Snake River. Pages 127-150 in W. Van Winkle, P.J. Anders, D.H. Secor, and D.A. Dixon, Editors. Biology, management, and protection of North American sturgeon. American Fisheries Society, Bethesda, Maryland.
- Janney, E.C., R.S. Shively, B.S. Hayes, T.J. Tyler, and G.N. Blackwood. 2002. Monitoring of Lost River and shortnose suckers at the Sprague River Dam fish ladder, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Janney, E.C., B.S. Hayes, R.S. Shively, T.J. Tyler, and G.N. Blackwood. 2002. Monitoring of Lost River and shortnose suckers in Upper Klamath Lake, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Jezorek, I. G., and J. H. Petersen. 2002. Monitoring and assessment of juvenile steelhead on Toppenish National Wildlife Refuge. Quick Response Project for 2001. U.S. Fish and Wildlife Service, Toppenish National Wildlife Refuge.
- Jorgensen, E. H., M. N. Vijayan, N. Aluru, and A. G. Maule. 2002. Fasting modifies Aroclor 1254 impact on plasma cortisol, glucose and lactate responses to a handling disturbance in Arctic char. *Comp. Biochem. Physiol. C Comp Pharmacol.* 132:235-245.
- Kincaid, H.L. and R. Reisenbichler. 2002. Gila Trout – Genetic Broodstock Management Plan. Prepared for the U.S. Fish and Wildlife Service, Region 2, New Mexico Fisheries Resources Office, Albuquerque, NM 87113.
- Leong, J.C., and G. Kurath. 2002. Novirhabdovirus. Chapter in *The Springer Index of Viruses*. Springer-Verlag, Berlin Heidelberg New York, pp. 1067-1073.

Liss, W.J., G.L. Larson, L.M. Ganio, T.J. Tyler, and R.L. Hoffman. 2002. Distributions and abundances of larval salamanders (*Ambystoma macrodactylum*) and large copepods (*Diatomus* sp.) in relation to introduced trout and abiotic factors in mountain lakes of North Cascades National Park Service Complex. Pages 63-133 in Liss, W.J., Larson, G.L., and Hoffman, R.L. (eds.) Ecological impact of introduced trout on native aquatic communities in mountain lakes: Phase III Final Report, USGS.

Meeuwig, M.H., J.M. Bayer, J.G. Seelye, and R.A. Reiche. 2002. Identification of larval Pacific lampreys (*Lampetra tridentata*), river lampreys (*L. ayresi*), and western brook lampreys (*L. richardsoni*) and thermal requirements of early life history stages of lampreys. Portland, Oregon. Bonneville Power Administration.2000-029. Contract Number 00AI23249

Mesa, M. G., L. K. Weiland, and P. Wagner. 2002. Effects of acute thermal stress on the survival, predator avoidance, and physiology of juvenile fall chinook salmon. Northwest Sci. 76:118-128.

Nowak, B., D. Elliott, D. Bruno, and J. Bryan (eds.). 2002. Dublin Histopathology Workshop. Parasites: Notes and Images. CD, European Association of Fish Pathologists, ISBN 0 9526242 8 1, www.EAFP.org.

Nowak, B., D.G. Elliott, and D.W. Bruno. 2002. The identification of parasites in fish tissue sections. Bull. Eur. Assoc. Fish Pathol. 22:173-177.

Ostberg, C.O. and R.J. Rodriguez. 2002. Species specific molecular markers differentiate *Oncorhynchus mykiss* (rainbow trout and steelhead) from *O.clarki clarki* (coastal cutthroat trout) and identify hybridization between the species. Mol. Ecol. Notes 2:197-202.

Parsley, M. J., P. J. Anders, A. I. Miller, L. G. Beckman, and G. T. McCabe Jr. 2002. Recovery of White Sturgeon Populations through Natural Production: Understanding the Influence of Abiotic and Biotic Factors on Spawning and Subsequent Recruitment. Pages 55-66 in W. Van Winkle, P. J. Anders, D. H. Secor, and D. A. Dixon, editors. Biology, management, and protection of North American sturgeon. American Fisheries Society, Symposium 28, Bethesda, Maryland.

Parsley, M.J., D.G. Gallion, K.M. Kappenman, and P.E. Kofoot. 2002. White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers Upstream from Bonneville Dam. Ward, D. Bonneville Power Administration, Portland, Oregon.

Pascho, R.J., and D.G. Elliott. 2002. Studies on the detection, transmission, and development of *Renibacterium salmoninarum* infections in Great Lakes salmonid fishes, Project No. 1999.12, Great Lakes Fishery Trust. Report for June-September 2002.

Pascho, R.J. October 2002. Characterization of the Humoral and Cellular Immune Response of Salmonids to *Renibacterium salmoninarum*, Project No. 1999.13, Great Lakes Fishery Trust. Report for June-September 2002.

Pascho, R.J., D.G. Elliott, and D.M. Chase. 2002. Comparison of traditional and molecular methods for detection of *Renibacterium salmoninarum*. Pages 157-209 in C.O. Cunningham (ed.). Molecular Diagnosis of Salmonid Diseases. Kluwer Academic Publishers, Dordrecht, The Netherlands.

Perry, R.W., M.J. Farley, T.J. Darland, G.S. Hansen, D.H. Feil, D.W. Rondorf, and R. LeCaire. 2002. Feasibility of using 3D acoustic telemetry to assess the response of resident salmonids to strobe lights in Lake Roosevelt, WA. Portland, Oregon, Bonneville Power Administration, project No. 1995-011-02.

Petersen, J. H., and E. E. Kofoot. 2002. Conditions for growth and survival of bull trout in Beulah Reservoir. Annual Report for 2001. Report for the U.S. Bureau of Reclamation, Pacific Northwest Region, Boise, Idaho. 43 pages.

Petersen, J.H. 2002. Compensatory feeding following a predator removal program: detection and mechanisms. Portland, Oregon. Bonneville Power Administration.

Plumb, J.M, A.C. Braatz, J.N. Lucchesi, S.D. Fielding, J.M. Sprando, G.T. George, N.S. Adams, and D.W. Rondorf. 2002. Migration Behavior of Radio-Tagged Juvenile Chinook Salmon and Steelhead Relative to the Performance of a Removable Spillway Weir at Lower Granite Dam, Washington 2002. Walla Walla, Washington. U. S. Army Corps of Engineers, Contract number W68SBV00104592.

Redman, R.S., M.R. Rossinck, S. Maher, Q.C. Andrews, W.L. Schneider, and R.J. Rodriguez. 2002. Field performance of cucurbit and tomato plants infected with a nonpathogenic mutant of *Colletotrichum magna* (teleomorph: *Glomerella magna*; Jenkins and Winstead). Symbiosis, 32:55-70.

Redman, R.S., K.B. Sheehan, R.G. Stout, R.J. Rodriguez, and J.M. Henson. 2002. Thermotolerance generated by plant/fungal symbiosis. Science, 298:1581.

Schreck, C.B. and A.G. Maule. 2002. Are the endocrine and immune systems really the same thing? pages 351-357 in H.J.Th. Goos, R.K. Rastogi, H. Vaudry, and P. Pierantoni (Eds.) Perspectives in Comparative Endocrinology, Unity and Diversity. Monduzzi Editore, Bolgona, Italy. CD book.

Schrock, R. M., R.E. Reagan, and T. R. Batt. 2002. BIGSAM: A Biologically Integrated Geospatial Salmonid data Access Management tool. (A prototype program on compact disk.)

Schrock, R.M., R.E. Reagan, R. Martinson (PSMFC). 2002. 23RD Smolt Workshop: The role of smoltification in an ecosystem-based life history.

Scoppettone, G.G. and, P.H. Rissler. 2002. Status of the Preston White River springfish (*Crenichthys baileyi albivallis*). West. N. Am. Nat. 62:82-87.

Scoppettone, G.G., and P.H. Rissler. 2002. Distribution of Cohead Lake tui chub, Twelvemile Creek, Oregon. Final Report to U.S. Fish and Wildlife Service, Oregon Field Office. 28 pp.

St-Hilaire, S., C.S. Ribble, C. Stephen, E. Anderson, G. Kurath, and M.L. Kent. 2002. Epidemiological investigation of infectious hematopoietic necrosis virus in salt water net-pen reared Atlantic salmon in British Columbia, Canada. *Aquaculture* 212:49-67.

Taylor, P.W., and J.R. Winton. 2002. Optimization of nested polymerase chain reaction assays for identification of *Aeromonas salmonicida*, *Yersinia ruckeri* and *Flavobacterium psychrophilum*. *J. Aquat. An. Health* 14:216-224.

Thorgaard, G.H., G.S. Bailey, D. Williams, D.R. Buhler, S.L. Kaattari, S.S. Ristow, J.D. Hanson, J.R. Winton, J.L. Bartholomew, J.J. Nagler, P.J. Walsh, M.M. Vijayan, R.H. Devlin, R.W. Hardy, K.E. Overturf, W.P. Young, B.D. Robison, C. Rexroad, and Y. Palti. 2002. Status and opportunities for genomics research with rainbow trout. *Comp. Biochem. Physiol. B* 113:609-646.

Tiffan, Kenneth F., R.D. Garland, and D.W. Rondorf. 2002. Quantifying flow-dependent changes in subyearling fall chinook salmon rearing habitat using two-dimensional spatially explicit modeling. *N. Am. J. Fish. Manage.* 22(3):713-726.

Tyler, T.J., W.J. Liss, G.L. Larson, and L.M. Ganio. 2002. Abundance and behavior of larval long-toed salamanders (*Ambystoma macrodactylum*) in naturally fishless lakes and lakes with non-reproducing populations of introduced trout in the northern Cascade Mountains, Washington, USA. Pages 4-42 in Liss, W.J., Larson, G.L., and Hoffman, R.L. (eds) Ecological impact of introduced trout on native aquatic communities in mountain lakes: Phase III Final Report, USGS.

Tyler, T.J., E.C. Janney, B.S. Hayes, R.S. Shively, and G.N. Blackwood. 2002. Monitoring of Lost River and shortnose suckers in the Lower Williamson River, Upper Klamath Basin, Oregon. Annual report submitted to the Bureau of Reclamation, Klamath Falls, OR.

Wiens, G.D., R. Pascho, and J.R. Winton. 2002. A single Ala139-to-Glu substitution in the *Renibacterium salmoninarum* virulence-associated protein p57 results in antigenic variation and is associated with enhanced p57 binding to Chinook salmon leukocytes. *Appl. Environ. Microbiol.*, Aug. 2002, P. 3969-3977.

Winton, J.R. and K. Einer-Jensen. 2002. Molecular diagnosis of infectious hematopoietic necrosis and viral hemorrhagic septicemia. In: Cunningham, C. (ed.) *Molecular Diagnosis of Salmonid Diseases*. Kluwer, Dordrecht.

Alados, C.L., Y. Pueyo, M.L. Giner, T. Navarro, J. Escos, F. Barroso, B. Cabezudo, and J.M. Emlen. 2003. Quantitative characterization of the regressive ecological succession by fractal analysis of plant spatial patterns. *Ecol. Model.* 163:1-17.

Alados, C.L., T. Navarro, J. Escos, B. Cabezudo, and J.M. Emlen. 2003. Translational and

fluctuating asymmetry as tools to detect stress in stress-adapted-non-adapted plants. *Int. J. Plant Sci.* 162:607-616.

Alcorn, S.W., R.J.Pascho, A.L. Murray, and K.D. Shearer. 2003. Effects of ration level on immune functions in chinook salmon (*Oncorhynchus tshawytscha*). *Aquacult.* 217:529-545.

Allen, B.M., P.J. Connolly, and K. Martens. 2003. Characterization of Flow, Temperature, Habitat Conditions, and Fish Populations in the Rattlesnake Creek Watershed. Connolly, P.J. (editor). Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts. Portland, Oregon. Bonneville Power Administration, Portland, Project 2001-025-00.9.

Allen, B.M., P.J. Connolly, and K. Martins. 2003a. Characterization of flow, temperature, habitat conditions, and fish populations in the Rattlesnake Creek watershed. P.J. Connolly (editor). Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts. Report A. Portland, Oregon. Bonneville Power Administration, Project 2001-025-00.

Allen, B.M., P.J. Connolly, and K. Martens. 2003. Characterization of flow, temperature, habitat conditions, and fish populations in the Rattlesnake Creek watershed. Connolly, P.J. (editor). Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts. Report A. Portland, Oregon. Bonneville Power Administration, Project 2001-025-00.

Allen, B.M., P.J. Connolly, and K. Martens. 2003. Instream PIT-Tag Detection System.

Beeman, J. W., D. A. Venditti, R. G. Morris, D. M. Gadomski, B. J. Adams, S. J. Vanderkooi, T. C. Robinson, and A. G. Maule. 2003. Gas bubble disease in resident fish below Grand Coulee Dam: final report of research. Boise, Idaho, USA. U.S. Bureau of Reclamation. Connolly, P.J., and J.H. Petersen (editors). 2003. Bigger is not always better for overwintering young-of-year steelhead. *Trans. Am. Fish. Soc.* 132:262-274.

Beeman, J.W., H.C. Hansel, P.V. Haner, K. Daniel, and J. Hardiman. 2003. Estimates of fish and spill passage efficiency of radio-tagged juvenile steelhead, and yearling and subyearling Chinook salmon at John Day Dam, 2000. Portland District, Portland, Oregon, USA. U.S. Army Corps of Engineers.

Beeman, J.W., S. Juhnke, K. Daniel, A. Daniel, and P. Haner. 2003. Estimates of the stilling basin residence time and lateral distribution of passage of juvenile Chinook salmon passing through the spillway of The Dalles Dam. Portland, Oregon, USA. U.S. Army Corps of Engineers.

Beeman, J.W., T.C. Robinson, P.V. Haner, S.P. VanderKooi, and A.G. Maule. 2003. Gas Bubble Disease Monitoring and Research of Juvenile Salmonids, 1999. Bonneville Power Administration, contract 96-AI-93279.

Beeman, J.W., S.P. Vanderkooi, P.V. Haner, and A.G. Maule. 2003. Gas Bubble Disease Monitoring and Research of Juvenile Salmonids: Annual Report of 1999 Research. Bonneville Power Administration, Portland, OR 97208-3621. Project Number 1996-021. Contract Number

96AI93279.

Cash, K.M., T.W. Hatton, E.C. Jones, R.J. Magie, K.C. Mayer, N.M. Swyers, N.S. Adams, and D.W. Rondorf. 2003. Three-Dimensional Fish Tracking to Evaluate the Removable Spillway Weir at Lower Granite Dam During 2002. U.S. Army Corps of Engineers, Walla Walla, Washington.

Connolly, P.J., and J.H. Petersen. 2003. Bigger is not always better for overwintering young-of-year steelhead. *Trans. Am. Fish. Soc.* 132:262-274.

Connolly, P.J. 2003. Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts. Bonneville Power Administration, Portland, Oregon. Project 2001-025-00.

Connolly, P.J. 2003. Wind River watershed restoration. 2000-2001. Bonneville Power Administration, Portland, Oregon. Project number 0004973.

Counihan, T.D., G.S. Holmberg, C.E. Walker, and J.M. Hardiman. 2003. Survival Estimates of migrant Juvenile Salmonids in the Columbia River through John Day Dam using Radio-Telemetry, 2003. Portland District. U.S. Army Corps of Engineers.

Dauble, D.D., T.P. Hanrahan, D.R. Geist, and M.J. Parsley. 2003. Impacts of the Columbia River hydroelectric system on main-stem habitats of fall chinook salmon. *N. Am. J. Fish. Manage.* 23:641-659.

Duda, J.J., D.C. Freeman, J.M. Emlen, J. Belnap, S.G. Kitchen, J.C. Zak, E. Sobek, M. Tracy, and J. Montante. 2003. Changes in native soil ecology associated with invasion of the exotic annual chenopod, *Halgeton glomeratus*. *Biol. Fertil. Soils.* 38:72-77.

Duda, J.J., D.C. Freeman, M. Brown, J.M. Emlen, J.H. Graham, A.J. Krzysik, J.C. Zak, and D.A. Kovacic. 2003. Estimating disturbance effects from military training using developmental instability and physiological measures of plant stress. *Ecol. Indic.* 3(4):252-262.

Elliott, D.G. 2003. General procedures for bacteriology. Pages 1.1.1-1.1.11 *In: Suggested Procedures for the Detection and Identification of certain Finfish and Shellfish Pathogens. Blue Book 5th Edition, 2004, Fish Health Section, American Fisheries Society, Bethesda, MD.*

Emlen, J.M., D.C. Freeman, M.D. Kirchhoff, C.L. Alados, J. Escos, and J.J. Duda. 2003. Fitting population models from field data. *Ecol. Model.* 162:119-143.

Emlen, J.M., D.C. Freeman, and J.H. Graham. 2003. The adaptive basis of developmental instability: A hypothesis and its implications. Pages 51-61 *in* M. Polak (editor). *Developmental Instability: Causes and Consequences.* Oxford University Press, New York, NY.

Emlen, J.M., L. Kapustka, L. Barnhouse, N. Beyer, G. Biddinger, T. Kedwards, W. Landis, C. Menzie, W. Munns, M. Sorensen, R. Wentsel. 2003. Ecological resource management: a call to arms. *Ecol. Soc. Bull.* 83:269-271.

- Emmenegger, E.J., R.M. Troyer, and G. Kurath. 2003. Characterization of the mutant spectra of a fish RNA virus within individual hosts during natural infections. *Virus Res.* 96:15-25.
- Farley, M.J., R.W. Perry, D. Shurtleff, D.H. Feil, and D.W. Rondorf. 2003. Migration behavior of juvenile salmonids and evaluation of a modified flume entrance at Cowlitz Falls Dam, Washington. Chehalis, Washington, Lewis County Public Utility District No. 1.
- Farley, M.J., R.W. Perry, D.J. Shurtleff, D.H. Feil, and D.W. Rondorf. 2003. Migration behavior of juvenile salmonids and evaluation of a modified flume entrance at Cowitz Falls Dam, Washington, 2001. Randle, Washington, Lewis County Public Utility District No. 1.
- Freeman, D.C., J.H. Graham, J.M. Emlen, M.A. Tracy, R.A. Hough, and C.L. Alados. 2003. Plant developmental instability: New measures, applications, and regulation. Pages 367-386 *in* M. Polak (editor). *Developmental Instability: Causes and Consequences*, Oxford University Press, New York, NY.
- Freeman, D.C., M.L. Brown, M. Dobson, Y. Jordan, A. Kizy, C. Micallef, L.C. Hancock, J.H. Graham, and J.M. Emlen. 2003. Developmental instability: Measures of resistance and resilience using pumpkin (*Cucurbita pepo*). *Biol. J. Linnean. Soc.* 78:27-41.
- Freilich, J.E., J.M. Emlen, J.J. Duda, D. C. Freeman, and P.J. Cafaro. 2003. Ecological effects of ranching: A six-point critique. *BioScience* 53(8):759-765.
- Gadomski, D.M., M.J. Parsley, and D.G.P. Kofoot. 2003. White sturgeon mitigation and restoration in the Columbia and Snake rivers upstream from Bonneville Dam. Portland, Oregon. Bonneville Power Administration (Project 86-50), 2001-2002.
- Garland, R.D., K.F. Tiffan, D.W. Rondorf, J. Skalicky, and D.R. Anglin. 2003. Assessment of chum and fall Chinook salmon spawning habitat near Ives and Pierce islands in the Columbia River. 1999-2001. Bonneville Power Administration, Contract 00004701, Portland, Oregon.
- Garver, K.A., R.M. Troyer, G. Kurath. 2003. Two distinct phylogenetic clades of infectious hematopoietic necrosis virus overlap within the Columbia River basin. *Dis. Aquat. Org.* 55:187-203.
- Geist, D.R., R.S. Brown, V.I. Cullinan, M.G. Mesa, S.P. VanderKooi, and C.A. McKinstry. 2003. Relationships between metabolic rate, muscle electromyograms and swim performance of adult Chinook salmon. *J. Fish Biol.* 63:970-989.
- Goodwin, A.E., and J.R. Winton. 2003. Spring viremia of carp. Chapter 2.10 *In: Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens*, Blue Book 5th ed. Fish health Section, American Fisheries Society, Bethesda, MD.
- Graham, J.H., J.M. Emlen, and D.C. Freeman. 2003. Nonlinear dynamics and developmental instability. Pages 35-50 *in* M. Polak (editor). *Developmental Instability: Causes and Consequences*. Oxford University Press, New York, NY.
- Graham, J.H., K. Shimizu, J.M. Emlen, D.C. Freeman, and J. Merkel. 2003. Growth models and the expected distribution of fluctuating asymmetry. *Biol. J. Linnean Soc.* 80:57-65.

- Hayes, B.S., E.C. Janney, and R.S. Shively. 2003. Monitoring of Lost River and shortnose suckers at shoreline spawning areas. Annual Report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Hayes, M.C., and R.W. Carmichael. 2003. Salmon restoration in the Umatilla River: A study of straying and risk containment. *Fisheries* 27(10):10-19.
- Hedrick, R.P., W.N. Batts, S. Yun, G.S. Traxler, J. Kaufman, J.R. Winton. 2003. Host and geographic range extensions of the North American strain of viral hemorrhagic septicemia virus. *Dis. Aquat. Org.* 55:211-220.
- Hendrixson, H.A., E.C. Janney, and R.S. Shively. 2003. Monitoring of Lost River and shortnose suckers at the Sprague River Dam fish ladder. Annual Report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Hendrixson, H.A., E.C. Janney, and R.S. Shively. 2003. Monitoring of Lost River and shortnose suckers at Upper Klamath Lake non-spawning locations. Annual Report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- Hockersmith, E.E., W.D. Muir, S.G. Smith, B.P. Sanford, R.W. Perry, N.S. Adams, and D.W. Rondorf. 2003. Comparison of migration rate and survival between radio-tagged and PIT-tagged migrant yearling chinook salmon in the Snake and Columbia Rivers. *N. Am. J. Fish. Manag.* 23:404-413.
- Jezorek, I.G., P.J. Connolly, and K. Martens. 2003. Juvenile steelhead and other fish rearing in the Wind River watershed. Portland, Oregon. Bonneville Power Administration. Project number 1998-0190-01.
- Jezorek, I.G., and J.P. Connolly. 2003. Juvenile steelhead and other fish rearing in the Wind River Watershed. Connolly, J.P. editor. Wind River watershed restoration. 2000-2001. Portland, Oregon. Bonneville Power Administration, Project number 0004973.
- Jezorek, I.G., P.J. Connolly, and K. Martens. 2003. Juvenile steelhead and other fish rearing in the Wind River watershed. Report B. P.J. Connolly. Wind River watershed restoration. 2000-2001. Portland, Oregon, Bonneville Power Administration. Project number 0004973.
- Jezorek, I.G., P.J. Connolly. 2003. Flow, Temperature, and Habitat Conditions in the Wind River Watershed. Connolly, P.J., editor, Wind River Watershed Restoration. USGS' Annual Report for 2000-2001. Portland, Oregon, Bonneville Power Administration. Project number 1998-0190-01.
- Jezorek, I.G., and P.J. Connolly. 2003. Flow, temperature, and habitat conditions in the Wind River Watershed. Connolly, P.J., editor. Bonneville Power Administration. Project number 0004973.
- Jezorek, I.G., and P.J. Connolly. 2003b. Flow, temperature, and habitat conditions in the Wind River watershed. Wind River watershed restoration. 2000-2001. Portland, Oregon, Bonneville Power Administration. Project number 0004973.
- Jezorek, I.G., and P.J. Connolly. 2003a. Instream PIT-tag detection system. Report B.

Connolly, P.J., editor. Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts 2002. Portland, Oregon, Bonneville Power Administration, Project 2001-025-00.

Jezorek, I.G., and P.J. Connolly. 2003b. Instream PIT-tag detection system. Report B. Connolly, P.J., editor. Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts 2001. Portland, Oregon, Bonneville Power Administration, Project 2001-025-00.

Jezorek, I.G., and P.J. Connolly. 2003. In stream PIT-Tag Detection System. Connolly, P.J. editor. Assess current and potential salmonid production in Rattlesnake Creek associated with restoration efforts. Portland, Oregon, Bonneville Power Administration. Project 2001-025-00.

Jezorek, I.G., and P.J. Connolly. 2003. In stream PIT-Tag Detection System. Assess Current and Potential Salmonid Production in Rattlesnake Creek Associated with Restoration Efforts. 2001. Portland, Oregon, Bonneville Power Administration.

Jezorek, I.G., J.H. Petersen, and S.T. Sauter. 2003. Monitoring and Assessment of Juvenile Steelhead on Toppenish National Wildlife Refuge. Science Support Project, Annual Report for 2002. Toppenish, Washington, U.S. Fish and Wildlife Service, Toppenish National Wildlife Refuge.

Kurath, G., K.A. Garver, R.M. Troyer, E.J. Emmenegger, K. Einer-Jensen, and E.D. Anderson. 2003. Phylogeography of infectious haematopoietic necrosis virus in North America. *J. Gen. Virol.* 84:803-814.

Kurath, G., K.A. Garver, and R.M. Troyer. 2003. IHN virus traffic in the Columbia River basin. Proceedings of the American Fisheries Society symposium on propagated fish in resource management. Boise, ID.

Meeuwig, M.H., J.M. Bayer, J.G. Seelye, R.A. Reiche. 2003. "Identification of larval Pacific lampreys (*Lampetra tridentata*), river lampreys (*L. ayresi*), and western brook lampreys (*L. richardsoni*) and thermal requirements of early life history stages of lampreys. 2002-2003 Annual report to the Bonneville Power Administration. Portland, OR.

Mesa, M.G., J.M. Bayer, and J.G. Seelye. 2003. Swimming performance and physiological responses to exhaustive exercise in radio-tagged and untagged Pacific lampreys. *Trans. Am. Fish. Soc.* 132:483-492

Mesa, M.G., J.M. Bayer, and J.G. Seelye. 2003. Annual sex steroid and other physiological profiles of Pacific lampreys (*Lampetra tridentata*): implications for upstream migrations past dams? Draft Annual Report for 2001 to U.S. Army Corps of Engineers, Portland District. Portland, Oregon.

Morris, R.G., J.W. Beeman, S.P. VanderKooi, and A.G. Maule. 2003. Lateral line pore diameters correlate with the development of gas bubble trauma signs in several Columbia River fishes. *Comp. Biochem. Physiol. A Comp. Physiol.* 135:309-320.

Murray, A.L., R.J. Pascho, S.W. Alcorn, W.T. Fairgrieve, K.D. Shearer, and D. Roley. 2003.

Effects of various feed supplements containing fish protein hydrolysate or fish processing by-products on the innate immune functions of juvenile coho salmon (*Oncorhynchus kisutch*). *Aquacult.* 220:643-653.

Pascho, R.J., and D.G. Elliott. 2003. Studies on the detection, transmission, and development of *Renibacterium salmoninarum* infections in Great Lakes salmonid fishes, Project No. 1999.12, Great Lakes Fishery Trust. Report for October-December 2002.

Pascho, R.J. 2003. Characterization of the Humoral and Cellular Immune Response of Salmonids to *Renibacterium salmoninarum*, Project No. 1999.13, Great Lakes Fishery Trust. Report for October-December 2002.

Pascho, R.J., and D.G. Elliott. 2003. Studies on the detection, transmission, and development of *Renibacterium salmoninarum* infections in Great Lakes salmonid fishes, Project No. 1999.12, Great Lakes Fishery Trust. Report for January-March 2003.

Pascho, R.J. 2003. Characterization of the Humoral and Cellular Immune Response of Salmonids to *Renibacterium salmoninarum*, Project No. 1999.13, Great Lakes Fishery Trust. Report for January-March 2003.

Pascho, R.J., and D.G. Elliott. 2003. Studies on the detection, transmission, and development of *Renibacterium salmoninarum* infections in Great Lakes salmonid fishes, Project No. 1999.12, Great Lakes Fishery Trust. Report for April-June 2003.

Pascho, R.J. 2003. Characterization of the Humoral and Cellular Immune Response of Salmonids to *Renibacterium salmoninarum*, Project No. 1999.13, Great Lakes Fishery Trust. Report for April-June 2003.

Pascho, R.J., and D.G. Elliott. 2003. Bacterial kidney disease. Pages 1.14.1-1.14.14 *In*: Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens. Blue Book 5th Edition, 2004, Fish Health Section, American Fisheries Society, Bethesda, MD.

Perry, R.W., M.J. Bradford, and J.A. Grout. 2003. Effects of disturbance on contribution of energy sources to growth of juvenile chinook salmon (*Oncorhynchus tshawytscha*) in boreal streams. *Can. J. Fish. Aquat. Sci.* 60:390-400.

Perry, R.W., M.J. Farley, G.S. Hansen, D.J. Shurtleff, D.W. Rondorf, and R. LeCaire. 2003. Using 3D acoustic telemetry to assess the response of resident salmonids to strobe lights in Lake Roosevelt, Washington. Portland, Oregon, Bonneville Power Administration. project No.1995-001-02.

Perry, R.W., M.J. Farley, G.S. Hansen, D.J. Shurtleff, D.W. Rondorf, and R. LeCaire. 2003. Using 3D acoustic telemetry to assess the response of resident salmonids to strobe lights in Lake Roosevelt, Washington, 2002. Portland, Oregon, Bonneville Power Administration. BPA project No. 1995-001-02.

Perry, R.W., S.D. Fielding, A.D. Cochran, J.L. Schei, J.M. Sprando, G.T. George, N.S. Adams, and D.W. Rondorf. 2003. Turbine survival and migration behavior of subyearling Chinook

salmon at McNary Dam, 2003. Bonneville Power Administration, Contract 00014243, Portland, Oregon.

Petersen, J.H., R.A. Hinrichsen, D.M. Gadowski, D.H. Feil, and D.W. Rondorf. 2003. American Shad in the Columbia River. Pages 141-155 in K.E. Limburg and J.R. Waldman, editors. Biodiversity, status, and conservation of the world's shads. Am. Fish Soc. Symp. 35, Bethesda, Maryland.

Petersen, J.H., and C.A. Barfoot. 2003. Evacuation of passive integrated transponder (PIT) tags from northern pikeminnow consuming tagged juvenile Chinook salmon. N. Am. J. Fish. Manag. 23:1264-1269.

Petersen, J.H., R. Reisenbichler, G.R. Gelfenbaum, C. Peterson, D. Baker, P.R. Leavitt, C.A. Simenstad, and F.G. Prahl. 2003. Historical changes in the Columbia River estuary based on sediment cores: feasibility studies. (USGS Columbia River Estuary Cores Final Report) May 19, 2003.

Petersen, J.H. 2003. Historical changes in the Columbia River estuary based on sediment cores: feasibility studies. USGS Report.

Petersen, J. H., E. E. Kofoot, and B. Rose. 2003. Conditions for growth and survival of bull trout in Beulah Reservoir. Annual Report for 2002. Report for the U.S. Bureau of Reclamation, Pacific Northwest Region, Boise, Idaho. 45 pages.

Plumb, J.M., A.C. Braatz, J.N. Lucchesi, S.D. Fielding, A.D. Cochran, T.K. Nation, J.M. Sprando, J.L. Schei, R.W. Perry, N.S. Adams, and D.W. Rondorf. 2003. Behavior and survival of radio-tagged juvenile Chinook salmon and steelhead relative to the performance of a removable spillway weir at Lower Granite Dam, Washington, 2003. Walla Walla, Washington, Army Corps of Engineers, contract W68SBV00104592.

Plumb, J.M., A.C. Braatz, J.N. Lucchesi, S.D. Fielding, J.M. Sprando, G.T. George, N.S. Adams, and D.W. Rondorf. 2003. Behavior of radio-tagged juvenile Chinook salmon and steelhead and performance of a removable spillway weir at Lower Granite Dam, Washington, 2002. Walla Walla, Washington, U.S. Army Corps of Engineers, Contract W68SBV00104592.

Plumb, J.M., M.S. Novick, A.C. Braatz, J.N. Lucchesi, J.M. Sprando, N.S. Adams, and D.W. Rondorf. 2003. Behavior and Migratory Delay of Radio-Tagged Juvenile Spring Chinook Salmon and Steelhead Through Lower Granite Dam and Reservoir During a Drought Year. 2001. Walla Walla, Washington, U.S. Army Corps of Engineers, Contract W68SBV00104592.

Rasmussen, C., C.O. Ostberg, D.R. Clifton, J.L. Holloway, and R.J. Rodriguez. 2003. Identification of a genetic marker that discriminates ocean-type and stream-type chinook salmon in the Columbia River basin. Trans. Am. Fish. Soc. 132:131-142.

Redberg, G.L., D.S. Hibbett, J.F. Ammirati, and R.J. Rodriguez. 2003. *Bridgeoporus nobilissimus*: Phylogeny and genetic diversity through PCR amplification of mitochondrial and nuclear rDNA. Mycologia 95:836-845.

Redman, R.S., and R.J. Rodriguez. 2003. Characterization and Isolation of an Extracellular

Serine Protease from the Tomato Pathogen *Colletotrichum coccodes* (Wallr.), and its Role in Pathogenicity. Mycol. Res. 106:1427-1434.

Reisenbichler, R.R., F.M. Utter, and C.C. Krueger. 2003. Genetic concepts and uncertainties in restoring fish populations and species. Pages 149-183 in R.C. Wissmar and P.A. Bisson [editors]. Strategies for restoring river ecosystems – sources of variability and uncertainty in natural and managed systems. American Fisheries Society, Bethesda, MD.

Rissler, P.H., G.G. Scoppettone, J. French, and S. Werdon. 2003. Native fish status and distribution in Soldier Meadows, Nevada, with emphasis on the desert dace. Page 69-70 in D. A. Hendrickson and L. T. Findley (eds.). Proceedings of the Desert Fishes Council Volume XXXV.

Robinson, T.C., J.M. Bayer, and J.G. Seelye. 2003. Olfactory Sensitivity of Pacific Lampreys to Petromyzonol Sulfate. Ch. 2. Close, D.A. editor. 2002 Annual Report Project No. 406-01. Bonneville Power Administration, Contract 9402600.

Rolland, J.B., and J.R. Winton. 2003. Relative resistance of Pacific salmon to infectious salmon anaemia virus. J. Fish Dis. 26:511-520.

Rolland, J.B., D.A. Bouchard, and J.R. Winton. 2003. Improved diagnosis of infectious salmon anemia virus by use of a new cell line derived from Atlantic salmon kidney tissue. In: Miller, O. and R.C. Cipriano (tech. coords.) International Response to Infectious Salmon Anemia: Prevention, Control, and Eradication: Proceedings of a Symposium; 3-4 September 2002; New Orleans, LA. Technical Bulletin 1902. U.S. Department of Agriculture, Animal and Plant Health Inspection Services, Washington, D.C. 194 pp.

Rood, S.B., C.R. Gourley, E.M. Ammon, L.G. Heki, J.R. Klotz, M.L. Morrison, D. Mosley, G.G. Scoppettone, S. Swanson, and P.L. Wagner. 2003. Flows for floodplain forests: a successful riparian restoration. BioScience 53:647-656.

Sanders, G.E. (DVM), W.N. Batts, and J.R. Winton (PhD). 2003. Susceptibility of zebrafish (*Danio rerio*) to a model pathogen, spring viremia of carp virus. Comp. Med. 53(5):514-521.

Scoppettone, G.G., and P.H. Rissler. 2003. Information on status, demographics, and life history of five populations of tui chub in the Cow Head Lake Slough Basin. Final Report to U.S. Fish and Wildlife Service, Oregon State Office. 20 pp.

Scoppettone, G.G., P. H. Rissler, and D. Withers. 2003. Cui-ui, an overlooked prey for Pyramid Lake's nesting colony of American white pelican. Page 76 in D. A. Hendrickson and L. T. Findley (eds.). Proceeding of the Desert Fishes Council Volume XXXV.

Shea, S., P.H. Rissler, and G.G. Scoppettone. 2003. Status of the Wall Canyon sucker (*Catostomus sp.*) after the invasion of non-native salmonids. Final Report to the Reno Field Office of the U.S. Fish and Wildlife Service 16 pp.

Tiffan, K.F., C.A. Haskell, and D.W. Rondorf. 2003. Thermal exposure of juvenile fall chinook salmon migrating through a lower Snake River reservoir. Northwest Sci. 77(2):100-109.

- Tiffan, K.F., D.W. Rondorf, and W.P. Connor. 2003. Post-release attributes and survival of hatchery and natural fall Chinook salmon in the Snake River. Portland, Oregon, Bonneville Power Administration.
- Tiffan, K.T., C.A. Haskell, J.A. Heinz, M.G. Mesa, and D.W. Rondorf. 2003. Water Temperature Effects on Fall Chinook Salmon in the Snake and Columbia Rivers, 2001. Walla Walla, Washington, U.S. Army Corps of Engineers. Contract W68SBV11591407.
- Tordo, N., A. Benmansour, C. Calisher, R.G. Dietzgen, R.-X. Fang, A.O. Jackson, G. Kurath, S. Nadin-Davis, R.B. Tesh, and P.J. Walker. 2004. Family *Rhabdoviridae*, In "The eighth report of the international committee for taxonomy of viruses". Academic Press, San Diego.
- Tracy, M., D.C. Freeman, J.J. Duda, K.J. Miglia, J.H. Graham, and R.A. Hough. 2003. Developmental instability: an appropriate indicator of plant fitness? Pages 196-212 in M. Polak (editor). Developmental Instability: Causes and Consequences. Oxford University Press, New York, NY.
- Troyer, R.M., and G. Kurath. 2003. Molecular epidemiology of infectious hematopoietic necrosis virus reveals complex virus traffic and evolution within southern Idaho aquaculture. *Dis. Aquat. Org.* 55:175-185.
- Tyler, T.J., E.C. Janney, H. Hendrixson, R.S. Shively. 2003. Monitoring of Lost River Suckers in the lower Williamson River. Annual Report submitted to the Bureau of Reclamation, Klamath Falls, OR.
- VanderKooi, S.P., and K.A. Buelow. 2003. Near-shore habitat use by endangered juvenile suckers in Upper Klamath Lake, Oregon. Annual Report 2001. U.S. Geological Survey, Western Fisheries Research Center, Klamath Falls Field Station, Klamath Falls, Oregon.
- Yarden, O., D.J. Ebole, S. Freeman, R.J. Rodriguez, and M.B. Dickman. 2003. Fungal Biology and Agriculture: Revisiting the Field. *Mol. Plant-Microbe Interact.* 16:859-866.
- Yasutake, W.T., and D.G. Elliott. 2003. Epizootiology and histopathology of *Parvicapsula* sp. in coho salmon *Oncorhynchus kisutch*. *Dis. Aquat. Org.* 56:215-221.
- Yun, Sang-Seon, S.P. Alexander, J.M. Bayer, J.G. Seelye, D.A. Close, and W. Li. 2003. HPLC and ELISA analyses of larval bile acids from Pacific and western brook lampreys. *Steroids* 68:515-523.
- Zimmerman, C.E., R.W. Stonecypher Jr., and M.C. Hayes. 2003. Migration of precocious male hatchery chinook salmon in the Umatilla River, Oregon. *N. Am. J. Fish. Manag.* 23(3):1006-1014.
- Aluru, N., E.H. Jorgensen, A.G. Maule, and M.M. Vijayan. 2004. PCB disruption of the hypothalamus-pituitary-interrenal axis involves brain glucocorticoid receptor downregulation in anadromous Arctic charr. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 287:R787-R793.
- Beeman, J.W., C. Grant, and P. Haner. 2004. Comparison of three underwater antennas for use in radiotelemetry. *N. Am. J. Fish. Manage.* 24.

- Connor, W.P., K.F. Tiffan, and J.G. Sneva. 2004. Investigating passage of ESA-listed juvenile fall Chinook salmon at Lower Granite Dam during winter when the fish bypass system is not operated. 2003 Annual Report to the Bonneville Power Administration, Portland, Oregon.
- Elliott, D.G., and R.J. Pascho. 2004. Characterization of the humoral and cellular immune response of salmonids to *Renibacterium salmoninarum*. Final Report, Project No. 1999.52 (1999.13). Great Lakes Fishery Trust, Lansing, MI.
- Elliott, D.G., and R.J. Pascho. 2004. Studies on the detection, transmission, and development of *Renibacterium salmoninarum* infections in Great Lakes salmonid fishes. Final Report, Project No. 1999.51 (1999.12). Great Lakes Fishery Trust, Lansing, MI.
- Freeman, D.C., M.L. Brown, J.J. Duda, J.H. Graham, J.M. Emlen, A.J. Krzysik, J.C. Zak, and D.A. Kovacic. 2004. Developmental instability in *Rhus copallinum* L.: multiple stressors, years, and responses. *Int. J. Plant Sci.* 165(1):53-63.
- Freeman, D.C., M.L. Brown, J.J. Duda, J.H. Graham, J.M. Emlen, A.J. Krzysik, H.E. Balbach, D.A. Kovacic, and J.C. Zak. 2004. Photosynthesis and fluctuating asymmetry as indicators of plant response to soil disturbance in the Fall-Line Sandhills of Georgia: A case study using *Rhus copallinum* and *Ipomoea pandurata*. *Int. J. Plant Sci.* 165(5):805-816.
- Gadomski, D.M., D.A. Venditti, T.C. Robinson, J.W. Beeman, and A.G. Maule. 2004. Distribution and relative abundance of fishes in littoral areas of Chief Joseph Reservoir, Columbia River. *Northwest Sci.* 78:48-58
- Gale, W.L., A.G. Maule, A. Postera, and M.H. Peters. 2004. Acute exposure to gas-supersaturated water does not affect reproductive success of female adult chinook salmon late in maturation. *River Res. Applic.* 20:565-576
- Graham, J.H., H.H. Hughie, S. Jones, K. Wrinn, A.J. Krzysik, J.J. Duda, D.C. Freeman, J.M. Emlen, J.C. Zak, D.A. Kovacic, C. Chamberlin-Graham, and H. Balbach. 2004. Habitat disturbance and the diversity and abundance of ants (Formicidae) in the Southeastern Fall-Line Sandhills. *J. Insect Sci.* 4:30.
- Halpenny, C.M., R.M. Kocan, and P.K. Hershberger. 2004. Prevalence of the parasitic copepod *Haemobaphes intermedius* in juvenile buffalo sculpins from Washington state. *J. Aquat. Anim. Health* 16:161-163.
- Hardiman, J.M., B.M. Johnson, and P.J. Martinez. 2004. Do Predators Influence the Distribution of Age-0 Kokanee in a Colorado Reservoir? *Trans. Am. Fish. Soc.* 133(6):1366–1378.
- Haskell, C.A., K.T. Tiffan, W.P. Connor, and J.G. Sneva. 2004. Passage of juvenile fall Chinook salmon at Lower Granite Dam during winter, 2002-2003. Tiffan, K.F. and W.P. Connor, editors. Investigating passage of ESA-listed juvenile fall Chinook salmon at Lower Granite Dam during winter when the fish bypass system is not operated. 2003 Annual Report to the Bonneville Power Administration.

- Haskell, C.A., K.T. Tiffan, R.C. Koch, J.A. Heinz, M.G. Mesa, and D.W. Rondorf. 2004. Water Temperature Effects on Fall Chinook Salmon in the Snake and Columbia Rivers, 2002. U.S. Geological Survey report to the U.S. Army Corps of Engineers. Walla Walla, Washington.
- Hausmann, B., J. Beeman, H. Hansel, S. Juhnke, and P. Haner. 2004. Estimates of fish, spill, and sluiceway passage efficiencies of radio-tagged juvenile salmonids relative to the operation of the J-design Sluiceway Guidance Improvement Device at The Dalles Dam in 2002. Report prepared by the U.S. Geological Survey for the U.S. Army Corps of Engineers, Portland, Oregon, contract W66QKZ20364279. Portland, Oregon, U.S. Army Corps of Engineers.
- Hausmann, B., J. Beeman, H. Hansel, S. Juhnke, and P. Haner. 2004. Estimates of fish, spill, and sluiceway passage efficiencies of radio-tagged juvenile salmonids relative to spring and summer spill treatments at John Day Dam in 2003. Report prepared by the U.S. Geological Survey for the U.S. Army Corps of Engineers, Portland, Oregon. Portland, Oregon, U.S. Army Corps of Engineers.
- Kerans, B.L., C. Rasmussen, R. Stevens, A.E.L. Colwell, and J.R. Winton. 2004. Differential propagation of the Metazoan parasite *Myxobolus cerebralis* by *Limnodrilus hoffmeisteri*, *Ilyodrilus templetoni*, and genetically distinct strains of *Tubifex tubifex*. J. Parasitol.
- Kocan, R.M., P.K. Hershberger, and J. Winton. 2004. Ichthyophoniasis: An Emerging Disease of Chinook Salmon (*Oncorhynchus tshawytscha*) in the Yukon River. J. Aquat. Anim. Health 16:58-72.
- Kocan, R., P. Hershberger, and J. Winton. 2004. Effects of Ichthyophonus on survival and reproductive success of Yukon River chinook salmon. Final Report to the U.S. Fish and Wildlife Service for Study 01-200.
- Kurath, G., W.N. Batts, W. Ahne, and J.R. Winton. 2004. Complete genome sequence of Ferde-Lance virus reveals a novel gene in reptilian paramyxoviruses. J. Virol. 78(4):2045-2056.
- Leavy, T., R.R. McShane, K.M. Swaim, and G.G. Scoppettone. 2004. Status of Ash Meadows speckled dace in Bradford Springs. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 12 pp.
- McShane, R.R., K.M. Swaim, and G.G. Scoppettone. 2004. Implications of habitat restoration for managing an exotic crayfish at Ash Meadows National Wildlife Refuge. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 26 pp.
- McShane, R.R. K.M. Swaim, and G.G. Scoppettone. 2004. Information on habitat use of larval Ash Meadows speckled dace. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 7 pp.
- Maule, A.G. 2004. Gas bubble disease monitoring and research of juvenile salmonids, 2004 Annual Report. Prepared by the U.S. Geological Survey for the Bonneville Power Administration. Contract 96-AI-93279. Portland, OR.
- Maule, A.G. 2004. Xenobiotic impact on Arctic char: Nutritional modulation and

physiological consequences. Final report to the National Science Foundation (NSF Project OPP 9908890).

Meeuwig, M.H., A.L. Puls, and J.M. Bayer. 2004. Survival and tag retention of Pacific lamprey larvae and macrophthalmia marked with coded wire tags. American Fisheries Society. N. Am. J. Fish Manage.

Meeuwig, M.H., J.M. Bayer, J.G. Seelye, and R.A. Reiche. 2004. Identification of larval Pacific lampreys (*Lampetra tridentata*), river lampreys (*L. ayresi*), and western brook lampreys (*L. richardsoni*) and thermal requirements of early life history stages of lampreys. 2002-2004 Final report to Bonneville Power Administration. Portland, OR.

Meeuwig, M.H., J.M. Bayer, J.G. Seelye, and R.A. Reiche. 2004. Identification of larval Pacific lampreys (*Lampetra tridentata*), river lampreys (*L. ayresi*), and western brook lampreys (*L. richardsoni*) and thermal requirements of early life history stages of lampreys. 2002-2003 Annual report to Bonneville Power Administration. Portland, OR.

Miller, K.M., J.R. Winton, A.D. Schulze, M.K. Purcell, and T.J. Ming. 2004. Major histocompatibility complex loci are associated with susceptibility of Atlantic salmon to infectious hematopoietic necrosis virus. Environ. Biol. Fishes 69:307-316.

Mork, C., P.K. Hershberger, R. Kocan, W. Batts, and J. Winton. 2004. Isolation and characterization of a rhabdovirus from starry flounder (*Platichthys stellatus*) collected from the northern portion of Puget Sound, Washington, USA. J. Gen. Virol. 85:495-505.

Ostberg, C.O., and R.J. Rodriguez. 2004. Bi-parentally inherited species-specific markers identify hybridization between rainbow trout and cutthroat trout subspecies. Mol. Ecol. Notes 4:26-29.

Ostberg, C.O., S.L. Slatton, and R.J. Rodriguez. 2004. Spatial partitioning and asymmetric hybridization among sympatric coastal steelhead trout (*Oncorhynchus mykiss irideus*), coastal cutthroat trout (*O. clarki clarki*) and interspecific hybrids. Mol. Ecol. 13:2773-2788.

Parsley, M.J., and N.D. Popoff. 2004. Site fidelity, habitat associations, and behavior during dredging operations of white sturgeon at Three Tree Point in the lower Columbia River. Final report to the Environmental Resource Branch, Army Corps of Engineers, Portland District. Portland, Oregon. Portland, Oregon.

Perry, J.A., R.M. Kocan, J.R. Winton, and P.K. Hershberger. 2004. High corticosteroid doses suppress resistance to *Ichthyophonus* in Starry Flounder. J. Aquat. Anim. Health 16:45-49.

Perry, R.W., A.C. Braatz, M.J. Farley, and D.W. Rondorf. 2004. Migration behavior of juvenile salmonids and evaluation of a modified box entrance at Cowlitz Falls Dam, Washington, 2003. Report by the U.S. Geological Survey to Lewis County Public Utility District, Chehalis, Washington.

Poole, G.C., J.B. Dunham, D.M. Keenan, S.T. Sauter, D.A. McCullough, C. Mebane, J.C. Lockwood, D.A. Essig, M.P. Hicks, D.J. Sturdevant, E.J. Materna, S.A. Spalding, J. Risley, and M. Deppman. 2004. The case for regime-based water quality standards. BioScience

54:155-161.

Purcell, M.K., G. Kurath, K.A. Garver, R.P. Herwig, and J.R. Winton. 2004. Quantitative expression profiling of immune response genes in rainbow trout following infectious haematopoietic necrosis virus (IHNV) infection or DNA vaccination. *Fish Shellfish Immunol.* 17:447-462.

Reisenbichler, R.R., S.P. Rubin, L. Wetzel, and S.R. Phelps. 2004. Natural selection after release from a hatchery leads to domestication in steelhead, *Oncorhynchus mykiss*. Pages 371-383 *In* K.M. Leber, H.L. Blankenship, S. Kitada, and T. Svåsand [editors] *Stock Enhancement and Sea Ranching: developments, pitfalls, and opportunities*. 2nd edition. Blackwell Science Ltd, Oxford.

Rissler, P.H., G.G. Scopettone, J. French, and M. Varner. 2004. Distribution of desert dace (*Emreithys acros*) in relationship to other fishes and water temperature in Mud Meadow/Soldier Meadow Basin. Final Report to Reno Field Office of the U. S. Fish and Wildlife Service. 32 pp.

Rissler, P.H., and G.G. Scopettone. 2004. Relative abundance, distribution, and demographics of fishes on Stillwater National Wildlife Refuge, focusing on potential prey base for American white pelicans. Final Report to U.S. Fish and Wildlife Service, Stillwater National Wildlife Refuge. 20 pp.

Robinson, T.C., J.M. Bayer, and J.G. Seelye. 2004. Olfactory sensitivity of Pacific lampreys to conspecific bile acids. Draft final report to Confederated Tribes of the Umatilla Indian Reservation, Pendleton, OR. Contract number 406-01.

Rodriguez, R.J., R.S. Redman, and J.M. Henson. 2004. The role of fungal symbioses in the adaptation of plants to high stress environments. *Mitigation and Adaptation Strategies for Global Change* 9:261-272.

Rodriguez, R.J., D. Cullen, C. Kurtzman, G. Khachatourians, and D. Hegedus. 2004. Molecular methods for discriminating taxa, monitoring species, and assessing fungal diversity. Pages 77-102 *in* "Biodiversity of Fungi: Inventory and Monitoring Methods." Mueller, G. M., G. F. Bills, and M. S. Foster, [eds.]. Elsevier Academic Press, Oxford, U.K.

Romero-Brey, I., W.N. Batts, I. Bandin, J.R. Winton, and C.P. Dopazo. 2004. Molecular characterization of birnaviruses isolated from wild marine fishes at the Flemish Cap (Newfoundland). *Dis. Aquat. Org.* 61:1-10.

Saiki, M.K., D.G. Slotton, T.W. May, S.M. Ayers, and C.N. Alpers. 2004. Summary of total mercury concentrations in fillets of selected sport fishes collected during 2000-2003 from Lake Natoma, Sacramento County, California. U.S. Geological Survey Data Series 103, 21 p. (Available at <http://water.usgs.gov/pubs/ds/ds103/>).

Saiki, M.K., B.A. Martin, and T.W. May. 2004. Reproductive status of western mosquitofish inhabiting selenium-contaminated waters in the Grassland Water District, Merced County, California. *Arch. Environ. Contam. Toxicol.* 47(3):363-369.

- Sauter, S.T., R.M. Schrock, J.H. Petersen, and A.G. Maule. 2004. Assessment of smolt condition: Biological and environmental interactions—The impact of prey and predators on juvenile salmonids. Final Report to Bonneville Power Administration BPA Project No. 8740100, Portland, OR.
- Schroeder, D.M., and M.S. Love. 2004. Ecological and political issues surrounding decommissioning of offshore oil facilities in the Southern California Bight. *Ocean Coast. Manage.* 47:21-48.
- Scoppettone, G.G., J.E. Harvey, and J. Heinrich. 2004. Conservation, status, and life history of the endangered White River spinedace, *Lepidomeda albivallis* (Cyprinidae). *West. N. Am. Nat.* 64:38-44.
- Scoppettone, G.G., P.H. Rissler, and S. Shea. 2004. A fish survey of the White River, Nevada. 2004. *West. N. Am. Nat.* 64:45-52.
- Scoppettone, G.G., J.A. Salgado, and M.B. Nielsen. 2004. *Oreochromis aureus* predation on fishes in the Muddy River. Final Report to Las Vegas Office of the U. S. Fish and Wildlife Service. 11 pp.
- Smith, C.D., T.L. Liedtke, B.J. Hausmann, J.L. Schei, J.R. Lyng, L.P. Gee, and J.W. Beeman. 2004. Tailrace Egress of yearling and subyearling Chinook salmon and juvenile steelhead following juvenile bypass system passage at John Day Dam, 2002. Portland District, U.S. Army Corps of Engineers.
- Swaim, K.M., R.R. McShane, and G.G. Scoppettone. 2004. Status of Virgin River chub and other fishes of the Muddy River following 1995 invasion of blue tilapia in Warm Springs Area. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 20 pp.
- Swaim, K.M., R.R. McShane, and G.G. Scoppettone. 2004. *Oreochromis aureus* reproduction in the Muddy River. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 8 pp.
- Swaim, K.M., R.R. McShane, and G.G. Scoppettone. 2004. Benthic macroinvertebrate distribution in thermal springs of the Muddy River. Final Report to the Las Vegas Office of the U.S. Fish and Wildlife Service. 6 pp.
- Tiffan, K.F., D.W. Rondorf, and J.J. Skalicky. 2004. Imaging Fall Chinook Salmon Redds in the Columbia River with a Dual-Frequency Identification Sonar. *N. Am. J. Fish. Manage.* 24:1421-1426.
- Tiffan, K.F. 2004. Juvenile and adult fall Chinook and chum salmon habitat studies below Bonneville Dam on the Columbia River. 2002-2003 Annual Report to the Bonneville Power Administration. Portland, Oregon.
- Adams, B.J., B.D. Swigle, and R.S. Shively. 2005. Movements and Behavior of Radio-Tagged Adult Lost River Suckers and Shortnose Suckers in Upper Klamath Lake, Oregon. 2003 Annual Report, United States Geological Survey – Klamath Falls Field Station.
- Allen, M.B., and P.J. Connolly. 2005. Assessment of White Salmon watershed using the

Ecosystem Diagnosis and treatment methodology (EDT). Final Report. Prepared for Yakama Nation, Toppenish, WA.

Connor, W.P., J.G. Sneva, K.F. Tiffan, R.K. Steinhorst, and D. Ross. 2005. Two alternative juvenile life history types for fall Chinook salmon in the Snake River basin. *Trans. Am. Fish. Soc.* 134:291-304.

Gadomski, D.M., and M.J. Parsley. 2005. Laboratory studies on the vulnerability of young white sturgeon to predation. *N. Am. J. Fish. Manage.* 25:667-674.

Hayes, M.C., J.E. Hensleigh, S. Rubin, L.A. Wetzel, R.R. Reisenbichler, A. Maule. 2005. Effect of milt cryopreservation on incubation, growth, stress response and sex-ratio of cryogenic juvenile steelhead. *Aquaculture*.

Love, M.S., C.W. Mecklenburg, T.A. Mecklenburg and L.K. Thorsteinson. 2005. Resource Inventory of Marine and Estuarine Fishes of the West Coast and Alaska: A Checklist of North Pacific and Arctic Ocean Species from Baja California to the Alaska – Yukon Border. Published under a cooperative agreement between the USGS's Western Fisheries Research Center and the University of California, Santa Barbara (CA 03WRAG007). 276 pages.

Martin, B.A., and M.K. Saiki. 2005. Relation of desert pupfish abundance to selected environmental variables in natural and manmade habitats in the Salton Sea basin. *Env. Biol. Fish.* 73:97-107.

Maule, A.G., Jørgensen, E. H., Vijayan, M. M., and Killie, J.-E. A. 2005. Aroclor 1254 exposure reduces disease resistance and innate immune responses in fasted arctic char. *Environ. Toxicol. Chem.* 24:117-124.

Meeuwig, M. H., Bayer, J. M., and Seelye, J. G. 2005. Effects of Temperature on Survival and Development of Early Life Stage Pacific and Western Brook Lampreys. *Trans. Am. Fish. Soc.* 134: 19-27.

Mesa, M.G., and C.M. Magie. 2005. Assessment of low-level water chemistry in selected streams of the Washougal, Lewis, and Winder River watersheds, 2003. Final report to the Lower Columbia Fish Enhancement Group and the U. S. Forest Service.

Petersen, J.H., and C.P. Paukert. Development of a bioenergetics model for humpback chub and evaluation of water temperature changes in the Grand Canyon, Colorado River. *Trans. Am. Fish. Soc.* 134:960-974.

Reisenbichler, R.R. 2005. Uncertainty and research needs for supplementing wild populations of anadromous Pacific salmon, *Oncorhynchus* spp. Pages 263-275 in G. Carmichael, D. MacKinlay & V. Mudrak [eds.]. *Propagated Fish in Resource Management*. Am. Fish. Soc. Symp. 44, Bethesda, MD.

Scopettone, G.G., P.H. Rissler, C. Gourley, and C. Martinez. 2005. Habitat restoration as a means of controlling nonnative fish in a Mojave Desert oasis. *Restor. Ecol.* Vol 13, No. 2:247-256.

Springman, K.R., G. Kurath, J.J. Anderson, and J.M. Emlen. 2005. Contaminants as viral

cofactors: assessing indirect population effects. *Aquat. Toxicol.* 71:13-23.

Tiffan, K.F., D.W. Rondorf, and J.J. Skalicky. 2005. Diel spawning behavior of chum salmon in the Columbia River. *Trans. Am. Fish. Soc.* 134:892-900.

Walker, C.E., R.M. Schrock, T.J. Reilly, and A.L. Baehr. 2005. A direct immunoassay for detecting diatoms in groundwater as an indicator of the direct influence of surface water. *J. Appl. Phycol.* 17:81-90.

Papers in Press/Submitted/Accepted:

Adams, B.J., R.S. Shively, D. Gadomski, and D. Perkins. *Draft*. Age structure, growth rates and back-calculated growth by year-class of Lost River suckers and shortnose suckers collected during fish kill events in Upper Klamath Lake, Oregon.

Alcorn, S.A., A.L. Murray, R.J. Pascho and J. Varney. *In Press*. A cohabitation challenge to compare the efficacies of vaccines for bacterial kidney disease (BKD) in chinook salmon *Oncorhynchus tshawytscha*. *Dis. Aquat. Org.*

Bacon, C.R., P.K. Weber, K.A. Larsen, R. Reisenbichler, J.A. Fitzpatrick, and J.L. Wooden. *Submitted*. Migration and rearing histories of chinook salmon (*Oncorhynchus tshawytscha*) determined by ion microprobe Sr isotope and Sr/Ca transects of otoliths. *Can. J. Fish. Aquat. Sci.*

Bartholomew, J.L., R.P. Hedrick, B. Kerans, S.C. MacDiarmid and J.R. Winton. *In Review*. Development of a risk assessment based approach for the prevention, management, and control of whirling disease. *Trans. Am. Fish. Soc.*

Bruno, D.W., B. Nowak, D.G. Elliott. *Submitted*. A guide to identification of fish protozoan and metazoan parasites in stained tissue sections. *Dis. Aquat. Org.*

Bruno, D., D. Elliott, S. Feist, and B. Nowak (eds.). *In Press*. Malta 2003 Histopathology Workshop. Fish Neoplasia: Notes and Images. CD, European Association of Fish Pathologists, www.EAFP.org.

Clark, L.O, K.F. Tiffan, R.D. Garland, and D.W. Rondorf. *In Press*. Variables influencing the presence of subyearling fall chinook salmon in shoreline habitats of the Hanford Reach, Columbia River. *N. Am. J. Fish. Manage.*

Coady, A.M., A.L. Murray, D.G. Elliott, and L.D. Rhodes. *Submitted*. Both msa genes and *Renibacterium salmoninarum* are needed for full virulence in bacterial kidney disease. *Appl. Environ. Microbiol.*

Connolly, P.J., I.G. Jezorek, E.F. Printice. *Submitted*. Development of use of in-stream PIT-tag detection systems to assess movement behavior of fish in tributaries of the Columbia River Basin, USA. *Proceedings: Measuring Behavior 2005*.

Einer-Jensen, K., J. Winton and N. Lorenzen. *In Press*. Genotyping of the fish rhabdovirus, viral haemorrhagic septicaemia virus, by restriction fragment length polymorphisms. *Vet. Microbiol.*

Emlen, J.M., J.J. Duda, D.C. Freeman, A.J. Krzysik, J.H. Graham, and J.C. Zak. *Submitted*. Complexity of floral community structure as an indicator of ecosystem disturbance and integrity. *Appl. Veg. Sci.*

Emlen, J.M., and J.J. Duda. *Submitted*. Interaction Assessment (INTASS) User's Manual: Field procedures, data preparation, analysis, and software. Unpublished USGS Report.

Emlen, J.M., and K.R. Springman. *Submitted*. Developing methods to assess and predict the population and community level effects of environmental contaminants. *J. Theor. Biol.*

Emery, B.M., L. Washburn, M. Love, M.M. Nishimoto, and J.C. Ohlmann. *In Press*. Do oil and gas platforms off California reduce recruitment of bocaccio (*Sebastes paucispinis*) to natural habitat? An analysis based on trajectories derived from high frequency radar.

Freeman, D.C., M.L. Brown, J.J. Duda, J.H. Graham, J.M. Emlen, A.J. Krzysik, H.E. Balbach, D.A. Kovacic, and J.C. Zak. *In Press*. Leaf fluctuating asymmetry, soil disturbance, and plant stress: A multiple year comparison using two herbs, *Ipomoea pandurata* and *Cnidioscolus stimulosus*. Ecological Indicators.

Freilich, J.E., R.J. Camp, J.J. Duda, and A.E. Karl. *Accepted*. The problem of sampling desert tortoises: a simulation analysis based upon field data. *J. Wildl. Manage.*

Gadomski, D.M., and P.G. Wagner. *In Press*. Effects of water level fluctuations on age-0 resident fishes in shorelines of the Hanford Reach of the Columbia River. *Northwest Sci.*

Garver, K.A., S.E. LaPatra, and G. Kurath. *In Press*. Efficacy of an IHN virus DNA vaccine in chinook (*Oncorhynchus tshawytscha*) and sockeye (*Oncorhynchus nerka*) salmon. *Dis. Aquat. Org.*

Garver, K.A., C.M. Conway, D.G. Elliott, and G. Kurath. *In Press*. Analysis of DNA vaccinated fish reveals viral antigen in muscle, kidney, and thymus, and transient histopathological changes. *Mar. Biotechnol.*

Godfrey, E.W., and G.E. Sanders. *In Press*. The effect of water hardness on oocyte quality and embryo development in the African clawed frog (*Xenopus laevis*). *Comp. Med.*

Gregg, J., D. Anderi, and D. Kimura. *In Press*. Improving the precision on otoliths based on age estimates for Greenland turbot found in Alaskan waters.

Halos, D., A. Hart, H. Hsu, P. Hershberger, and R. Kocan. *In Press*. *Ichthyophonus* in Puget Sound rockfish, *Sebastes emphaeus* from the San Juan archipelago and Puget Sound, Washington, USA. *J. Aquat. An. Health.*

Hayes, M.C., S.P. Rubin, J.E. Hensleigh, R.R. Reisenbichler, and L.A. Wetzel. *Submitted*. Performance of juvenile steelhead trout produced from untreated and cryopreserved milt. *J. N. Am. Aqua.*

Henson, J., R.Redman, R. Rodrigues, and R. Stout. *In Press*. Fungi in Yellowstone's geothermal soils and plants. *Yellowstone Science.*

Hershberger, P.K., N.E. Elder, J. Wittouck, K. Stick, and R.M. Kocan. *In Press*. Abnormalities in Larvae from the Once-Largest Pacific Herring Population in Washington State Result Primarily from Factors Independent of the Spawning Location. *Trans. Am. Fish. Soc.*

Hershberger, P.K., S.A. Hart, J. Gregg, N.E. Elder, and J.R. Winton. *In preparation*. Dynamics of viral hemorrhagic septicemia, viral erythrocytic necrosis, and ichthyophoniasis in juvenile Pacific herring. *Dis. Aquat. Org.*

Hoffman, R.L., T.J. Tyler, G.L. Larson, M.J. Adams, W. Wentz, and S. Glavan. *In Press*. Sampling protocols for monitoring abiotic and biotic characteristics of mountain ponds and

lakes: U.S. Geological Survey Techniques and Methods 2-A2.

Jezorek, I.G., P.J. Connolly, and K. Martins. *Submitted*. Wind River Watershed Project: Flow, Temperature, and Habitat Conditions, 2002 Annual Report. Annual Report to the Bonneville Power Administration.

Jezorek, I.G., and J.H. Petersen. *Submitted*. Monitoring and Assessment of Juvenile Steelhead on Toppenish National Wildlife Refuge.

Kaesler, A.J., C. Rasmussen, and W.E. Sharpe. *Submitted*. An examination of environmental factors associated with *Myxobolus cerebralis* infection of wild trout in Pennsylvania. *J. Aquat. Anim. Health*.

Koel, T.M., and D.L. Mahony, K.L. Kinnan, and C. Rasmussen, C.J. Hudson, S. Murcia, and B.L. Kerans. *Submitted*. *Myxobolus cerebralis* in Native Cutthroat Trout of the Yellowstone Lake Ecosystem. *J. Aquat. Anim. Health*.

Kovacic, D.A., A.J. Krzysik, J.C. Zak, M.P. Wallace, D.C. Freeman, J.H. Graham, H.E. Balbach, J.J. Duda, and J.M. Emlen. *In Press*. Soil mineralization potential as an ecological indicator of forest disturbance. *For. Ecol. Manag.*

Krueger, R.C., B.L. Kerans, E.R. Vincent, and C. Rasmussen. *Submitted*. Risk of *Myxobolus cerebralis* infection to rainbow trout in the Madison River, Montana. *Ecol. Appl.*

Krzysik, A.J., D.A. Kovacic, M.P. Wallace, J.H. Graham, J.J. Duda, J.C. Zak, D.C. Freeman, H.E. Balbach, and J.M. Emlen. *Submitted*. Development of ecological indicator guilds for land management: classifying ecosystem metrics along a landscape disturbance gradient. *Ecol. Appl.*

Kurath, G. *In Press*. Overview of recent DNA vaccine development for fish. *In*, P.J. Mittlethaler (ed.), *Fish Vaccinology, Developments in Biologicals*, Basel, Karger. Vol. 121:201-213.

Kurath, G., K.A. Garver, W.N. Batts, and E.J. Emmenegger. *In Press*. Genetic typing of infectious hematopoietic necrosis virus. *Aquaculture*, R.C. Cipriano, I.S. Shchelkunov, and M. Failal, (eds.).

Lefebvre, K.A., N.E. Elder, P.K. Hershberger, V.L. Trainer, C.M. Stehr, N.L. Sholtz. *In Review*. Dissolved saxitoxin exposure causes transient inhibition of sensorimotor function in larval herring (*Clupea pallasii*). *Marine Biology*.

Love, M.S., D. Schroeder, W.H. Lenarz. *In press*. Comparing adult densities and potential larval production of Bocaccio and Cowcod around oil and gas platforms and natural outcrops in the southern California bight. *Fishery Bulletin*.

Love, M.S., and A. York. *In press*. A comparison of the fish assemblages associated with an oil/gas pipeline and adjacent seafloor in the Santa Barbara Channel, Southern California Bight. *Bulletin of Marine Science*.

Mesa, M.G., L.K. Weiland, and G.B. Zydlewski. *In press*. Critical swimming speeds of wild

bull trout. Northwest Sci. 78:xxx-xxx.

Miller, K.M., J.R. Winton, A.D. Schulze, M.K. Purcell and T.J. Ming. *In press*. Major histocompatibility complex loci are associated with susceptibility of Atlantic salmon to infectious hematopoietic necrosis virus. J. Env. Biol. Fish.

Mumford, S., C. Patterson, J. Evered, R. Brunson, J. Levine, and J. Winton. *In Review*. A comparison of individual animal and pooled sampling methods for detecting bacterial pathogens of fish. J. Vet. Diagnos. Investig.

Ostberg C.O., S. Dufree, and R.J. Rodriguez. *In Press*. Analyzing the molecular ecology of hybridization between rainbow and cutthroat trout in two Puget Sound streams. Mol. Ecol.

Peven, C.A., G.J. Skalski, M. Langeslay, A. Grassell, S.G. Smith, T. Counihan, R.W. Perry, and S. Bickford. *In Review*. Guidelines and recommended protocols for conducting, analyzing, and reporting juvenile salmonid survival studies in the Columbia Basin. Draft Report to the U.S. Army Corps of Engineers, Portland, Oregon.

Plum, J.M., R.W. Perry, N.S. Adams, D.W. Rondorf, and T. Wik. *In Press*. Effects of water velocity, dam passage, and hatchery rearing on the migration behavior of juvenile steelhead in the Lower Snake River, Washington.

Purcell, M.K., K.D. Smith, L. Hood, J.R. Winton, and J.C. Roach. *In Review*. Conservation of toll-receptor signaling pathways during vertebrate evolution. Comp. Biochem. Physiol.

Reisenbichler, R.R., M.C. Hayes, S.P. Rubin, L.A. Wetzel, and B.M. Baker. *Accepted*. PEPA* genotype affects return rate for hatchery steelhead. Trans. Am. Fish. Soc.

Robinson, T.C., and J.M. Bayer. *In Press*. Upstream migration of Pacific lampreys in the John Day River, OR: behavior, timing, and habitat use. Northwest Sci.

Robinson, T.C., J.M. Bayer, and J.G. Seelye. *In Press*. Olfactory sensitivity of Pacific lampreys to conspecific bile acids. American Fisheries Society. Trans. Am. Fish. Soc.

Rodriguez, R., and R. Redman. *In Press*. One gas to rule them all: balancing the generation and elimination of reactive oxygen species. PNAS.

Rodriguez, R.J., R.S. Redman, and J.M. Henson. *In Press*. Symbiotic lifestyle expression by fungal endophytes and the adaptation of plants to stress: unraveling the complexities of intimacy. Pages 683-696 in "The Fungal Community: Its Organization and Role in the Ecosystem, Ed. J. Dighton, P. Oudemans, and J. White [eds.].

Rodriguez, R.J., R.S. Redman, M. Hoy, and N. Elder. *In Press*. Fungal symbiosis: a potential mechanism of plant invasiveness. Conference Proceedings; International Spartina Conference.

Rolland, J.B., D. Bouchard, J. Coll and J.R. Winton. *In Press*. Combined use of the ASK and SHK-1 cell lines can enhance the detection of infectious salmon anemia virus. J. Vet. Diagnos. Investig.

Rubin, S., R. Reisenbichler, J. Hensleigh, L. Wetzel, and B. Baker. *Submitted*. Genetic

differences between sea-ranched and wild steelhead in survival and growth in the hatchery and seaward migration. Report to Bonneville Power Administration.

Saiki, M.K., B.A. Martin, T.W. May, and C.N. Alpers. *Submitted*. Total mercury concentrations in fillets of bluegill, redear sunfish, largemouth bass, and other fishes from Lake Natoma, Sacramento County, California. California Fish and Game.

Saiki, M.K., B.A. Martin, G.W. Knowles, and P.W. Tennant. *Submitted*. Some life history and ecological characteristics of Santa Ana sucker (Catostomidae: *Catostomus santaanae*). Southwestern Nat.

Scoppettone, G.G., and P.H. Rissler. *In Press*. Relation of cui-ui growth and maturation to population increase. Trans. Am. Fish. Soc.

Scoppettone, G.G., J.A. Salgado, and M.B. Nielsen. *In Press*. Blue tilapia (*Oreochromis aureus*) predation on fishes in the Muddy River System, Clark County, Nevada. West. N. Am. Nat.

Scoppettone, G.G., and P.H. Rissler. *In Press*. Compensatory growth and maturation in response to population increase in cui-ui (*Chasmistes cujus*; Catostomidae).

Scoppettone, G.G., P.H. Rissler, D. Withers, and M.C. Fabes. *In Press*. Fish Tag Recovery from the American White Pelican Nesting Colony on Anaho Island, Pyramid Lake, Nevada, with Implications on Foraging Behavior. Great Basin Birds.

Scoppettone, G.G., and P.H. Rissler. *In Press*. Distribution of tui chub in the Cow Head Lake Slough system, Nevada and California. Calif. Fish & Game.

Springman, K.R., G. Kurath, J.A. Anderson, and J.M. Emlen. *In Press*. Contaminants as viral cofactors: assessing indirect population effects. Aquatic Toxicology.

Steinback, L.C., B.L. Kerans, C. Rasmussen and J.R. Winton. *In Review*. Interactions among two strains of *Tubifex tubifex* (Oligochaeta: Tubificidae) and *Myxobolus cerebralis* (Myxozoa). Dis. Aquat. Org.

Swigle, B.D., J. Parham, and E.J. Peter. *In Press*. Movement and Habitat Use by Shovelnose and Pallid Sturgeon in the Lower Platte River. Trans. Am. Fish. Soc.

Tyler, T.J., C.M. Ellsworth, R.S. Shively, and S.P. Vanderkooi, S.P. *In Review*. Larval sucker drift in the lower Williamson River, Oregon: Evaluation of two proposed water diversion sites for Modoc Point Irrigation District. USGS WFRC Report.

Van der Straaten, N, A. Jacobson, D. Halos, P. Hershberger, A. Kocan, R. Kocan. *In Press*. An intraerythrocytic parasite from Puget Sound rockfish (*Sebastes emphaeus*). J. Parasitol.

Van der Straaten, N., A. Jacobson, D. Halos, P. Hershberger, A. Kocan, and R. Kocan. *In Press*. Prevalence and spatial distribution of intracythrocytic parasite(s) in Puget Sound rockfish *Sebastes emphaeus* from the San Juan Archipelago, Washington, USA. J. Parasitol.

