

21.0 References

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References cited in the text, tables, and graphics of this manual are provided below.

71 FR 3260. Small Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Eastern Tropical Pacific. V71, #13:3260-3275.

Anderson, James J. 1992. Assessment of the Risk of Pile Driving to Juvenile Fish. Presentation to the Deep Foundations Institute, October 10–12, 1992, Seattle, Washington.

Arkoosh, M.R., E. Casillas, E. Clemons, A.N. Kagley, R. Olson, P. Reno, and J.E. Stein. 1998. Effect of pollution on fish diseases: Potential impacts on salmonid populations. *Journal of Aquatic Animal Health* 10(2):182-190.

Au, W.W. and M.C. Hastings. 2008. *Principles of Marine Bioacoustics*. Spring Science, LCC.

Bain, D.E. 2002. A model linking energetic effects of whale watching to killer whale (*Orcinus orca*) population dynamics. Friday Harbor Laboratories, University of Washington, Friday Harbor, Washington.

Bain, D.E. and M.E. Dahlheim. 1994. Effects of masking noise on detection thresholds of killer whales. In T.R. Loughlin (ed.), *Marine Mammals and The Exxon Valdez*. Academic Press, New York. Pp 243-256.

Baldwin, D.H., J.F. Sandahl, J.S. Labenia, and N.L. Scholz. 2003. Sublethal effects of copper on coho salmon: impacts on nonoverlapping receptor pathways in the peripheral olfactory nervous system. *Environmental Toxicology and Chemistry* 22(10):2266-2274.

Bash, J., C. Berman, and S. Bolton. 2001. Effects of turbidity and suspended solids on salmonids. Center for Streamside Studies, University of Washington, Seattle, Washington.
<<http://depts.washington.edu/cwvs/Outreach/Publications/Salmon%20and%20Turbidity.pdf>>.

Berg, L. and T.G. Northcote. 1985. Changes in territorial, gill-flaring, and feeding behavior in juvenile coho salmon (*Oncorhynchus kisutch*) following short-term pulses of suspended sediment. *Canadian Journal of Fisheries and Aquatic Sciences* 42:1410-1417.

Bjornn, T.C. and D.W. Reiser. 1991. Habitat requirements of salmonids in streams. *American Fisheries Society Special Publication* 19:83-138.

Bjornn, T.C., M.A. Brusven, M. Molnau, F.J. Watts, R.L. Wallace, D.R. Neilson, M.F. Sandine, and L.C. Stuehrenberg. 1974. Sediment in streams and its effects on aquatic life. University of Idaho, Idaho Water Resource Research Institute, Technical Completion Report, Project B-025-IDA, Moscow, Idaho.

Bolt, Beranek, and Newman. 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, D.C. Region 1, Seattle, Washington. (See WSDOT 1991.)

Bolt, Beranek, and Newman. 1987. Noise Control for Buildings and Manufacturing Plants. U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, D.C.

Bottomf, J. and J. Schafer. 1987. Orcas Island Ferry Terminal Noise Study, San Juan County, Washington. Washington State Department of Transportation, Environmental Unit, Olympia, Washington.

Brusven, M.A. and K.V. Prather. 1974. Influence of stream sediments on distribution of macrobenthos. *Journal of the Entological Society of British Columbia* 71:25-32.

Buck, E.H. 1995. Acoustic Thermometry of Ocean Climate: Marine Mammal Issues. CRS Report 95-603 ENR.

Bullard, W.E., Jr. 1965. Role of watershed management in the maintenance of suitable environments for aquatic life. Pages 265-269 in C.M. Tarzwell, editor. *Biological Problems in Water Pollution: Transactions of the Third Seminar*, Cincinnati, Ohio. U.S. Department of Health, Education, and Welfare, Public Health Service.

Burgess, W.C. and S.B. Blackwell. 2003. Acoustic Monitoring of Barrier Wall Installation at the Former Rhône-Poulenc Site, Tukwila, Washington. Greeneridge Sciences, Inc., Report 290-1.

CalTrans. 2003. Personal communication.

CalTrans. 2009. Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish.

Carlson, T.J., G. Ploskey, R.L. Johnson, R.P. Mueller, M.A. Weiland, and P.N. Johnson. 2001. Observations of the behavior and distribution of fish in relation to the Columbia River navigation channel and channel maintenance activities. Appendix A: Characterization of underwater infrasound generated by vibratory pile driving within the context of the characteristics of sound known to result in avoidance response by juvenile salmonids. Prepared by Pacific Northwest National Laboratory for the US Army Corps of Engineers, Portland District (under a related services agreement with the US Department of Energy under Contract DE-AC06-76RL01830). Portland, Oregon.

Carlson, Tom. 2003. Personal communication.

Cavanaugh, W.J. and G.C. Tocci. 1998. Environmental Noise. Published in E.S.C., *USC Journal of Public Affairs*, Vol. 1 Num. 1, Los Angeles, California.

- Cederholm, C.J., L.C. Lestelle, B.G. Edie, D.J. Martin, J.V. Tagart, and E.O. Salo. 1978. The Effects of Landslide Siltation on the Salmon and Trout Resources of Stequaleho Creek and the Main Clearwater River, Jefferson County, Washington, 1972-1975. University of Washington, Fisheries Research Institute, Final Report FRI-UW-7804, Seattle, Washington.
- Chapman, C.J. and A.D. Hawkins. 1973. A Field Study of Hearing in the Cod, *Gadus morhua*. *J. Comp. Physiol.* 85:147–67.
- Clean Water Act Section 303(d) lists provided by the Department of Ecology for threatened waters in the state of Washington, available online at <http://www.ecy.wa.gov/programs/wq/303d/index.html>.
- Cordone, A.J. and S. Pennoyer. 1960. Notes on silt pollution in the Truckee River Drainage. California Fish and Game, Inland Fisheries Administrative Report 60-14, Sacramento, California.
- Davidson, M. 2004. Transmission loss. Pages lecture structure obtained from website in IOM. Studies, editor. University of Plymouth, Drake Circus, Plymouth, Devon, UK.
- Delaney, D.K. and T.G. Grubb. 2003. Effects of Off-Highway Vehicles on Northern Spotted Owls: 2002 Results. A report to the State of California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division, Contract No. 4391Z9-0-0055.
- Delaney, D.K. and T.G. Grubb. 2004. Sound Recordings of Road Maintenance Equipment on the Lincoln National Forest, New Mexico. Res. Pap. RMRS-RP-49. Fort Collins, CO: USDA Forest Service, Rocky Mountain Research Station. 56 p.
- DesJardin. 2003. Personal communication.
- Dooling, R.J. and S.H. Hulse. 1989. The Comparative Psychology of Audition: Perceiving Complex Sounds. Lawrence Erlbaum Assoc., Hillsdale, New Jersey (cited in USDI 2003).
- Ecology. 2001. Stormwater Management Manual for Western Washington. Washington Department of Ecology.
- Ecology. 2004. Stormwater Management Manual for Eastern Washington. Washington Department of Ecology.
- Eisler, R. 1998. Copper Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review. United States Geological Survey, Biological Resources Division, Patuxent Wildlife Research Center, Biological Science Report USGS/BRD/BSR-1998-0002, Laurel, Maryland. 120 p. <http://www.pwrc.usgs.gov/infobase/eisler/reviews.cfm>.
- Enger, P.S. 1981. Frequency Discrimination in Teleosts—Central or Peripheral? Pp. 243–255 in: W.N. Tavolga, A.N. Popper, and R.R. Fay [ed.], *Hearing and Sound Communication in Fishes*. Springer Verlag, New York.

EPA (U.S. Environmental Protection Agency). 1980. Ambient Water Quality Criteria for Copper - 1980. EPA, Publication 440/5-80-036, Washington, D.C. (October 1980). 162 p.

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment Guidance FTA-VA-90-1003-06 May,

Feist, Blake E., J.J. Anderson, and R. Myaamoto. 1992. Potential Impacts of Pile Driving on Juvenile Pink (*Oncorhynchus borboscha*) and Chum (*O. keta*) Salmon Behavior and Distribution. FRI-UW-9603. University of Washington, School of Fisheries, Fisheries Research Institute.

Govoni, J.J., L.R. Settle, and M.A. West. 2003. Trauma to Juvenile Pinfish and Spot Inflicted by Submarine Detonations. *J. Aquatic Anim. Health* 15:111–119.

Gyselman, E. and J. Jorgenson. (unpublished). Acoustic Measurement of the Behavioral Response of Arctic Riverine Fish to Seismic Sound. Presentation given at the 2005 Acoustical Society of America meeting in Vancouver, B.C.

Hansen, J.A., P.G. Welsh, J. Lipton, and P.G. Welsh. 2002b. Relative Sensitivity of Bull Trout (*Salvelinus confluentus*) and Rainbow Trout (*Oncorhynchus mykiss*) to Acute Exposures of Cadmium and Zinc. *Environmental Toxicology and Chemistry* 21(1):67-75.

Harris, C.M. 1991. Handbook of Acoustical Measurement and Noise Control.

Hastings, M.C. 1995. Physical Effects of Noise on Fishes. Proceedings of INTER-NOISE 95, The 1995 International Congress on Noise Control Engineering. Volume II, 979–984.

Hastings, M.C. 2002. Clarification of the Meaning of Sound Pressure Levels and the Known Effects of Sound on Fish. White Paper. August 2002.

Hastings, M.C. and A.N. Popper. 2005. Effects of Sound on Fish. White Paper. January 2005.

Hastings, M.C., A.N. Popper, J.J. Finneran, and P. Lanford. 1996. Effects of Low Frequency Sound on Hair Cells of the Inner Ear and Lateral Line of the Teleost Fish *Astronotus ocellatus*. *Journal of the Acoustical Society of America* 99(3):1759–1766.

Hawkins, A.D. and A.D.F. Johnstone. 1978. The Hearing of Atlantic Salmon, *Salmo salar*. *J. Fish. Biol.* 13:655–673.

Hayes, M.C., T.F. Marhaba, N.W. Agnoli, and D.M. Lackey. 1996. Evaluation of Highway Runoff Pollution Control Devices. New Jersey Department of Transportation, Final Report Task Order #43, Project 7620. 45 p.

Heathershaw, A.D., P.D. Ward, and A.M. David. 2001. The Environmental Impact of Underwater Sound. *Proc. I.O.A.* Vol. 23(4):1–13.

Herbert, D.W., J.S. Alabaster, M.C. Dart, and R. Lloyd. 1961. The effect of china-clay wastes on trout streams. *International Journal of Air and Water Pollution* 5:56-74.

Hult, R. 1982. Another Function of Echolocation for Bottlenose Dolphins (*Tursiops truncatus*). *Cetology* 47:1-7.

Illingworth and Rodkin, Inc. 2001. Noise and Vibration Measurements Associated with the Pile Installation Demonstration Project for the San Francisco-Oakland Bay Bridge East Span, Final Data Report, Task Order 2, Contract No. 43A0063.

Illingworth and Rodkin, Inc. 2003. Personal communication from J. Reyff to Jim Laughlin regarding sound propagation and transmission loss of pile driving noise in marine environments.

Illingworth and Rodkin, Inc. 2004. Personal communication.

Illingworth and Rodkin. 2010. Underwater Sound Levels Associated with Driving Steel Piles for the State Route 520 Bridge Replacement and HOV Project Pile Installation Test Program. Washington State Department of Transportation.

Jepson, P.D., M. Arbelo, R. Deaville, I.A.P. Patterson, P. Castro, J.R. Baker, E. Degollada, H.M. Ross, P. Heeaez, A.M. Pocknell, F. Rodriguez, F.E. Howie, A. Espinosa, R.J. Reid, J.R. Jaber, V. Martin, A.A. Cunningham, and A. Fernandez. 2003. Gas-bubble lesions in stranded cetaceans. *Nature* 425:575-576.

Kayhanian, M., A. Singh, C. Suverkropp, and S. Borroum. 2003. Impact of annual average daily traffic on highway runoff pollutant concentrations. *Journal of Environmental Engineering* 129(11):975-990.

Kerwin, J. and T.S. Nelson, editors. 2000. Habitat Limiting Factors and Reconnaissance Assessment Report, Green/Duwamish and Central Puget Sound Watersheds (WRIA 9 and Vashon Island). Washington State Conservation Commission and the King County Department of Natural Resources, Seattle, Washington (December 2000). 770 p.
<<http://your.kingcounty.gov/dnrp/library/2000/kcr728/vol1/cover/Acknowledgements.pdf>>.

Laughlin, J. 2005a. Underwater Sound Levels Associated with Pile Driving at the Bainbridge Island Ferry Terminal Preservation Project. Washington State Department of Transportation. November 2005.

Laughlin, J. 2005b. Underwater Sound Levels Associated with Restoration of the Friday Harbor Ferry Terminal. Washington State Department of Transportation. May 2005.

Laughlin, J. 2006. Underwater Sound Levels Associated with Pile Driving at the Cape Disappointment Boat Launch Facility Wave Barrier Project. Washington State Department of Transportation. March 2006.

Laughlin, J. 2010a. Underwater sound levels associated with driving steel piles at the Vashon ferry terminal. Washington State Department of Transportation Report.

Laughlin, J. 2010b. Vashon Ferry Terminal Test Pile Project – Vibratory Pile Monitoring Technical Memorandum. Washington State Department of Transportation Technical Memorandum.

Laughlin, J. 2010c. Average Noise Reductions Using Different Minimization Strategies for WSDOT Impact Pile Driving Operations. Washington State Department of Transportation Technical Memorandum.

Laughlin, Jim. 2010. Airborne Noise Measurements (A-weighted and un-weighted) during Vibratory Pile Installation – Technical Memorandum. Washington State Department of Transportation.

Laughlin, Jim. 2011. Underwater Sound Levels Associated with Driving 72-inch Steel Piles at the SR 529 Ebey Slough Bridge Replacement Project. Washington State Department of Transportation.

Lloyd, D.S., J.P. Koenings, and J.D. LaPerriere. 1987. Effects of turbidity in fresh waters of Alaska. *North American Journal of Fisheries Management* 7:18-33.

Longmuir, C. and T. Lively. 2001. Bubble Curtain Systems for Use During Marine Pile Driving. Produced by Fraser River Pile & Dredge, Ltd.

LSA Associates. 2002. Noise. Livermore General Plan Update, Working Paper. Berkeley, California.

MacGillivray, A., E. Ziegler, and J. Laughlin. 2007. Underwater acoustic measurements from Washington State Ferries 2006 Mukilteo Ferry Terminal Test Pile Project. Technical report prepared by JASCO Research, LTD for Washington State Ferries and Washington State Department of Transportation. 27 pp.

McCauley, R.D., J. Fewtrell, and A.N. Popper. 2003. High Intensity Anthropogenic Sound Damages Fish Ears. *Acoustical Society of America* 113(1).

McKenzie. 2004. Personal communication.

National Marine Fisheries Service (NMFS). 2005. Proposed Conservation Plan for Southern Resident Killer Whales (*Orcinus orca*). National Marine Fisheries Service, Northwest Region, Seattle, Washington. 183 pp.

Nedwell, J.R. and B. Edwards. 2002. Measurements of Underwater Noise in the Arun River during Piling at County Warf, Littlehampton. Subacoustech Report Reference: 513 R 0108.

Nedwell, J.R., A. Turnpenny, J. Langworthy, and B. Edwards. 2003. Measurements of Underwater Noise during Piling at the Red Funnel Terminal, Southampton, and Observations of Its Effect on Caged Fish. Subacoustics LTD. Report 558 R 0207.

- Nedwell, J.R., B. Edwards, A.W.H. Turnpenny, and J. Gordon. 2004. Fish and Marine Mammal Audiograms: A Summary of Available Information. Subacoustech Report Ref: 534 R 0214.
- Newcombe, C.P. and J. Jensen. 1996. Channel suspended sediment and fisheries: a synthesis for quantitative assessment of risk and impact. *North American Journal of Fisheries Management* 16:693-727.
- Niyogi, S., P. Couture, G. Pyle, D.G. McDonald, and C.M. Wood. 2004. Acute cadmium biotic ligand model characteristics of laboratory-reared and wild yellow perch (*Perca flavescens*) relative to rainbow trout (*Oncorhynchus mykiss*). *Canadian Journal of Fisheries and Aquatic Sciences* 61(6):942-953.
- NOAA Fisheries. 1996. Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale.
- NOAA Fisheries. 2003. Terms and Conditions of the Lower Columbia River Programmatic Consultation for Minor Discharges and Excavations. Found in Endangered Species Act Section 7 Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation: Revised Standard Local Operating Procedures for Endangered Species for Certain Regulatory and Operations Activities Carried Out by the Department of the Army in Oregon and the North Shore of the Columbia River. July 8, 2003.
- NOAA. 2012. Guidance Document: Data Collection Methods to Characterize Impact and Vibratory Pile Driving Source Levels Relevant to Marine Mammals. NMFS Northwest Region and Northwest Fisheries Science Center, Memorandum.
- NOAA. 2012. Guidance Document: Data Collection Methods to Characterize Underwater Background Sound Relevant to Marine Mammals in Coastal Nearshore Waters and Rivers of Washington and Oregon. NMFS Northwest Region and Northwest Fisheries Science Center, Memorandum.
- NOAA. 2012. Guidance Document: Sound Propagation Modeling to Characterize Pile Driving Sounds Relevant to Marine Mammals. NMFS Northwest Region and Northwest Fisheries Science Center, Memorandum.
- Norris, K.S. and B. Møhl. 1983. Can Odontocetes Debilitate Prey with Sound. *Am. Naturalist* 122:85–104.
- Nuttall, P.M. and G.H. Bilby. 1973. The effect of china-clay wastes on stream invertebrates. *Environmental Pollution* 5:77-86.
- Pater, L.D., D.K. Delaney, T.J. Hayden, B. Lohr, and R. Dooling. 1999. Assessment of Training Noise Impacts on the Red-Cockaded Woodpecker: Preliminary Results. CERL Tech. Rept. 99/51. U.S. Army Corps of Engineers, Construction Engineering Research Laboratory, Champaign, Illinois.

- Peterson, C.H., S.D. Rice, J.W. Short, R. Eisler, J.L. Bodkin, B.E. Ballachey, and D.B. Irons. 2003. Long-term ecosystem response to the Exxon Valdez oil spill. *Science* 302(5653):2082-2086.
- Playle, R.C. 2004. Using multiple metal-gill binding models and the toxic unit concept to help reconcile multiple-metal toxicity results. *Aquatic Toxicology* 67(4):359-370.
- Popper, A.N. and N.L. Clarke. 1976. The Auditory System of the Goldfish (*Carassius auratus*): Effects of Intense Acoustic Stimulation. *Comp. Biochem. Physiol.* 53:11–18.
- Popper, A.N. and R.R. Fay. 1973. Sound Detection and Processing by Teleost Fishes: Critical Review. *Journal of the Acoustical Society of America* 53(6):1515–1529.
- Popper, A.N. and R.R. Fay. 1993. Sound Detection and Processing by Fish: A Critical Review and Major Research Questions. *Brain Behavior and Evolution* 41:14–39.
- Popper, A.N., M.E. Smith, P.A. Cott, B.W. Hanna, A.O. MacGillivray, M.E. Austin, and D.A. Mann. 2005. Effects of Exposure to Seismic Airgun Use on Hearing of Three Fish Species. *J. Acoust. Soc. Am.* 117(6):3958–3971.
- Reed, R.D. and S.T. Elliot. 1972. Effects of Logging on Dolly Varden. Alaska Department of Fish and Game, Division of Sport Fisheries, Project F-9-4, Job RV-B, Juneau, Alaska.
- Reinhall, P.G. and P. H. Dahl. 2011. Underwater Mach wave radiation from impact pile driving: theory and observation. *Journal of the Acoustical Society of America* 130:1209-1216.
- Reyff, J.A. 2006. Russian River Bridge at Geyserville: Underwater sound measurement data for driving permanent 48-inch CISS piles. Illingworth and Rodkin, Inc., Petaluma, California.
- Reyff, J.A., P. Donovan, and C.R. Green Jr. 2002. Underwater Sound Levels Associated with Construction of the Benicia-Martinez Bridge. Produced by Illingworth and Rodkin, Inc., Petaluma, California.
- Reyff, J.A., P. Donovan, and C.R. Greene Jr. 2003. Underwater Sound Levels Associated with Seismic Retrofit Construction of the Richmond-San Rafael Bridge. Produced by Illingworth & Rodkin, Inc., and Greeneridge Sciences under contract to the California Department of Transportation.
- Scholik, A.R. and H.Y. Yan. 2001. Effects of Underwater Noise on Auditory Sensitivity of a Cyprinid Fish. *Hear. Res.* 152:17–24.
- Schueler, T.R. 1987. Controlling Urban Runoff: A practical manual for planning and design of urban BMPs. Metropolitan Washington Council of Governments, Washington, D.C. 275 p.
- Servizi, J.A. and D.W. Martens. 1991. Effect of temperature, season, and fish size on acute lethality of suspended sediments to coho salmon (*Oncorhynchus kisutch*). *Canadian Journal of Fisheries and Aquatic Sciences* 48:493-497.

- Sexton, T. 2007. Underwater Sound Levels Associated with Pile Driving during the Anacortes Ferry Terminal Dolphin Replacement Project. Washington State Department of Transportation, April 2007.
- Sigler, J.W., T.C. Bjornn, and F.H. Everest. 1984. Effects of chronic turbidity on density and growth of steelheads and coho salmon. *Transactions of the American Fisheries Society* 113:142-150.
- Smith, M.E., A.S. Kane, and A.N. Popper. 2004. Acoustical Stress and Hearing Sensitivity in Fishes: Does the Linear Threshold Shift Hypothesis Hold Water? *J. Exp. Biol.* 207:3591–3602.
- Smith, M.E., A.S. Kane, and A.N. Popper. 2004a. Noise-Induced Stress Response and Hearing Loss in Goldfish (*Carassius auratus*). *J. Exp. Biol.* 207:427–435.
- Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Green Jr., D. Kastak, D.R. Ketten, J.H. Miller, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine mammal noise exposure criteria: Initial scientific recommendations. *Aquatic Mammals*. 33:414-521.
- Spence, B.C., G.A. Lomnicky, R.M. Hughes, and R.P. Novitzki. 1996. An Ecosystem Approach to Salmonid Conservation. Prepared by ManTech Environmental Research Services, Inc., Corvallis, Oregon, for National Marine Fisheries Service, Publication TR-4501-96-6057, Portland, Oregon (December 1996). 356 p. <<http://www.nwr.noaa.gov/Publications/Reference-Documents/ManTech-Report.cfm>>.
- Stocker, Michael. 2002. Fish Mollusks and other Sea Animals, and the Impact of Anthropogenic Noise in the Marine Acoustical Environment. Michael Stocker Associates for Earth Island Institute.
- Thomsen, F.K, Ludemann, R., Kafemann, and W. Piper. 2006. Effects of offshore wind farm noise on marine mammals and fish. Cowrie, Ltd., Hamburg, Germany.
- Turnpenny, A.W.H., K.P. Thatcher, and J.R. Nedwell. 1994. The Effects on Fish and Other Marine Animals of High-Level Underwater Sound. Report FRR 127/94. Fawley Aquatic Research Laboratory, Ltd., United Kingdom.
- U.S. COE. 2000 (revised May 2001). Phase I Programmatic Biological Evaluation for the State of Washington for Salmonid Species Listed or Proposed by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service under the Endangered Species Act. U.S. Army Corps of Engineers. Available online at <<http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=Programmatic>>.
- U.S. COE. 2001 (revised in July 2002). Phase II Programmatic Biological Evaluation for Habitat Restoration/Rehabilitation Activities in the State of Washington for Species Listed or Proposed by National Marine Fisheries Service and U.S. Fish and Wildlife Service under the Endangered Species Act. U.S. Army Corps of Engineers. Available online at <<http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=Programmatic>>.

Urlick, R.J. 1983. Principles of Underwater Sound. Ch. 7 *In*: The Noise Background of the Sea. Peninsula Publishing, Los Altos, California.

USDI. 2003 (revised September 2004). Biological Opinion and Letter of Concurrence for Effects to Bald Eagles, Marbled Murrelets, Northern Spotted Owls, Bull Trout, and Designated Critical Habitat for Marbled Murrelets and Northern Spotted Owls from the Olympic National Forest Program of Activities for August 5, 2003, to December 31, 2008. U.S. Department of Interior, Fish and Wildlife Service, Lacey, Washington.

USDOT. 1995. Highway Traffic Noise Analyses and Abatement: Policy and Guidance. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, Washington, D.C.

USFS. 1996. Explosives, Chainsaw, and Rock Drill Demonstration. U.S. Forest Service, Mt. Baker/Snoqualmie National Forest, North Bend, Washington. Unpublished Report by Charles Vandemoer.

USFWS et al. 1993 (updated in 1998). Biological Assessment Preparation and Review. Proceedings of a 1993 workshop sponsored by the U.S. Fish and Wildlife Service; Resources Northwest, Inc.; and the Wildlife Society, Washington chapter.

USFWS. 1998. A Framework to Assist in Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Bull Trout Subpopulation Watershed Scale. U.S. Fish and Wildlife Service.

USFWS. 2003. Biological Opinion and Letter of Concurrence of Effects on Bald Eagles, Marbled Murrelets, Northern Spotted Owls, Bull Trout, and Designated Critical Habitat for Marbled Murrelets and Northern Spotted Owls from Olympic National Forest Program Activities for August 5, 2003 to December 31, 2008. Reference number 1-3-03-F-0833. U.S. Fish and Wildlife Service.

USFWS. 2004. Personal communication. U.S. Fish and Wildlife Service.

USFWS. 2011. Final Summary Report: Environmental Science Panel for Marbled Murrelet Underwater Noise Injury Threshold. Prepared by: Science Applications International Corporation for U.S. Navy (NAVFAC Northwest), Lacey, Washington. June 27-29, 2011.

Vagle, S. 2003. On the Impact of Underwater Pile Driving Noise on Marine Life. Canada DFO, Institute of Ocean Sciences, Ocean Science and Productivity Division.

Van Metre, P.C., B.J. Mahler, and E.T. Furlong. 2000. Urban sprawl leaves its PAH signature. *Environmental Science and Technology* 34(19):4064-4070.

Visconty, S. 2000. Ambient Noise and the Potential impact of Pile Driving on Bald Eagle. Washington State Ferries.

Wallace, Richard. 2004. Personal communication (letter to Don Nelson, director of WSDOT environmental and engineering programs, regarding the WSDOT revised 2004 *Highway Runoff Manual*). Water Quality Program manager, Washington Department of Ecology. March 14, 2004.

Wardle, C.S., T.J. Carter, G.G. Urquhart, A.D.F. Johnstone, A.M. Ziolkowski, G. Hampson, and D. Mackie. 2001. Effects of Seismic Air Guns on Marine Fish. *Continental Shelf Res.* 21:1005-1027.

WCC. *Various dates*. Washington Conservation Commission 1999–2000 Limiting Factors Analysis reports for Washington state water resource inventory areas (WRIAs). Reports available online at <<http://www.scc.wa.gov/index.php/174-Salmon-Habitat-Limiting-Factors-Reports/View-category.html>>.

WDF. 1975. A Catalog of Washington Streams and Salmon Utilization, Volumes 1 (Puget Sound) and 2 (Coastal). Washington Department of Fisheries. November 1975.

WDFW 1992b. 1992 Washington State Salmon and Steelhead Stock Inventory (SASSI) – Appendices 1, 2, and 3. Washington Department of Fish and Wildlife and Western Washington Treaty Tribes. Available online at <<http://wdfw.wa.gov/fish/sassi/sassi92.pdf>>.

WDFW. 1992a. Fishway Design Guidelines for Washington State. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/hab/ahg/fishguid.pdf>>.

WDFW. 1997. Aquatic Plants and Fish. APF-11-97. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/hab/aquaplnt/aquaplnt.pdf>>.

WDFW. 1998. 1998 Washington State Salmon and Steelhead Stock Inventory (SASSI) – Bull Trout Appendix. Washington Department of Fish and Wildlife and Western Washington Treaty Tribes. Available online at <<http://wdfw.wa.gov/fish/sassi/bulldolly.pdf>>.

WDFW. 1999a. Fish Passage Design at Road Culverts: A Design Manual for Fish Passage at Road Crossings. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/hab/engineer/cm/>>.

WDFW. 2000b. 2000 Washington State Salmon and Steelhead Stock Inventory (SASSI) – Coastal Cutthroat Trout Appendix. Washington Department of Fish and Wildlife and Western Washington Treaty Tribes. Available online at <<http://wdfw.wa.gov/fish/sassi/cutthroat.pdf>>.

WDFW. 2002. 2002 Salmonid Stock Inventory. Washington Department of Fish and Wildlife. Available online at agency interactive website: <<http://wdfw.wa.gov/fish/sasi/>>.

WDFW. 2002a. Integrated Streambank Protection Guidelines. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/hab/ahg/strmbank.htm>>.

WDFW. 2009. Gold and Fish. Rules for mineral prospecting and placer mining. 2nd Edition. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/licensing/mining/>>.

Western Highway Institute. 1971. Fundamentals of Noise and Vehicular Exterior Noise Levels. U.S. Department of Transportation, Federal Highway Administration, San Francisco, California.

WSDOT. 1991. Revised construction equipment noise ranges from Bolt et al. (1971). Washington State Department of Transportation.

WSDOT. 1994. Field Note Sound Level Measurements, Friday Harbor Ferry Terminal Wingwall Replacement. Washington State Department of Transportation, Environmental Office, Olympia, Washington.

WSDOT. 1995. Field Note Sound Level Measurements, Bainbridge Island Ferry Terminal. Washington State Department of Transportation, Environmental Office, Olympia, Washington.

WSDOT. 2001 (revised in 2003). Guidance for Preparing Biological Assessments: ESA, Indirect Effects, Transportation and Development. Washington State Department of Transportation.

WSDOT. 2002. No Effect and Not Likely to Adversely Affect Programmatic Biological Assessment Working Document for NOAA Fisheries Listed Species. Washington State Department of Transportation.

WSDOT. 2004a. Standard Specifications for Road, Bridge, and Municipal Construction. Washington State Department of Transportation.

WSDOT. 2004b. Programmatic Biological Assessment for the Washington State Department of Transportation Eastern Washington Regions – Working Document. Washington State Department of Transportation.

WSDOT. 2004d. Underwater Sound Levels Associated with Construction of the SR 240 Bridge on the Yakima River at Richland. Washington State Department of Transportation.

WSDOT. 2005 (revised). Highway Runoff Manual. Washington State Department of Transportation.

WSDOT. 2005b. Washington State Highway Log. Washington State Department of Transportation, Strategic Planning and Programming Division, Olympia Washington.

WSDOT. 2005c. Underwater Sound Levels Associated with the Friday Harbor Ferry Terminal. Washington State Department of Transportation, Office of Air, Noise, and Energy.

Wursig, B., C.R. Greene, Jr., and T.A. Jefferson. 1999. Development of an Air Bubble Curtain to Reduce Underwater Noise of Percussive Piling. *Marine Mammal Research* 49(2000):79–93.

Young, G.K., S. Stein, P. Cole, T. Kammer, F. Graziano, and F. Bank. 1996. Evaluation and Management of Highway Runoff Water Quality. Federal Highway Administration, The Office of Natural Environment, Final Report FHWA-PD-96-032, Washington, D.C. 480 p.