

20.0 References

20.0 References

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

73 FR 41318. Small Takes of Marine Mammals Incidental to Specified Activities; Port of Anchorage Marine Terminal Redevelopment Project, Anchorage, Alaska. National Marine Fisheries Service. Vol. 73, No. 139:41318-41330.

76 FR 4300. Takes of Marine Mammals Incidental to Specified Activities: Taking Marine Mammals Incidental to a Test Pile Program. National Marine Fisheries Service. Vol. 76, No. 16:4300-4322.

77 FR 61938 . Endangered and Threatened Wildlife and Plants; Listing Taylor’s Checkerspot Butterfly and Streaked Horned Lark and Designation of Critical Habitat; Proposed Rule. Vol. 77 No. 197. 61938-62058.

79 FR 19760. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Olympia Pocket Gopher, Roy Prairie Pocket Gopher, Tenino Pocket Gopher, and Yelm Pocket Gopher, With Special Rule. Vol. 79, No. 68. 19760-19796.

86 FR 34270. Endangered and Threatened Wildlife and Plants; Endangered and Threatened Wildlife and Plants; Draft Recovery Plan for Four Subspecies of Mazama Pocket Gopher Vol. 86, No. 122. 34269 -34271.

Abernethy, C.S., B.G. Amidan, and G.F. Cada. 2003. Fish Passage Through a Simulated Horizontal Bulb Turbine Pressure Regime: A Supplement to "Laboratory Studies of the Effects of Pressure and Dissolved Gas Supersaturation on Turbine-Passed Fish". Prepared for the U.S. Department of Energy. Pacific Northwest National Laboratory. Richland, Washington.

Altman, B. 1999. Status and conservation of state sensitive grassland bird species in the Willamette Valley. Unpubl. report to: Oregon Dept. of Fish and Wildlife, Corvallis, OR. 60 pp.

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. 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. 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://www.wsdot.wa.gov/research/reports/fullreports/526.1.pdf>

Barnard, R. J., J. Johnson, P. Brooks, K. M. Bates, B. Heiner, J. P. Klavas, D.C. Ponder, P.D. Smith, and P. D. Powers. 2013. Water Crossings Design Guidelines, Washington Department of Fish and Wildlife, Olympia, Washington. <http://wdfw.wa.gov/publications/01501/wdfw01501.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.

Blair, S.I., Barlow, C.H. and McIntyre, J.K., 2021. Acute cerebrovascular effects in juvenile coho salmon exposed to roadway runoff. *Canadian Journal of Fisheries and Aquatic Sciences*, 78(2), pp.103-109.

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

Buchanan, D.V. and S.V. Gregory. 1997. Development of water temperature standards to protect and restore habitat for bull trout and other cold water species in Oregon. In W.C. Mackay, M.K. Brewin, and M. Monita, eds. *Friends of the Bull Trout Conference Proceedings*. P8.

Buck, E.H. 1995. Acoustic Thermometry of Ocean Climate: Marine Mammal Issues. CRS Report for Congress (95-603 ENR. National Council for Science and the Environment (NCSE). Available at: www.dtic.mil/get-tr-doc/pdf?AD=ADA466194

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.

California Department of Fish and Wildlife. 2005. The Status of Rare, Threatened, and Endangered Plants and Animals of California 2000-2004. Accessed: May 2, 2013.
http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/new_te_rpt.html

_____. 2015. Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish.

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.

Cooper, J. 1982. Methods of reducing mortality of seabirds caused by underwater blasting. Cormorant 10:109-113.

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.

Dahl, P.H., P.G. Reinhall, and M.L. Stockham. 2010. Analysis of the Port Townsend In-water Acoustic Background. WSDOT Technical Report. December 2, 2010.

Dahl, P.H. P.G. Reinhall and D.M. Farrell. 2012. Transmission loss and range, depth scaled associated with impact pile riving. Proceedings of the 11th European Conference on Underwater Acoustics.

Dahl, P.H., J. Laughlin, and D.R. Dall'Osto. 2016. Final Report: Measurements of Pile Driving Noise from Control Piles and Noise-Reduced Piles at the Vashon Island Ferry Dock. University of Washington. February 3, 2016. 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.

Ecology. 2004. Stormwater Management Manual for Eastern Washington. Washington Department of Ecology.

_____. 2018. Stormwater Management Manual for Western 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/eisler/CHR_33_Copper.pdf

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.

Entranco Inc., and Hamer Environmental. 2005. Marbled murrelet hazing report - SR 104 Hood Canal Bridge east-half replacement and west-half retrofit project. Washington State Department of Transportation, May 2005. 22 + appendices pp.

Environmental Protection Agency (EPA). 1978. Protective Noise Levels: Condensed Version of EPA Levels Document. Office of Noise Abatement and Control. EPA 550/9-79-100.

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

_____. 2007. Aquatic Life Ambient Water Quality Criteria for Copper – 2007 Revision. EPA Publication EPA-822-R-07-001. Washington, D.C. (February 2007). 204 p.

Escude, L. 2012. Concrete Pier Demolition Underwater Sound Levels: SR 303 Manette Bridge Project. Washington State Department of Transportation, 2012.

_____. 2017. Concrete Pier Demolition Underwater Sound Levels: SR 520 East Approach Bridge Demolition. Washington State Department of Transportation.

Federal Highway Administration. 2011. Construction Noise Handbook.
http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

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

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

Fitch, J.E., and P.H. Young. 1948. California Fish and Game 34(2):53-70.

Flint, P., J.A. Reed, J.C. Franson, T.E. Hollmen, J.B. Grand, M.D. Howell, R.B. Lanctot, D.L. Lacroix, and C.P. Dau. 2003. Monitoring Beaufort Sea waterfowl and marine birds. U.S. Geological Survey, Alaska Science Center, OCS Study MMS 2003-037, Anchorage, AK. 125 pp.

Frissell, C.A., W.J. Liss, and David Bayles. 1993. An Integrated Biophysical Strategy for Ecological Restoration of Large Watersheds. Proceedings from the Symposium on Changing Roles in Water Resources Management and Policy, June 27-30, 1993 (American Water Resources Association), pp. 449–456.

Ghebregzabihier, A. 2014. SR 520 West Connection Bridge, Underwater Sound Level Report: Permanent Bridge Replacement. Washington State Department of Transportation, 2014.

_____. 2017. SR 20 / Coupeville Ferry Terminal Timber Towers Preservation Project, Underwater Noise Monitoring Report. Washington State Department of Transportation. May 2017.

Gilbertson, S. 2007. Sound-level Measurements for Over-Water Geotechnical Test Boring Activities - Memorandum. Washington State Department of Transportation, 2007.

Gisiner, R.C., E. Cudahy, G.V. Frisk, R. Gentry, R. Hofman, A.N. Popper, and J.W. Richardson. 1998. Effects of anthropogenic noise in the marine environment. Pages 1-141 In Gisiner, R.C. ed. Workshop on the effects of anthropogenic noise in the marine environment, February 10-12, 1998, Marine Mammal Science Program, Office of Naval Research, Arlington, VA. 141 pp.

Hansen, J.A., P.G. Welsh, J. Lipton, and P.G. Welsh. 2002. 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.

Hardyniec, S. and S. Skeen. 2005. Pile driving and barotraumas effects. *J. Transportation Research Board*, No. 1941, pp. 184 – 190.

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.

_____. 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. California Department of Transportation, Contract No. 43A0139, Task Order 1, Sacramento, CA, January 28, 2005. 82 pp.

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.

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. 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.

Jasco Research Ltd. 2005. Sound pressure and particle velocity measurements from marine pile driving at Eagle Harbor maintenance facility, Bainbridge Island WA.

Jensen, D.W., Steel, E.A., Fullerton, A.H. and Pess, G.R., 2009. Impact of fine sediment on egg-to-fry survival of Pacific salmon: a meta-analysis of published studies. Reviews in Fisheries Science, 17(3), pp.348-359. Jorgensen, J.K. and E.C. Gyselman. 2009. Hydroacoustic measurements of the behavioral response of arctic riverine fishes to seismic airguns. Journal of the Acoustical Society of America. 126(3): 1598.

Kastak, D.B., Southall, R., R. Schustermand, and C. Reichmuth-Kastak. 2005. Underwater temporary threshold shift in pinnipeds: Effects of noise level and duration. Journal of the Acoustical Society of America. 118:3154-3163.

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>>.

Knudsen F.R., P.S. Enger, and O. Sand. 1992. "Awareness reactions and avoidance responses to sound in juvenile Atlantic salmon, *Salmo salar L.*" *Journal of Fish Biology* 40:523-534.

Knudsen, F.R., C.B. Schreck, S.M. Knapp, P.S. Enger, and O. Sand. 1997. Infrasound produces flight and avoidance responses in Pacific juvenile salmonids. *Journal of Fish Biology* 51:824-829.

Lacroix, D.L., R.B. Lanctot, J.A. Reed, and T.L. McDonald. 2003. Effect of underwater seismic surveys on molting male Long-tailed Ducks in the Beaufort Sea, Alaska. *Canadian Journal of Zoology* 81:1862-1875.

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

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

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

_____. 2005c. Underwater Sound Levels Associated with Pile Driving on the SR 24, I-82 to Keys Road Project- Yakima River. Washington State Department of Transportation, 2005.

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

_____. 2006b. Underwater Sound Levels Associated with "Dry" Pile Driving at the Evans Creek Bridge on SR 202. Washington State Department of Transportation, 2006.

_____. 2007. Underwater Sound Levels Associated with Driving Steel and Concrete Piles Near the Mukilteo Ferry Terminal. Washington State Department of Transportation Underwater Noise Technical Report. March 30, 2007.

_____. 2009. Vashon Ferry Terminal Test Pile Project – Vibratory Pile Monitoring, Technical Memorandum. Washington State Department of Transportation. December 2009.

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

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

_____. 2010c. Underwater Sound Levels Associated with Driving Steel Piles at the Wahkiakum County Ferry Terminal. Washington State Department of Transportation. March 2010.

- _____. 2010d. Revised Friday Harbor Vibratory Pile Monitoring Technical Memorandum. Washington State Department of Transportation, 2010.
- _____. 2010e. Keystone Ferry Terminal – Vibratory Pile Monitoring Technical Memorandum. Washington State Department of Transportation, 2010.
- _____. 2010f. Manette Bridge Vibratory Pile Driving Noise Measurements – Technical Memorandum. Washington State Department of Transportation, 2010.
- _____. 2011a. Underwater Sound Levels Associated with Driving 72-inch Steel Piles at the SR 529 Ebey Slough Bridge Replacement Project. Washington State Department of Transportation.
- _____. 2011b. Edmonds Ferry Terminal – Vibratory Pile Monitoring Technical Memorandum. Washington State Department of Transportation, 2011.
- _____. 2011c. Port Townsend Dolphin Timber Pile Removal - Vibratory Pile Monitoring Technical Memorandum. Washington State Department of Transportation, 2011.
- _____. 2012a. Underwater Vibratory Sound Levels from a Steel and Plastic on Steel Pile Installation at the Anacortes Ferry Terminal. Washington State Department of Transportation, 2012.
- _____. 2012b. Seattle Ferry Terminal: Underwater Vibratory Sound Levels from a Battered Pile Installation at the Seattle Colman Dock. Washington State Department of Transportation, 2012.
- _____. 2016. Underwater Sound Level Report: Puyallup River Bridge at I-5. Washington State Department of Transportation. Available at:
<http://www.wsdot.wa.gov/environment/technical/disciplines/air-quality-noise-energy>
- _____. 2017a. Email from J. Laughlin (WSDOT) to J. Dreier (WSDOT) on October 11, 2017.
- _____. 2017b. Edmonds – Kingston: Vibratory Driving Monitoring of a Dolphin Pile Reset Operation. Washington State Department of Transportation, 2017.
- _____. 2017c. Underwater Sound Level Report: I-90 Keechelus Lake Avalanche Bridge Blasting. Washington State Department of Transportation, 2017.
- _____. 2018. Underwater Sound Level Report: I-90 Keechelus Lake Avalanche Bridge Blasting, 2017. Washington State Department of Transportation, 2018.
- _____. 2019a. Bainbridge / Fauntleroy: Vibratory Driving Monitoring of H-Piles. Prepared by Washington State Department of Transportation, 2019.
- _____. 2019b. Compendium of Background Sound Levels for Ferry Terminals in Puget Sound. Prepared by Washington State Department of Transportation, 2019.

_____. 2019c. I-90 Bridge Resurfacing Project: Underwater Noise Monitoring Report, Part 2. Prepared by Washington State Department of Transportation, 2019.

Lee, D.C., J.R. Sedell, B.E. Rieman, R.F. Thurow, J.E. Williams and others. 1997. Chapter 4: Broad-scale Assessment of Aquatic Species and Habitats. In T.M. Quigley and S.J. Arbelbide eds. An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins Volume III. U.S. Department of Agriculture, Forest Service, and U.S. Department of Interior, Bureau of Land Management, Gen Tech Rep PNW-GTR-405.

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.

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.

Magnoni, L. 2006. SR 411, Lexington Bridge Underwater Noise Monitoring Results. Washington State Department of Transportation, 2006.

Magnoni, L., Escude, Maria Laura Musso, Laughlin, J. and Walker, M. 2014. SR 20 Port Townsend Ferry Terminal, Slip 1 Transfer Span Piles Underwater Sound Levels. Washington State Department of Transportation, 2014.

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

Mueller, R. P., D. A. Neitzel, W.V. Mavros, and T. J. Carlson. 1998. Evaluation of low and high frequency sound for enhancing fish screening facilities to protect outmigrating salmonids. U.S. Dept. of Energy, Portland, Oregon. Project number 86-118.

National Marine Fisheries Service (NMFS). 1996. Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale.

_____. 1997. Fish Screening Criteria for Anadromous Salmonids. National Marine Fisheries Service, Northwest Region, Seattle, Washington.

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

_____. 2005b. Assessment of acoustic exposures on marine mammals in conjunction with USS Shoup active sonar transmissions in the eastern Strait of Juan de Fuca and Haro Strait, Washington. 5, May 2003. NMFS Office of Protected Resources, Silver Spring, MD

_____. 2011. Anadromous Salmonid Passage Facility Design. NMFS, Northwest Region, Portland, Oregon.

_____. 2012a. 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. _____. 2013. Programmatic Biological Opinion for the Washington State Department of Transportation Preservation, Improvement, and Maintenance Activities: January 2, 2013. (National Marine Fisheries Service Consultation Number 2012/00293)

_____. 2018. Manual for Optional User Spreadsheet Tool (Version 2.0) for: 2018 Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. Silver Spring, Maryland: Office of Protected Resources, National Marine Fisheries Service.

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.

Nuttall, P.M. and G.H. Bilby. 1973. The effect of china-clay wastes on stream invertebrates. *Environmental Pollution* 5:77-86.

Olsen, K. 1969. A comparison of acoustic threshold in cod with recordings of ship noise. *FAO Fish. Rep.*, 62(2): 431438.

_____. 1971. Influence of vessel noise on behaviour of herring. *In* Modern fishing gear of the world, 3: 291-294. Ed. by H. Kristjonsson. Fishing News Books Ltd., for FAO.

Orr, J. W., M. A. Brown, and D. C. Baker. 2000. Guide to rockfishes (Scorpaenidae) of the genera *Sebastes*, *Sebastolobus*, and *Adelosebastes* of the Northeast Pacific Ocean, second edition. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-117, 47 p.

Overton, C.K., J.D. McIntyre, R. Armstrong, S.L. Whitewell, and K.A. Duncan. 1995. User's guide to fish habitat: descriptions that represent natural conditions in the Salmon River Basin, Idaho. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Gen Tech. Rep. INT-GTR-322.

Overton, C.K., S.P. Wollrab, B.C. Roberts, and M.A. Radko. 1997. R1/R4 (Northern/Intermountain regions) Fish and Fish Habitat Standard Inventory Procedures Handbook. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Gen Tech. Rep. INT-GTR-346. Pacific Fishery Management Council (PFMC). 2008. Pacific Coast Groundfish Management Plan for the California, Oregon, and Washington Groundfish Fishery as Amended through Amendment 19. PFMC, Portland, OR. 155 p.

_____. 2016. Pacific Coast Salmon Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California as Amended through Amendment 19. PFMC, Portland, OR. 91 p.

_____. 2018. Coastal Species Fishery Management Plan as Amended through Amendment 16. PFMC, Portland, OR. 49 p.

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.

Pearson, S. F., and B. Altman. 2005. Rangewide Streaked Horned Lark (*Eremophila alpestris strigata*) Assessment and Preliminary Conservation Strategy. Washington Department of Fish and Wildlife, Olympia, Washington. 25 pp.

Pearson, S. F. and M. Hopey. 2005. Streaked horned lark nest success, habitat selection, and habitat enhancement experiments for Puget lowlands, coastal Washington and Columbia River islands. Natural Areas Program Report 2005-1. Washington Dept. of Natural Resources. Olympia, WA.

_____. 2004. Streaked horned lark inventory, nesting success and habitat selection in the Puget lowlands of Washington. Natural Areas Program Report 2004-1. Washington Department of Natural Resources. Olympia, WA. 36 pp.

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.

_____. 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.
- Rieman, B.E. and J.D. McIntyre. 1993. Demographic and habitat requirements for conservation of bull trout. USDA Forest Service, Intermountain Research Station, Boise, ID.
- Rieman, B.E. and D.L. Meyers. 1997. Use of redd counts to detect trends in bull trout (*Salvelinus confluentus*) populations. *Conservation Biology* 11(4): 1015-1018.
- 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.
- _____. 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.
- Ryals, B.M., R.J. Dooling, E. Westbrook, M.L. Dent, A. MacKenzie, and O.N. Larsen. 1999. Avian species differences in susceptibility to noise exposure. *Hearing Research*. 131:71-88.
- SAIC. 2011. Environmental sound panel for marbled murrelet underwater noise injury threshold. Science Applications International Corporation, Bothwell, Washington, August 31, 2011. 38 pp.
- Saunders, J. and R. Dooling. 1974. Noise-induced threshold shift in the parakeet (*Melopostittacus undulatus*). *Proceedings of the National Academy of Science USA*. 71:1962-1965.
- Scholz, N.L., Myers, M.S., McCarthy, S.G., Labenia, J.S., McIntyre, J.K., Ylitalo, G.M., Rhodes, L.D., Laetz, C.A., Stehr, C.M., French, B.L. and McMillan, B., 2011. Recurrent die-offs of adult coho salmon returning to spawn in Puget Sound lowland urban streams. *PLoS ONE*, 6(12), e28013.
- 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, 2007.
- Shepard, B.B., K.L. Pratt, and P.J. Graham. 1984. Life Histories of Westslope Cutthroat and Bull Trout in the Upper Flathead River Basin, MT. U.S. Environmental Protection Agency report. Contract No. R008224-01-5.
- 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.
- Soderberg, P. 2016a. Underwater Sound Level Report: SR 520 West Approach Bridge North (WABN). Washington State Department of Transportation, 2016.
- _____. 2016b. Underwater Sound Level Report: Vashon Test Pile Project 2016. Washington State Department of Transportation. March 2016.
- Soderberg and Laughlin. 2016a. WSF Colman Dock Test Pile Project, Underwater sound Level Report: Colman Dock Test Pile Project 2016. Washington State Department of Transportation. June 2016.
- _____. 2016b. Keechelus Lake Underwater Background Sound Measurement Results – Technical Memorandum. Washington State Department of Transportation, 2016.
- 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.
- Speich, S. M. and T. R. Wahl. 1989. Catalog of Washington Seabird Colonies. OCS Study, MMS 89-0054, Biological Report 88(6), USDI, Fish and Wildlife Service, Washington, D.C.
- Spence, B.C., G.A. Lomnický, 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.westcoast.fisheries.noaa.gov/publications/reference_documents/the_mantech_report.html
- Stemp, R. 1985. Observations on the effects of seismic exploration on seabirds. Pages 217-233 In *Canada Oil and Gas Lands Administration*.

- 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.
- Szymanski, M.D., D.E. Bain, K. Kiehl, S. Penninton, S. Wong, and K.R. Henry. 1999. Killer whale (*Orcinus orca*) hearing: Auditory brainstem response and behavioral audiograms. *Journal of the Acoustical Society of America*. 106(2):1134-1141.
- 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.
- Thorson, P. and J.A. Reyff. 2003. Marine mammal and acoustic monitoring for the eastbound structure. San Francisco – Oakland Bay Bridge East Span Seismic Safety Project. Report submitted for Incidental Harassment Authorization issued November 14, 2003, to Caltrans.
- Tian, Z., Zhao, H., Peter, K.T., Gonzalez, M., Wetzel, J., Wu, C., Hu, X., Prat, J., Mudrock, E., Hettinger, R. and Cortina, A.E., 2021. A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. *Science*, 371(6525), pp.185-189.
- 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. Army Corps of Engineers (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/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>>.
- _____. 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/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>>.
- U.S. Department of Transportation (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.
- U.S. Fish and Wildlife Service (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.

_____. 2003. 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 Olympic National Forest Program of Activities for August 5, 2003, to December 31, 2008. (USFWS Reference: 1-3-03-F-0833).

_____. 2011a. Biological Opinion for Second Explosives Handling Wharf at Naval Base Kitsap Bangor in Kitsap County, Washington. Western Washington Fish and Wildlife Office, Lacey, Washington, November 16, 2011. 137pp.

_____. 2011b. 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.

_____. 2013a. Biological Opinion for Effects to Northern Spotted Owls, Critical Habitat for Northern Spotted Owls, Marbled Murrelets, Critical Habitat for Marbled Murrelets, Bull Trout, and Critical Habitat for Bull Trout from Selected Programmatic Forest Management Activities March 25, 2013 to December 31, 2023 on the Olympic National Forest Washington. USFWS Reference: 13410-2009-F-0388. Washington Fish and Wildlife Office Lacey, Washington.

_____. 2013b. Conducting Masking Analysis for Marbled Murrelets and Pile Driving Projects. Presentation for WSDOT Biologists and Consultants. Presented by E. Teachout, November 19, 2013, Olympia, Washington.

_____. 2015. Statewide Programmatic Consultation for Washington State Department of Transportation: July 2, 2015. USFWS Reference: 01EWF00-2014-F-0286, 01EWF00-2014-FC-0287. Washington Fish and Wildlife Office, Lacey, Washington.

U.S. Forest Service (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.

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

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.

Veirs, V. and S. Veirs. 2006. Average levels and power spectra of ambient sound in the habitat of southern resident orcas. Unpublished report to NOAA/NMFS/NWFSC. April 21, 2006.

Washington Conservation Commission. *Various dates*. Washington Conservation Commission 1999–2000 Limiting Factors Analysis reports for Washington state water resource inventory areas (WRIAs). Reports previously available online at < <http://scc.wa.gov/directory/> As of January 2016, web searches by WRIA appear to be only method to obtain these reports.

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

Washington Department of Fish and Wildlife (WDFW). 1998. Aquatic Plants and Fish. APF-1-98. Washington Department of Fish and Wildlife. Available online at < <https://wdfw.wa.gov/publications/00713/> >.

_____. 1999. Aquatic Habitat Guidelines white papers. Available online at < <https://wdfw.wa.gov/conservation/habitat/planning/ahg/> >

_____. 2000. Fishway Design Guidelines for Washington State. Washington Department of Fish and Wildlife. Available online at <<http://wdfw.wa.gov/hab/ahg/fishguid.pdf>>.

_____. 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>>.

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

_____. 2002a. Integrated Streambank Protection Guidelines. Washington Department of Fish and Wildlife. Available online at < <https://wdfw.wa.gov/publications/00046/> >.

_____. 2004. 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 <<https://wdfw.wa.gov/publications/pub.php?id=00193>>.

_____. 2013. Water Crossing Design Guidelines. Washington Department of Fish and Wildlife. Available online at < <https://wdfw.wa.gov/publications/01501/> >

_____. 2018. Gold and Fish. Rules for mineral prospecting and placer mining. Washington Department of Fish and Wildlife. Available online at < <https://wdfw.wa.gov/licensing/mining/> >.

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.

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

_____. 2010. Port Townsend Test Pile Project, Underwater Noise Monitoring. Washington State Department of Transportation, 2010.

_____. 2016. Highway Runoff Manual. Washington State Department of Transportation.

_____. 2018. Standard Specifications for Road, Bridge, and Municipal Construction. Washington State Department of Transportation.

Wemple, B.C. 1994. Hydrologic Integration of Forest Roads with Stream Networks in Two Basins, Western Cascades, Oregon. M.S. Thesis, Geosciences Department, Oregon State University.

Winward, A.H. 1989. Ecological Status of Vegetation as a base for Multiple Product Management. Abstracts 42nd annual meeting, Society for Range Management, Billings MT, Denver CO: Society For Range Management: p. 277. Yelverton, J.T., D.R. Richmond, E.R. Fletcher, R. K. Jones. 1973. Safe distances from underwater explosions for mammals and birds. Report DNA 3114T. Director, Defense Nuclear Agency. Washington D.C.

Yelverton, J.T., D.R. Richmond, W. Hicks, K. Saunders, and E.R. Fletcher. 1975. The relationship between fish size and their response to underwater blast. Report DNA 3677T. Director, Defense Nuclear Agency. Washington D.C.

Yelverton, J.T., and D.R. Richmond. 1981. Underwater explosion damage risk criteria for fish, birds, and mammals. Pages 1-17 In 102nd Meeting of the Acoustical Society of America, November 30 - December 04, 1981, Department of Biodynamics, Lovelace Biomedical and Environmental Research Institute, Albuquerque, New Mexico.

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.