Chapter 6

LITERATURE CITED

This page intentionally left blank.

Literature Cited

Agee, J. K. 1993. Fire Ecology of Pacific Northwest Forests. Island Press, Washington, D.C.

Agne, M.C., P.A. Beedlow, D.C. Shaw, D.R. Woodruff, E.H. Lee, S.p. Cline, and R.L. Comeleo. 2018. Interactions of Predominant Insects and Diseases with Climate Change in Douglas-fir Forests of Western Oregon and Washington, U.S.A. Forest Ecology and Management, 409(1):317–332. doi:10.1016/j.foreco.2017.11.004.

Allen, C. D., D. D. Breshears, and N. G. McDowell. 2015. On Underestimation of Global Vulnerability to Tree Mortality and Forest Die-off from Hotter Drought in the Anthropocene. Ecosphere 6:129.

Barnett, T. P., D. W. Pierce, H. G. Hidalgo, C. Bonfils, B. D. Santer, P. Das, G. Bala, A. W. Wood, T. Nozawa, A. A. Mirin, D. R. Cayan, and M. D. Dettinger. 2008. Human-induced Changes in the Hydrology of the Western United States. Science 19:1080–1083.

Beechie, T., E. Buhle, M. Ruckelshaus, A. Fullerton, and L. Holsinger. 2006. Hydrologic Regime and the Conservation of Salmon Life History Diversity. Biological Conservation 130:560–572.doi: 10.1016/j.biocon.2006.01.019.

Beschta, R.L., R.E. Bilby, G.W. Brown, L.B. Holtby, T.D. Hofstra. 1987. Stream Temperature and Aquatic Habitat: Fisheries and Forestry Interaction, in Streamside Management: Forestry and Fishery Interactions, E. O. Salo and T. W. Cundy, eds. University of Washington, Institute of Forest Resources, Seattle, Washington. Contribution 57:191–232.

Brosofske, K. D., J. Chen, R. J. Naiman, and J. F. Franklin. 1997. Harvesting Effects on Microclimatic Gradients from Small Streams to Uplands in Western Washington. Ecological Applications 7:1188–1200.

Brown, E. R. 1985. Management of Wildlife and Fish Habitats in the Forests of Western Oregon and Washington. Publ. R6-F&WL-192-1985. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland, Oregon.

Brubaker, L. B. 1986. Responses of Tree Populations to Climate Change. Vegetatio 67:119–130.

Buchanan, J. B. 2016. Periodic Status Review for the Northern Spotted Owl in Washington. Washington Department of Fish and Wildlife, Olympia, Washington.

Carey, A. B. 2003. Biocomplexity and Restoration of Biodiversity in Temperate Coniferous Forest: Inducing Spatial Heterogeneity with Variable-Density Thinning. Forestry 76(2):127–136.

Carpenter, S. R., S. G. Fisher, and N. B. Grimm. 1992. Global Change and Freshwater Ecosystems. Annual Review of Ecology and Systematics 23:119–139.

Case, M. J., J. L. Lawler, and J. A. Tomasevic. 2015. Relative Sensitivity to Climate Change of Species in Northwestern North America. Biological Conservation 187:127–133.

Cederholm, C. J. and L. M. Reid. 1987. Impacts of Forest Management on Coho Salmon (Oncorhynchus kisutch) Populations of the Clearwater River, Washington: a Project Summary, in Streamside Management: Forestry and Fishery Interactions, E.O. Salo and T.W. Cundy, eds. University of Washington, Institute of Forest Resources, Seattle, Washington. Contribution 57:373-398. Center for the Study of the Pacific Northwest, University of Washington. 2016. Document 43: Two Loggers with Chainsaw, circa 1945 UW negative 11927, Industries and Occupations Photo Collection, Special Collections, University of Washington Libraries.

Chen. J. 1991. Edge Effect: Miroclimate Pattern and Biological Response in Old-Growth Douglas-fir Forests. Dissertation. University of Washington, Seattle, Washington.

Chen, J. T., J. F. Franklin, and T. A. Spies. 1995. Growing-season Microclimatic Gradients from Clearcut Edges into Old-growth Douglas-fir Forests. Ecological Applications 5:74–86.

Crozier, L. G., M. D. Scheuerell, and E. W. Zabel. 2011. Using Time Series Analysis to Characterize Evolutionary and Plastic Responses to Environmental Change: A Case Study of a Shift Toward Earlier Migration Date in Sockeye Salmon. The American Naturalist 178:755–773. doi: 10.1086/662669.

Daniels, J. 2004. Assessing socioeconomic resiliency in Washington counties. General Technical Report PNW-GTR-607. U. S. Forest Service, Pacific Northwest Research Station. Portland, OR. 35 p.

Davies, Brent. 2011. Forestry Balances Profit and Conservation in the Pacific Northwest, The Solutions Journal 2 (6):57–63. Available at: https://www.thesolutionsjournal.com/article/forestry-balances-profit-and-conservation-in-the-pacific-northwest/.

Davis, R. J., B. Hollen, J. Hobson, J.E. Gower, and D, Keenum. 2016. Northwest Forest Plan—the First 20 years (1994–2013): Status and Trends of Northern Spotted Owl Habitats. Gen. Tech. Rep. PNW-GTR-929. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon.

DNR: refer to Washington Department of Natural Resources.

Dugger, K. M., Wiens, J. D., Lewicki, K. E., and Simon, D. C., 2016. Effects of Experimental Removal of Barred Owls on Population Demography of Northern Spotted Owls in Washington and Oregon—2015 progress report: U.S. Geological Survey Open-File Report 2016-1041.

Elsner, M. M., L. Cuo, N. Voisin, J. S. Deems, A. F. Hamlet, J. A. Vano, K. E. B. Mickelson, S. Lee, and D. P. Lettenmaier. 2010. Implications of 21st Century Climate Change for the Hydrology of Washington, State. Climatic Change 102:225–260. doi: 10.1007/s10584-010-9855-0.

Ecology: refer to Washington Department of Ecology.

FEMAT: refer to Forest Ecosystem Management Assessment Team.

Ford, K. R.., C. A. Harrington, B. Bansal, P. J. Gould, and J. B. St Clair. 2016. Will Changes in Phenology Track Climate Change? A Study of Growth Initiation Timing in Coast Douglas-fir. Global Change Biology, in press.

Forest Ecosystem Management Assessment Team (FEMAT). 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. Available at: https://www.blm.gov/or/plans/nwfpnepa/FEMAT-1993/1993_%20FEMAT_Report.pdf. Accessed July 13, 2016.

Franklin, J.F., and C.T. Dyrness. 1973. Natural Vegetation of Oregon and Washington. USDA Forest Service General Technical Report PNW-GTR-008. Pacific Northwest Research Station, Portland, Oregon.

Franklin, J. F., F. J. Swanson, M. E. Harmon, D. A. Perry, T. A. Spies, V. H. Dale, A. McKee, W. K. Ferrell, J. E. Means, S. V. Gregory, J. D. Lattin, T. D. Schowalter, and D. Larsen. 1991. Effects of Global Climate Change on Forests in Northwestern North America. The Northwest Environmental Journal 7: 233–254.

Franklin, J. F., T. A. Spies, R. Van Pelt, A. B. Carey, D. A. Thornburgh, D. R. Berg, D. B. Lindenmayer, M. E. Harmon, W. S. Keeton, D. C. Shaw, K. Bible, and J. Chen. 2002. Disturbances and Structural Development of Natural Forest Ecosystems with Silvicultural Implications, Using Douglas-fir Forests as an Example. Forest Ecology and Management 155:399–423.

Gillett, N. P., V. K. Arora, G. M. Flato, J. F. Scinocca, and K. von Salzen. 2012. Improved Constraints on 21st-Century Warming Derived Using 160 years of Temperature Observations. Geophysical Research Letters 39:L01704 doi:10.1029/2011GL050226.

Gould P. J, C. A. Harrington, and J. B. St. Clair. 2011. Incorporating Genetic Variation into a Model of Budburst Phenology of Coast Douglas-fir (Pseudotsuga menziesii var. menziesii). Canadian Journal of Forest Research 41:139–150.

Johnson, D. H., and T. A. O'Neil. 2001. Wildlife habitat relationships in Oregon and Washington. Oregon State University Press, Corvallis, Oregon.

Halofsky, J.E., D.L. Peterson, K.A. O'Halloran, and C.H. Hoffman. 2011. Adapting to climate change at Olympic National Forest and Olympic National Park. Gen. Tech. Rep. PNW-GTR-844. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. 130 p.

Halofsky, J.S., D.R. Conklin, D.C. Donato, J.E. Halofsky, and J.B. Kim. 2018a. Climate change, wildfire, and vegetation shifts in a high-inertia forest landscape: Western Washington, USA. PloS One, 13(12), p.e0209490. doi: 10.1371/journal.pone.0209490.Halofsky, J.S., D.C. Donato, J.F. Franklin, J.E. Halofsky, D.L. Peterson, and B.J. Harvey. 2018b. The Nature of the Beast: Examining Climate Adaptation Options in Forests with Stand-Replacing Fire Regimes. Ecosphere, 9(3).

Halpern, C.B., and T.A. Spies. 1995. Plant Species Diversity in Natural and Managed Forests in the Pacific Northwest. Ecological Applications 5(4):313–934.

Hamlet, A. F., P. W. Mote, M. P. Clark, and D. P. Lettenmaier. 2005. Effects of Temperature and Precipitation Variability on Snowpack Trends in the Western United States. Journal of Climate 18:4545–4651. doi: 10.1175/JCLI3538.1.

Hamlet, A. F. and D. P. Lettenmaier. 2007. Effects of 20th Century Warming and Climate Variability on Flood Risk in the Western U.S. Water Resources Research 43:17. doi: 10.1029/2006WR005099.

Hamlet, A. F., M. M. Elsner, G. S. Mauger, S. Y. Lee, I. Tohver, and R. A. Norheim. 2013. An Overview of the Columbia Basin Climate Change Scenarios Project: Approach, Methods, and Summary of Key Results. Atmosphere-Ocean 51:392-415. doi: 10.1080/07055900.2013.819555.

Harrington, C. A. and P. J. Gould. 2015. Tradeoffs Between Chilling and Forcing in Satisfying Dormancy Requirements for Pacific Northwest tree species. Frontiers in Plant Science 6:1–12.

Henderson, J. A, D. H. Peter, R. D. Lesher, and D. C. Shaw. 1989. Forested Plant Associations of the Olympic National Forest. USDA Forest Service Technical Paper R6 ECOL 001-88, Portland, Oregon.

Hicke, J. A., J. A. Logan, J. Powell, and D. S. Ojima. 2006. Changing Temperatures Influence Suitability for Modeled Mountain Pine Beetle (*Dendroctonus ponderosae*) Outbreaks in the Western United States. Journal of Geophysical Research B. 111:G02019.

Hicks, B. J., J. D. Hall, P. A. Bisson, and J. R. Sedell. 1991. Responses of Salmonids to Habitat Changes. Influences of Forest and Rangeland Management on Salmonid Habitat: American Fisheries Society Special Publications 19. W.R. Meehan, ed. American Fisheries Society: pp. 483-518, Bethesda, Maryland.

Independent Science Advisory Board. 2007. Climate Change Impacts on Columbia River Basin Fish and Wildlife. ISAB Climate Change Report ISAB 2007-2. Portland, Oregon: Northwest Power and Conservation Council. 136 p.

Intergovernmental Panel on Climate Change. 2013. Working Group 1, Summary for Policy Makers. Available at: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf. Accessed: November 2, 2016.

IPCC: refer to Intergovernmental Panel on Climate Change.

- Kliejunas, J. T. 2011. A Risk Assessment of Climate Change and the Impact of Forest Diseases on Forest Ecosystems in the Western United States and Canada. Gen. Tech. Rep. PSW-GTR-236. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 70 p.
- Lawler, J. J., C. L. Raymond, M. E. Ryan, M. J. Case, and R. M. Rochefort. 2014. Climate Change, Wildfire, and Wildlife Habitat in the North Cascade Range, *in* C. L. Raymond, D. L. Peterson, and R. Rochefort, *eds*. Climate Change Vulnerability and Adaptation in the North Cascades Region, Washington. Gen. Tech. Rep. PNW-GTR-892. Portland, Oregon: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 279 p.
- Lenoir, J., T. Hattab, and G. Pierre. 2017. Climatic microrefugia under anthropogenic climate change: implications for species redistribution. Ecography, 40(2).
- Lesmeister, D.B., R.J. Davis, P.H. Singleton, and J.D. Wiens. 2018. Chapter 4: Northern spotted owl habitat and populations: status and threats. In: Spies, T.A., P.A. Stine, R. Gravenmier, J.W. Longs, and M.J. Reilly, tech. cords. 2018. Synthesis of Science to Inform Land Management Within the Northwest Forest Plan Area. Gen. Tech. Rep. PNW-GTR-966. United States Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, Oregon. pp. 245–299.
- Littell, J. S. and D. L. Peterson. 2005. A Method for Estimating Vulnerability of Douglas-fir Growth to Climate Change in the Northwestern U.S. The Forestry Chronicle 81:369–374.
- Littell, J. S., D. L. Peterson, and M. Tjoelker. 2008. Douglas-fir Growth in Mountain Ecosystems: Water Limits Tree Growth from Stand to Region. Ecological Monographs 78:349–368.
- Littell, J. S., E. E. Oneil, D. McKenzie, J. A. Hicke, J. A. Lutz, R. A. Norheim, and M. M. Elsner. 2010. Forest Ecosystems, Disturbance, and Climatic Change in Washington State, USA. Climatic Change 102:129–159.
- Littell, J. S., J. A. Hicke, S. L. Shafer, S. M. Capalbo, L. L. Houston, and P. Glick. 2013. Forest Ecosystems Vegetation, Disturbance, and Economics, *in* Dalton, M. M., P. W. Mote, and A. K. Snover, *eds*. 2013. Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities. Washington, D.C., Island Press.
- Littell, J. S., D. L. Peterson, K. L. Riley, Y. Liu, and C. H. Luce. 2016. A Review of the Relationships Between Drought and Forest Fire in the United States. Global Change Biology https://www.fs.fed.us/rm/pubs_journals/2016/rmrs_2016_littell_j001.pdf.
- Luce, C. H., J. T. Abatzoglou, and Z. A. Holden. 2013. The Missing Mountain Water: Slower Westerlies Decrease Orographic Enhancement in the Pacific Northwest USA. Science 342.6164:1360–1364.
- Mantua, N., I. Tohver, and A. Hamlet. 2010. Climate Change Impacts on Streamflow Extremes and Summertime Stream Temperature and Their Possible Consequences for Freshwater Salmon Habitat in Washington State. Climatic Change 102:187–223. doi: 10.1007/s10584-010-9845-2.

Mauger, G. S., J. H. Casola, H. A. Morgan, R. L. Strauch, B. Jones, B. Curry, T. M. Busch Isaksen, L. Whitely Binder, M. B. Krosby, and A. K. Snover. 2015. State of Knowledge: Climate Change in Puget Sound. Report Prepared for the Puget Sound Partnership and the National Oceanic and Atmospheric Administration. Climate Impacts Group, University of Washington, Seattle, Washington doi: 10.7915/CIG93777D.

McKenzie, D., D. W. Peterson, D. L. Peterson, and P. E. Thornton. 2003. Climatic and Biophysical Controls on Conifer Species Distributions in Mountain Forests of Washington State, USA. Journal of Biogeography 30:1093-1108. doi: 10.1046/j.1365-2699.2003.00921.x.

Meehan, W. R. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society Special publication no. 19. Bethesda, MD. Naiman 1992.

Milne B. T., V. K. Gupta, and C. Restrepo. 2002. A Scale-Invariant Coupling of Plants, Water, Energy, and Terrain. Ecoscience 9:191–199.

Moss, R. H., J. A. Edmonds, K. A. Hibbard, M. R. Manning, S. K. Rose, D. P. van Vuuren, T. R. Carter, S. Emori, M. Kainuma, T. Kram, G. A. Meehl, J. F. B. Mitchell, N. Nakicenovic, K. Riahi, S. J. Smith, R. J. Stouffer, Al M. Thomson, J. P. Weyant, and T. J. Wilbanks. 2010. The Next Generation of Scenarios for Climate Change Research and Assessment. Nature 463:747–756.

Mote, P. W., E. A. Parson, A. F. Hamlet, W. S. Keeton, D. P. Lettenmaier, N. Mantua, E. L. Miles, D. W. Peterson, D. L. Peterson, R. Slaughter, and A. K. Snover. 2003. Preparing for Climatic Change: The Water, Salmon, and Forests of the Pacific Northwest. Climatic Change 61:45–88. doi: 10.1023/A:1026302914358.

Mote, P. W., A. F. Hamlet, M. Clark, and D. P. Lettenmaier. 2005. Declining Mountain Snowpack in Western North America. Bulletin of the American Meteorological Society 86:39–49.

Mote, P. W., J. T. Abatzoglou, and K. E. Kunkel. 2013. Climate – Variability and Change in the Past and the Future, *in* Dalton, M.M., P.W. Mote, and A.K. Snover, *eds*. 2013. Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities. Washington, D.C., Island Press.

Naiman, R. J. 1992. Watershed Management: Balancing Sustainability and Environmental Change. Springer-Verlag: New York, New York.

National Marine Fisheries Service and United States Fish and Wildlife Service. 2006. Final Environmental Impact Statement for the Proposed Issuance of Multiple Species Incidental Take Permits or 4(d) Rules for the Washington State Forest Practices Habitat Conservation Plan. U.S. Department of Commerce and U.S Department of the Interior, Washington, D.C.

NMFS and USFWS: *refer to* National Marine Fisheries Service and United States Fish and Wildlife Service.

Noss, R. F. 2001. Beyond Kyoto: Forest Management in a Time of Rapid Climate Change. Conservation Biology 15:578–590.

Office of Financial Management. 2019. State of Washington 2019 Population Trends. Available at: https://www.ofm.wa.gov/sites/default/files/public/dataresearch/pop/april1/ofm_april1_poptrends.pdf. Accessed September 26, 2019.

OFM: refer to Office of Financial Management.

Oliver, C. D. and B. C. Larson. 1996. Forest Stand Dynamics, update edition. John Wiley & Sons, New York, New York. 520 p.

Parmesan, C. and G. Yohe. 2003. A Globally Coherent Fingerprint of Climate Change Impacts Across Natural Systems. Nature 421:37–42.

Parmesan, C. 2006. Ecological and Evolutionary Responses to Recent Climate Change. Annual Review of Ecology Evolutionary, and Systematics 37:637–669.

Parry, M. L., O. F. Canzianai, J. P. Palutikof, P. J. van der Linden, and C. E. Hanson, *eds.* 2007. Climate Change 2007: Impacts, Adaptation, and Vulnerability; Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom: Cambridge University Press. 976 p.

Peterson, D. W., and D. L. Peterson. 2001. Mountain Hemlock Growth Responds to Climatic Variability at Annual and Decadal Time Scales. Ecology 82:3330-3345.

Potyondy, J. P. and T. W. Geier. 2011. Watershed Condition Classification Technical Guide. FS-978: United States Department of Agriculture, Forest Service, Washington, D.C.

Raphael, M.G., S.K. Nelson, P. Swedeen, M. Ostwald, K. Flotlin, S. Desimone, S. Horton, P. Harrison, D. Prenzlow Escene, and W. Jaross. 2008. Recommendations and Supporting Analysis of Conservation Opportunities for the Marbled Murrelet Long-Term Conservation Strategy (Science Team Report). Washington Department of Natural Resources, Olympia, Washington.

Rehfeldt, G. E., N. L. Crookston, M. V. Warwell, and J. S. Evans. 2006. Empirical Analyses of Plant-Climate Relationships for the Western United States. International Journal of Plant Sciences 167:1123–1150. doi: 10.1086/507711.

Rogers, B. M., R. P. Neilson, R. Drapek, J. M. Lenihan, J. R. Wells, D. Bachelet, and B. E. Law. 2011. Impacts of Climate Change on Fire Regimes and Carbon Stocks of the U.S. Pacific Northwest. Journal of Geophysical Research 116 (G03037):1–13. doi: 10.1029/2011JG001695.

Ryan, M. G., M. E. Harmon, R. A. Birdsey, C. P. Giardina, L. S. Heath, R. A. Houghton, R. B. Jackson, D. C. McKinley, J. F. Morrison, B. C. Murray, D. E. Pataki, and K. E. Skog. 2010. A Synthesis of the Science on Forests and Carbon for U.S. Forests. The Ecological Society of America, Issues in Ecology, Number 13, Spring 2010.

Salathé Jr, E. P., A. F. Hamlet, C. F. Mass, S. Y. Lee, M. Stumbaugh, and R. Steed. 2014. Estimates of Twenty-First-Century Flood Risk in the Pacific Northwest Based on Regional Climate Model Simulations. Journal of Hydrometeorology 15:1881–1899.

Salathé, E. S., G. Mauger, C. Mass, R. Steed, and B. Dotson. 2015. Final Project Report: Regional Modeling for Windstorms and Lightning. Report Prepared for Seattle City Lights by the Climate Impacts Group, University of Washington, Seattle, Washington.

Sedell, J. R., P. A. Bisson, E. J. Swanson, and S. V. Gregory. 1988. What We Know about Large Trees That Fall into Streams and Rivers, *in* From the Forest to the Sea: A Story of Fallen Trees. C. Maser, R.F. Tarrant, J.M. Trappe, and J.E. Franklin, *eds*. General Technical Report PNW-GTR-229. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon. pp. 47–81.

Sheehan, T, D. Bachelet, and K. Ferschweiler. 2015. Projected Major Fire and Vegetation Changes in the Pacific Northwest of the Conterminous United States Under Selected CMIP5 Climate Futures. Ecological Modelling 317:16–29.

Smith, J. E., L. S. Heath, K. E. Skog, and R. A. Birdsey. 2006. Methods for Calculating Forest Ecosystem and Harvested Carbon with Standard Estimates for Forest Types of the United States, General Technical Report NE-GTR-343. United States Department of Agriculture, Forest Service, Northeastern Research Station, Newtown Square, Pennsylvania. 216 p.

Society of American Foresters. 1971. Terminology of Forest Science, Technology, Practice, and Products. English Language Version. Washington, D.C.

Sonne, E. 2006. Greenhouse Gas Emissions from Forestry Operations: A Life Cycle Assessment. Journal of Environmental Quality 35:1439–1450.

Spence, B. C., G. A. Lomnicky, R. M. Hughes, and R. P. Novitzki. 1996. An Ecosystem Approach to Salmonid Conservation. Funded jointly by the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. TR-4501-96-6057. Man Tech Environmental Research Services Corp., Corvallis, Oregon. Stephenson, N. L. 1990. Climatic Control of Vegetation Distribution: The Role of the Water Balance. American Naturalist 135:649–670.

Stephenson, N. L. 1998. Actual Evapotranspiration and Deficit: Biologically Meaningful Correlates of Vegetation Distribution Across Spatial Scales. Journal of Biogeography 25:855–870.

University of Washington. 2007. The Future of Washington Forests. Washington Department of Natural Resources, Olympia, Washington.

U.S.D.A. and U.S.D.I. 1994. Record of Decision for amendments to the Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl ("Northwest Forest Plan"). USDA Forest Service and U.S. Department of the Interior Bureau of Land Management, Portland, Oregon.

U.S. Fish and Wildlife Service. 1997a. Intra-Service Concurrence Memorandum and Biological Opinion for the Washington Department of Natural Resources' Habitat Conservation Plan. US Fish and Wildlife Service, Olympia, Washington.

U.S. Fish and Wildlife Service. 1997b. Grizzly Bear Recovery Plan. Supplement: North Cascades Ecosystem Recovery Plan Chapter. June 23, 1997.

U.S. Fish and Wildlife Service. 2011. Revised Recovery Plan for the Northern Spotted Owl (Strix occidentalis caurina). US Fish and Wildlife Service. Portland, Oregon.

U.S. Forest Service. 2015a. Queets Vegetation Management Environmental Assessment. Olympic National Forest. Jefferson County, Washington. Pacific Northwest Region. Portland, Oregon.

U.S. Forest Service 2015b. Hansen Creek Vegetation Project Environmental Assessment. Snoqualmie Ranger District Mt. Baker-Snoqualmie National Forest. North Bend, Washington.

Van Pelt, R. 2007. Identifying Mature and Old Forests in Western Washington. Washington Department of Natural Resources, Olympia, Washington.

Van Vuuren, D. P., Edmonds, J., Kainuma, M., Riahi, K., Thomson, A., Hibbard, K., Hurtt, G. C., Kram, T., Krey, V., Lamarque, J. F. and Masui, T. 2011. The Representative Concentration Pathways: An Overview. Climatic Change, 109:5–31.

Vose, J. M., J. S. Clark, C. H. Luce, and T. Patel-Weynand, *eds*. 2016. Effects of Drought on Forests and Rangelands in the United States: A Comprehensive Science Synthesis. Gen. Tech. Report WO-93b. U.S. Department of Agriculture, Forest Service, Washington Office, Washington, D.C. 302 p.

Vose, J.M., D.L. Peterson, G.M. Domke, C.J. Fettig, L.A. Joyce, R.E. Keane, C.H. Luce, J.P. Prestemon, L.E. Band, J.S. Clark, N.E. Cooley, A. D'Amato, and J.E. Halofsky, 2018: Forests. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, D.C. pp. 232–267. doi: 10.7930/NCA4.2018.CH6.

Walker, B., C. S. Holling, S. R. Carpenter, and A. Kinzig. 2004. Resilience, Adaptability, and Transformability in Social-Ecological Systems. Ecology and Society 9:5.

Wallace, J.B., S.L. Eggert, J.L Meyer, and J.R. Webster. 1997. Multiple Trophic Levels of a Forest Stream Linked to Terrestrial Litter Inputs. Science 277:102–104.

Walsh, J., D. Wuebbles, K. Hayhoe, J. Kossin, K. Kunkel, G. Stephens, P. Thorne, R. Vose, M. Wehner, J. Willis, D. Anderson, S. Doney, R. Feely, P. Hennon, V. Kharin, T. Knutson, F. Landerer, T. Lenton, J. Kennedy, and R. Somerville. 2014. *In* Ch. 2: Our Changing Climate. Climate Change Impacts in the United States: The Third National Climate Assessment. J. M. Melillo, T. C. Richmond, and G. W. Yohe *eds.* U.S. Global Change Research Program, pp. 19–67. doi:10.7930/J0KW5CXT.

Warner, M.D., C.F. Mass, E.P. Salathé. 2015. Changes in Winter Atmospheric Rivers along the North American West Coast in CMIP5 Climate Models. Journal of Hydrometeorology, 16(1):118–128. doi: 10.1175/JHM-D-14-0080.1.

Warner, M.D. and C.F. Mass. 2017. Changes in the Climatology, Structure, and Seasonality of Northeast Pacific Atmospheric Rivers in CMIP5 Climate Simulations. Journal of Hydrometeorology, 18(8). doi: 10.1175/JHM-D-16-0200.1.

Washington Department of Ecology. 2019. Water Quality Assessment and 303(d) List. https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d. Accessed April 8, 2019.

Washington Forest Practices Board. 2016. Washington Forest Practices Board Manual. Washington Department of Natural Resources, Olympia, Washington. Available at: https://www.dnr.wa.gov/about/boards-and-councils/forest-practices-board/rules-and-guidelines/forest-practices-board-manual. Accessed October 3, 2016.

Washington Department of Natural Resources. 1979. Forest Land Management Program.

Washington Department of Natural Resources. 1997. Final Habitat Conservation Plan. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 1998. Final (Merged) Environmental Impact Statement for the Habitat Conservation Plan. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2004. Final Environmental Impact Statement on Alternatives for Sustainable Forest Management of State Lands in Western Washington and for Determining the Sustainable Harvest Level. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2005a. Definition and Inventory of Old Growth Forests on DNR-Managed State Lands. Available at:

http://file.dnr.wa.gov/publications/lm ess westside oldgrowth rpt.pdf. Accessed May 24, 2016.

Washington Department of Natural Resources. 2005b. Forest Practices Habitat Conservation Plan. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2006a. Policy for Sustainable Forests. Washington State Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2006b. Final Environmental Impact Statement on the Policy for Sustainable Forests. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2006c. Implementation Procedures for the Habitat Conservation Plan Riparian Forest Restoration Strategy for Westside Planning Units Excluding the Olympic Experimental State Forest. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2007a. Addendum to a Final Environmental Impact Statement (SEPA File #02-022201). Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2007b. Natural Heritage Plan. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2010. South Puget HCP Planning Unit Forest Land Plan Final Environmental Impact Statement. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2011. Natural Heritage Plan 2011 Update. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2016a. Olympic Experimental State Forest HCP Planning Unit Forest Land Plan Final Environmental Impact Statement. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2016b. Olympic Experimental State Forest HCP Planning Unit Forest Land Plan. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2016c. Draft Environmental Impact Statement for the Marbled Murrelet Long-Term Conservation Strategy. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2016d. State Trust Land Habitat Conservation Plan 2015 Annual Report. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2018. Revised Draft Environmental Impact Statement for the Marbled Murrelet Long-Term Conservation Strategy. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2019a. Final Environmental Impact Statement for the Marbled Murrelet Long-Term Conservation Strategy. Washington Department of Natural Resources, Olympia, Washington.

Washington Department of Natural Resources. 2019b. State Trust Land Habitat Conservation Plan 2018 Annual Report. Washington Department of Natural Resources, Olympia, Washington.

Washington State Department of Fish and Wildlife. 2015. Washington State Wildlife Action Plan. Available at: https://wdfw.wa.gov/sites/default/files/publications/01742/wdfw01742.pdf. Accessed October 19, 2016.

Wilhelmi, N.P., D.C. Shaw, C.A. Harrington, J.B. St. Clair, L.M. Ganio. 2017. Climate of Seed Source Affects Susceptibility of Coastal Douglas-fir to Foliage Diseases. Ecosphere, 8(12). doi: 10.100ECS2.2011.

U.S. Forest Service and Washington State Department of Natural Resources. 2016. Forest Health Highlights in Washington – 2015. Available at: http://file.dnr.wa.gov/publications/rp_fh_2015_forest_health_highlights.pdf. Accessed on August 12,

U.S. Forest Service and Washington State Department of Natural Resources. 2019. Forest Health

http://www.dnr.wa.gov/publications/rp_fh_2018_forest_health_highlights.pdf. Accessed on April 8, 2019.

Ying, C. C. and A. D. Yanchuk. 2006. The Development of British Columbia's Tree Seed Transfer Guidelines: Purpose, Concept, Methodology, and Implementation. Forest Ecology and Management, 227(1):1–13.

Highlights in Washington – 2018. Available at:

2016.