APPENDIX

Bibliography: Key References on Climate Change

The basis for our understanding of observed and projected climate change is scientific findings published in the peer-reviewed literature. Scientists periodically convene to assess and synthesize the peer-reviewed science. These assessments serve to integrate scientific information from various sources, to emphasize the key findings, to draw broader conclusions about the state of the science and to identify significant gaps in our understanding of the climate change science and impacts. The following lists the primary syntheses useful for understanding climate change impacts. Since the peer-reviewed journal articles are the primary source for these documents, we have also included annotations for several noteworthy papers.

Synthesis Reports: Global

1. IPCC, 2013: Intergovernmental Panel on Climate Change (IPCC), *IPCC Fifth Assessment Report, Working Group I Report*

The IPCC is the leading international, scientific organization providing assessments on climate change and its projected impacts on resources and societies worldwide. Teams composed of thousands of scientists from around the world collaborate to develop periodic assessments of the current state of knowledge in climate change and its potential environmental and socioeconomic impacts. The Working Group I report ("The Physical Science Basis") consists of a synthesis of the science on global climate change. The fifth assessment report (AR5) was released in September of 2013.

Link to report	http://www.ipcc.ch/report/ar5/wg1/#.UqI6miTHRow
Publishing body	IPCC (Cambridge Press)
Literature included	Contributions are supported by references to peer-reviewed and internationally available literature. Sources other than scientific journals include reports from governments, industry, research institutions, international organizations and conference proceedings. Each IPCC Working Group sets cut-off dates by which time the literature must be accepted for publication by scientific journals (~2-3 months prior to final draft completion), thereby assuring that the literature included is up-to-date.
Review process	IPCC review process includes wide participation, with hundreds of Expert Reviewers and governments invited at different stages to critique the accuracy and completeness of the scientific assessment. The review process consists of 3 stages: 1. Authors prepare a first order draft of the report based on scientific, technical and socioeconomic literature and other relevant publications. Experts from a wide

	range of views, expertise and geographical representation review the first order draft. 2. Authors prepare a second order draft based on the review comments of the first order draft. The Summary for Policymakers (SPM) is drafted at this time. Both drafts are subject to simultaneous review by experts and governments. 3. Author teams prepare the final drafts of the full report and the SPM accounting for the reviewers' comments. The final drafts are submitted to governments to for a last round of comments on the SPM. The process concludes with a plenary session where the governments meet to approve the SPM line-by-line and to accept the final report. For additional details, see "IPCC Factsheet: How does the IPCC review process work?: http://www.ipcc.ch/news_and_events/docs/factsheets/FS_review_process.pdf
Geographical domain	Global, regional (continental)
Subject matter	Climate science.
Citation	Not yet available. (Official publication date in January of 2014.

2. IPCC, 2012: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*

The purpose of this synthesis report is to integrate expertise in climate science, disaster risk management, and adaptation to inform decisions on reducing and managing the risks of extreme events and disasters associated with climate change.

Link to report	http://ipcc-wg2.gov/SREX/
Publishing body	IPCC (Cambridge Press)
Literature included	Contributions are supported by references to peer-reviewed and internationally available literature. Unpublished material needs citation and a copy must be provided.
Review process	Authors and review editors for special report are nominated by governments and selected by the WGI and WGII bureaus. The report and summary for policymakers (SPM) undergo an expert review and an additional expert and government review. http://ipcc-wg2.gov/SREX/ipcc-process/
Geographical domain	Global, national, regional

Subject matter	Climate science, climate impacts, adaptation and vulnerability, mitigation (very broad for state-level adaptation efforts).
Citation	Field, C. B., Barros, V., Stocker, T. F., & Dahe, Q. (Eds.). (2012). *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Special Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press.

3. IPCC, 2007: *IPCC Fourth Assessment Report, Working Group I Report*

The IPCC is the leading international, scientific organization providing assessments on climate change and its projected impacts on resources and societies worldwide. The Working Group I report ("The Physical Science Basis") consists of a synthesis of the science on change in the global climate system. The fourth assessment report (AR4) was released in 2007.

Link to report	http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html
Publishing body	IPCC (Cambridge Press)
Literature included	Contributions are supported by references to peer-reviewed and internationally available literature. Unpublished material needs citation and a copy must be provided.
Review process	IPCC authors are directed to "seek the participation of reviewers encompassing the range of scientific, technical and socio-economic views, expertise, and geographical representation". The review process consists of 2 stages: 1. Review by experts from a range of scientific, technical and socio-economic views, expertise and geographical backgrounds, and 2. Review by governments and experts chosen to include "as wide a group of experts as possible". For additional details, see "IPCC principles, Appendix A: http://www.ipcc.ch/organization/organization_procedures.shtml
Geographical domain	Global, regional (continental)
Subject matter	Synthesis of the current state of climate science.
Citation	Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis,

K.B. Averyt, M. Tignor and H.L. Miller (eds.). (2007). *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

Synthesis Reports: United States

4. Kunkel, K.E. et al. 2013*: Regional Climate Trends and Scenarios for the U.S. National Assessment. Part 9. Climate of the Contiguous U.S.*

This report is one in a series of nine, eight of which cover a region of the U.S. and this one covering the contiguous U.S. This report provides a synthesis of the most recent climate science for the CONUS, based on previously published papers, datasets and model output. The reports include two components: historical climate based on core climate data and future climate conditions projected by two greenhouse gas emissions scenarios. Collectively, these reports provide the technical input for the Third National Climate Assessment.

Link to report	http://scenarios.globalchange.gov/regions
Publishing body	NOAA
Literature included	Previously published literature and datasets on historical and plausible future climate scenarios specific to the Northwest region
Review process	National Climate Assessment working group including university-based and Federal research scientists
Geographical domain	Contiguous United States
Subject matter	Documents, graphics, references to data sets, and other resources depicting a range of plausible future conditions to inform decisions and assessments of risk, vulnerability and opportunities for adaptation on a regional scale.
Citation	Kunkel, K.E, L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Wuebbles, K.T. Redmond, and J.G. Dobson, 2013: Part 9. Climate of the Contiguous U.S., NOAA Technical Report NESDIS 142-9, 85 pp.

5. USGCRP 2014: US Global Change Research Program (USGCRP), *Third National Climate Assessment (NCA)*

The NCA evaluates and summarizes current climate science from the US Global Change Research Program and other sources. The report is intended to inform national priorities for future climate science research and adaptation to climate impacts. The assessment is undergoing final federal agency review (as of December 2013) and is scheduled for release in spring 2014.

Link to report	Public comment draft available at: http://ncadac.globalchange.gov/
Publishing body	National Climate Assessment Development Advisory Committee
Literature included	Synthesis reports (e.g., IPCC), peer-reviewed literature, technical inputs
Review process	Input from stakeholders that was compiled into a separate Technical Input Report (TIR) for each chapter. The entire 3rd NCA draft was released for an expert review and public comment period from January to April 2013.
Geographical domain	National and regional
Subject matter	Climate science, climate impacts, vulnerability
Citation	TBD

6. NRC 2011: National Research Council (NRC), *America's Climate Choices*

America's Climate Choices is a five report series developed by the National Research Council, as requested by Congress. Developed between 2009 and 2011, the report discusses climate change adaptation and mitigation policy as well as the relevant science and technology. The report focusing on the science of climate impacts, *Advancing the Science of Climate Change*, includes impacts by sector such as freshwater resources, agriculture, public health and transportation. The report also covers adaptation options and climate change drivers in each sector.

Link to report	http://nas-sites.org/americasclimatechoices/sample-page/panel-reports/
Publishing body	National Research Council of the National Academy of Sciences
Literature included	Peer-reviewed science and other assessments such as IPCC AR4, USGCRP's *Global Climate Change Impacts in the United States* and previous NRC reports
Review process	A different authoring panel is responsible for each report in

	the series, with outside input received from public presentations and workshops and comments submitted on the website.
Geographical domain	U.S.
Subject matter	Climate science, adaptation and mitigation policy, technology
Citation	National Research Council (2011). *America's Climate Choices*. Washington, DC: The National Academies Press.

Synthesis Reports: U.S. West Coast

7. NRC, 2012: *Sea level rise for the coasts of California, Oregon and Washington: Past, Present and Future*

Several federal and state agencies collaborated to produce this assessment of sea level rise along the West Coast of the U.S. The report, produced by the National Research Council, reviews and synthesizes the current, published research on global and regional sea levels and applies established process-based approaches to project global sea level rise through the 21st century.

Link to report	http://www.nap.edu/catalog.php?record_id=13389
Publishing body	National Academy of Sciences
Literature included	Committee reviews and synthesizes current, published research.
Review process	The NRC appointed a Report Review Committee to select experts from a variety of backgrounds to independently review the report. The review process ensures that the report meets institutional standards of objectivity, evidence and responsiveness to the study charge. Reviewers are listed in the Acknowledgements of the report.
Geographical domain	West Coast of U.S. (California, Oregon and Washington)
Subject matter	Sea level rise, coastal impacts, vulnerability – specific to coastal systems along the U.S. West Coast.
Citation	National Research Council. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. Washington, DC: The National Academies Press, 2012.

Synthesis Reports: Pacific Northwest

8. Kunkel, K.E. et al. 2013: *Regional Climate Trends and Scenarios for the U.S. National Assessment. Part 6. Climate of the Northwest U.S.*

This report is one in a series of nine, eight of which cover a region of the U.S. and one cover the contiguous U.S. Each report provides a synthesis of the most recent climate science for the given region, based on previously published papers, datasets and model output. The reports include two region-specific components: historical climate based on core climate data and future climate conditions projected by two greenhouse gas emissions scenarios. These reports provide the technical input for the Third National Climate Assessment.

Link to report	http://scenarios.globalchange.gov/regions/northwest
Publishing body	NOAA
Literature included	Previously published literature and datasets on historical and plausible future climate scenarios specific to the Northwest
Review process	National Climate Assessment working group including university-based and Federal research scientists
Geographical domain	Regional (Northwest U.S.)
Subject matter	Documents, graphics, references to data sets, and other resources depicting a range of plausible future conditions to inform decisions and assessments of risk, vulnerability and opportunities for adaptation on a regional scale.
Citation	Kunkel, K.E, L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Wuebbles, K.T. Redmond, and J.G. Dobson, 2013: Part 6. Climate of the Northwest U.S., NOAA Technical Report NESDIS 142-6, 76 pp.

9. Dalton et al. 2013: *Climate Change in the Northwest: Implications for our Landscapes, Waters, and Communities*

As companion report for the Northwest chapter of the Third National Climate Assessment, the objective of this synthesis is to assess the state of knowledge about key climate impacts and consequences to multiple natural resource sectors and communities in the Northwest U.S. This report is the culmination of an iterative process involving workshops with regional stakeholders to identify climate risks and consequences in their respective sectors. This report is designed to serve as an updated resource for scientists, decision makers, stakeholders and adaption planning in the PNW.

Link to report	http://islandpress.org/ip/books/book/distributed/C/bo9111930.html

Publishing body	Island Press
Literature included	Previously published literature representing best available science on regional climate change, impacts, vulnerability assessments, mitigation and adaptation.
Review process	27 expert reviewers drawn from federal, state, tribal, private, nonprofit, universities and other regional agencies.
Geographical domain	Regional (Northwest U.S.)
Subject matter	A review of the historic, current and projected climate conditions for the Northwest region. Interactions among important sectors, and cross-sectoral topics: climate change mitigation, adaptation, education and outreach.
Citation	Dalton, M.M., P.W. Mote, and A.K. Snover. (Editors). 2013. Climate Change in the Northwest: Implications for our Landscapes, Waters, and Communities. Washington, D.C.: Island Press. 271 pp.

Synthesis Reports: Washington State

10. CIG, 2009: Climate Impacts Group (CIG), *Washington State Climate Change Impacts Assessment (WACCIA)*

The WACCIA was produced in 2009 by the Climate Impacts Group in collaboration with researchers and Washington State University and the Pacific Northwest National Laboratory, as mandated by Washington State House Bill 1303. The WACCIA reported on new research assessing climate impacts on Washington State's resources. The WACCIA involved developing updated climate change scenarios for Washington State and using these scenarios to assess the impacts of climate change on the following sectors: hydrology, water management and irrigation, energy, agriculture, salmon, forests, coasts, stormwater infrastructure, human health and adaptation.

Link to report	http://cses.washington.edu/cig/res/ia/waccia.shtml
Publishing body	Climate Impacts Group, University of Washington
Literature included	Synthesis reports (e.g., IPCC), peer-reviewed literature
Review process	Anonymous peer review: all chapters were published as a special edition in the journal *Climatic Change*.
Geographical domain	Focused on WA state, but also includes results for the full Columbia River basin.
Subject matter	Climate impacts, by sector.
Citation	Climate Impacts Group (2009). *The Washington Climate*

Change Impacts Assessment, M. McGuire Elsner, J. Littell, and L Whitely Binder (eds). Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington.

11. Feely et al. 2012: *Scientific Summary of Ocean Acidification in WA State Marine Waters*

This scientific summary was a collaborative effort among natural scientists from Washington and Oregon States. The purpose of this NOAA special report is to inform members of the WA Shellfish Initiative Blue Ribbon Panel on ocean acidification and to summarize and synthesize the state of knowledge with regards to the conditions and probable biological and ecological responses to changes in ocean chemistry in the estuaries and coastal waters of WA.

Link to report	https://fortress.wa.gov/ecy/publications/summarypages/1201016.html
Publishing body	NOAA OAR Special Report
Literature included	Synthesis reports (e.g., IPCC), peer-reviewed literature.
Review process	Federal scientists from NOAA, and where relevant subject matter experts at the WA State Department of Ecology
Geographical domain	Focused on WA state, but provides global overview of the mechanisms driving ocean acidification
Subject matter	Ocean acidification and related regional dynamics contributing to changes in ocean chemistry, impacts to regional marine ecosystems and to shellfish industries.
Citation	Feely, R.A., Klinger, T., Newton, J.A., Chadsey, M. [Eds.] 2012. Scientific Summary of Ocean Acidification in Washington State Marine Waters. NOAA OAR Special Report. Seattle, Washington.

Key Peer-reviewed Journal Articles and White Papers

The following list includes noteworthy references to papers that provide the foundation for the syntheses listed above.

Greenhouse gases

This study describes recent trends in global greenhouse gas emissions, including the substantial acceleration in emissions since the year 2000:

- Peters, G.P., G. Marland, C. Quéré, T. Boden, J.G. Canadell, and M.R. Raupach. 2012. Rapid growth in CO2 emissions after the 2008–2009 global financial crisis. *Nature Climate Change* 2, 2–4. 2012, doi:10.1038/nclimate1332

Temperature trends

This study investigates the impact of measurement issues (changes in location of measurements, the instruments used, or in the overall number of observing stations in operation) on estimates of long-term trends in temperature. They find that correcting for these issues generally has a small effect on estimated trends:

- Menne, M. J., Williams, C. N., & Palecki, M. A. (2010). On the reliability of the US surface temperature record. *Journal of Geophysical Research: Atmospheres (1984–2012)*, 115(D11).

Detection and attribution

These four studies evaluate role of human activity in driving recent observed changes in temperature, precipitation, snowpack, and streamflow in the Western U.S.:

- Bonfils, C., and Coauthors. 2008. Detection and attribution of temperature changes in the mountainous western United States. *Journal of Climate*, 21, 6404–6424. doi:10.1175/2008JCLI2397.1

- Barnett, T., D.W. Pierce, H. Hidalgo, C. Bonfils, B.D. Santer, T. Das, G. Bala, A.W. Wood, T. Nazawa, A, Mirin, D. Cayan, and M. Dettinger. 2008. Human-induced changes in the hydrology of the western United States. *Science Express Reports* 10.1126/science.1152538.

- Pierce, D.W., T. Barnett, H. Hidalgo, T. Das, C. Bonfils, B.D. Santer, G. Bala, M. Dettinger, D. Cayan, A, Mirin, A.W. Wood, and T. Nazawa. 2008. Attribution of declining western U.S. snowpack to human effects. *Journal of Climate* 21(23): 6425–6444, doi:10.1175/2008JCLI2405.1.

- Hidalgo H.G., Das T., Dettinger M.D., Cayan D.R., Pierce D.W., Barnett T.P., Bala G., Mirin A., Wood A.W., Bonfils C., Santer B.D. and T. Nozawa, 2009, Detection

and Attribution of Streamflow Timing Change in the Western United States, *J. Climate, 22(13): 3838-3855.*

Streamflow

This is a landmark paper summarizing observed changes in streamflow timing across Western North America for the period 1948-2002. They find that the majority of streamflow sites show a shift to earlier peak flows, with implications for summer water availability.

- Stewart, I., D. R. Cayan and M. D. Dettinger. 2005. Changes toward earlier streamflow timing across western North America. *Journal of Climate*, 18: 1136-1155.

Sea level rise

This report consists of a synthesis of findings concerning the global and local factors contributing to sea level rise along the coasts of Washington state. The report provides summaries of sea level rise projections for 3 areas in WA state: the Puget Sound basin, Central/Southern WA coast, and the NW Olympic peninsula.

- Mote, P., Petersen, A., Reeder, S., Shipman, H., Whitely Binder, L.C. (2008). *Sea level rise in the coastal waters of Washington State.* Report prepared by the Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington, Seattle, Washington and the Washington Department of Ecology, Lacey, Washington.

This study demonstrates the potential impacts to coastal ecosystems as a result of projected sea level rise in the Puget Sound and along the Washington and northern Oregon coasts.

- Glick, P., Clough, J., and Nunley, B. 2007. Sea-level Rise and Coastal Habitats in the Pacific Northwest: An Analysis for Puget Sound, Southwestern Washington, and Northwestern Oregon (Reston, VA: National Wildlife Federation).

Ocean temperatures

This study evaluates observed changes in ocean temperatures in the Strait of Georgia (North of Puget Sound) and West of Vancouver Island, and finds a statistically significant warming trend for the top 1300 ft of ocean depth.

- Masson, D., & Cummins, P. F. (2007). Temperature trends and interannual variability in the Strait of Georgia, British Columbia. *Continental shelf research*, 27(5), 634-649.

Forested and non-forested ecosystems

This study assessed the likely impacts of climate change on wildfire, tree growth, tree species distributions, and mountain pine beetle outbreaks in the Pacific Northwest.

- 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(1-2): 129-158, doi: 10.1007/s10584-010-9858-x.

This paper describes an analysis of projected climate change impacts on diverse ecosystems found in the Pacific Northwest. It provides an indication of the sensitivity of the various vegetation types to increased fire occurrence and the potential response of carbon dynamics.

- 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.

Agriculture

This paper summarizes the current research on rangeland vulnearbilities and also provides a synopsis of anticipated impacts in the Pacific Northwest.

- Polley, H. W. et al., 2013. Climate Change and North American Rangelands: Trends, Projections, and Implications. *Rangeland Ecology and Management*, *66*(5), 493-511.

This paper argues for a more comprehensive look at food system vulnerability (i.e., "food security") — including not just agricultural production but also delivery, processing, and storage food. The paper also includes a review of existing research on impacts and adaptation.

- Miller, M. et al., 2013. Critical research needs for successful food systems adaptation to climate change. *Journal of Agriculture, Food Systems, and Community Development, 3*(4)*,* 161-175. doi: 10.5304/jafscd.2013.034.016

Water Resources

Water management in the context of climate change has been the focus of much research over the past decade. This is a classic study that highlights some of the conflicting objectives that water managers will face in attempting to mitigate the effects of climate change.

- Payne, J. T. et al., 2004. Mitigating the effects of climate change on the water resources of the Columbia River basin. Climatic Change, 62(1-3), 233-256. doi: 10.1023/B:CLIM.0000013694.18154.d6

This paper reviews the development, methods, and results of the Columbia Basin Climate Change Scenarios Project, which includes a comprehensive set of high resolution climate and hydrologic projections for the entire state of Washington, as well as summaries for 112 specific streamflow locations across the state.

- Hamlet, A.F. et al., 2013. An overview of the Columbia Basin Climate Change Scenarios Project: Approach, methods, and summary of key results. Atmosphere-Ocean 51(4): 392-415. doi: 10.1080/07055900.2013.819555

Hydrologic Extremes

Much recent work has been devoted to assessing the impacts of climate change on precipitation and streamflow extremes. The following two papers present different approaches to assessing changes in extremes, both of which include results for Washington State.

- Tohver, I. et al., 2013. Impacts of 21st century climate change on hydrologic extremes in the Pacific Northwest region of North America. Journal of the American Water Resources Association, in press.

- Salathé, E.P. Jr et al., 2013. Estimates of 21st Century Flood Risk in the Pacific Northwest Based on Regional Climate Model Simulations. Submitted