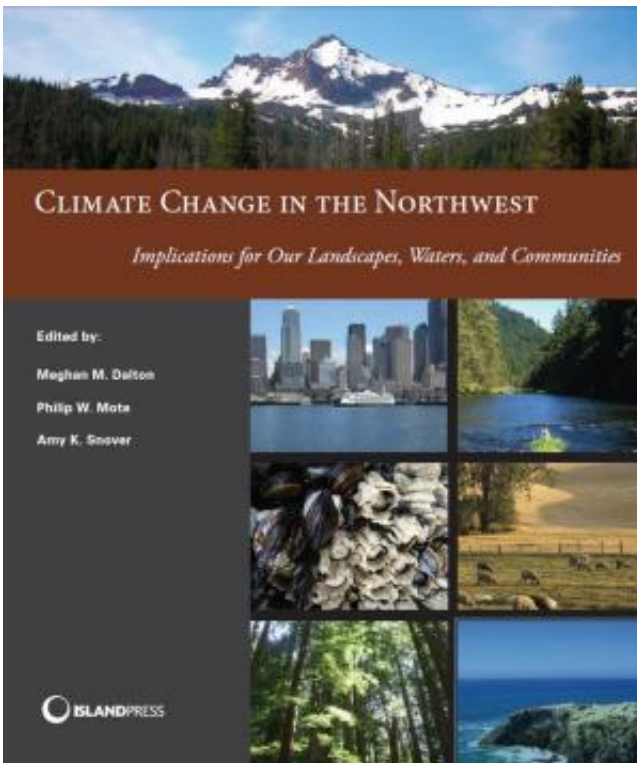


More wildfires, earlier snowmelt, coastal threats top Northwest climate risks

November 5 2013, by Hannah Hickey



The Pacific Northwest will face increased risks from declining forest health, earlier snowmelt and an array of coastal issues, according to a new comprehensive report on what climate change means for Washington, Oregon and Idaho.

Amy Snover, director of the University of Washington's Climate Impacts Group, was one of three editors of the 270-page [report](#) published this week by Island Press.

"As we looked across both economic and ecological dimensions, the three that stood out were less snow, more wildfires and challenges to the coastal environment and infrastructure," she said.

The [report](#), coordinated by Oregon State University's Oregon Climate Change Research Institute, is the first regional climate assessment in more than a decade. This document and the 1999 report were created as part of the U.S. National Climate Assessment. Washington and Oregon produced state-level reports in 2009 and 2010.

Editor Philip Mote at OSU said this report updates the science and addresses some new dimensions – including how climate change will affect human health and Northwest tribes that rely on natural resources.

"Studies are showing that snowmelt is occurring earlier and earlier and that is leading to a decline in stream flows in summer," Mote said.

"Northwest forests are facing a huge increase in wildfires, disease and other disturbances that are both direct and indirect results of climate change. And coastal issues are mounting and varied, from sea-level rise and inundation to ocean acidification."

In the Northwest, roughly 2,800 miles of coastal roads are in the 100-year flood plain, and some highways may face inundation with just 2 feet of sea-level rise. Seas are expected to rise as much as 56 inches, or nearly 5 feet, by the year 2100, the report said.

Earlier snowmelt is a concern for Northwest dams and reservoirs. The Columbia River basin has a storage capacity smaller than its annual flow volume and is "ill-equipped to handle the projected shift to earlier

snowmelt... and will likely be forced to pass much of these earlier flows out of the system," the report said.

Earlier peak stream flow may significantly reduce summer hydroelectric power production, the report concluded, and slightly increase winter power production.

The report includes information from improved climate models that suggest the Northwest will warm by 3 to 14 degrees Fahrenheit by the end of this century. For comparison, the region warmed 1.3 degrees between 1895 and 2011.

"The lower (end of the) range will only be possible if (global) greenhouse gas emissions are significantly reduced," Mote said.

Precipitation is harder to project, the report noted, with forecasts ranging from 10 percent less rain to 18 percent more rain by 2100. Most models suggest that more precipitation will fall as rain, and earlier snowmelt will change river flow patterns.

Pinpointing the impacts of temperature and precipitation shifts on agriculture will be difficult, said co-author Sanford Eigenbrode at the University of Idaho.

"As carbon dioxide levels rise, yields will increase for some plants, and more rainfall in winter could mean wetter soils in the spring, benefitting some crops," Eigenbrode said. "Those same conditions could adversely affect other crops. It is very difficult to say how changing climate will affect agriculture overall in the Northwest – but we can say that the availability of summer water will be a concern."

Pests, disease and invasive species may also affect agriculture and forestry practices.

The Northwest has not yet been vulnerable to many climate-related health risks, the report noted, but future impacts of [climate change](#) are more likely to be negative than positive. Health concerns include increased morbidity and mortality from heat-related illness, air pollution and allergenic disease, and the emergence of infectious diseases.

Regional agencies can use the report's findings to decide where to build new construction, what crops to grow where, and how to manage water resources, Snover said.

"Whether the ultimate consequences of the climate impacts outlined in this report are severe or mild depends in part on how well we prepare our communities, economies and natural systems for the changes we know are coming," Snover said.

The report was funded by the National Oceanic and Atmospheric Administration, the Oregon Legislature through its support of the Oregon Climate Change Research Institute, and in-kind contributions from the authors' institutions.

More information: www.globalchange.gov/what-we-do/assessment

Provided by University of Washington

Citation: More wildfires, earlier snowmelt, coastal threats top Northwest climate risks (2013, November 5) retrieved 3 July 2024 from <https://phys.org/news/2013-11-wildfires-earlier-snowmelt-coastal-threats.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.