DEPARTMENT OF ECOLOGY
State of Washington

Water Resources

Preparing Washington for a Changing Climate

Washington's climate is changing in ways that will affect where, when, and how much water is available for all uses.

Declining snowpack and loss of natural water storage

Much of Washington's water supply is stored in snow pack and glaciers that melt into rivers. In Washington's Cascades average snowpack declined about 25 percent between 1950 and 2006. Spring snowpack across Washington State is projected to decline 28 percent by the 2020s, 40 percent by the 2040s, and 59 percent by the 2080s compared to the 1916-2006 historical average.

Higher drought risk and more competition for scarce water resources

Increasing temperature, declining snowpack, and earlier snowmelt increase the risk of summer water shortages and increase demand for water, resulting in:

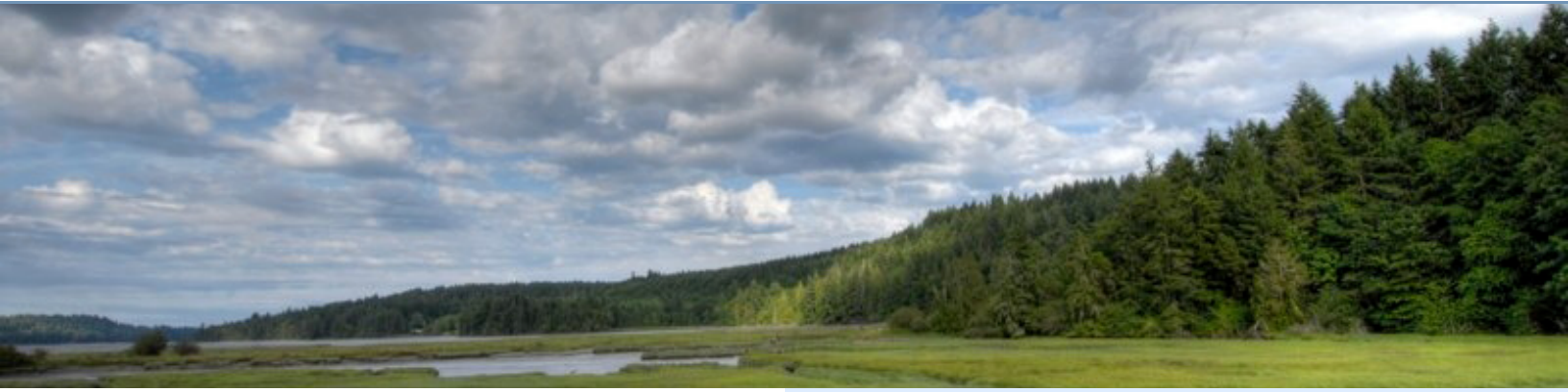
- Declines in irrigated agriculture production.
- Reduced hydropower output.
- Loss of freshwater salmon habitat.
- Reduced drinking water supplies and higher water demand.
- Adverse effects on recreation and navigation.
- Declines in forest productivity and higher susceptibility to wildfires and insects.

More severe winter flooding

Although the risks vary by location, Washington is expected to experience more severe winter flooding. This increases costs of maintaining and repairing water infrastructure and poses challenges for managing reservoirs for flood control, fish, and hydropower production.

Declining water quality

More runoff during the wet winter months increases the flow of pollution into waterways and strains the capacity of urban drainage systems. Lower summer streamflows and higher stream temperatures degrade water quality in rivers and streams.



Managing Water Resources in a Changing Climate

Washington State's Climate Response Strategy lays out a roadmap for state and local policymakers and planners to manage water resources and prepare for the unprecedented threats climate change poses to our economy and way of life. It includes strategies to:

- Use integrated water resource management approaches in highly vulnerable basins.
- Involve decision makers and communities in finding balanced sustainable solutions.
- Improve water supply and water quality in vulnerable basins.
- Apply water conservation and efficiency programs to reduce the amount of water needed for irrigation, municipal, and industrial users.
- Build the capacity of state and local governments, tribes, watershed groups, water managers, and communities to identify risks and reduce vulnerability to climate impacts.

Taking action now will increase our resilience, and help keep our communities, natural resources, and economy healthy under future climate conditions.

Integrated Water Resources Management in the Yakima River Basin

Water shortages are a chronic problem in the Yakima River Basin. Demand for water to irrigate crops, provide drinking water and ensure salmon and steelhead survival is greater than the available supply. By the 2040s water shortages in spring and summer are projected to reduce crop yields by $46 million per year. To help develop a consensus-based solution for the basin the U.S. Bureau of Reclamation and the Department of Ecology brought together once conflicting water interests. A working group adopted an integrated plan that addresses current water resource and habitat problems and provides a framework to address future changes and climate conditions. For more information on the plan, see: http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/plan/integratedplan.pdf

More information

See Ecology's Climate Change website:

www.ecy.wa.gov/climatechange/ipa_responsestrategy.htm

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See page 200 of the Response Strategy report.

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