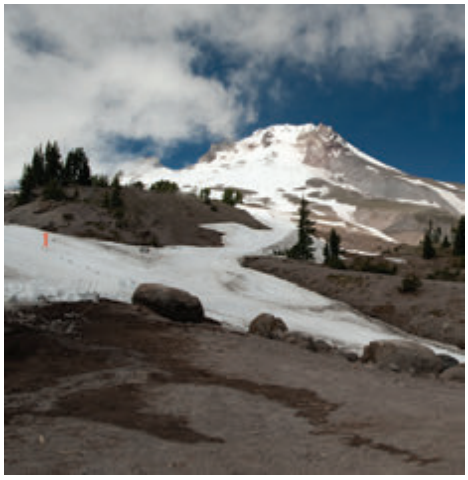
WATER VULNERABILITY



The U.S. Forest Service (an agency of the Dept. of Agriculture), along with other partners, **has performed a Vulnerability Assessment of the Columbia River Gorge, Mt. Hood & Willamette National Forests.** This report compares current conditions and the expected effects of climate change on everything from wildlife to recreation, but most alarmingly, the diminished quality of drinking water. **These findings have broad implications to its municipal management and are critically important to the public. As of yet, this document remains without any plans to publish its results.**

... AFFECTS THE QUALITY OF OUR DRINKING WATER

- Human populations rely on streamflow from national forests for drinking water, irrigation, and recreation and **water systems are already periodically stressed by degraded water quality, floods and drought.**
- The broad-scale climate change will affect water quality and timing of delivery putting the benefits of streamflow originations from national forest lands at risk. Delivery of safe drinking water and **managing regulator requirements is costlier with degraded water quality.**
- Climate change is expected to intensify stressors placed on water systems and put human benefits at risk. Increased investments in infrastructure as well as building redundancy into water systems will be required to meet water quality standards.
- Climatic water deficit (CWD) which is an indicator of **drought severity is projected to increase by at least 83% to as much as 216%.**
- Instituting management practices that reduce existing stressors on water quality, and implementing restoration projects that improve hydrologic condition and promote slower movement of water through the systems will help to reduce the negative effects of climate change.

... AFFECTS THE FOREST'S ABILITY TO SEQUESTER CARBON

- Expected effects of climate change are **increased fire, increased drought, forest productivity gains and losses.**
- Wildfire and insect outbreaks will cause short-term losses to carbon sequestration. Increased disturbance size and frequency will cause greater carbon losses. **Mortality and growth declines associated with drought events may also increase, impacting the carbon storage potential of the landscape.**

... AFFECTS THE ALREADY STRAINED WILDLIFE

- With increasing temperatures, drought stress, and insect outbreaks, the forest will lose large trees and snags, loss of snowpack, **increasing area burned, warming the stream temperature which alters hydrologic patterns.**
- As climate change shifts the spatial distribution of suitable conditions, species will have to follow these shifts.
- **Many species are intrinsically limited in movement ability, and will face additional barriers from roads, silvicultural operations, and other areas of heavy human activity.** The amount and distribution of many habitat types such as oak woodlands and old coniferous forests have been reduced in area and fragmented in arrangement by past human activities and structures such as agriculture, logging, accelerate reforestation, roads and recreation facilities. **Wildlife populations living in remaining habitat fragments are more restricted in their ability to adapt to changing climates, have reduced populations sizes, and are more vulnerable to climate-induced environmental changes.**

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