

OREGON'S WATER FUTURE

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ABSTRACT: The specter of climate change looms large over Oregon. Although hydroclimatologic models predict a warmer Oregon, the total volume of precipitation may not change significantly. However, the character (rain vs. snow) and spatial and temporal distributions of precipitation will likely change. The state is already witnessing earlier snowmelt in the Oregon Cascade Range. Much of the Cascade snowpack occurs at relatively low elevations and is thus very sensitive to even slight temperature changes. Earlier than normal snowmelt can produce unseasonal flooding and landslides and lead to storage problems since the snowpack provides natural 'free' storage. Without additional storage the resulting reduced summer runoff will produce: water shortages; insufficient flows to dilute waste and for environmental needs; higher stream temperatures and reduced dissolved oxygen levels; increased aquatic invasive species; and reductions in hydroelectric power generation. Reduced streamflows may lead to increase usage of nonrenewable groundwater. The effects on groundwater recharge are unclear. Oregon must now adapt to prepare for a potentially water-stressed future by: 1) further investigating the potential for aquifer storage recovery and artificial recharge (ASR & AR); 2) assessing its surface water and groundwater supplies; 3) ensuring that climate change is incorporated into its Integrated Water Resources Strategy, currently under development; 4) educating its citizenry; 5) preparing for the possible influx of climate refugees; 6) exploring, with its US Columbia Basin partners, the development of a Columbia River Compact; and 7) implementing, updating and revising various laws, regulations, practices, and policies so as to better enable the state to cope with an uncertain water future.