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# Integrated Basin Scale Hydropower and Environmental Opportunity Assessment in the Deschutes River Basin, Oregon

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The Deschutes River Basin in Oregon, USA, is home to a number of diverse groups of stakeholders that rely upon the complex snowmelt and groundwater-dominated river system to support their needs, livelihoods, and interests. Basin system operations that vary across various temporal and spatial scales often must balance an array of competing demands including maintaining adequate municipal water supply, recreation, hydropower generation, regulations related to environmental flows, mitigation programs for salmon returns, and in-stream and storage rights for irrigation water supplied by surface water diversions and groundwater pumping. The U.S. Department of Energy's Integrated Basin-scale Opportunity Assessment initiative is taking a system-wide approach to identifying opportunities and actions to increase hydropower and enhance environmental conditions while sustaining reliable supply for other uses. Opportunity scenarios are analyzed in collaboration with stakeholders, through nested integrated modeling and visualization software to assess tradeoffs and system-scale effects. Opportunity assessments are not intended to produce decisional documents or substitute for basin planning processes; assessments are instead intended to provide tools, information, and a forum for catalyzing conversation about scenarios where both environmental and hydropower gains can be realized within a given basin. We present the results of the nested integrated modeling approach and the modeling scenarios in order to identify and explore opportunities for the system.