CALIFORNIA DEPARTMENT OF WATER RESOURCES

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Contact:
Lauren Hersh, Information Officer
(916) 653-2639 Lauren.Hersh@water.ca.gov

Water Scarce to Recharge Groundwater Basins, New Report Shows

Recent storms underscore the need for more innovation and investment

SACRAMENTO, Calif. – A first-of-its-kind analysis of California's water resources shows that bringing local groundwater basins into sustainable balance -- as state law demands – will require investments and innovations in integrated water management including conservation, storm water capture, recycling, desalination, water transfers, diversion, conveyance and storage.

These actions, all pursued by the Brown administration under its five-year Water Action Plan, will help minimize potential urban and agricultural water shortages as local agencies implement historic legislation enacted by Governor Edmund G. Brown Jr. in 2014. The Sustainable Groundwater Management Act requires groundwater-dependent regions to halt overdraft and bring basins into sustainable levels of pumping and recharge by 2040. Groundwater supplies between 30 percent and 60 percent of the water Californians use in any year. Bringing basins into balance will eliminate the worst effects of overpumping, including the dewatering of streams and sinking of land that damages bridges, roads, canals, and other infrastructure.

Developed with extensive stakeholder involvement, the new draft report by the California Department of Water Resources separates the state into 10 regions and analyzes water supply and demand in each region in order to estimate how much surface water could be available to replenish groundwater basins. The "Water Available for Replenishment" report is required by the Sustainable Groundwater Management Act and will be used by the leaders of newly-formed local sustainable groundwater management agencies as they draft sustainability plans that are due in 2020 for critically overdrafted basins and two years later for all remaining high-and medium-priority basins

Development of new water resources needs to consider practicality and the financial feasibility of capturing rare flood events and evolving technologies. The new report shows that limited water is available for aquifer recharge in many regions, except in years of high precipitation. To capture more peak storm flow for the sake of groundwater recharge will require infrastructure, including diversion, storage, and conveyance. Recharge will need to be integrated with potential sources and can be accomplished using percolation, injection or in-lieu management, where current groundwater users effectively switch to a new source of supply.

The draft "Water Available for Replenishment" report, available here, provides a visual depiction of supply and demand in each region. It shows, for example, that demand for water, conveyed imports of water from other regions and groundwater pumping is highest in the Tulare Basin of the southern San Joaquin Valley. Runoff, natural recharge, and outflow are highest in the North Coast. The estimated water available for replenishing groundwater basins is highest in the Sacramento River Region, approximately 640,000 acre-feet a year. (An acre-foot is roughly enough water to supply the needs of two average households for a year or to irrigate a third of an acre of cropland.) By comparison, the amount of water estimated available for recharge annually in the Tulare Basin is 50,000 acre-feet.

The report takes into account the existing flow requirements for streams and considers potential new infrastructure to divert water based upon the capacity of existing facilities. An uncertain future is acknowledged using a range of potential instream flow required and project capacity, as the report analysis includes scenarios in which both flow requirements and diversion capacity are doubled in each region. The primary factors for these estimates are instream flow requirement and potential project capacity.

The report also examines the reliability of the statewide water projects that supply one-third of the state's irrigated farmland and two-thirds of the state's population. The State Water Project and the federal Central Valley Project both capture water from northern rivers, including the Sacramento River and Feather River watersheds, and move water from major reservoirs to the San Francisco Bay Area, the San Joaquin Valley, and Southern California. Water deliveries from these projects has reduced groundwater overdraft in many basins in the state; however, the average deliveries of water has declined in recent years due to drought and as state and federal agencies address the challenges of balancing water supply and competing needs. Project operators restrict pumping and provide flows to protect water quality and species listed under the state and federal endangered species acts in the Sacramento-San Joaquin Delta and tributaries. Climate change is expected to further exacerbate these challenges.

The DWR analysis shows that by providing more flexibility to capture additional storm runoff, construction of additional storage north and south of the Delta plus improvements in Delta pumping infrastructure as proposed with California WaterFix would limit the decline of water project deliveries and would provide a more efficient system for environmental protection compared to the existing 50-year-old infrastructure.

The report also recognizes that water may be available through conservation, recycling, desalination, water transfers, and other water management strategies. Guidance associated with these methods is included in appendices to the report. These tools can help regions diversify their water supply portfolio in ways that will ease any water shortages tied to bringing groundwater pumping and recharge into balance. These measures also are the foundation of the Brown administration's five-year Water Action Plan, which aims to build regional resiliency against drought, flood, population growth, and climate change. Together, the Water Action Plan and the Water Available for Replenishment report show that to achieve sustainable water resources, California must embrace conservation as a way of life and continue to invest in integrated water diversion, storage and conveyance projects including a wide array

of local, regional, and statewide projects that safeguard existing supplies, capture high flows when available, restore important habitats, and expand efficiency and recycling.

DWR seeks public comment on the draft Water Available for Replenishment report through March 10, 2017. Comments may be submitted at sgmps@water.ca.gov with the subject line heading, "Public Comments on WAFR."

For more information on the development of the report and stakeholder involvement, go to http://www.water.ca.gov/groundwater/sgm/wafr.cfm.

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Every Californian should take steps to conserve water. Find out how at SaveOurWater.com.