

From Water Quality, Quantity and Security Initiative Strategic Plan

Surface Water Quantity

California's surface water resources are critical to the health of the environment and to the state's economy. The surface water system is a complex network made up of waters in vernal pools; wetlands; lakes, including man-made reservoirs; streams; rivers; and conveyance canals. In combination, they provide water storage, flow, and delivery for municipal, industrial, agricultural, environmental, and recreational uses.

In an average year, approximately 50 to 60 percent of California's water is undeveloped while the remaining 40 to 50 percent is developed or "dedicated" to environmental, municipal, industrial, and agricultural uses. While the state's dedicated water supplies receive the most attention, ANR provides programs and personnel that address important aspects of the state's total water supply, both developed and undeveloped (e.g., water use and environmental services in forests and other naturally vegetated lands). ANR's efforts include research, outreach, and education to address issues critical to the availability and reliability of California's surface waters.

Preferred areas for research and extension

Topics common to agricultural and urban land uses:

- Hydrology and ecosystem function; total flows, peak flows, and summer baseline flows all impact surface water uses and the natural environment.
 - Impacts of climate change on surface water hydrology
- Interaction between surface water and groundwater; surface water can be the recharge source for groundwater, so changes in surface water use or hydrology will impact groundwater resources. Alternatively, groundwater use has impacts on surface water, especially on summer and fall in-stream flows of undeveloped (undammed) streams
 - Conjunctive management of surface water and groundwater
- Water transfers and marketing of surface waters and groundwater
- Socioeconomic aspects of water management systems
- Water re-use

Topics specific to production agriculture:

- Agricultural irrigation water management
 - Irrigation scheduling
 - Irrigation system operation and management

Topics specific to urban agriculture:

- Urban water use efficiency with emphasis on landscape irrigation water management