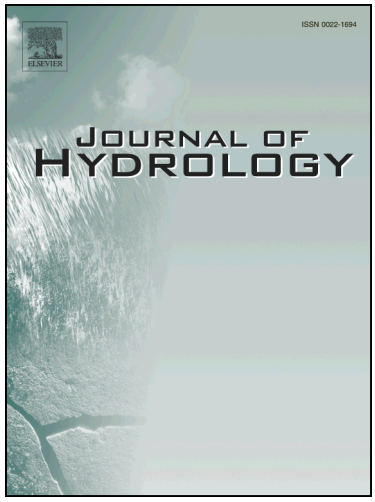

Research papers

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Identifying Water Price and Population Criteria for Meeting Future Urban Water Demand Targets

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Abstract

Predictive models for urban water demand can help identify the set of factors that must be satisfied in order to meet future targets for water demand. Some of the explanatory variables used in such models, such as service area population and changing temperature and rainfall rates, are outside the immediate control of water planners and managers. Others, such as water pricing and the intensity of voluntary water conservation efforts, are subject to decisions and programs implemented by the water utility. In order to understand this relationship, a multiple regression model fit to 44 years of monthly demand data (1970-2014) for Los Angeles, California was applied to predict possible future demand through 2050 under alternative scenarios for the explanatory variables: population, price, voluntary conservation efforts, and temperature and precipitation outcomes predicted by four global climate models with two CO_2 emission scenarios. Future residential water demand in Los Angeles is projected to be largely driven by price and population rather than climate change and conservation. A median projection for the year 2050 indicates that residential water demand in Los Angeles will increase by approximately