[Your Name]

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[Course Number]

[Date]

How Climate Affects California's Water

This topic is studied under Environmental Science that is an interdisciplinary academic field to research the environmental issues and their solutions. California is famous for its diverse climate from snowcapped mountains to green fields and beautiful beaches, but climate change has started affecting its natural beauty in the opposite way. The sudden increase in temperature causes wildfires, droughts, and rapid snow melting that causes a rise in sea level. The following literature discusses the issue thoroughly.

1. Hanak, Ellen, and Jay R. Lund. "Adapting California’s water management to climate change." *Climatic change* 111.1 (2012): 17-44.

This article discusses the disappointing consequences of rapid climate change in California and government actions against this disaster. Climate change has caused floods and droughts that affect both the water supply and the food supply to the citizens. This paper discusses that the state has taken some measures to minimize the losses. The California Department makes water reservoirs to store the flood water for later use. Apart from that, the authorities allow the use of groundwater storage in the time of intense drought. The paper concludes that Federal cooperation is essential to cope with this issue more effectively.

1. Mirchi, Ali, et al. "Climate change impacts on California’s water resources." *Drought in arid and semi-arid regions*. Springer, Dordrecht, 2013. 301-319.

Ali Mirchi, Kaveh Madani, Maurice Roos, and David W. Watkins have co-authored this article. The article states that Californians are facing a water shortage due to climate change. A comprehensive study has been done on the changing hydro-climatic in California. The present and future (conjectured) effects of climate change in California have been analyzed. The paper also suggests some strategies to take effective measures against this disaster.

1. Lundquist, Jessica D., and Steven P. Loheide. "How evaporative water losses vary between wet and dry water years as a function of elevation in the Sierra Nevada, California, and critical factors for modeling." *Water Resources Research* 47.3 (2011).

 Sierra Nevada (California) has high altitude groundwater storages that can prove ideal sites to experiment on the water conversion from one state to another. The measurement of evapotranspiration can help the authorities to analyze and control the rapid outflow of water from the state storages. Lundquist and Steven call for scientific research on the quick water scarcity and appeal the scientists to find the long-lasting solutions for water scarcity.

1. Lund, Jay R., et al. "Climate warming & California's water future." *World Water & Environmental Resources Congress 2003*. 2003.

J.R. Lund and his co-authors have written this article warning about the future of California. This article finds that water scarcity is a major challenge for California and its future depends upon this phenomenon. The paper acknowledges that the Californian authorities have taken some measures to handle the situation under California's inter-tied water system (CALVIN), but the researchers are not satisfied with the measures because they think that the increase in Californian population and the rapid Climate change would prove major risks for the State authorities.

5. Connell-Buck, Christina R., et al. "Adapting California’s water system to warm vs. dry climates." *Climatic Change* 109.1 (2011): 133-149.

California's future strategies to cope with water scarcity in the future have been examined in this article. Currently, the State has issues with water supply that are expected to become worse in the future. The CALVIN economic-engineering optimization model of California's intertwined water supply system introduces the adaptive water-supply system in the context of changing climate scenarios: warmer conditions, and warmer drier conditions. This system will be promulgated in 2050 for a period of 30 years. The article finds that the water supply in warmer climate is cheaper than the warmer-drier scenario, but the water supply system should be managed well. The article concludes with some suggestions that can be considered to improve future studies.