

Water budgets for berkeley, california and terre haute, indiana



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Water is an essential natural resource and its adequate supply must be ensured for all intended uses. Water budgets are computed for various locations to determine the water balance within the respective environments. This is to aid in understanding the periods of surplus, usage, deficit and recharge within the system. The water budgets of Berkeley, California and Terre Haute, Indiana for a particular year were presented and compared in this work. The similarities and differences and the likely climatic (and related) factors responsible for these were discussed as well.

The periods of surplus, usage, deficit and recharge are as depicted in the tables. Surplus was experienced between January and March at the two locations with Terre Haute's extending till April. Utilization occurred at about the same time for the two locations (April to May for Berkeley and May to June for Haute). The similarities were achieved in different ways by the two climates. The year started at Terre Haute with the cold winter and this reduces evaporation rates. Therefore, the precipitation, though smaller than Berkeley's for the same period, was conserved in storage because of the low evaporation rates.

On the contrary, high precipitation was observed at Berkeley. This is likely to be as a result of the moisture laden westerly winds from the Pacific giving rise to relief rainfall (due to high altitude at Berkeley). However, this could not be adequately conserved due to the high evaporation rates. As a result, the storage was reduced to values similar to Haute's. Further into the year at Terre Haute, spring likely brought about an increase in water utilization (by the blooming flowers and leaves).

This reduced storage despite that there was a slight increase in precipitation. A similar trend also occurred at Berkeley at about the same time. However, this is as a result of reduction in precipitation and the attendant increase in evaporation at the onset of the dry season. The major difference lies in the deficit periods. Berkeley's precipitation reduced significantly and evaporation increased during the dry season and this trend continued till around October (lasting for almost half of the year). This was a rather long period of deficit.

Though deficit also occurred at Terre Haute during summer (July to September), it was short lived with the fall coming in succession. The fall triggers off the cooling of the atmosphere and a decline in the level of evaporation. Consequently, recharge was initiated earlier than at Berkeley. Berkeley's recharge started later at the very end of the year. Conclusion The differences in climatic conditions and altitude are the major factors that affected water balance in these two regions. The understanding of the water balance would better inform on the trends in water availability in these regions.