Water balance essay

Business, Accounting

According to Gildemeister, Berkeley is a west-coast Mediterranean climate (distinct wet and dry seasons). In the late spring and early fall, strong offshore winds of sinking air typically develop, bringing heat and dryness to the area. In the spring, this is not usually a problem as vegetation is still moist from winter rains, but extreme dryness prevails by the fall. The warmest and driest months are typically June through September, with the highest temperatures occurring in September. Mid-summer (July-August) is often a bit cooler due to the sea breezes and fog which are normally most strongly developed then (Gildemeister, 2004, p. 109).

Gildemeister also mentions the main controlling factor over the characteristics of the Mediterranean climate is the alternating influence of the subtropical high in summer and Westerlies during the winter (p. 111). During the summer, the subtropical high has expanded to its largest extent and most pole ward position, exerting its influence on subtropical west coasts between 30o and 40o N and S latitude. Subsiding air from the high creates stable atmospheric conditions when coupled with cold ocean currents along these coasts

Terre Haute has a mid-latitude continental climate. Ritter explains that rainfall in is fairly evenly distributed throughout the year. The wettest months of the year are May and June. The warmest month of the year is July with an average maximum temperature of 87. 30 degrees Fahrenheit, while the coldest month of the year is January with an average minimum temperature of 17. 70 degrees Fahrenheit Polar-type air masses collide with tropical type air masses causing uplift of the less dense and moister tropical air resulting in precipitation.

Colliding along the polar front, these air masses turn and swirl into large extra-tropical cyclones steered by the polar front jet stream lying high in the troposphere. These huge systems generally work their way across the surface in a west to east fashion, embedded in the dominate wind flow of the westerly wind belt (Ritter, The PhysicalEnvironment). Potential evapo-transpiration is the amount of water that would be evaporated under an optimal set of conditions, among which is an unlimited supply of water. In other words, it would be the water needed for evaporation and transpiration given the local environmental conditions.

One of the most important factors that determine water demand is solar radiation. As energy input increases the demand for water, especially from plants increases. Regardless if there is, or isn't, any water in the soil, a plant still demands water. If it doesn't have access to water, the plant will likely wither and die. Between April and October, potential evapo-transpiration significantly exceeds precipitation in Berkeley whereas except July & August potential evapo-transpiration marginally exceeds precipitation in Terre Haute.