

Paleoclimate (392 words, roughly torn from glen macdonald's essay "ice ages, packrats and ancient trees: climatic environmental change in the salton sea region and colorado river basin")

The Salton Sea basin lies between two deserts, the Mojave to the north and the Sonoran to the south and west. Both deserts are hotter in the summer than in the winter, the Sonoran hotter than the Mojave, some parts of which freeze in the winter. While also generally drier than the Mojave, the Sonoran also gets monsoons in the summer.

During the Pleistocene era, roughly three million to 13,000 years ago, the climate shifted back and forth between ice age conditions and the warmer, modern ones. The last of these shifts occurred some 10,000 to 13,000 years ago. So stable has the climate been during that time, that the past 10,000 years gets its own name, the Holocene era. While ice did not cover the Salton Sea basin in the Pleistocene, climate and vegetation did change between the end of the Pleistocene and the beginning of the Holocene. Temperatures were probably 2° C to 8° C cooler than today.

Pieces of plants preserved in packrat middens, some over 40,000 years old, show that Sonoran plants of the Pleistocene were those of moister deserts, single needle pinyon pine, California juniper, and joshua trees. The region probably got upwards of fifty percent more rain than it gets today. Around 10,000 to 9,000 years the plants in the Sonoran desert were those found there today, creosote bush, brittle bush, and catclaw acacia.

Both the annual rainfall and the annual flow of the Colorado River can be reconstructed by counting tree rings (to get the date) and measuring their thickness (to get the amount of rain). The trees best for this are the trees that not only make wide rings in wet years and narrow rings in dry, but that live for over 1,000 years: the limber pine, douglas fir, and pinyon pine of the San Jacinto, San Gorgonio, San Antonio, and Baden-Powell mountains. The rings show that the climate, and the average flow of the river, has been much the same over the past 1,000 years as it has for the past 100, the only time for which there are weather station records.

Flow of the Colorado has varied from year to year, without any trend of increasing or decreasing over the past 500 years. Average flow in this century, around 49 billion cubic feet per year, is higher than in most other centuries.