Climate

Margot McDonald, College of Architecture and Environmental Design

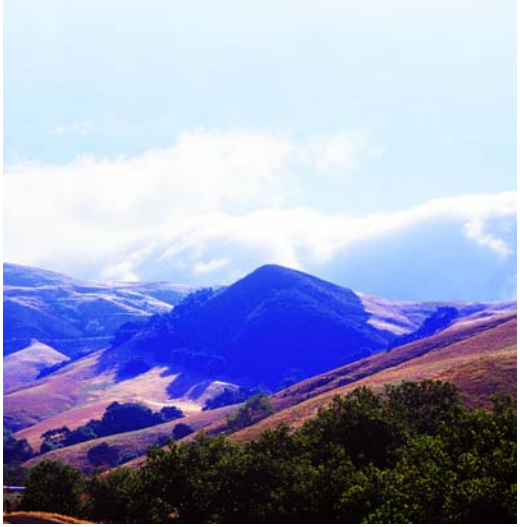
Cal Poly Lands located in San Luis Obispo County experience a collection of idyllic microclimates due to their geographical position relative to the Irish Hills and San Luis Range to the south and west, and the Santa Lucia Range to the east. These ridges create sheltered valleys that retard the persistent summer coastal fog common to neighboring communities to the west and the wide seasonal temperature variations of the Salinas and San Joaquin Valley north of the Cuesta Grade. The elevation in the region ranges from an average of 62 feet above sea level in the city to 2900 feet in the Santa Lucia Range.

From a global perspective, the region's climate type is termed Mediterranean, with warm dry summers, mild wet winters, and a strong maritime influence. This classification is a rare distinction shared by approximately two percent of the world and mostly by locations with westerly ocean coastlines, such as parts of California, Chile, South Africa and Australia. The specific occurrence of this climate type in San Luis Obispo, situated 12 miles east of the Pacific Ocean, is moderated by a continental influence whose dominance increases with distance from the coast. Seasonal transition is visible in the landscape in late Spring, when grasses change from verdant to golden hue, and in Winter, when green returns.

The large-scale weather patterns in the region are shaped by seasonal changes in upper level winds and solar radiation. In spring and summer, the North Pacific high pressure system drives the upwelling of cold, nutrient rich, ocean waters to the surface, producing the characteristic condensation that usually takes the form of coastal fog.

Daytime warming of the local land mass pulls cool ocean breezes and any accompanying coastal fog onshore during the late afternoon. The pattern reverses at night with cooling at the earth's surface.

In late fall and winter, the North Pacific high is weakened and storm systems are more likely to reach the region. Storms out of the north result in moderate precipitation, whereas the less common southerly



A wall of fog condenses at the top of Cuesta Ridge

storms can bring with them large amounts of tropical moisture.

Snowfall occurs rarely and only at the higher elevations in the region, as it did in December 1990 when two inches of snow accumulated on Cuesta Ridge.

During sunny winter days, warm coastal air rises up slope when it meets mountains, becomes less dense and then cools. The cooled air condenses into fog and is halted when meeting warmer valley air mass on the opposite downslope side.

The regional vegetation adapts to stresses presented by the Mediterranean climate with evergreen leaves that are small, hardened, and grayish, drought-deciduous leaves that fall off during the dry season, with photosynthetic rates that are higher in winter or spring when water is most available and temperatures are mild, and with deep tap-roots and shallow roots that collect the earliest rains.

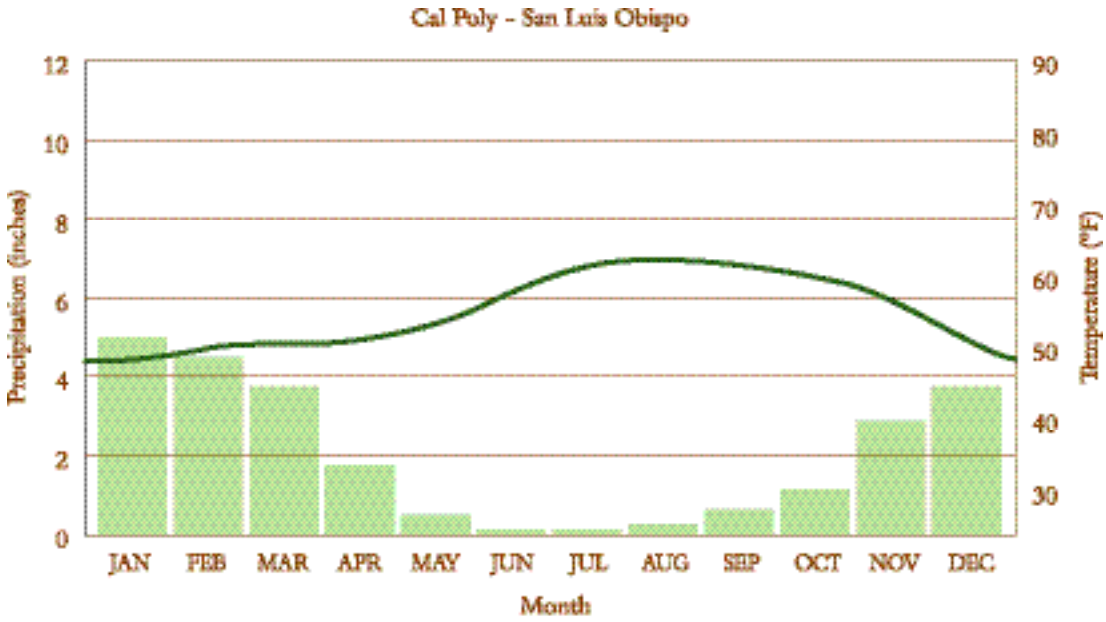
Differences in plant and soil types are evident throughout the landscape, especially when comparing those located on sunny, south-facing slopes with others on moist, shaded north slopes.

Riparian zones, such as those found along Brizzolara, Stenner, and Pennington creeks, are signalled by water-tolerant sycamores and willows.

Weather conditions for Cal Poly Land have been recorded continuously for over 100 years by the U.S. Weather Bureau. Based on records covering

Oak woodlands on north-facing slopes, in upper Poly Canyon

the period of 1961-1990, the variation in temperature ranges from an annual average maximum temperature of 71°F to an annual average minimum temperature of 47°F. Warmest months are typically August and September and coolest months are December and January. Relative humidity is an annual average of 75%. Average annual rainfall is 23.5 inches. Flooding occurs on average every 13 years. There is an average of 2800-3200 hours of sunshine annually, which equates to 70% possible sunshine hours. There are 256 clear, 44 partly cloudy, and 65 cloudy days annually based on averages for the same historical period. Winds are predominantly out of the northwest and have been statistically estimated to average five mph at Cal Poly.



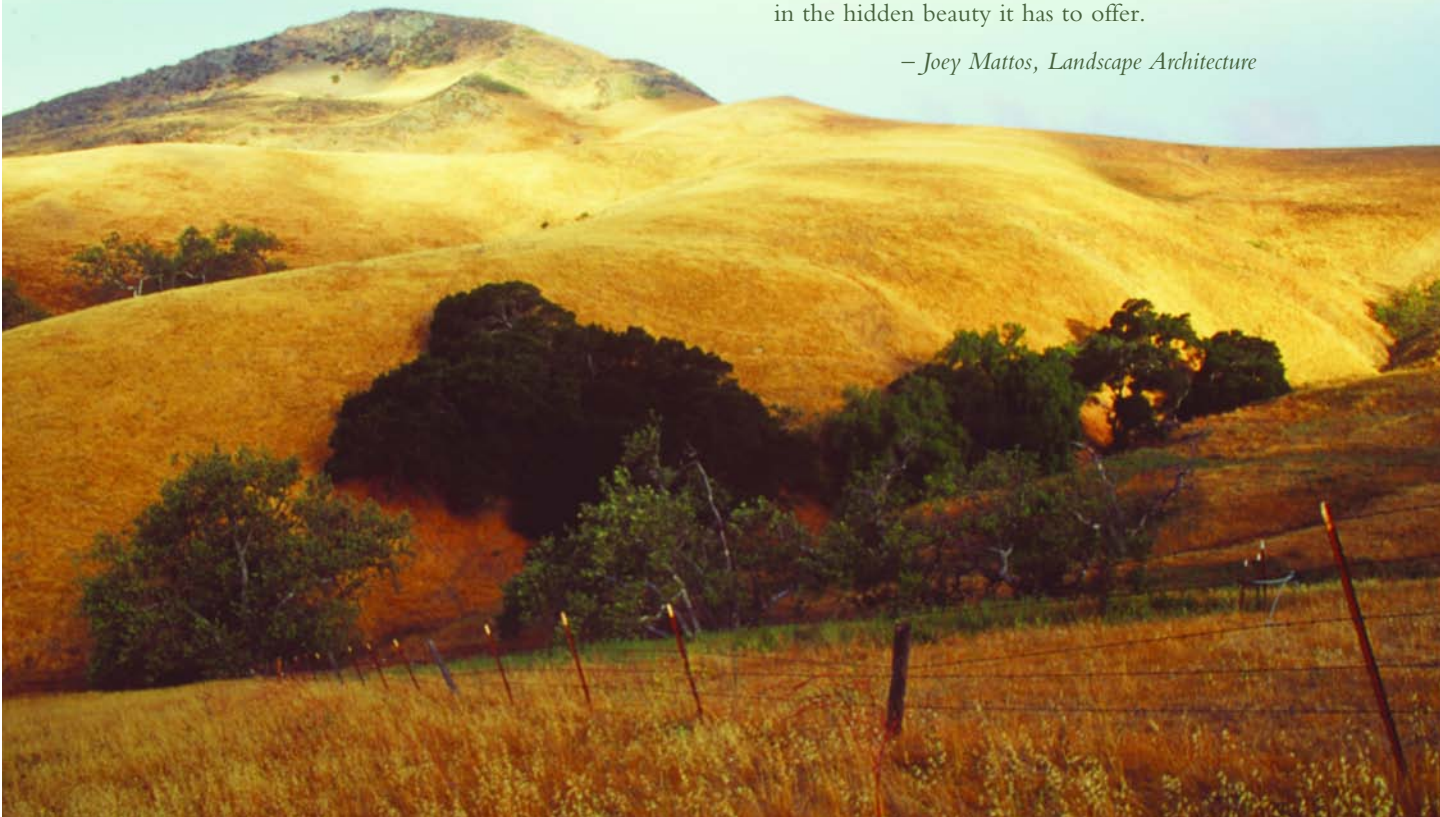
Source data: NOAA Technical Memorandum WR-223 (February 1994)

Seasonal Entries from Student Journals

Spring has turned the golden hue of the hills into a sea of green wealth. The slender stocks of grass dance in the cool breeze of this afternoon. The leaves tremble with the anticipation of a spring storm, while their roots await the nourishment of the quenching rain. The sweet aroma of the grasses drifts in the currents of the northerly winds. As the grass blades sway in the increasing winds, they orchestrate an eerie halloo throughout the landscape. My hands filter through the soft foliage being careful of the razor sharp edges. Its sweet smell is equaled only by its savory flavor.

– Ric Hendricks, Landscape Architecture

Today I would like to say good bye to a good friend, a pleasant season we call spring. Good bye to the various shades of green that visually grace us. So long to the soft wavy grasses that grew adjacent to the creek that ran near my temporary dwelling. Farewell to the luscious Irish green hills that reminded me of a time when I was visiting in that country.

For the next nine months I must search harder, look deeper. I need to get reacquainted with the golden hills, sprinkled with darker shades of green present in the coast live oak and chaparral communities. I need to say hello to the dry landscape and take pleasure in the hidden beauty it has to offer.

– Joey Mattos, Landscape Architecture