

# *The Community* **VOICE**

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## **California's unique place in the world of biodiversity**



*By Wade Belew October 29, 2009 05:41 pm*

Residents of California enjoy great weather and a tremendous variety of landscapes from the Sierras to the sea. But did you know that California is also a unique place in the world from the standpoint of evolution and biodiversity? I personally never really appreciated this amazing diversity until I studied natural resources in college, and have since done a fair amount of traveling viewing the natural world with a fresh perspective. California's Mediterranean climate is one of the factors that add to this diversity. While it may seem "normal" to us, this climate is quite unique in the world.

Named after the Mediterranean region, this climate is characterized by cool, wet winters and long, warm to hot summers with little or no rain. It's not uncommon for us to go for six months over the summer with no appreciable rainfall. This climate regime challenges plants to survive in difficult conditions.

Besides California and the Mediterranean region, this climate only occurs in three other locations: Chile, Australia and South Africa. These regions only represent 2.2 percent of the world's land surface, yet contain 20 percent of the world's plant species. Only tropical rainforests exhibit more plant diversity than Mediterranean climates.

In the study of evolution, scientists like to examine places like the Galapagos Islands, Hawaii or Australia. The isolation and dynamic geology of islands create the perfect conditions for speciation or the formation of new species of plants and animals.

Despite being connected to a large continent, California can be considered an "island" of evolution. Bordered by large mountain ranges in the north and east, deserts in the south, and the Pacific ocean to the west, California is relatively insulated from the free flow of genetics that maintains homogenous species on contiguous landscapes.

Besides this genetic isolation, California is very geologically dynamic as anyone that has experienced an earthquake here can attest. We sit on a continental plate that is sliding over

the Pacific ocean seafloor like a giant bulldozer blade scraping over the surface. This creates intense heat and pressure that can form mountain ranges such as the Sierras, and contributes to a variety of unique soils, such as those made from ancient marine sediments. Conservation International has identified this region as a “biodiversity hotspot,” naming it the California Floristic Province.

Besides covering most of the state, this region also includes a small portion of southern Oregon and northern Mexico. Within the California Floristic Province, over 60 percent of the plant species are endemic, meaning they are found here and no place else on earth. One of the many ecosystems that make California a unique place is grasslands, which can be found all over the state. They can be found in alpine meadows, mountain foothills, valleys and coastal bluffs. Unfortunately, less than 2 percent of California’s native grasslands remain.

Besides conversions to other uses, such as agriculture and development, non-native, weedy grasses have usurped most of what is left. While most of our native grasses are perennial (living more than a year) bunchgrasses, most of the invasive weeds are annual grasses, whose fast-growing habit allows them to outcompete the slower growing native grasses. As a complement to our tree and shrub plantings, the Cotati Creek Critters have been planting an understory of native grasses and related plants to return important biodiversity to the Laguna. Come learn more about the importance of native grasses at a presentation entitled, “Discover California Grasslands,” Monday, Nov. 2 at 7 p.m. the Ray Miller Community Center, 216 E. School St., Cotati.

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