

NCC Quarterly

Conservation in a Mediterranean Climate

California's Mediterranean climate was once described by Author Inez Haynes Irwin as "where the spring comes in the fall, and the fall comes in the summer, and the summer comes in the winter, and the winter never comes at all."

Mediterranean climates in California and other parts of the world are characterized by mild winters and warm summers, both of which make outdoor living extremely comfortable. California's climates are also heavily influenced by the proximity to the Pacific Ocean, which helps to moderate temperatures and bring cool breezes.

During the winter months, Mediterranean climates typically range from the mid-60s to low 70s (Fahrenheit). Most of the annual precipitation occurs during the winter months, with typically modest rainfall in the spring and fall, and mostly dry summers.

It should come as no surprise that native flora and fauna thrive in Mediterranean climates. People and agriculture flourish in it as well. Plentiful sunshine, fertile soils, and favorable temperatures benefit the growth of a variety of fruits, vegetables, grains and legumes. Ideal weather, outdoor recreational options, connectivity to nature, and access to locally grown foods significantly boost human populations in Mediterranean climates. For these reasons, it is understood the expansion of agriculture and urbanization in Orange County have resulted in large-scale habitat loss and fragmentation over the past century.

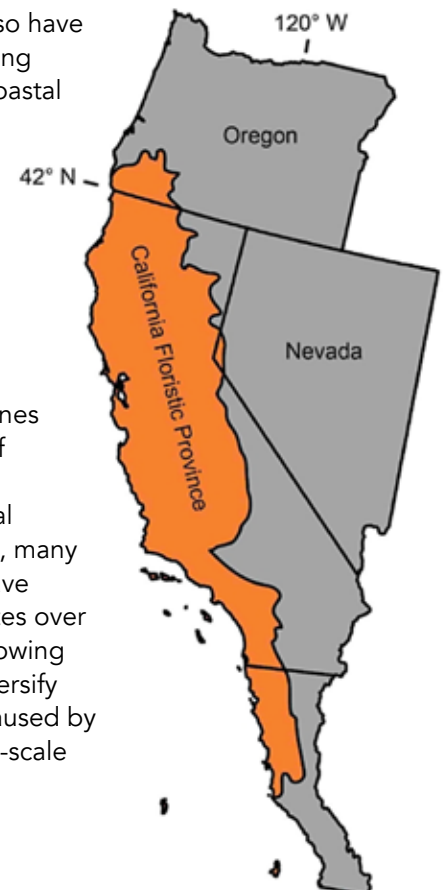
Only four other geographic regions in the world offer a similar Mediterranean type of climate we experience in Southern California. Those locations include parts of Chile, Southwestern Australia, South Africa and the Mediterranean Basin (e.g., France, Italy, Spain and Greece).

What Makes the Mediterranean Climate Unique?

The combination of dry summers and mild winters create a range of microclimates which support the abundant growth of plant and animal species. The winter temperatures allow for a longer growing season, thus enabling the proliferation of a wide variety of plants and the survival of many species throughout the year.

Mediterranean regions also have varied landscapes, including mountains, valleys, and coastal plains. The changes in elevation across landscapes create different habitats and microclimates, fostering a wide range of species.

Different soil types and compositions throughout Mediterranean climate zones support a wide breadth of plant communities, which in turn foster varied animal populations. Furthermore, many Mediterranean regions have experienced stable climates over geological timescales, allowing species to evolve and diversify without the disruptions caused by glaciations or other large-scale climatic changes.



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California as a Biodiversity Hotspot

California's Mediterranean climate was a key factor in Conservation International's designation of the California Floristic Province as one of the world's most biodiverse hotspots. Other factors leading to the designation included the large number of native plant and animal species which are found nowhere else in the world, plus the contraction of natural lands due to habitat loss and fragmentation. Click [here](#) for a short video about California's Floristic Province.

One of the reasons why Conservation International initiated its work on biodiversity hotspots is the understanding that 36 distinct regions of the world are both biologically rich - and highly threatened. Through its vision to protect these spaces, Conservation International justifies its stance by articulating "Biodiversity underpins all life on earth. Without species, there would be no air to breathe, no food to eat, no water to drink." Furthermore, Conservation International proclaims "hotspots are among the richest and most important ecosystems in the world - and they are home to many vulnerable populations who are dependent on nature to survive."

Data from the National Geographic website reveals biodiversity hotspots make up about 2.3 percent of Earth's land surface, but 44 percent of the world's plants and 35 percent of land vertebrates live in these regions. National Geographic also described some of the unique features of biodiversity hotspots by revealing, "Most plants in a biodiversity hotspot are endemic, meaning they are not found anywhere else on Earth. Yet biodiversity hotspots are, by definition, in a conservation crisis. To be classified as a biodiversity hotspot, a region must have lost at least 70 percent of its original natural vegetation, usually due to human activity."

The Essentiality of Conservation

When contemplating the enormous benefits of a Mediterranean climate and assessing the pressures continually placed on biodiversity hotspots, we may begin to recognize the value of conservation and the essential role organizations like the United States Fish and Wildlife Service and the California Department of Fish and Wildlife serve in implementing regional conservation plans, including the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) of Central and Coastal Orange County.

With an estimated 90% loss of coastal sage scrub habitat in Orange County, there is some relief in knowing a portion of the most biologically rich landscapes have been designated as permanent habitat preserves. The NCCP/HCP of Central and Coastal Orange County, Southern Habitat Conservation Plan, and Orange County Transportation Authority M2 NCCP/HCP comprise a vast acreage of wildlands in the County which are protected for the long term.

On a global scale, Mediterranean climates are rare, yet bountiful. They are incredibly accommodating to plant and animal species, but their range has been greatly reduced due to urbanization and agricultural pressures. While most of us who experience this climate choose to never leave, we must care for it so it does not leave us.

Gray Fox

The gray fox (*Urocyon cinereoargenteus*) is a small canid native to North and Central America and is the most common fox in California, mainly populating coastal or mountain forests at lower elevations. It is believed to have lived in North America for 3.5 million years. It also happens to be one of the three mammals listed as an identified species receiving regulatory coverage under the Natural Community Conservation Plan/Habitat Conservation Plan for the Central and Coastal Subregion of Orange County.

The first thing which comes to mind when describing the gray fox is its climbing skills. Unlike the red fox species, gray foxes have retractable claws and flexible wrists which enable it to grasp tree trunks and other objects with ease. When confronted with danger, the gray fox quickly makes its way through trees using its agility and sharp claws to navigate through a maze of branches.

Being largely nocturnal, the gray fox hunts for food during low light conditions, relying upon its extraordinary hearing and visual acuity. It inaudibly stalks its prey, often from branches above and waits for the perfect moment to strike. The gray fox is an omnivore whose diet largely exists of rodents, rabbits and insects. They are also fond of fruit and will seek it out wherever it may be available.

According to Animals Network, scientists believe that this species of fox is monogamous, and pairs remain together for life. They form family groups with their offspring from prior years. Young females are more likely to remain with the family for longer periods than young males are. The family is most active at night, dawn, or dusk. During the day, they retreat to their den, which is usually in a hollow tree or burrow.

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Dogs and Open Spaces



The Nature Reserve of Orange County (NROC) is comprised of 37,378 acres of habitat protected lands which are enrolled in the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) of Central and Coastal Orange County. While there are multiple landowners who hold title to and manage these lands, the properties are often referred to by a variety of different names. For example, the County of Orange denotes its habitat protected properties mainly as Wilderness Parks. The City of Irvine uses the term "Preserve" to identify its protected open spaces, and in the City of Newport Beach, the word "Reserve" is applied as a land use designation conveying habitat protection.

A similarity among all landowners in the Nature Reserve of Orange County is a restriction of dogs on habitat protected lands. The reasons for keeping dogs out of wilderness parks, habitat preserves, and land reserves are linked to the mission of conserving and protecting natural environments, per the NCCP/HCP Permit.

Scientific studies assessing the impacts of dogs on wildlife communities reveals dogs pose a variety of risks to natural ecosystems.

Habitat degradation and wildlife disturbance are two of the more recognizable effects dogs may have on habitat protected areas. Dogs can trample and dig up vegetation, causing erosion and damaging plant life. This can lead to a loss of native plant species and an increase in

invasive species. In addition, dogs may chase and harass wildlife, thereby causing stress and potentially disrupting feeding, breeding, and nesting behaviors.

Dogs may also disrupt the biotic systems which exist within habitat protected properties. Parasites such as fleas, intestinal worms or ticks may affect wildlife. Zoonotic diseases that are transmissible to wildlife, such as canine distemper or parvovirus, can spread rapidly in wildlife populations and cause significant mortality. Fecal contamination is another risk which may introduce harmful bacteria and negatively impact aquatic life and water quality. Furthermore, the chemical contaminants from flea and tick collar based treatments pose a risk to both terrestrial and aquatic ecosystems.

Behavioral changes in wildlife may also be caused by dogs. The presence of dogs can alter movement patterns and force wildlife to avoid areas where dogs may not be present. Dogs can also disturb nesting and denning sites, leading to an abandonment of such sites and a subsequent decrease in reproductivity and species recovery.

As this story reveals, science informs us that dogs impact the efficacy of providing regional protection and recovery of multiple species and habitat in wilderness parks, habitat preserves and land reserves. When planning your next dog outing, please consider a neighborhood or community park as a desirable and welcoming location for a walk.

Gray Fox

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One of the fascinating things about gray foxes is the multiple forms in which they communicate. The website, "allthingsfoxes.com" reveals 'they screech, they yelp, they howl and they scream. Fox calls are an amazing thing if you have never heard them, late at night when they come out for hunting in the wilderness they can be heard calling out to each other.'

Gray foxes also use their tails to communicate with other foxes by stiffening them up when they are startled or if danger is near. In addition, they use their urine, in what is called chemical communication to mark spots where they have made multiple kills, understanding it may be a desirable place to return for another kill.

The lifespan of a gray fox is typically 7-10 years. Their survival in the wild is dependent on their ability to hide from predators as well as their solitary behavior that keeps them from most human populations.

About Conservation Easements in OC

Over the past 16 months, Orange County's outdoor recreation enthusiasts and nature lovers have been treated to a gift that keeps on giving – access to 18 miles of new trails in the Irvine Ranch Open Space.

The grand openings at Saddleback Wilderness, Gypsum Canyon Wilderness and Red Rock Wilderness have ramped up the inventory of publicly accessible trails in Orange County. These new open space areas are being met with great appreciation by recreational users and those who are looking to connect with nature on some of the most beautifully preserved lands in Orange County.

Saddleback, Gypsum Canyon and Red Rocks Wilderness areas all exist within lands donated by the Irvine Company to the County of Orange, which have the added protections afforded by a conservation easement. It is noted on each Grant Deed of Conservation Easement that many sensitive, rare, and endangered plant and animal species are dependent on such natural communities. In addition, protection of the property supports many non-listed species which are dependent on the water sources, nesting habitat, and available food sources.

A conservation easement is a voluntary legal agreement between a landowner and a government agency (or land trust) which permanently restricts certain uses and activities in order to protect the conservation values associated with the property's natural resources and wildlife habitat. Conservation easements typically involve an easement holder, which is a third-party nonprofit organization or government agency. The easement holder ensures compliance of the terms and conditions of the Deed by periodically checking on the property to make sure the agreement is upheld. In the case of Saddleback, Gypsum Canyon and Red Rocks Wilderness, the easement holder is the Orange County Parks Foundation.

Conservation easements offer benefits to both landowners and the community as a whole. For landowners, they provide financial incentives through tax incentives and reduced property taxes. Conservation easements can also be a source of pride for property owners, knowing that their property will be protected for future generations. For communities, conservation easements provide a wide range of benefits, such as preserving natural habitats for wildlife and protecting natural resources like water sources. They also help maintain local property values, ensure open spaces for outdoor recreation, and preserve the natural character of the region

While it is unusual to talk about land use in terms of perpetuity, we can all celebrate the achievement that nature connectivity remains a priority in Orange County. The sustained commitment to conservation values at Saddleback, Gypsum Canyon and Red Rocks Wilderness areas are all part of a gift which keeps on giving.

David Browning and Virginia Webber from OC Parks Trails Subcommittee exploring Red Rocks.

