

# COASTAL SAGE SCRUB ECOSYSTEM

An ecosystem describes an environment of any size where living and nonliving things interact. Ecosystems are characterized by the amount of land, air, water, and sunlight they have. For instance, an area is defined as a desert if it receives less than 10 inches of rain per year. An estuary describes a body of water that consists of both fresh and salt water. Ecologists study ecosystems to learn about the living organisms, nonliving factors, and how they interact.

The coastal sage scrub ecosystem is a biological community of plants and animals that exists in natural areas of California's coast line from the San Francisco Bay region southward to El Rosario in Baja California.

This coastal shrubland is home to several plant species such as buckwheat, white, black and purple sage, bush sunflower, laurel sumac, lemonade berry, and the most common shrub, the California sagebrush, for which the ecosystem is named. Bobcats, lizards, ravens, rattlesnakes, turkey vultures, roadrunners, ground squirrels, and the threatened California gnatcatcher are among the many mammals, birds, and reptiles that inhabit this natural community.

The coastal sage scrub is part of our historical heritage as well. It has been home to many Native American cultures that made use of its plants and animals to provide them with the necessities of life.

The coastal sage scrub ecosystem exists below an elevation of 3,000 feet and often grows alongside or into the chaparral ecosystem. However, it differs from chaparral in many ways. Chaparral vegetation grows from six to nine feet in height and is usually so dense that one can hardly walk through it. Coastal sage plants, on the other hand, are usually less than six feet in height and have more open canopies.

Although coastal sage scrub species may occur in chaparral and some chaparral shrubs can grow in coastal sage scrub, they have different drought adaptations. Chaparral plants have waxy hard leaves, during the summer and softer leaves in the winter, so they have leaves year-round. The dominant plants of the coastal sage scrub community have developed different adaptations to tolerate drought. Some of these plants partially or totally shed their leaves as the summer drought season approaches. Other plants produce small leaves. This enables the plant to survive the hot, dry summer because smaller leaves lose less water than large leaves.

Many of the coastal sage scrub plants have light-colored leaves that reflect heat, and deep root systems that reach into the ground for water.

The coastal sage scrub ecosystem with its well adapted plants and diverse animal community is also the fastest disappearing ecosystem in the state. The tremendous amount of urban development that has occurred in southern California has reduced this ecosystem to between 10 and 30 percent of its former range. With more development planned, a better understanding of the ecosystem is needed so that measures can be taken to preserve it.