

## **Monterey Pines (*Pinus Radiata*)**

Monterey pines are a unique native species on the Monterey Peninsula that originated in Central America and Mexico and moved north to California about 15-25 million years ago through the movement of tectonic plate action and other geologic changes. The Monterey pines by this time were already a distinct species. According to fossil records, these forests were always located in scattered pockets along the California coast from Tamales Bay in Marin County to San Diego County. Today, however, Monterey pine forests are located indigenously in only five areas: Ano Nuevo, Swanton and Weddle Valley in Santa Cruz County, the Monterey Peninsula, the greater Cambria area in San Luis Obispo County, and two islands off the coast of Baja California (Guadalupe and Cedros).

Monterey pine forests have a long history of fragmentation even during the Pleistocene epoch. Scientists once believed that there was one great Ice Age in the Pleistocene epoch. However, now through the examination of pollen and marine sedimentary fossils, scientists believe that there were eleven ice ages each lasting approximately 90,000 years followed by an interglacial period of about 10,000 years which was a warming period. During warming periods, as we are experiencing today, there were fewer trees and less pollen. The forests and trees prospered and expanded during moderate climatic conditions of gradual warming and cooling periods. In extreme weather such as severe heat, cold and/or drought, the forests and their trees would suffer severe stress and both contract in size and even die off. The forests have continued to follow this process today, but have continued to survive and adapt as in the past. The successful survival of the forests along the central coast has also long been attributed to the coastal fog and the coastal canyons that greatly temper weather extremes and produce much needed moisture. The future is more uncertain, however, with continued rapid global warming.

Monterey pines also need ample space, which is a major requirement for them to thrive and evolve. On the greater Monterey Peninsula, there were an estimated historic 18,000 acres of Monterey pines whereas today there are only an estimated 8,500-9,000 acres remaining due to increased human activity beginning with the Spanish explorers and settlers in the 16<sup>th</sup> and 17<sup>th</sup> centuries down to today. The first explorers, Cabrillo and Viscaino, were greatly impressed with Monterey Bay, naming it Bahia de Pinos (Bay of Pines), and the lush forest surrounding the bay was called the Monterey Peninsula Punto de los Pinos, the Peninsula of the Pines. From their first settlements until present day, this area has been settled and developed and the forest has contracted greatly. Trees were cut down for shipbuilding, homes, forts, missions, stockades, fencing, and fuel for heating homes and servicing ships. The ranchos were also a particular problem due to the clearing of very large areas of forest for the grazing of livestock and horses and the fencing required. Seedlings were trampled or eaten so regeneration was impossible. As the population grew with the expansion of the mission, forts and settlers, there was also an even greater need for more land for agriculture resulting in the demise of more and more native vegetation.

The early settlers were not the only significant force impacting the forest long term. They were just the beginning. By the 1830s so much forest had been cut around the Monterey settlement that the government passed a law regulating the cutting of trees. Still, there was a large forest remaining. When California was admitted to the Union, the greatest part of the forest was intact, but not for long. In more modern times in the 19<sup>th</sup> century, after California's entry into the Union, the cities along the west coast multiplied and grew requiring great amounts of lumber for

the building of industries and manufacturing, fishing, shipping and governmental infrastructure. Fuel was another enormous consumer of wood for the heating of homes and steam for the engines of industry and commerce. Much of this fuel came from the giant coastal forests of Monterey pines and redwoods along the central coast until the advent of alternative sources of fuel came on the horizon.

The Monterey pine forest continued a major decline into the 20<sup>th</sup> century with the advent of the automobile and the tourist industry on the Monterey Peninsula. The San Francisco earthquake and fire brought many people who lacked homes and many stayed to become permanent residents. The rebuilding of San Francisco after the disaster put huge pressure on the forests all along the west coast including in Monterey County. With the great San Francisco disaster also came a population of people which greatly added to the cultural and environmentally conscious residents already living on the peninsula, but most particularly in Carmel-by-the-Sea, already recognized as the unique village in the forest by the sea. These new and old residents looked upon the great trees with awe and a special reverence which was directed toward saving them and replanting as many as possible when houses, shops and streets were built. Carmel-by-the-Sea was known as the “Village in the Forest” and was incorporated mainly because Carmelites believed that Monterey County had not respected Carmel’s special environment and unique forest. Along with the great loss of our native Monterey pine forest, we have also suffered the loss of the unique and valuable ecosystem that it has supported. This ecosystem is so unique that it is recognized by scientists worldwide.

In spite of human development and climatic change, the Monterey Peninsula still has the largest native undeveloped acreage of contiguous Monterey pine forest in the world. Other areas of the world know the Monterey pine, but for a very different reason. Monterey pines have been cultivated for enormous wood products industries in countries such as Australia, New Zealand, Spain, Chili, South Africa and Kenya. Major industrial forests have resulted from the excellent quality of the pines, and Monterey pines have become the most planted timber tree in the world. The Monterey pine is vital to the maintenance and genetic health of the Monterey Peninsula forests and other forests worldwide. If Monterey Peninsula forests are not protected and preserved, the original genetic pool of trees on the peninsula will be lost and will impact the ability of other countries to maintain the genetic health of these trees and the forests around the world.

Monterey pines are critical to the aesthetics, climate, ecosystem of the forests, and the peace and tranquility of residential areas. Dedicated efforts are required to protect, preserve and enhance the viability these very unique and special trees that define the Monterey peninsula.