

## ***Pigeon Point Light Station State Historic Park***

Perched on a cliff, 50 miles south of San Francisco, the 115-foot Pigeon Point Lighthouse, one of the tallest lighthouses in California, has been guiding mariners since 1872. Its five-wick lard oil lamp and first-order Fresnel lens, comprising 1,008 pieces of glass, was first lit at sunset, November 15, 1872. The lens stands 17 feet tall, 6 feet in diameter, and weighs 8,000 pounds. It sits in a lantern room that was constructed at the Lighthouse Service's general depot in New York before being shipped around the Horn. Although the original Fresnel lens is no longer in use, the lighthouse is still an active U. S. Coast Guard aid to navigation using a 24-inch Aero Beacon.



### **Telephones:**

Pigeon Point Store: 650-879-2120  
Ranger Station: 650-879-2025  
Pigeon Point Hostel: 650-879-0633

**Operating hours:** Day-use area, 8:00 to sunset.

**Location/Directions:** On Pigeon Point Road, off of California Highway 1, 20 miles south of Half Moon Bay and 27 miles north of Santa Cruz.

### **Facilities/Activities**

Free entrance and parking. Portable toilets.

Picnic tables.

**Tours:** Guided history walks around the lighthouse grounds are available 10 am – 4 pm, Fridays through Sundays, weather permitting.

**Keeper's Store:** Open 10 am – 4 pm, Fridays through Sundays, except on rainy days.

**Whale Watching:** In April and May docents offer a shore-based whale-watching program during the northward migration of the California gray whales. The whale cows and calves are seen in great numbers and often swim within 30 to 40 yards of the point.

**Lighting of the Fresnel Lens:** Every year on the Saturday closest to the anniversary of the first lighting of the Fresnel lens (November 15, 1872) a celebration of the anniversary is held and the original Fresnel lens is lit again.

**Fog Signal Building** Exhibits on the history and natural history of Pigeon Point.

Hostel:

The lighthouse keepers' housing is restored and operated as a hostel (pictured below). Each bungalow features a kitchen, two shared bathrooms with hot showers, and living rooms. The hostel also has a hot tub, limited on-site parking, wheelchair access, and space for meetings.



The hostel office is open from 7:30 am to 9:30 pm on Saturdays and Sundays. It is closed weekdays from 10 am to 4:30 pm. Access hours are from 7:30 to 10 am and 4:30 to 11 pm. Guests must return to the hostel no later than 11 pm. Checkout is at 10:00 am. Phone: 650-879-0633

Dogs are prohibited at all times.

## **Features and History of the Light Station**

The Pigeon Point Lighthouse, towering 150 feet above the sea, is noted for its graceful design. Constructed of unreinforced bricks, the tower stands on an eight-foot-thick concrete foundation. The walls are four and one-half feet thick at the base and taper to two feet at the top. Areas of the tower where the iron-work is attached were built using a double-wall construction technique to create air-pockets. This construction method protects the iron-work from the oxidizing effects of the salt air. The tower emerged unharmed from the earthquakes of San Francisco in 1906 and Loma Prieta in 1989. Time and elements took their toll, however, and in December 2001, two sections of the tower's upper iron belt course broke off. The damage was particularly serious because the belt course functions like a rubber band, holding the tower together. The tower is closed to the public pending its restoration.

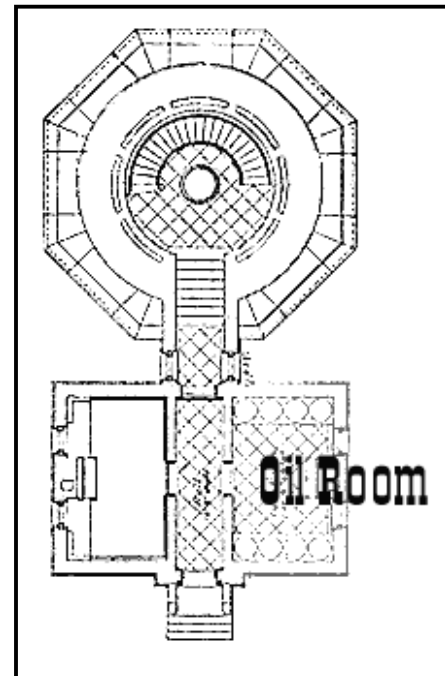
The glass-enclosed lantern room at the top of the tower contains the lighthouse's original first-order Fresnel ("fray-nell") lens, named after Augustin Fresnel, the French engineer who invented the system in 1822. The lens consists of glass prisms and magnifiers that bend and concentrate light from a central lamp into horizontal beams that can be seen from many miles out at sea. The Pigeon Point lens has 984 prisms, each ground and polished by hand, mounted in a brass framework. The entire assembly is 17 feet high and 6 feet in diameter, and weighs over 4 tons.

The lens (pictured below) is mounted on brass wheels; the turning mechanism was powered by a gravity-driven clockwork system, similar to a grandfather clock. The entire lens assembly rotated once every four minutes to produce a flash of light every 10 seconds.



The lamp used in 1872 generated light using a burner made up of five concentric, open-flame wicks, fueled by lard oil. It produced 70,000 candlepower. Later, kerosene was burned in a similar open-flame, multiple-wick lamp. Next, a vaporized oil system, similar to lanterns used in camping, was installed. Finally, in 1926, electricity was used to illuminate the lighthouse lens. Today's light is an externally mounted rotating aero beacon that sends a 680,000 candlepower beam 24 miles out to sea every 10 seconds. Ship captains consult manuals called "Light Lists" to identify lighthouses by their patterns of light and dark called their "characteristics."

The diagram on the right is the floor plan of the tower, work room, and oil room. Both the work room (left side), and the oil room (right side), have small fireplaces. The work room was used by the keepers for repairing equipment, updating logs, and other maintenance and administrative chores. The oil room was used to store 100-pound butts of lard oil. Each night the keeper, or his assistant, would draw off a sufficient amount of oil for a night's service. Then he would carry the fuel up the 136 stairs to the lens room. The 100-pound butts were supplied from the Lighthouse Service's depot in San Francisco.



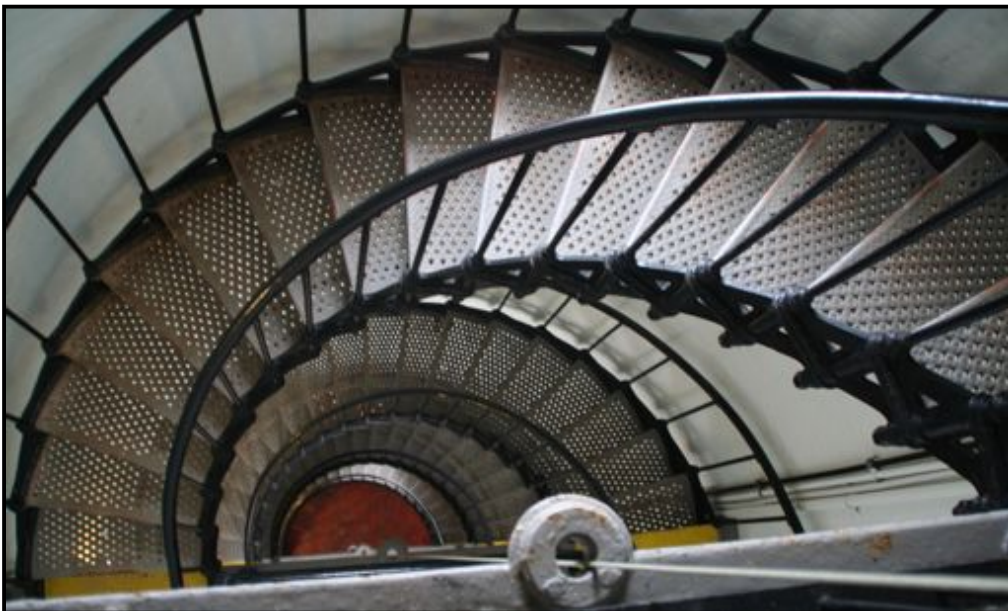
Around 1888, the lard oil lamp, which produced considerable smoke and dirtied the lens, was replaced by one that burned kerosene. In the early 1900s, a separate oil bunker to store kerosene was built away from the tower. This oil bunker was a safety precaution to prevent damage to the tower in case of fire or explosion by the more volatile kerosene fuel.

The early lighthouse keepers lived with their families in a Victorian-style house (pictured at right) located where the hostel bungalows stand today. The bungalows were built in 1962 for the last keepers of the light—the men of the U.S. Coast Guard who manned the station from 1939 until 1972, the year the facility was automated.



From 1871, when the lighthouse was built, until 1910, the operations were administered by the United States Lighthouse Board, and the keepers were appointed by the President of the United States. In 1910 management was assigned to the Bureau of Lighthouses under the Department of Commerce, and in 1939 the U.S. Coast Guard assumed responsibility for aids to navigation.

The early keepers worked a grueling round of difficult jobs every day. Before the light was lit at sunset, they washed the windows of the lantern room, cleaned the Fresnel lens, hauled fuel to the top of the tower, trimmed the lantern wicks and adjusted the air flow through the light apparatus. (The picture below shows the stairs they climbed to the top of the tower.) They stood watch over the light throughout the night and kept the fog signal operating when visibility was obscured. To maintain the buildings and machinery, the keepers were also skilled as carpenters, painters, steeplejacks, and mechanics.



The remote location of Pigeon Point, and the lack of reliable roads along the coast, made it necessary for steamers from San Francisco to supply the station with mail, fuel, and hardware once a month. The keepers' families maintained produce fields, an orchard, a dairy farm, and livestock to supply themselves with food.

The rocky island in the middle of the cove (pictured below) is called Prisoner Rock because fishermen were often stranded on it when high tides cut off their return to shore. The next bay to the south, called Colombia Bay, is named after the passenger liner Colombia, which ran aground in fog at full speed and sank in 1896.



In the early 1800s Pigeon Point was known as Punta de las Balenas (Whale Point), because gray whales passed nearby during their migrations between the Arctic and Baja California. Few ships ever passed the Point until gold was discovered in the Sierra foothills in 1848. Then the ocean off Whale Point became a veritable marine highway. Vessels of all types were pressed into service to carry gold seekers and goods to the booming town of San Francisco. But the fog, gales, currents and reefs made the area a graveyard for many vessels.

One victim was the clipper ship Carrier Pigeon. While lost in fog on the last leg of her maiden voyage from Boston to San Francisco, she ran aground at Whale Point on June 6, 1853. The Carrier Pigeon broke apart and sank on a ledge of rocks just 500 feet from shore. In her memory, Whale Point was renamed Pigeon Point.

Beginning in about 1862, a shore whaling station operated at Pigeon Point. The whalers, settlers from the Portuguese islands of the Azores, would post a look-out to watch for the spouts of passing whales. When a spout was spotted, the cry of “Whale!” was issued. The whalers piled into small boats and rowed furiously out to harpoon the whale. The carcasses were towed back to shore and the blubber was rendered into oil.



## Natural History

The coastal areas surrounding Pigeon Point Light Station are still rich with life. Pigeon Point is a great spot for watching gray whales during their winter migrations from the Bering Sea to Baja California, and their return north with their calves in early spring, particularly in April and May. The picture on the left of a gray whale “spyhopping” was taken from the platform at the end of Pigeon Point. Harbor seals regularly forage around the point. Elephant seals, sea otters, sea lions, dolphins, and humpback whales often pass by.

The intertidal zone along this part of the coast, including the rocky reefs that flank the light station, contains numerous, diverse varieties of plant and animal life.

Pigeon Point is one of the best vantage points on the California coast for observing seabirds, in part because of the presence of deep ocean waters very close to shore. The prime time of the year is during spring migration (March-May) when thousands of northbound loons, scoters, brant, cormorants, shearwaters, gulls, terns, and shorebirds pass the promontory. A spotting scope is necessary to see them well, for they are often far from shore. A survey of migrant seabirds passing Pigeon Point in the spring of 1976 recorded over one million birds.

On the rocks below the lighthouse, one can see resident American black oystercatchers, as well as wandering tattlers (August-May), surfbirds (September-April) and black turnstones (year-around). In the summer, western gulls sometimes nest on the cliff ledges. Pigeon guillemots, like the one pictured on the right, nest in crevasses in the rocky cliffs and can be seen flying in from the ocean with fish to feed their young.

Marbled murrelets can sometimes be observed from Pigeon Point, especially during spring and summer. A few pairs have been resident in the area and may be found feeding just beyond the surf when the sea is not too rough. From November through February, a few ancient murrelets may be seen just offshore. During summer months, feeding masses of sooty shearwaters offshore may number in the tens of thousands.



In the winter a small flock of western snowy plovers can often be found just north of the light station on a small pocket beach, known locally as Pistachio Beach, at the corner of the north end of Pigeon Point Road and Highway 1.

When the Coast Guard conveyed ownership of the light station to State Parks in 2005, the predominant plants around the lighthouse were what is commonly described as “ice plant.”

These included *Carpobrotus edulis* (see picture below, left), a creeping, mat-forming succulent species, with yellow or light pink flowers, that is also known as the “highway ice plant” or “Hottentot fig”—so named because it was eaten by a tribe on the west coast of Africa, the Khoikhoi, who were called Hottentots by early European explorers. The fruit of the plant is high in vitamin C, and 18<sup>th</sup> and 19<sup>th</sup> century sailors ate the fruit to prevent scurvy. A similar succulent, *Carpobrotus chilensis* (sea fig), is a close relative, but has deep magenta flowers and is more diminutive and less aggressive. The two species hybridize readily throughout their ranges in California.



It is not known when ice plant first came to California. It was introduced to Europe in 1727. When a botanical expedition went through southern California in 1859, they found these plants growing in large masses. Ice plant has commonly been planted along the coast because it is not harmed by the salt air and quickly stabilizes sandy soil with its rapid growth. The plants grow year round, with individual shoot segments growing more than three feet per year. A single ice plant can grow to cover an area 165 feet in diameter.

Ice plant poses a serious ecological problem, forming vast monospecific zones, lowering biodiversity, and competing directly with several threatened or endangered plant species for nutrients, water, light, and space.

In 2006, State Parks began a volunteer program to remove the ice plant at Pigeon Point and restore local native plants. Several native plants, such as lizard tail (see picture), coast buckwheat, and gum plant already grew within and on the edges of the mat of ice plant.

