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Travels through History

California's Guiding Lights: A Lighthouse Journey Along the Coast

By Cecelia Smith

California's coastline stretches 3427 miles and has some of the most diverse scenery that one can experience.¹ The drive from its southernmost city, Imperial Beach in San Diego County, to the city at its northern border, Crescent City in Del Norte County, is over 850 miles and can take as many as two to three days to traverse. Travelling along Highway 1, also known as the Pacific Coast Highway, reveals any number of quaint towns situated at the edge of pristine beaches, habitats for elephant seals, sea lions, and otters, and the enormity of towering ancient redwoods. The winding highway offers astonishing views of craggy, black rock formations repeatedly assailed by voluminous crashing waves. Famous beaches, such as Huntington, Venice, and Half Moon Bay, host hundreds of imitation-rubber-clad bodies, challenging the waters, oftentimes regardless of the weather or the condition of the surf. This is the dichotomy of California's coastline: its beauty and

¹ "Shorelines.Pdf," NOAA Office for Coastal Management, accessed December 16, 2020, <https://coast.noaa.gov/data/docs/states/shorelines.pdf>. This data is from the National Oceanic and Atmospheric Administration (NOAA). Shoreline mileage of the outer coast includes offshore islands, sounds, bays, rivers, and creeks to the head of the tidewater or to a point where tidal waters narrow to a width of 100 feet. A second method for measuring comes from the Congressional Research Service and calculates the coastline to be 840 miles. Due to the placement of several lighthouses, the NOAA data is used.

treachery, its sandy beaches and rocky terrain, its quiet giants and hostile wildlife.

There are numerous places of interest for tourists and residents alike to visit on the western edge of California, but perhaps the most intriguing are the lesser-known detours to the lighthouses along its coast. The development of a system of lighthouses stretching along the coastline paralleled the growth of California's economy, beginning with the Gold Rush at Sutter's Mill in 1848. However, as the economy grew, their usefulness diminished as it became cost-prohibitive to maintain the structures as they were designed. Damage from earthquakes, automation, and superior maritime technology ensured the slow and continued demise of these pharoses. While the growth of California's economy was ultimately boosted by this infrastructure, it was time and the rise of technology that decisively set about the decline of the lighthouses.

The image of these buildings stirs up strong symbolism. Standing between the two opposing forces of nature, land, and sea, the structures evoke underlying emotions. The images of iconic lighthouses are illustrated in art pieces, branded on documents, and reproduced on cups, key chains, and knickknacks. Maine, Florida, Connecticut, Washington, and Rhode Island are some of the states that have featured lighthouses on their license plates, perhaps attempting to convey any number of symbolic meanings, including safety and strength.²

There is also a bit of a romantic aura surrounding these structures that garners attention. The sounds and smells of the ocean, the gentle clamor of seagulls, or the far-off bellowing of a passing whale all converge to offer an impression of an adventurous life for a lighthouse keeper. It summons a postcard picture of a tall, columnar structure, plastered against a messy sky, moored to a rugged coastline, with white picket fences that line a pathway directed towards its entrance, and rows of smaller

² Ray Jones, *Lighthouse Encyclopaedia: The Definitive Reference* (New Kingstown: Globe Pequot, 2017).

buildings standing like sentries. This image of a lighthouse is that of a classic, New England-style building, and it is replicated in a variety of structures, from faux restaurant facades to office spaces in storage facilities.

The allure of the lighthouse has even infiltrated the gaming world; lighthouses are mentioned in the popular Japanese anime game Pokémon, which has several lighthouse stages and even an entire episode called Mystery of the Lighthouse.³ It is perhaps an homage to the island of Japan, itself home to sixty-seven historical, functioning, and actively used lighthouses.⁴

But lighthouses also serve as testaments to loneliness as they force isolation from society in what might seem to be an endless confinement. Movies such as *The Monster of Piedras Blancas* (1959) or *The Lighthouse* (2019) reinforce the idea of mystery but also present an image of horror, and insanity from living a life of solitude.⁵ There are many examples of movies and literature, as well as commercial advertisements, that feature these structures, but notice that it is always the tall, slender, elegant lighthouse that is showcased, not a squat, concrete, or skeletal structure, as this would not fit the perception.⁶

³ “The Official Pokémon Website | Pokemon.Com | Explore the World of Pokémon,” accessed December 19, 2020, <https://www.pokemon.com/us/>.

⁴ “Historical Lighthouses of Japan,” Tokokai, accessed December 19, 2020, <https://www.tokokai.org/en/historical-lighthouses-japan/>.

⁵ *The Monster of Piedras Blancas*, directed by Irvin Berwick (Hollywood, CA: Vanwick Productions, 1959); *The Lighthouse*, directed by Robert Eggers (New York: A24 Films, 2019).

⁶ Some examples of the use of these tall, slender lighthouses for companies and commercial advertisements include mixed martial arts and fitness facilities, insurance companies, photo studios, and Macy’s department store. See, “Lighthouse - The Perfect Gift Brings People Together | Macy’s,” YouTube, 2:10, December 5, 2017, [https://www.youtube.com/watch?v=1TgqEjOz9zs](https://www.youtube.com/watch?v=1TgqEjOz9zs;); Safe Passage Urns, accessed April 30, 2020, <https://safepassageurns.com>.

California's History: The Coastline and the Economy

Before statehood was granted in 1850, the California territory had been home to numerous Indigenous people (also known as Native Californians), explored by Europeans, colonized by the Spanish, and occupied by Mexico.⁷ Russia even maintained Fort Ross, located approximately three hours north of San Francisco, in the early nineteenth century as a Russian-American settlement. It was the site of California's first windmills and shipbuilding facilities.⁸ Ultimately, Mexico ceded California to the United States after the Mexican-American War (1846–1848) with the signing of the Treaty of Guadalupe Hidalgo, on February 2, 1848.⁹

There were numerous ways to approach, explore, or move around the California territory, including crossing the land by the burgeoning railway system, wagons, horseback, or even walking. The ocean was also a viable means of transportation. Of course, there was an exchange of goods and commodities before California procured statehood, so this is not to imply that there had not been some type of economic activity occurring. Ladened vessels often brought people and supplies to the region's missions. Contact between the Indigenous peoples, Spain, Mexico, and China, saw the trading of animal furs, whaling products, lumber, and various other essentials. Sea otters, for example, whose pelts were extremely valuable, were nearly exhausted, all in the name of the fur trade.

⁷ "List of Federally-Recognized Tribes in CA | Links and Resources," Indian Health Service: The Federal Health Program for American Indians and Alaska Natives, accessed December 17, 2020, <https://www.ihs.gov/california/index.cfm/tribal-consultation/resources-for-tribal-leaders/links-and-resources/list-of-federally-recognized-tribes-in-ca/?mobileFormat=0>.

⁸ "Fort Ross SHP: A Russian Fort by the Sea," California Department of Parks and Recreation, accessed December 17, 2020, <https://www.parks.ca.gov/>.

⁹ "Our Documents - Treaty of Guadalupe Hidalgo (1848)," www.ourdocuments.gov, accessed December 17, 2020, <https://www.ourdocuments.gov/doc.php?flash=false&doc=26>.

Because there was trade, there had also been a large amount of maritime activity before California's statehood, however, there are no records of designated lighthouses that guided those ships. Perhaps there was only little sailing at night, or large fires were lit on the shorelines, but it is unclear how or if the coasts were illuminated during this pre-statehood era. Problematic were the waters of the Pacific Ocean which saw numerous shipwrecks, loss of life, and the destruction of merchandise. As the population grew, maritime activity increased. It would be necessary to properly define the California coastline if commerce and travel were to be successful, and at this point, the new American government stepped in.

Long before the first lighthouse was lit on the West Coast, captains' ship logs detailed the treacherous journeys they faced when sailing to California. In 1775, on the ship, *The Santiago*, Captain Heceta (1743–1807) discovered cloudy weather and dense fog rendered his travels unsafe.¹⁰ Hubert Howe Bancroft (1832–1918), whose writings provide detailed accounts of California's history, reported it in the following manner: “re-entering the California waters on the 21st, the weather being cloudy, little was learned of the coast. Passing Cape Mendocino during the night of the 25th, he wished to enter San Francisco, but a dense fog rendered it unsafe to make the attempt, though he sighted the Farallones.”¹¹ This minor entry also confirms that, at this point in time and place, the contours of the coastline were not completely known; without visibility, Captain Heceta would not be able to maneuver these waters safely.

Other ships did not bear such luck. On the jagged coast off Point Montara near the San Francisco Bay, there were nearly ninety shipwrecks by the mid-nineteenth century. In 1868 a Pacific

¹⁰ “Heceta House: A History and Architectural Survey,” accessed April 30, 2021, <http://npshistory.com/publications/usfs/region/6/siuslaw/heceta-house/sec1-1.htm>.

¹¹ Hubert Howe Bancroft, “The Works of Hubert Howe Bancroft,” The Online Books Page (San Francisco, late nineteenth century), accessed December 16, 2020, <http://onlinebooks.library.upenn.edu/webbin/metabook?id=works bancroft>.

mail steamship, the *Colorado*, carrying hundreds of passengers, wrecked along a rocky edge, and an outcry grew to install a fog signal.¹² There are long, detailed lists and stories of shipwrecks along the coast that depict various reasons for their demise, including stormy weather, fog, and groundings.¹³ Even today several beaches have remnants of rusting iron, or eroding wooden ships accessible to visitors; divers, too, are able to seek out the last resting places of many of these vessels.

According to the *Encyclopedia of Civil War Shipwrecks*, California was vital to the Union effort in the war, supplying gold to help fuel the Union economy.¹⁴ This is an important detail to consider, specifically because it denotes the growing influence of California as a state. Safe passage was critical to California as well as to the entirety of the United States, which ensured that the economy and lighthouse infrastructure found themselves on equal footing.

Lists of the wrecks of these vessels, including passenger indexes and details of cargo attest to how important the efforts were to light the coastline. There cannot be a blanket statement that indicates lighthouses ensured there were no more shipwrecks. It can, however, be concluded that lighthouses were a definite factor in guiding many more ships safely to harbor.

In 1848 the establishment of eight lighthouses along the West Coast was authorized by the Department of Commerce, and after the California coastline was surveyed, eventual placement of the first group of lights was approved.¹⁵ Secretary of the Treasury

¹² Betty S. Veronico, *Lighthouses of the Bay Area*, Images of America (San Francisco: Arcadia Pub, 2008).

¹³ California State Lands Commission, *California Shipwrecks*, accessed April 30, 2021, <https://www.slc.ca.gov/wp-content/uploads/2018/12/AnnieESmale.pdf>.

¹⁴ W. Craig Gaines, *Encyclopedia of Civil War Shipwrecks* (Baton Rouge: Louisiana State University Press, 2008).

¹⁵ Dennis Noble, "California Naval History: A Brief History of U.S. Coast Guard Operations in California," accessed December 16, 2020, <http://www.militarymuseum.org/USCGinCA.html>.

Alexander Hamilton (1755/57–1804) was the first superintendent of lighthouses, and responsible for the maintenance of lighthouses, buoys, and other aids to navigation. The United States Lighthouse Service was created under the direction of the Department of Commerce, and in 1939, it consolidated its duties with that of the Coast Guard.¹⁶

Lighthouse History, Structure, and Lighting

Lighthouses have been in existence since antiquity. The Lighthouse of Alexandria, also known as the Pharos of Alexandria, was built during the reign of Ptolemy II (280–247 BCE). It was documented as one of the Seven Wonders of the Ancient World.¹⁷ Even during those ancient times, there were a variety of structures that comprised these beacons, and various methods to light the way, one of which included building fires that burned whale oil or kerosene. Often, they were primitive structures, but as technology progressed, so too did the lighthouse design, never straying far from the original intent.

Planning the design and placement of a lighthouse structure is dependent upon a multitude of factors. The structures can be categorized by the construction method, shape, building materials, or even foundation types, for example, terrestrial or aquatic. There are many materials used for building, including wood, masonry, concrete, cast iron, and skeletal structures.

The paint designs used on lighthouse towers are effective in identifying locations along the coast. No two towers are painted in the same manner. Sometimes diagonal stripes, diamonds, or spirals, all called daymarks, were painted down the body of the tower, or a different color of paint was used on the top of the lighthouse. Even if two structures had the same black diagonal

¹⁶ “Consolidation of the Lighthouse Service with the Coast Guard: July 1, 1939,” *Naval History Blog*, July 1, 2012, <https://www.navalhistory.org/2012/07/01/consolidation-of-the-lighthouse-service-with-the-coast-guard-july-1-1939>.

¹⁷ Veronico.

stripes, there was still something different about them to visually distinguish one from the other. None of the lighthouses on the West Coast today have painted stripes, but they all have different shapes and signals to distinguish them from each other.

In addition to lighthouses, lightships, including one in the San Francisco Bay, were set afloat in the waters as an alternative to the land structures when it was not feasible to build a lighthouse. They were a convenient form of light as they were moveable from one station to the other. Light Vessel (LV) 70 was the first lightship called *San Francisco* and was stationed 8.6 miles west of the Golden Gate Bridge, marking the main shipping channel into the San Francisco Bay.¹⁸ Foghorns were also installed at some locations where visibility was severely restricted. These devices sound hazard warnings for vessels on the seas or advise of rocky coastlines when the fog is extreme enough to inhibit the light from lighthouses.

Perhaps the most important technology developed for lighthouses was the light itself. Oftentimes the quality was insufficient and the need for a better application arose. Whereas fires may have lit the way during antiquity, glass lenses, incandescent bulbs, and electricity eventually became the mechanics used in these structures.

The Fresnel lens, designed by Augustin-Jean Fresnel (1788–1827) and completed in 1822, was a major step forward in lighthouse lighting technology. The lens itself is a beautifully constructed device, composed of hundreds of pieces of glass that is lit up from within, for example, by burning whale oil. The placement of the glass pieces in a barrel shape intensifies candlepower and focuses a beam of light that can be broadcast miles out into the ocean; timing mechanisms ensure the light can flash in a variety of combinations, helping to distinguish one lighthouse from the other. Varying sizes of the lenses are called orders. They range from a first order lens to an eighth order. One of the largest first order lenses stood ten to twelve feet tall,

¹⁸ Veronico.

measured more than six feet in diameter (interior), and was made of more than one thousand glass prisms weighing as much as 12,800 pounds. It used four to five wicks and burned more than twenty-six ounces of fuel an hour. It was visible for more than twenty nautical miles.¹⁹

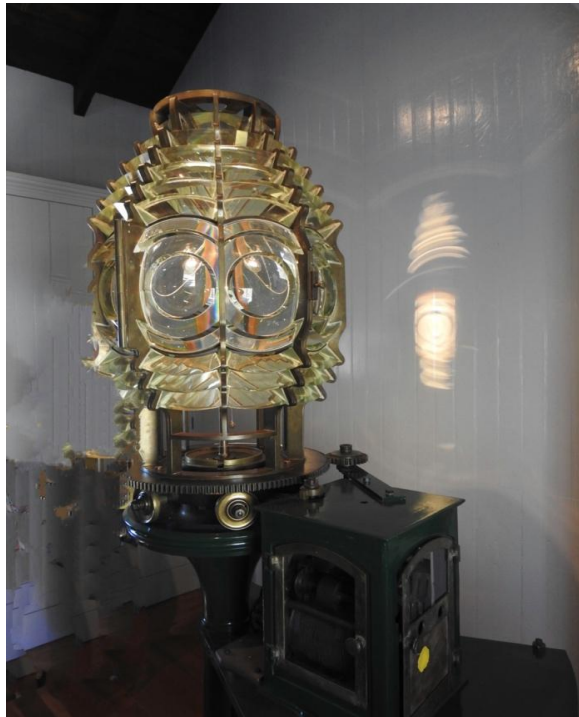


Figure 1. Third order Fresnel lens from the Point San Luis Lighthouse. Courtesy of Cecelia Smith.²⁰

Lighthouse Keepers

The lighthouse keepers have distinct duties, those of which offer no romance or mystery. Structures attached to the lighthouse, or built alongside, are usually homes for the lighthouse keeper. Some

¹⁹ Veronico.

²⁰ Photograph courtesy of Cecelia Smith.

facilities allowed for the keeper and his entire family to reside, including his small children, and some facilities could house several families. Oftentimes there was a head keeper and an assistant, but depending on the duties at a particular lighthouse there could be several assistant keepers.

Normally thought of as a masculine job, visitors to lighthouses across America are often surprised to learn that there were many women lighthouse keepers. Women took over after the death of a spouse, and they were expected to perform their duties without any exceptions. It was also the lighthouse keeper's job to maintain the actual structure, buildings, and also assist with any rescues from shipwrecks that occurred in the vicinity. In a review of the book, *Women Who Kept the Lights: An Illustrated History of Female Lighthouse Keepers*, historian Janet L. Coryell writes that,

Many served after husbands or fathers had died in service, particularly in the first half of the nineteenth century. The job was lonely, dangerous and exhausting. Male or female, the lighthouse keeper had to be a good housekeeper, cleaning the lenses, maintaining the supplies of fuel and refueling reservoirs, ensuring that the light and fog horn or bell were always functioning, particularly during stormy weather when they were most needed and most dangerously maintained.²¹

The first female lighthouse keeper on record is Hannah Thomas, who took over a Massachusetts lighthouse in 1775 after her husband left to fight with the colonial army. She maintained two lights, even surviving a skirmish between a British warship and the militia who were protecting the lighthouse station.²²

²¹ Janet L. Coryell, *Michigan Historical Review* 20, no. 2 (1994): 212-13. Accessed June 3, 2021. [doi:10.2307/20173472](https://doi.org/10.2307/20173472).

²² Patricia Majher, *Ladies of the Lights: Michigan Women in the U. S. Lighthouse Service* (Ann Arbor: University of Michigan Press, 2010).

In 1855 and 1856, the California coast was becoming illuminated. Ten lighthouses came online in those two years, two more than were first authorized. Noting the placement of the lighthouses, it is easy to determine which areas in the ocean were the most detrimental for ships, and which ports were important and beneficial for the economy.

The Lighthouses

Alcatraz Island Light – The First of the California Lighthouses

San Francisco is known for many things, especially earthquakes and fires, but perhaps its fog maintains the most consistently ominous infamy. Chuante Howard, a former student at the University of San Francisco, described it in the following manner: “It is like a rolling grey carpet that simply consumes everything and comes over the city like a giant wave.”²³ Imagine an 1850s San Francisco with less of the city illuminated, and one can easily understand the necessity for a lighthouse to light the way for ships through the dangerous waters.

The importance of placing a lighthouse in the San Francisco Bay was recognized by the sheer volume of maritime activity generated by the gold rush at Sutter’s Mill. Therefore, Alcatraz Island Light became the first lighthouse on the California coast, erected in 1853. The lighthouse was not lit until 1854 after a new Fresnel lens was installed. A fixed, third-order lens powered by whale oil, was lit by head keeper Michael Cassin for the first time on June 1, 1854. The beam could be seen for up to nineteen miles.²⁴

The journey to the infamous Alcatraz Island is a tourist boat ride across approximately one mile of, at most times, choppy waters. In the distance looms the famous Golden Gate Bridge,

²³ Chuante Howard (former student, University of San Francisco), in discussion with the author, December 2020.

²⁴ Veronico.

which itself was completed in 1937; its rust-orange hue often shrouded in fog. Visitors disembark from crowded boats and can begin the hike to the top of the hill where the current lighthouse sits.

Alcatraz Island was initially used as a military facility and prison, designated so by President Millard Fillmore (1800–1874) in 1850.²⁵ The initial lighthouse was a short tower protruding from the center of the roof of the keeper's house, but when the federal penitentiary was ultimately built to replace the military facility, it was determined that a new tower should also replace the older structure. The new tower soared to eighty-four feet and the old keeper's residence was demolished. The new lighthouse's Fresnel lens was lit in 1909.

After earthquakes, fires, a stint as a federal prison, and finally a Native American occupation, the facility was in ruins and scheduled for demolition.²⁶ Alcatraz Island was eventually turned over to the Golden Gate National Recreation Area, a group that maintains and refurbishes the facility. The Alcatraz lighthouse is not open to the public, but private tours can be arranged, and visitors can stand right next to the tower itself. Several buildings are in ruins across the island, but the prison facility is open for tours.

²⁵ Ibid.

²⁶ "Alcatraz Island Occupation (1969-1971)," *A Radical Guide* (blog), accessed January 2, 2021, <https://www.radical-guide.com/listing/alcatraz-island-occupation-1969-1971/>. Native American occupation occurred between 1969-1971 when 89 American Indians who called themselves Indians of All Tribes (IOAT) occupied the island under the Treaty of Fort Laramie (1868).



Figure 2. The lighthouse on the Island of Alcatraz. Courtesy of Cecelia Smith.²⁷

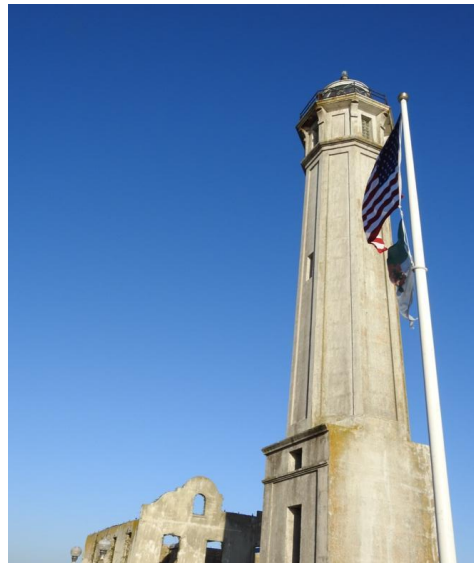


Figure 3. Alcatraz Light up close (San Francisco, CA). This structure was lit in 1909. Courtesy of Cecelia Smith.²⁸

²⁷ Photograph courtesy of Cecelia Smith.

²⁸ Photograph courtesy of Cecelia Smith.

To underscore the importance of the San Francisco Bay, Alcatraz is not the only lighthouse. Lime Point and Fort Point are two smaller structures to the north and south ends of the narrowest opening of the Bay. Mile Rocks Lighthouse is just about a mile outside the entrance, while Southamptton Shoal, East Brother, and Carquinez Strait are all further inland. The Relief Lightship, WLV 605, was decommissioned and remains anchored in the harbor, used now as a floating classroom. Farallon Island Lighthouse is about thirty miles west of the San Francisco Bay and is located on the tallest of the group of islands in this area of the ocean.

Point Bonita Lighthouse

Marking an entrance to the San Francisco Bay, Point Bonita Lighthouse was founded in 1853, but not lit until 1855. Its original lighthouse was a fifty-six-foot conical brick tower situated 260 feet above sea level. Alongside the tower was a one-and-a-half-story brick and stone cottage. But as with the lighthouse in San Diego (Old Point Loma), the fog hovered over the structure, most often rendering it useless. A different location was selected, however, there were still problems securing the structure and providing better access. In 1876, Chinese workmen responsible for the Sierra tunnels of the Transcontinental Railroad were brought in to dig a 118-foot tunnel, by hand, through the rock that would eventually lead out to the tip of Point Bonita.²⁹

Today, visitors still access the lighthouse by walking through the tunnel. They then must cross a small suspension bridge, which had been built over a chasm that had developed from erosion and earthquake damage, separating the lighthouse from the land. Point Bonita was the last manned lighthouse on the California coast.³⁰

²⁹ Kraig Anderson, "Lighthouse Friends," accessed December 29, 2020, <https://www.lighthousefriends.com/>.

³⁰ Ibid.



Figure 4. Point Bonita Light (San Francisco, CA). First lit in 1855. Courtesy of Daphne M. Howard.³¹

Point Loma Lighthouse (Old and New)

The southern portion of California also required an establishment of lights, as its stretch of coastline featured jagged rocks and natural bays. Difficulties abounded with the development of San Diego as a port city, however, after the passage of time, San Diego became the most important city on the southern border. In 1855, prescient visionaries saw the importance of the location, and San Diego was awarded a lighthouse.³²

Today there are two lighthouses in San Diego: Old Point Loma and New Point Loma. Old Point Loma was lit in 1855, some 422 feet above sea level.³³ The lighthouse was styled as a house with the tower centered towards the middle. There were several outbuildings alongside the main house. Unfortunately, the location selected was a veritable disaster. Fog and low clouds often

³¹ Photograph courtesy of Daphne M. Howard.

³² Anderson, "Lighthouse Friends."

³³ "The Lighthouses of Point Loma - Cabrillo National Monument," US National Park Service, accessed April 22, 2021, <https://www.nps.gov/cabr/learn/historyculture/the-lighthouses-of-point-loma.htm>.

obscured the light causing it to be mostly ineffective. The decision was made to establish a new lighthouse much lower towards the ocean. The second structure is an iron skeleton that sits on a bluff just below the location of the original house. The new light was lit in 1891.³⁴

Unique to San Diego, both lighthouses remain. The old lighthouse has been refurbished and is accessible to visitors. Walking up a short hill one can see the inside of the lighthouse just as it was 166 years ago. The view is spectacular from this point. The Old Point Loma Lighthouse, though not functional, sits on its bluff above the New Point Loma Lighthouse, almost as a keeper watching over its charge.



Figure 5. Point Loma Lighthouse (old) in San Diego, California. Constructed with a lighthouse keeper residence and lighthouse structure protruding from the middle. Courtesy of Cecelia Smith.³⁵

³⁴ Anderson, "Lighthouse Friends."

³⁵ Photograph courtesy of Cecelia Smith.



Figure 6. The second structure at Point Loma Lighthouse is an iron skeleton that sits on a bluff below the original house. Courtesy of Cecelia Smith.³⁶

Battery Point—The Northernmost Lighthouse on the California Coast/St. George’s Reef—The Most Expensive and Difficult to Construct

The ocean is a constant companion to the Pacific Coast Highway near the border of California and Oregon, except for a few miles inland. Coming from inland, on twisting and turning roads that are occasionally hidden amongst giant trees, you arrive at Crescent City, where two lighthouses reside: Battery Point and Saint George’s Reef.

Battery Point Lighthouse was first activated in 1856, one of the ten lighthouses lit during the prolific two-year effort undertaken to build lighthouses. Crescent City is very near ancient redwood forests; lumber ships were the main traffic in the harbor. Perched upon the edge of an isthmus, the lighthouse can be accessed by walking across the narrow stretch of land to reach it. However, attention must be paid to high tides, as visitors can become trapped when the isthmus becomes an island.

³⁶ Photograph courtesy of Cecelia Smith.



Figure 7. Battery Point Lighthouse at Crescent City. Courtesy of Cecelia Smith.³⁷

The Battery Point coastline is covered with jagged rocks. In addition, six to eight miles off-shore is a submerged volcanic mountain. It was dubbed the “Dragon Rocks” by British explorer George Vancouver (1757–1798) in 1792 due to the obscuring of the rocky area by a thick, smoke-like spray. After the shipwreck of the passenger steamer *Brother Jonathan*, which saw the loss of almost two hundred passengers, the urgency to install a lighthouse grew. Congress appropriated funding and construction began in 1881.³⁸

The major difference between this lighthouse and many others was its location. St. George’s Reef Lighthouse was to be built atop volcanic rock, miles from the coastline, and amid turbulent waters. A ship was moored to the rock to house the construction workers as they worked on the lighthouse.

St. George’s Reef Lighthouse is one of the greatest building feats among American lighthouses. This is due to the volcanic rock

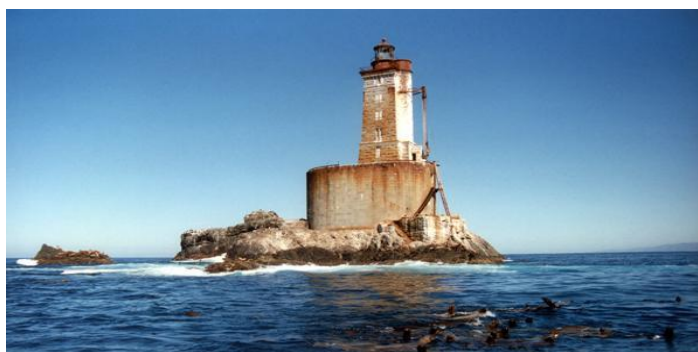
³⁷ Photograph courtesy of Cecelia Smith.

³⁸ “Legendary Lighthouses: Great Lighthouses,” PBS, accessed December 30, 2020, <http://www.pbs.org/legendarylighthouses/html/calgl.html>.

on which it was constructed, the cost, and the isolation of its keepers. At the end of its construction period, eleven years later in 1892, the total cost for the lighthouse was \$704,633, the equivalent of nearly one hundred million dollars today. It is the most expensive lighthouse ever built.³⁹

The ferocity of the water at this specific point also ensures it is one of the more dangerous places for a lighthouse keeper to live. The winter of 1952 proved to be one of the harshest on record as 160-foot waves swept over the lighthouse. One of the more tragic occurrences to take place in its history happened when three Coast Guardsmen were drowned as a wave capsized their boat as they prepared to leave. Another keeper had to be removed due to a mental breakdown.⁴⁰

This structure is difficult but not impossible to photograph, however, you must have a powerful telephoto lens and be positioned in the right area on a clear day. St. George's Reef was rescued by a preservation society. Their ultimate goal is to provide access to the public. Currently, helicopter flights to the station are available.



*Figure 8. St. George's Reef Lighthouse. Courtesy of Kraig Anderson.*⁴¹

³⁹ "Legendary Lighthouses: Great Lighthouses."

⁴⁰ Ibid.

⁴¹ Photograph courtesy of Kraig Anderson, "California Lighthouses," accessed December 28, 2020, <https://www.lighthousefriends.com/pull-state.asp?state=CA&Submit=Go>.

Piedras Blancas – The Lighthouse with No Top

The lighthouse at Piedras Blancas has an unusual look. It is missing about thirty feet of its top. Piedras Blancas is located near the city of San Simeon, along the central coast of California. The lighthouse is next to an elephant seal sanctuary and on clear days visitors can sometimes catch sight of passing whales. This city became a whaling port, along with lumber, produce, and other goods. Otters frequented the area but were massively hunted for their fur.

Approval for the lighthouse was granted in 1872 and the structure was built and finally lit in 1875.⁴² To visit this lighthouse, you must plan ahead and purchase tickets. The facility is only accessible during specific hours and tours are led by docents. At a parking lot about a mile away from the lighthouse, you are met and led in a caravan onto the property.

The United States Bureau of Land Management owns the property, and the Piedras Blancas Light Station Association was formed to raise money to preserve the structure. They plan to restore the top floors to the lighthouse.

⁴² Jeremy D'Entremont, *The Lighthouse Handbook: West Coast* (Kennebunkport, ME: Cider Mill Press, 2016).



Figure 9. Piedras Blancas Lighthouse. Courtesy of Cecelia Smith.⁴³

Pidgeon Point Lighthouse

One of the most picturesque lighthouses along the coastline is Pidgeon Point Lighthouse in Pescadero, California. This lighthouse shares the title of tallest on the West Coast with Point Arena Lighthouse. Both structures have 115-foot towers. It originally contained a first order Fresnel lens made up of 1,008 separate prisms. The four ranch-style houses that now sit on the property were built by the Coast Guard in 1960 after the original buildings were torn down. The four structures today are leased to American Youth Hostels, Inc., for use as economical, dormitory-style accommodations. The facility was transferred to the authority of the California State Parks and Peninsula Open Space Trust in 2004, and funds are being raised for restoration purposes.⁴⁴

⁴³ Photograph courtesy of Cecelia Smith.

⁴⁴ Anderson, "Lighthouse Friends."



Figure 10. Pidgeon Point Lighthouse. One of the tallest remaining on the West Coast, it is located in the area of Half Moon Bay. Courtesy of Cecelia Smith.⁴⁵

Santa Cruz Light – Santa Cruz Breakwater Light – The Last Built

The Santa Cruz Light and the Santa Cruz Breakwater light are approximately two miles apart. The first to be built was the Santa Cruz Light which was authorized in 1852 but not begun until after the Civil War (1861–1865) due to disputes over land ownership. It was finally lit in 1870 with a fifth order Fresnel lens and a lard-oil lamp.⁴⁶ This lighthouse sits in Monterey Bay which had become a busy port for ships taking on loads of redwood and other agricultural products in the nineteenth century. The lighthouse has been refurbished and was dedicated as the Mark Abbott Memorial Lighthouse, in honor of a surfer who lost his life in this area. The facility was repurposed as a surfing museum.⁴⁷

The Santa Cruz Breakwater Light was the last official lighthouse to be constructed along the coast and sits at the edge of Santa Cruz harbor. The spot had been the site of other styles of lighthouses, including a box structure, a cylinder nicknamed “the

⁴⁵ Photograph courtesy of Cecelia Smith.

⁴⁶ Anderson, “California Lighthouses.”

⁴⁷ Anderson, “Lighthouse Friends.”

water heater,” and finally a simple pipe before it was replaced by the current structure. It was completed in 1964 and refurbished in 2002. This lighthouse is also known as the Walton Lighthouse, due to major donations from Charles Walton of Los Gatos, and dedicated to his brother, Derek, a merchant marine lost at sea during World War II.⁴⁸



Figure 11. Santa Cruz Light. Courtesy of Cecelia Smith.⁴⁹

⁴⁸ Anderson, “California Lighthouses.”

⁴⁹ Photograph courtesy of Cecelia Smith.



Figure 12. Santa Cruz Breakwater Light. Courtesy of Cecelia Smith.⁵⁰



Figure 13. The Lighthouse at Point San Luis. This structure is a tower built next to the actual keeper's Victorian, two-story residence. A narrow stairway leads to the top where the fourth order Fresnel lens was mounted. The light was first lit in 1870. This lighthouse sits on Pacific Gas and Electric Company property which operates the Diablo Canyon Nuclear Generating Facility.⁵¹ Visitors must take a tram to get to the lighthouse. Courtesy of Cecelia Smith.

⁵⁰ Photograph courtesy of Cecelia Smith.

⁵¹ Anderson, "California Lighthouses." Photograph courtesy of Cecelia Smith.



Figure 14. Point Fermin Light (San Pedro, CA). First lit in 1874. The lighthouse guards the harbor at San Pedro. The original facility had a chicken coop. The lighthouse is surrounded by a beautiful park, accessible to the public. It is maintained by the City of Los Angeles but managed by the Point Fermin Historical Society. Courtesy of Cecelia Smith.⁵²



Figure 15. Anacapa Light (Channel Islands, CA). First lit in 1912. Visitors to Anacapa Light must take a boat ride to the islands. It is approximately twelve miles off the coast of California, and the boat ride takes an hour. The islands have been designated as Channel Islands National Park. Courtesy of Cecelia Smith.⁵³

⁵² Anderson, "Lighthouse Friends." Photograph courtesy of Cecelia Smith.

⁵³ Anderson, "Lighthouse Friends." Photograph courtesy of Cecelia Smith.

The Demise of the Lighthouse

The demise of lighthouses occurred for a variety of reasons, including the passage of time, natural disasters, and the progression of technology. Corrosion from saltwater and destabilization from earthquakes are natural nemeses that saw numerous lighthouses crumble.

An example was the 1906 San Francisco earthquake. This event struck on April 18, 1906, at 5:12 a.m., the three keepers at Point Arena Lighthouse and their families were forced outside when the house they occupied began to break apart. A black bear charged towards the group as one of the keepers ran back inside to grab a rifle. He managed to kill the bear, but they were left without a residence and had to make do with temporary shelter. The keepers wrote in the station's logbook:

A heavy blow came quick and heavy, accompanied by a heavy report. The tower quivered for a few seconds, went far over to the north, came back, and then swung north again, repeating this several times. Immediately after came rapid and violent vibrations rendering the tower apart, the sections grinding and grating upon each other; while the lenses, reflectors, etc., in the lantern were shaken from their settings and fell in a shower upon the iron floor.⁵⁴

There are other examples of earthquakes destroying or damaging these structures, such as the Mare Island Lighthouse in 1886 and Alcatraz Lighthouse in 1906, both in San Francisco.⁵⁵ The replacement of many of the lighthouses and buildings along

⁵⁴ "Lighthouses@Lighthouse Digest ... Earthquake Wrecks Point Arena Lighthouse," Lighthouse Digest, accessed January 3, 2021, <http://www.lighthousedigest.com/digest/StoryPage.cfm?StoryKey=4473>.

⁵⁵ Anderson, "Lighthouse Friends."

the California coast was due to earthquake damage, going as far back as the late nineteenth century. Some received enough damage to be structurally compromised, while others lost lighthouse towers or other vital parts of the buildings. It was and continues to be costly to refurbish lighthouses, and many times they are left to ruin.⁵⁶ The Fresnel lens would require exceptional expertise to repair, and thus only a few of these beacons remain in service. Often, the lens itself was removed and became an established focal point in nearby museums. Ultimately, time has taken great tolls on many of these structures, seeing some in complete ruin; cracked facades, broken windows, crumbling, or completely rusted away are all part of their degradation.

The development of RADAR (Radio Detection And Ranging) and SONAR (Sound Navigation And Ranging) was a valuable and timely asset. Today's ships and other modes of transportation cannot function without them. A more recent technological advance was the implementation of the Global Positioning System or GPS. It is a satellite-based navigation system consisting nominally of twenty-four satellites. The space-based component of GPS functions 24 hours a day under any conditions. It was originally a military application, run by the United States Department of Defense, but was made available for civilian use in the 1980s.⁵⁷ It is these technological advances that have also rendered many lighthouses mere contingencies. With future technology including remotely operated vehicles, improved artificial intelligence, and autonomous ships, the existence of the

⁵⁶ Christina Caron, "True Cost of Buying a Cheap Lighthouse? That Should be Visible a Mile Away," *New York Times*, August 9, 2017, accessed May 1, 2021. <https://www.nytimes.com/2017/08/09/us/buy-a-lighthouse-michigan-maryland.html>.

⁵⁷ "Global Positioning System History," NASA, accessed April 30, 2021, https://www.nasa.gov/directorates/heo/scan/communications/policy/GPS_History.html.

lighthouse is tenuous at best.⁵⁸ They have by no means been shut down completely, for ships do still follow the lights and foghorns. But with the rapid advancement in navigational technology, the hundreds of satellites in the sky, and new computer-aided programs, lighthouses are slowly becoming obsolete and often found in varying states of deterioration.

The lighthouse keeper also became obsolete over time as lighthouses were eventually automated. Most of California's lighthouses were automated in the 1970s, with the earliest, the concrete Santa Barbara Light, automated in 1928.⁵⁹ There is only one lighthouse in the United States that still retains a lighthouse keeper. A law was passed in 1989 that required the Boston Light in the Boston Harbor Islands National Recreation Area to remain manned. It is the oldest continuously used and manned lighthouse in the country built in 1716, pre-dating the Revolutionary War (1775–1783). It has been moved, severely damaged by storms and fires, and blown up by the British, but it was rebuilt by Massachusetts in 1783 and has been a functioning feature ever since.⁶⁰

Photograph a lighthouse from far away and you are likely to capture a gorgeous scene, with what appears to be a flawless building resisting the forces of nature surrounded by blue waters churning and foaming against a dark, rocky coastline. But stand next to many of these structures and you will see the toll that time has taken. Check any listing of lighthouses for California and there are references to those structures that used to be, including places such as Ano Nuevo Light, Ballast Point Light, Humboldt Harbor Light, Mare Island Light, and Point Knox Light. Some of these places can be visited, but the most that visitors would see are

⁵⁸ Shannon Regan, "3 Technologies Transforming the Maritime Industry," Deep Trekker, accessed January 3, 2021, <https://www.deeptrekker.com/news/technologies-transforming-maritime>.

⁵⁹ Anderson, "Lighthouse Friends."

⁶⁰ "Boston Light - Boston Harbor Islands National Recreation Area."

rusted remnants or concrete moorings. Ballast Point Light, for example, is now the grounds of the Naval Base Point Loma.

Many lighthouse devotees travel all over the country and try to tour every one of these historic buildings. Lighthouse “passport” books from the United States Lighthouse Society allow visitors to obtain a stamp as a record that they have visited these places.⁶¹ As a result of this interest and enthusiasm, lighthouse preservation groups have grown. In 2000, Congress passed the National Historic Lighthouse Preservation Act of 2000 (NHLPA) which allows the United States Coast Guard to declare some historic lighthouses as excess and transfer them, at no cost, to federal agencies, state and local governments, non-profit corporations, educational agencies, and community development organizations.⁶² The groups must be financially stable, able to maintain the historic lighthouse station and must make it available for education, park, recreation, cultural, or historic preservation purposes for the general public.

Oftentimes when visiting these historic lighthouses, the non-profit organizations are attempting to raise money to restore the facility, or at least help maintain its upkeep. Docent-led tours are free or have a low cost for entry, and many of the sites run souvenir shops with images of the lighthouse on cups and keychains, along with a variety of informational books.

Conclusion

California would see the development of infrastructure, in the form of lighthouses, that paralleled the growth of its economy. The lighthouses along California’s Pacific coast would support the exploding maritime activity in its burgeoning ports. Were it not for

⁶¹ “U.S. Lighthouse Society’s Passport Program | US Lighthouse Society,” United States Lighthouse Society, accessed December 29, 2020, <https://uslhs.org/fun/passport-club>.

⁶² “National Historic Lighthouse Preservation Act | Maritime Heritage Program,” National Parks Service: US Department of the Interior, accessed December 29, 2020, <https://www.nps.gov/maritime/nhlpa/intro.htm>.

these lighthouses and the vigilance of its keepers, the foggy, treacherous waters along the coast would be remarkably difficult to traverse. The maritime activity helped to bring a populace, commerce, ideas, and innovations to and from this state, ultimately creating one of the largest economies on earth.

Today's economy is boosted by, among other things, agriculture, manufacturing, technology, and tourism. California is amongst the leaders of states with touristy destinations. Forward-thinking and progress ensure that it will remain a viable leader in economic growth. Visitors from all over the world come to see its famous attractions, as well as its natural beauty.

There are as many as forty-six (some lists catalog up to fifty) locations for lighthouses, including the thirteen spots around the San Francisco Bay, and seven structures that are no longer in existence.⁶³ There are thirty that are still standing. Some are still functioning and are automated. At least sixteen are available to visitors or can be viewed from a reasonable distance along the coast, and there are a few that have been renovated into bed and breakfast inns, still a viable support for the economy. A planned excursion along the coast and a detour to one of these artifacts would be a fitting homage to the lighthouse infrastructure, as well as honoring the memory of the men, women, and children who sometimes risked their lives in the name of securing the safety of thousands of ocean-bound mariners and passengers.

Visiting the lighthouses along the coast of California is like stepping into the past with both feet planted in the present. Stare at the structure with its rust stains and cracks in the façade, and you consider the havoc that time has wrought. Walk inside the lighthouse or the keeper's home, and you embrace an odd sense of nostalgia. Take the narrow, spiral staircase upward and you feel a kinship with the men and women who trudged these stairs numerous times a day. Consider the spot where a massive, beautiful lens once turned and you are impressed by the brilliance of Augustin-Jean Fresnel. Stand aloft looking outward across the

⁶³ Anderson, "Lighthouse Friends."

water and its beaches and you marvel at the wonderment and exquisite nature of the coastline of California.

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Author Bio

Cecelia M. Smith was born and raised in Los Angeles County and attended Howard University after high school. She relocated to San Bernardino County as an adult and resumed her pursuit for higher education at Chaffey College, eventually obtaining a Bachelor of Arts in History at California State University at San Bernardino in 2013. After a hiatus, she returned to CSUSB and enrolled in the inaugural class of the Master of Arts in History program. Her focus is on African-American Women's history. She plans on graduating in 2022, and engaging in further research and writing. She retired from the City of Los Angeles as a dispatcher for the police department after 35 ½ years of service. Cecelia is a breast cancer survivor, the mother of two children, Alycia and Cameron, and currently resides in Fontana with her husband, Lydell, and dog, Ruckus.



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