

Cell Phone Tour Stop 1

What was this place like 250 years ago?

Female voice

Hi, I'm Kristin Baron, an architectural historian with the National Park Service. I was part of the team that helped revitalize Fort Baker. In fact it's one of my favorite places, with its rich history and wonderful views. Speaking of which, right now I want you to turn and look out on San Francisco Bay and imagine what it was like 250 years ago, when the air was clean and the landscape clear of the urban core that houses almost a million people today. Imagine a time with no Golden Gate Bridge. A time when the Coast Miwok Indian population here, could only visit the Ohlone villages on the other side of the bay, by paddling small reed canoes across the strong currents of the Golden Gate Strait. Descendants of these Coast Miwok still tell us of their past.

Second female voice

Hello, '*oppun towis*, I am Angela Hardin and I am Coast Miwok. These are the lands of my ancestors – the Coast Miwok. Today one can hear languages and meet people from around the world—Europe, Africa, and Asia. But for thousands of years before Europeans arrived, the languages here were those of my people, the Coast Miwok and Southern Pomo.

This place is still rich and lush, but once elk, *tanta*, and deer, *choyyekke*, grazed in the valleys while the mountain lions, *upuksu*, and bear, *kule*, roamed the hills. Oak trees grew scattered across the grassy hills, and the air was filled with birds.

For countless generations, we raised our families in villages dotted across the area. A Miwok group known as the *Huimen* people lived in *Liuaneglua*, the largest nearby village, located in what is now called Sausalito. Villages were built near marshes and streams. The land and the sea gave us all the other materials we needed – wood for tools and fire, plants for food and medicine, and the animals for food, tools, and clothing.

Male voice

To hear an account of the first Spanish contact with the Coast Miwok dial 22#.

Cell Phone Tour Stop 2

What do ice ages have to do with San Francisco Bay?

Male voice

So how did San Francisco Bay's dramatic landscape come to be? How and when did the bay and hills around you form? Geologically speaking, they are new features; the result of great tectonic plates colliding and grinding past one another, of sea level rising and falling as ice ages come and go, and of a rushing glacial-fed river cutting a new course to the ocean.

San Francisco Bay first filled only 650 thousand years ago, at a time when glaciers in the Sierra Mountains and the continent's interior melted and sea level rose. About that same time, a glacier-fed lake in central California, nearly the size of Lake Michigan overtopped a ridge and catastrophically flooded down to the bay and ocean, cutting the modern Sacramento River valley on its way. Since then, the bay has drained and filled six times, as glaciers have built up and retreated. Scientists predict the bay will rise between three and five feet in the next century due to global warming.

The rocks under your feet and other hills around the bay mostly formed on the sea floor over 100 million years ago, as the tectonic plate under the Pacific slid beneath North America-- a process called subduction. Then, about 12 million years ago, the San Andrea fault formed in this area. Now the Pacific Plate was sliding past the North American Plate instead of under it and the California coast of today started to emerge from the sea. But it wasn't until about 4 million years ago that today's coastal hills and mountains started to form when a shift in plate motion caused crumpling and folding along the San Andreas.

Second male voice

To learn more about the rocks at Fort Baker dial 23# now.

Cell Phone Tour Stop 3

What's so special about California's grasslands?

Male voice

Look up at the grassy hills around Fort Baker... These emerald winter, turned vibrant golden, late summer grasslands are a signature feature of California... Sadly, only one percent of the state's native grasslands are intact, due to overgrazing and introduced European grasses. Yet, the remaining grasslands harbor the majority of the states rare and endangered species.

Fort Baker contains remnants of the most species-rich grassland community in North America, the California coastal prairie. Coastal prairie is dominated by perennial bunchgrasses that can live for over 100 years. And these grasses shelter an abundance of wildflowers and bulbs. These grasslands also provide habitat for rodents such as mice, gophers, and voles, which are in turn hunted by hawks and other birds of prey. Some ground nesting birds also make their home here. But insects truly own this place, and among them are many species of butterflies, including the endangered Mission Blue.

Second male voice

To learn about the Mission blue butterfly dial 24# now.

Cell Phone Tour Stop 4

William Richardson; hopeless romantic or land grabber?

Female voice

After the Spanish colonized the area in 1776, it took some time for Europeans to inhabit the lands north of the Golden Gate. The grasslands of the area did provide good prospect for cattle ranching, and in 1838 during the Mexican period, the Marin Headlands and what would someday become Fort Baker became part of Rancho Sausalito, owned by William Richardson. Richardson tells the story of his life here....

Male voice

I spent a large amount of my early years on the sea, as just a cabin boy and would later work my way up the ropes to become a Captain.

In 1825, I found myself in San Francisco falling in love with Maria Antonia Martinez, daughter of the commandant of the Presidio. So, I became a Mexican citizen, married my love and built a home made of redwood, near the Yerba Buena cove. Our house was the first home in what is now San Francisco.

After a number of years, I obtained land in the southern Marin headlands, The Rancho was officially granted to me from Governor Alvarado. The land was rich and untouched, 20,000 acres of what is known now as Rancho Sausalito. And in 1844 I was awarded a second tract of fertile land along the Mendocino coast.

I had made a series of poor investments and at the end of my life, I had lost almost everything. In a last attempt to salvage what we had, 640 acres were deeded over to my wife and the rest of the rancho was left in the hands of my administrator, Samuel Throckmorton.

Cell Phone Tour Stop 5

How many ways can a harbor be defended?

Female voice

As one of the first Europeans to see San Francisco Bay, Spanish priest Pedro Font described it 1776...

Male voice in Spanish followed by same male voice in English

The port of San Francisco...is a marvel of nature, and might well be called a harbor of harbors... I've seen none that pleased me so much as this. And I think if it could be well settled like Europe there would not be anything more beautiful in all the world, for it has the best advantages for founding in it a most beautiful city.

Original female voice

Look out over the bay and see how Father Font's prophetic vision has been realized. Ever since gold was discovered in 1848, it has been the army's highest priority to defend this strategic harbor. Although there are many ways to defend a harbor, the army built four generations of harbor defenses here. The first generation used brick forts with many cannons to level crossfire on enemy ships. Only two of the three planned forts, at Fort Point and Alcatraz Island, were constructed. The Lime Point installation, planned for Fort Baker, was never built. The next generation of harbor defenses, from the 1870s to the 1920s, consisted of large rifled guns dispersed along the bay entrance. This generation led to the construction of batteries at Fort Baker. The third generation, during World War Two, relied on huge 16-inch guns on the coastal bluffs, and underwater mines managed from Fort Baker. After the war, Nike missiles at Fort Cronkhite, to the west of Fort Baker, deterred attacks from Russian bombers into the 1970s.

Second male voice

To learn more about Fort Baker's Battery Yates dial 25# now.

Cell Phone Tour Stop 6

Why build Fort Baker here?

Female voice

Before you lies Fort Baker. Let your imagination carry you back. Way back to 1866, when San Francisco was a growing city and its harbor bustled with activity. This was still ranchland then, newly purchased by the army to build a brick fort to protect the harbor entrance... a fort to match Fort Point which still stands today across the Golden Gate Strait. But the new fort was never built. Steep cliffs hampered its construction and newly developed artillery could destroy brick forts. Instead, the army built a system of hidden and dispersed gun batteries on the surrounding hills from the 1870s to 1905.

General Nelson Miles spoke of the need for modernizing San Francisco's harbor defenses in 1897...

Male voice

It is necessary to occupy new ground and to adopt a new system to defend Pacific Coast harbors. The commanding position known as Fort Baker is now receiving batteries of modern guns and mortars, soon to make it what I call 'the Gibraltar of the Pacific Coast'.

Original female voice

At first the soldiers who manned these large guns camped in tents, but cold fog and winds soon made permanent housing a necessity. Thus grew Fort Baker starting in 1901.

Cell Phone Tour Stop 7

Why a horseshoe design?

Female voice

Look out towards the flag pole and grassy open parade ground and think back to a hundred years ago. Can you hear the soldiers marching... and officer's children playing on the far side?

The layout of Fort Baker and other military posts built around 1900 reflects the highly structured hierarchy of military life. At the top of the parade ground lies the largest and most ornate house, where Fort Baker's commanding major or colonel lived. Below the commander's house, the parade ground separates lower ranking officers' quarters on one side, from enlisted men's barracks on the other. At the bottom is the guardhouse with a stockade for prisoners.

The flagpole is the symbolic center of the army post, flying the colors of the nation the army defends. The surrounding parade ground provides an open space for drills, marching, and public ceremonies. Drills and marching instill discipline and weld soldiers into organized groups that act as one in battle. Ceremonies express the army's tradition of recognition and reward.

Cell Phone Tour Stop 8

Why did army life improve in the late 1800s?

Female voice

You are standing before 100 year old structures built for the “new army.” By the late 1800s, the army realized it had a problem with their recruits. The people who enlisted were often in trouble or flat out broke -- and the poor pay, and low quality of army food, clothing and housing provided little to attract better quality recruits. Col. Richard L. Dodge spoke of this in 1885.

Male voice

Some enlist because they really believe the life will suit them; others from disappointments in business or love affairs: others again to hide themselves from some youthful scrape – but the large majority are driven to enlist by absolute want.

Original female voice

High desertion rates and low morale led the army to focus not only on modernizing its defense technology, but also on improving conditions for its enlisted soldiers. These new living improvements would hopefully attract better recruits. Look up the hill at the Colonial Revival style barracks to your right. With their clean, classic designs, they contained vastly improved living conditions. The barracks had spacious bunkrooms, large windows and real beds with mattresses. And even better, they had electricity, hot and cold running water, and indoor toilet and shower facilities; all state of the art for that time. The brick gymnasium behind you also provided improved sports and recreational facilities for the recruits.

Second male voice

To hear an account from a soldier stationed at Fort Baker in 1901, press 21# now.

Cell Phone Tour Stop 9

How can a historic building go ‘green’?

Female voice

Because of its national historic significance, Fort Baker was listed on the National Register of Historic Places in 1972. When the army transferred the post to the Golden Gate National Parks in 2002, the National Park Service consulted the public on the best future for this site, and a retreat and conference center won approval.

Cavallo Point Lodge at the Golden Gate completed rehabilitation of the post’s historic buildings in 2008. In 2009, the U.S. Green Building Council certified the project at the LEED Gold standard for environmentally sustainable design and construction, the first national park lodge to receive LEED Certification. Reusing and rehabilitating historic buildings is in itself a sustainable practice, and the work was done so as to maintain the buildings’ historic character inside and out. New lodging facilities were constructed with state-of-the-art solar panels integrated onto the roofs, and environmentally friendly glues, paints, carpets, and other green building materials such as denim insulation, bamboo and recycled woods were also used. Water is conserved by using drought-tolerant planting and by recycling laundry water.

Fort Baker also hosts the Institute at the Golden Gate, a joint venture between the Golden Gate National Parks Conservancy and the National Park Service. The Institute promotes environmental action and global sustainability.

Cell Phone Tour Stop 10

Why did the army plant forests?

Female voice

You are standing under trees planted 100 years ago. The trees you see surrounding this bowl-shaped valley are the remnants of stands planted at that time. In October of 1908 a San Francisco newspaper gave this account of tree planting activities in the Marin Headlands.

Male voice

Thousands of trees--redwoods, pine, gum and other varieties--will be planted at Fort Baker and Fort Barry military reservations by the U.S. government in the near future. The extensive planting is to conserve water in the dry soil, to make the forts more habitable by using the trees as windbreaks, and to beautify the harbor and its entrance. The gum and pine trees used will be transplanted from the Presidio in San Francisco.

Original female voice

The windswept hills of Fort Baker were originally covered by a mixture of grassland, coastal scrub, and, in the more protected areas, there is oak woodland dominated by coast live oak. The army planted thousands of non-native trees, mostly Monterey pine, Monterey cypress and Tasmanian blue gum eucalyptus. These fast-growing trees soon provided protection from the incessant winds. Today, the park prunes and thins stands of planted trees to maintain the historic landscape. To restore critical native habitat and maintain historic vistas, the park may remove trees outside the planted forest.

Second male voice

If you want to learn more about Fort Baker's eucalyptus groves dial 26#.

Cell Phone Tour Stop 17

What edible treats pass by these bluffs?

Male voice

You are looking at the interface of one of the world's major estuaries and the sea, affecting the area in many ways, providing a rich abundance of sea life, strong ocean currents, and cooling wind and fog.

This cliff is the rim of the drowned Sacramento River Canyon. Even today, salmon swimming up the Sacramento River drainage follow the old river channel at the base of this bluff rather than venturing into more southern parts of the bay. Salmon aren't the only tasty migrants here. Dungeness crabs migrate from the ocean to the bay to lay their eggs. The young crabs settle and feed in Horseshoe Bay.

The volume of the immense San Francisco Bay estuary is so great that the tidal flow going in and out of the Golden Gate is twice the flow of the Mississippi River. Under the Golden Gate Bridge, strong tidal currents scour a 375-foot-deep channel all the way down to bedrock.

The climate also is affected by this land-sea interface. Cold ocean air and warmer landward air meet at the Golden Gate to create the fog that frequently shrouds the bay. Microclimates are typical of these coastal areas, and Fort Baker is lucky to be in a fog shadow formed by the high ridge to the west.

Cell Phone Tour Stop 21

Soldiers account 1901

Male voice

In 1901, I was an enlisted man in the 68th Company of Coast Artillery, and I called Fort Baker my home. It had been named a few years before I arrived to honor Col. Edward Dickinson Baker, who was a U.S. senator from Oregon and the commanding officer of the 71st Pennsylvania Infantry Regiment,... he had given his life in the Civil War battle of Balls bluff.

When I got to Fort Baker, there were all sorts of construction going on as they were building barracks and officers' houses. The new barracks were the best I ever had. Now as a remember it, each barracks held about 100 enlisted men, and I slept in a large room on the second floor with all the other enlisted soldiers. There was a kitchen, a mess hall, and recreation room below on the first floor.

I remember target practice with the big coast artillery guns. It became almost like a dance as we loaded and aimed our guns. Eight shots were fired all being exactly in line within the described limit, so they counted as hits. The wind was blowing hard, so the performance was all the more commendable.

Cell Phone Tour Stop 22

The Spanish Arrive 1775-1776

Female voice

In 1775 Spanish explorers arrived on a ship called the *San Carlos* and spent ten days in the safe harbor of Fort Baker's Horseshoe Cove conducting repairs. Imagine the feelings and reactions of the Coast Miwok and Ohlone people when they first saw the *San Carlos* sail into the waters of San Francisco Bay. And what did the Spanish think of this vast harbor and its local peoples? Through the diary of Father Vicente Santa Maria aboard the *San Carlos*, we hear of the emotions and temperament of the first interactions between these people.

Male voice in Spanish followed by same male voice in English

We exchanged gifts with the local people, who were as cautious in there actions with us as we were with them. They call themselves the *Huimen* and use tule reed canoes to fish in these fertile waters for the game of oysters, sea otters and seal. These native peoples have their own interesting mythologies and myths on the creation of the world and hold the Coyote to be their ancestor and creator.

Original female voice

A year later Spanish colonists established the Presidio of San Francisco across the Golden Gate, and Mission *San Francisco de Asis* three miles to its east. By 1801, 90 percent of the local *Huimen* people had left their land to be baptized into the Spanish mission system in San Francisco. These mass migrations, coupled with deaths from imported European diseases, would eventually spell the end of the native tribal world as it existed prior to colonization.

Cell Phone Tour Stop 23

How did deep seafloor rocks end up at Fort Baker?

Male voice

By studying the rocks around Fort Baker in the Marin Headlands, scientists have expanded our knowledge of what happens when one tectonic plate slides under another during the subduction process. These rocks, and tiny fossils in them, tell the story of how they formed deep under the Pacific Ocean between 200 and 100 million years ago. There are basically three types of rocks at Fort Baker. The first is basalt, which forms the orange bluff you can see in front of the bay, but which is often greenish and has rounded shapes called pillows when freshly exposed. The basalt here was erupted from volcanoes deep in the mid-Pacific Ocean. The reddish layered rock widely seen forming the ridgelines in the Marin Headlands is chert, a sedimentary rock formed in the middle of the ocean and made of tiny silica shells from radiolarian zooplankton. The third rock type is a greenish gray sandstone called graywacke. This sandstone formed as underwater landslides, known as turbidites, flowed into an oceanic trench at the subduction zone once here. All of these rocks were scraped off the ocean floor and plastered onto the edge of North America about 95 million years ago.

Cell Phone Tour Stop 24

How can an ant affect a rare butterfly?

Male voice

If you are here in the springtime, you might be lucky enough to see one of these small blue butterflies. The Mission Blue is now restricted to protected areas in the Marin Headlands, San Francisco, and San Mateo County. Mission Blue larvae are picky eaters, dining on only three species of lupine. The local silver-leaf lupine is their preferred food. The trouble is that these lupines are also particular. They require habitat disruption, such as fire and ground disturbance, to sustain the open grasslands where they live. Today the lupine's sustenance often requires human intervention.

Surprisingly, another threat to the Mission Blue is the non-native Argentine ant. As with many butterfly species, Mission Blue larvae are tended by ants that feed on sugary solutions produced by the larvae. In return the ants protect the larvae from enemies. An invasion of Argentine ants is displacing native ant species, and although the Argentine ants still tend the mission blue larvae, they don't do as good a job as native ants, potentially reducing the butterfly's reproductive success.

Cell Phone Tour Stop 25

What's the story of Battery Yates?

Female voice

Look out towards San Francisco. The concrete structure on the hill to the left of Horseshoe Bay is Battery Yates. From 1906 until 1946, Battery Yates held relatively small, 3-inch diameter, rapid fire rifles designed to protect underwater mines that were planted in the bay. In the event of a foreign attack, its guns could fire up to 30 shots per minute at fast moving enemy torpedo boats. During World War II, the guns protected an antisubmarine net that spanned the entrance to the bay.

Like many military facilities, Battery Yates is named after a soldier who made significant contributions, and in this case, sacrificed his life for his country. Captain George Yates was a veteran of major U.S. Civil War battles in Manassas, Antietam, Fredericksburg, and Gettysburg. A close friend of General George Armstrong Custer, Yates died at his side during the famous Battle of the Little Bighorn in 1876.

Cell Phone Tour Stop 26

Are planted eucalyptus forests a good thing?

Male voice

The trees you are standing under are Tasmanian Blue Gum, or *Eucalyptus globulus*. As you can see, they have grown quite large in the past 100 years. These trees and other stands on the ridges around Fort Baker are now part of the historic setting.

Aromatic and beautiful to some, these leafy giants are not without controversy. The fragrant oils in eucalyptus leaves can be pleasing, but they also alter soil chemistry, and can become highly flammable when the leaves accumulate on the forest floor. Some trees also have spread beyond the original planted areas, where they create poor conditions for many native species and their roots may damage historic structures.

In the trees' favor, however, their leafy canopy and understory of escaped ornamental plants and native species, including California blackberry and toyon, provide habitat for a variety of wildlife that would not be here otherwise. Raptors rest and nest in the canopy, and forest dwelling birds like chickadees and woodpeckers raise their young in tree cavities. Eucalyptus trees also provide a resting place for smaller winged travelers...monarch butterflies, which can form clusters in a nearby grove during their southward autumn migration, or even throughout the winter.

Cell Phone Tour Stop 32

Why is Battery Cavallo so unusual?

Female voice

Hidden behind this fence and earthen mounds is Battery Cavallo, one of the most outstanding examples of military architecture in Golden Gate's outdoor coast defense museum. Historian Erwin Thompson wrote of this battery...

Male voice

Of all the coast defense works constructed in the 1870s, the Cavallo Battery is the most handsome architecturally and is the best surviving example of the post-Civil War earthworks batteries.

Original Female voice

Battery Cavallo was constructed in the 1870s to replace the obsolete Civil War-era brick forts. This distinctive shield-shaped, earthwork and brick emplacement was to be armed with three monstrous 20-inch diameter Rodman cannon that would fire 1,000-pound projectiles four miles, as well as many additional 12-inch rifles, 13-inch mortars, 15-inch cannon.

Construction of Battery Cavallo began in 1872, but as was typical of many military projects of this era, money quickly dried up. Several years later, the structure stood nearly complete, but no guns were placed here until the Spanish American War of 1898, when three already obsolete 8-inch rifled Rodman guns were installed.

Today, this enclosure not only preserves this unique example of 1870s military architecture, but also protects critical grassland habitat for the endangered Mission Blue butterfly.

Cell Phone Tour Stop 34

What does this dock have to do with World War II?

Female voice

Shocked by the bombing of Pearl Harbor in December 1941, the army evacuated alleged enemy aliens and citizens from coastal areas. In February of 1942, the San Francisco Chronicle reported...

Male voice

San Francisco's waterfront districts ordered swept clean of enemy aliens by February 24. No enemy alien will be permitted to live in the forbidden zone, to work there or even visit there. The government will rout approximately 1400 Italians from the 2000 man San Francisco fishing industry.

Original female voice

Fearing a Japanese attack on the mainland, the army activated underwater minefields outside the Golden Gate. Ships tending those mines used the harbor here. As more boats were needed to tend the mines, the army appropriated some of San Francisco's Italian fishing fleet idled by the evacuation order.

To maintain these newly conscripted boats, the army established a marine repair shop in the building you are standing next to. Repairs included redesigning boats, reconditioning engines, painting, scraping barnacles, and straightening propeller shafts. The metal marine railway you see coming out of the building and running down to the water was used to haul the boats out for repair.

Shop foreman Harry Plummer said of the repair shop activities...

Second Male voice

Instead of waiting three weeks for a boat to return from a shipyard for a simple cleaning and painting job, the Baker gang can complete the task in two or three days. Heck, we will save the government more than fifty thousand dollars this year.

Third Male voice

That would equal more than 650 thousand of today's dollars.

Cell Phone Tour Stop 35

Why is the Golden Gate Bridge orange?

Female voice

Before you is one of the most notable places in the world where art and engineering meet - the majestic span of the Golden Gate Bridge. But in 1916, when San Francisco officials started considering a bridge across the bay, many thought a bridge at this location would be impossible. It was too wide for a beam bridge, too deep for a cantilever or truss bridge, and the strong winds might destroy a suspension bridge. But when bridge engineer Joseph Strauss was asked if he could build it, his answer was an emphatic, yes!

Work started with Strauss' design team, who created the beautiful art deco bridge that complements the dramatic setting. The International Orange paint color was even developed to fit the location. Over four years, hundreds of construction workers built the bridge, completing it in 1937. The daunting project included setting underwater footings in 100 feet of water, constructing the 746-foot high towers, spinning 80,000 miles of wire to create the suspension cables, and building the road deck 220 feet above the water.

Today this 4200-foot long international icon is being retrofitted to withstand a magnitude 8 plus earthquake, preserving it for future generations.

Cell Phone Tour Stop 36

What did the army do inside this hill?

Female voice

Imagine the buzz of activity here in 1942 when army crews used this area to activate mines and then load them onto mine planting ships moored at today's fishing pier. The ships would then take the mines outside the Golden Gate and plant them in a semicircular underwater minefield surrounding the bay's entrance.

In December 1941, mine planter Captain Frank Liwski describes this activity...

Male voice

We worked day and night, cutting cables, and loading mines and planting them... Any vessel entering the harbor can not avoid our mine fields.

Female voice

The mine depot structures built into the hill here reflect the dangerous aspects of this job. To avoid accidental explosions, the high explosives were stored in these underground concrete casemates to keep them cool and dark. In the room behind this wall, soldiers armed the mines by pouring granular dynamite into them. The dynamite was stored next door in Building 411, and the detonators were in Building 410, where you can still see the "explosives" and "no smoking" signs.