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Lands in Motion

This year marks the centennial of the great earthquake and fire that so dramatically changed the face of San Francisco. In this issue, we explore the history, mystery, and consequences of our geologic underpinnings, examples of which can be found throughout the Golden Gate National Parks. For the last 25 million years (give or take a few million), our national park neighbor to the south, Pinnacles National Monument, has crept closer to us, carried northward along the west flank of the San Andreas Fault. Meanwhile, our park neighbor to the north, Point Reyes National Seashore, continues to drift away from us aboard the Pacific Plate. For more about what it means to ride a major faultline, start with “Hiking the Seafloor,” p. 3.

Our thanks to Roxi Farwell, NPS Interpretive Ranger, Marin Headlands, who contributed to this introduction.

The Geology of Fort Funston

Walk to the Farallones? Millennia ago, that would have been possible. Today, Fort Funston’s cliffs allow us to read the geologic record of San Francisco’s shifting shoreline.

4

The Camp No One Used

After the earthquake of 1906, all the city’s residents suffered, but some received much less help than others. Greed and prejudice fueled a shameful episode in San Francisco’s post-quake history.

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Historical Tidbits

A potpourri of earthquake- and geology-related Q & A.

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Behind the Scenes

Golden Gate National Recreation Area consists of over 75,500 acres of land, and protects more than 1,250 historic structures, 27 rare and endangered species, and many small “islands” of threatened habitat. NPS staff, volunteers, and partners work hard to take care of the park’s treasures for the millions of people who visit each year, and for future generations.

It Can Happen Again

Earthquakes are common here along the California coast. The “big ones”—like those that occurred in 1906 and 1989—make history, and according to the US Geological Society, we should expect another “big one” sometime in the next few decades. For information on how to prepare for an earthquake (or other major disaster), visit www.72hours.org.



Looking east on Market Street, late morning, April 18, 1906, as the Call Building (tall structure at left of photo) burns. The fire started at the top, and as the heat became more intense, windows blew out. By afternoon, the building stood in ruins.

Epicenter of Earth Science Inquiry

Thanks to a grant from the Toyota Foundation through the National Park Foundation, “PARK Teachers” is drawing new audiences and making Golden Gate an epicenter of Earth science inquiry. In partnership with San Francisco State, Sonoma State, and Yosemite Institutes, NPS staff members have designed a park-based geology unit that can be integrated into Science Methods courses. The next step will be to collaborate with George Lucas Educational Foundation and other partners to design a website that will enrich the park experience.

Stay in Touch

Public involvement is the cornerstone of a well-managed, protected, preserved, balanced, safe, and user-friendly national park. To facilitate this involvement, GGNRA will hold a public meeting on Tuesday, May 16, at 7 PM in Marin County to update the public on key park-related issues and provide an opportunity for public comment. Agendas and locations for all meetings can be found at www.nps.gov/goga under “Public Meetings.” To be added to the mailing list for meeting notices and agendas, contact Michael Feinstein, Public Affairs, at (415) 561-4733.

Whole Lot of Planning Going On!

NPS staff and partners—the Golden Gate National Parks Conservancy, California State Parks, Marin County, and others—are working on several important planning projects. Among them, restoration planning at Muir Beach (coastal wetland and creek restoration), trail and habitat improvement planning (Mori Point Trail and Restoration Plan, Dias Ridge and Coast View Trails Rehabilitation and Access Improvement Project), and park maintenance facility moves (Park Maintenance Facilities Interim Relocation Project). Expect to see requests for input this year as the Environmental Assessments (EAs) and Environmental Impact Statements (EISs) move forward. Stay in touch with what’s happening by visiting the park’s website (www.nps.gov/goga) and a new NPS site, National Park Service Planning, Environment and Public Comment (PEPC). To access, go to www.parkplanning.nps.gov/goga and use the pull-down menu to select Golden Gate NRA and the projects that interest you. This site provides information on current plans, environmental impact analyses, and related documents available for public review, and also accepts public comments.

Help Us Imagine the Future

Help kick-off the New GGNRA General Management Plan Process by participating in one of three “open houses” planned for the week of April 20 through 27. The General Management Plan (GMP) provides the “big picture,” long-range vision for park management, and the open houses are opportunities for the public to meet with park managers and the planning team and let us know what’s important from your perspective. Comments can also be offered at the May 16 public meeting at the park’s San Francisco headquarters at Fort Mason. For more information, check the park’s website (www.nps.gov/goga), or www.parkplanning.nps.gov; use the pull-down menu to select Golden Gate NRA, then click on “General Management Plan.”

Marin Headlands-Fort Baker Draft EIS Announcement.

The Marin Headlands-Fort Baker Transportation Management Plan Draft Environmental Impact Statement (DEIS) is due to be released for public review in late spring. The plan consists of roadway, parking, and trail improvements; new transit service; and other transportation management actions proposed to be implemented by the National Park Service over several years starting in 2007. For more information, please contact Paul Bignardi, NPS Transportation Planner at (415) 561-4933 or by email at paul_bignardi@nps.gov.

Dedicated to One We Love

This issue dedicated to US Park Police Sergeant Pepper Karansky, the first female USPP Officer in San Francisco and the first female officer to pass the Horse Mounted Training in Washington D.C. and be assigned here in the San Francisco Field Office. Oh yes, and first in our hearts.

Welcome to the Golden Gate National Parks

Golden Gate National Recreation Area’s mission is to preserve and enhance the natural and cultural resources of the coastal lands north and south of the Golden Gate for the inspiration, education, and recreation of people today, and for future generations. We also work to protect the integrity of our parks’ fragile resources in the challenging context of an urban setting. Finally, we are committed to forging partnerships with the community to strengthen the parks’ relevance to our metropolitan neighbors and to engage the public in stewardship of the parks’ history and lands. We welcome your visit, and encourage you to take advantage of the many recreational opportunities the parklands offer, as well as to become involved as a volunteer at a favorite site.


Brian O’Neill
Superintendent



National Park Service
U.S. Department of the Interior

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Cover

TOP: Red chert, Marin Headlands
MIDDLE: San Francisco, April 18, 1906
BOTTOM: Earthquake refugee camp, Ft. Mason area; Ft. Funston bluffs

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Experience Your America

The Marin Headlands

Hiking the Seafloor

Roxi Farwell, NPS Interpretive Ranger, Marin Headlands

It's a recurring phenomenon in the Marin Headlands. Dozens of geology students from local colleges arrive and take up positions on Conzelman Road, notebooks and compasses in hand, to give the rocks a close examination. Their field trips provide unique opportunities not only to view the red, wavy layers of deep-ocean radiolarian chert and dark, bulbous pillow lavas from submarine volcanoes, but also—in clear weather—to gaze across the Golden Gate at the enigmatic, bluish-green serpentinites of the Presidio. These students are the latest participants in a long-standing geologic pilgrimage.



Ribbons of red chert, folded and uplifted, can be seen from the car window on a drive up Conzelman Road above the Golden Gate. The Marin Headlands provide textbook examples of northern California geology.

ASSEMBLAGES AND TRINITIES

In 1892, two geologists stood in the same area, surrounded by the same rock formations. One, Andrew Lawson, was just beginning a sixty-year career at the University of California, Berkeley. It would be Lawson who named the perplexing suite of rocks he studied in the Bay Area the Franciscan Assemblage. He would also apply the name San Andreas Rift to the “remarkably straight line” extending from Point Arena to Mount Pinos (Ventura County), along which he mapped the destructive movement of the Earth's plates in 1906.

The other geologist was Gustav Steinmann, from Germany. His specialty was the structure of the tortured layers of rock within the Swiss Alps. Steinmann's rock sequence of serpentinites, pillow lavas, and radiolarites eventually would be named the Steinmann Trinity. (Outstanding geoscientists continue to earn the prestigious Gustav Steinmann Medal, honoring their achievements in geology.)

Imagine Steinmann's reaction when Lawson showed him the dramatic

scenery of the Golden Gate. Here was the same rock sequence he'd examined in the high peaks of Switzerland and Italy!

Steinmann's Trinity and the Franciscan Assemblage record the formation and migration of great slabs of ancient seafloor. The emergence in the 1960s of plate tectonics, the unifying theory of modern geology, helps us realize how the same sequence of seafloor rocks can appear deep within mountain ranges, along some coastlines, and on the summits of the Himalaya. Plate tectonics helps explain many of the features of the Earth's crust and the patterns of geologic convulsion such as earthquakes and volcanoes. It also reminds us of Earth's dynamic nature. We are on a constant journey as our tectonic plate creeps across the planet, sliding by or crashing into other tectonic plates, or being consumed in one of the Earth's great subduction zones.

SEAFLOOR SCRAPINGS

Most seafloor rocks are fated to be consumed in a subduction zone, as newly formed ocean crust is pushed away from a mid-ocean ridge and pulled downward as a cold, wet slab

into the hot mantle below. Some bits of seafloor, however, manage to resist subduction and, instead, are scraped off along the continent's edge. The Marin Headlands and much of the Bay Area are made up of such scrapings.

The rocks of the Marin Headlands offer a brilliant showcase for plate tectonics, and Conzelman Road provides a dazzling display. The seafloor rocks found in roadcuts of the Sierra highways may be hard to understand clearly, but the geologic landscape of the Marin Headlands appears on a big screen, in high definition. Stand atop Hawk Hill and look northwest toward Mount Tamalpais. The weather-resistant chert forms strong ridges, bounded on one side by softer, more easily weathered pillow basalt, and on the other by even softer graywacke sandstone.

Detailed analysis of the radiolarian plankton fossils found in the chert shows that each ridge is a part of the same great piece of seafloor, with nearly identical fossil sequences of tropical origin. Such stacking of repeated sequences of seafloor rocks, called imbricate layering—think “shingles on a roof”—is common to the geologic structure of subduction zones (described by Clyde Wahrhaftig, source of many substantial contributions to local geology). These stacked slices of chert help create the dramatic landscape of the Marin Headlands ... and make a level trail very rare!

After exploring the Franciscan rocks along Conzelman Road, take time to visit a different geologic hotspot, the Point Bonita Lighthouse, to view another part of Steinmann's Trinity: pillow lavas from ancient underwater eruptions. Like the Conzelman cherts, the pillow lavas at Point Bonita attracted the interest of 19th-century geologists. Leslie Ransome, a student of Andrew Lawson, produced what is likely the earliest professionally drawn, detailed geologic map of any locality in California when he published his

article and map for the University of California's *Bulletin of the Department of Geology* in 1893.

Ransome's meticulous descriptions of the rocks and their placements along the trail remain unsurpassed. However, in 1893, it was inconceivable that such well-preserved pillow structures could have erupted anywhere except nearby. Geochemical and paleomagnetic studies from the 1980s suggest otherwise. The Point Bonita basalts were part of a seamount originally formed about 3,000 km offshore, whereas the basalts found in the rest of the Marin Headlands originated in deeper water, at a seafloor spreading center (similar to the Mid-Atlantic Ridge) about 5,000 km to the southwest.

The third element of Steinmann's Trinity, serpentinite, is harder to find in the Marin Headlands, although diligent explorers will observe some of the soapy, slick state rock in landslides along Rodeo Beach and underfoot on the Marincello Trail. To see textbook serpentinite landscapes, visit the parklands just south of the Golden Gate. At Fort Point and throughout the Presidio, the flaky rock is well exposed, along with the rare plants that eke out an existence on the unusual serpentinite soils.

SAMPLE THE STEW

An exploration of the Franciscan rocks in the Marin Headlands provides us with the opportunity to take a hike on the seafloor and look inside underwater volcanoes while surrounded by uncountable numbers of fossilized plankton. Our explorations also give us a chance to reflect on the many years of contributions to the science of geology that have occurred in our parklands. Geologist Clyde Wahrhaftig often described this jumble of seafloor scrapings as a “tectonic stew.” On your next visit to the park, relish the rocks!

See page 7 for more on Clyde Wahrhaftig.

The Geology of Fort Funston

Earthquakes, Glaciers, and Beaches

Will Elder, NPS Interpretive Ranger, Presidio

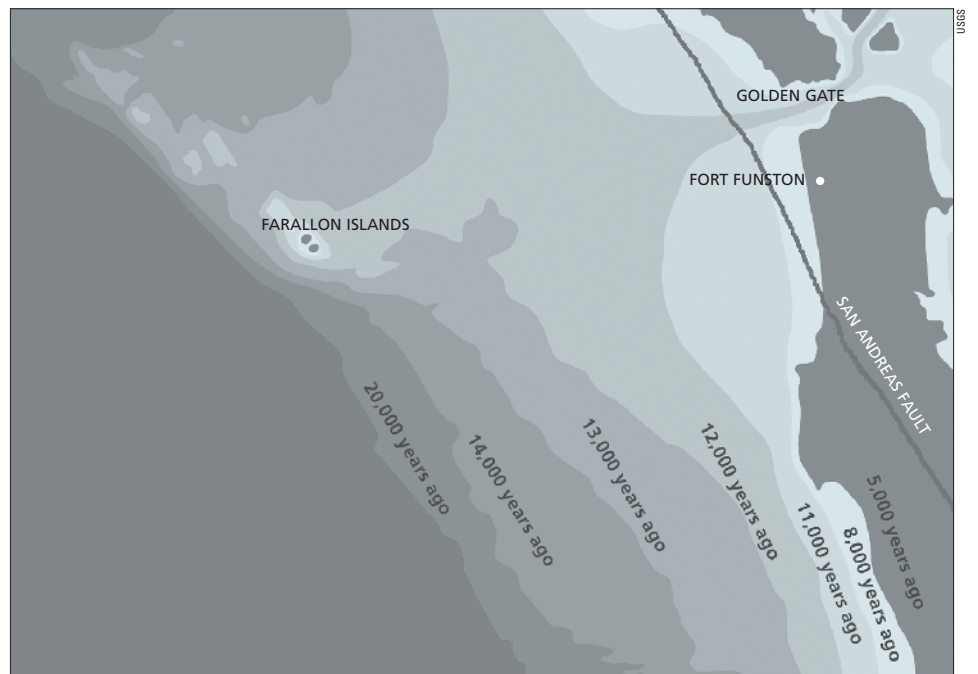
Walking along the beach at Fort Funston, with the sound of the waves, the smell of salt, and the ocean breeze ruffling your hair, have you ever pondered what stories the cliffs towering over your head may tell? How long have they been there? Where did they form? What are these crumbly rocks? Geologists have managed to coax many stories from the rocks, answering these and numerous other questions.

So do the cliffs of Fort Funston have anything to do with the 1906 San Francisco earthquake? Well, for one, both the earthquake and the cliffs were born from the San Andreas Fault, the infamous fracture in the Earth's crust that separates the North American and Pacific plates. The fault lies less than 2 miles offshore of this popular beach and recreational area. As a matter of fact, Fort Funston was the closest landfall to the 1906 earthquake epicenter. Although the fault moved more at Point Reyes—over 20 feet—the first point to break along the fault was off Fort Funston. The 1906 earthquake epicenter lies at, perhaps not coincidentally, an apparent sharp right bend in the San Andreas, to which the rocks of the cliffs, known as the Merced Formation, may owe their existence.

Preserved in the cliffs today you can see beach and shallow ocean rocks, sand dunes, bay floors, stream beds, and ancient soils. Because these rocks are so young and only slightly buried, they are barely held together by the sand and mud from which they are made.

READING THE ROCKS

If you walk the four miles of beach from Mussel Rock in the south, where the oldest part of the Merced Formation appears, to its top near Lake Merced in the north, you will walk across a mile-thick pile of rock that spans the Pleistocene glacial period. In the south, the older rocks are mostly of shallow ocean origin, but as you hike northward, you see a larger proportion of rocks that were formed



After the last glacial maximum (20,000 years ago), sea level rose rapidly, moving the shoreline from west of the Farallones to its modern-day location about 8,000 years ago.



Hang-gliders have a bird's-eye view of Fort Funston's stratified bluffs, which provide one of the best continuous exposures of 2 million years of California geologic history.

The San Andreas is a right-lateral fault, so-called because when looking across it, the opposite side is moved to the right. When a right-lateral fault bends to the right, the two sides of the fault pull apart across the bend, forming a hole. Merced Formation rocks fill the hole, or basin, that formed behind this bend, which is slowly moving northward with the Pacific Plate.

Over the last 3 million years, as the ground beneath the basin subsided, sediments from many environments along the ocean's edge piled up.

at or above sea level; this indicates that the basin was filling with sediment faster than it was sinking. This rock sequence also shows that sea level fell and rose about forty separate times as continental glaciers advanced and retreated, repeatedly locking up water, which then flowed back to the oceans during interglacial times (such as today).

The rocks reveal this rising and falling sea level in their repeated cycles of shallow marine sediments overlain by beach, dune, bay, or stream deposits.

The fresh, accessible cliff exposures along the beach at Fort Funston make it one of the best places in the world to see rocks formed in many different coastal environments and to learn how sea level changes in a coastal setting appear in the rock record.

The easiest access to Merced rocks is by taking the beach trail down from the observation deck at the Fort Funston parking lot and then walking north. The trail descends a large landslide, but as you go north, the first solid rock you'll see at the cliff base was formed in a shallow bay and contains many burrows and fossil clams. Farther north, you'll see different types of bedding in the rock, indicating different depositional settings, including small parallel beds formed near a bay or beach, beds steeply tilted in different directions deposited in sand dunes, and areas with colorful clay layers and pebbly zones that were once soils and stream beds.

What other stories do these rocks tell? Here are a few more: In the cliffs south of the Fort Funston parking lot, sand particles derived from granite and volcanic rocks of the Sierras suddenly appear in the Merced Formation. Their appearance marks the creation of today's Sacramento/San Joaquin river system as it first flowed through the Golden Gate. The new river system

was created when a huge lake covering the Central Valley overtopped a low ridge near modern-day Stockton and cut (perhaps catastrophically) the Carquinez Straits. The lake, which was at times as large as Lake Michigan, formed after an earlier drainage system flowing into Monterey Bay was blocked by the rising Diablo Range. A short distance above the sediment change, near the Daly City sewer outfall, you can see a prominent white ash layer formed by a volcanic eruption near Lassen Peak. Radiometric dating of the ash shows it to be about a half-million years old, which tells us that the new river system is slightly older.

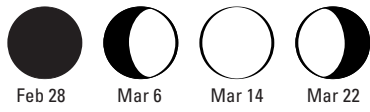
BEACHWALK THROUGH TIME

So the next time you need some fresh air and want to take a walk, head to the beach at Fort Funston and have some fun exploring the rocks. It is best to go near low tide, and please stay on the beach, since the cliffs are crumbly and not safe for climbing. If you want to learn more about the rocks of Fort Funston, the park offers a monthly docent-led geology walk. Check the *Park Programs* calendar for dates and times.

More information is available through this USGS online publication: <http://geopubs.wr.usgs.gov/bulletin/b2188/b2188ch4.pdf> (4.7mb).

Park Programs

M A R C H

SUNDAY	MON	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	FORT FUNSTON Clean-up Day 9:30 AM Green Team 10 AM–12:30 PM PRESIDIO The Last Gun 11 AM–3 PM
CRISSY FIELD CENTER Kids on Trails (Caminata Infantil) 1–2:30 PM MARIN HEADLANDS Nike Missile Site Open House 12:30–3:30 PM MUIR WOODS Muir Beach Bird Walk 9–10:30 AM OCEAN BEACH Adopt-a-Beach Clean-up Day: Rivera Street 10 AM–12 NOON PRESIDIO The Last Gun 11 AM–3 PM Buffalo Soldiers at the Presidio 1–3 PM	6	PRESIDIO National Cemetery Walk 10 AM–12 NOON	8	CRISSY FIELD CENTER Ecological Restoration of the Waterfront 10:30 AM–12:30 PM PRESIDIO Shuttle through Time 12:50–2 PM	10	CRISSY FIELD CENTER Presidio Birdlife 9:30–11:30 AM FORT FUNSTON Green Team 10 AM–12:30 PM MARIN HEADLANDS Smashing Plates and Elastic Rocks 9 AM–2 PM Secret Gardens of the Headlands 10 AM–12 NOON MUIR WOODS Medicinal Plant Walk 10 AM–12 NOON
ALCATRAZ Alcatraz Kidz Tour: Fortress Alcatraz 4:20–7:15 PM MARIN HEADLANDS Beginning Birding 9:30–11:30 AM MUIR WOODS Early Spring Wildflower Hike 10 AM–1:30 PM PRESIDIO Nature's Deli 1–3 PM	13	CRISSY FIELD CENTER Lower Tennessee Hollow Watershed 12 NOON–1:30 PM MARIN HEADLANDS Sunset Full Moon Walk to Point Bonita Lighthouse 5:45–7:45 PM MUIR WOODS Muir Woods by Moonlight 5:30–7:30 PM	15	PRESIDIO From Post to Park 1–3 PM	17	FORT FUNSTON Green Team 10 AM–12:30 PM MARIN HEADLANDS Wildflower Photography Hike 9:30 AM–12 NOON Bones, Bones, Bones 10 AM–1 PM Cats of the Marin Headlands 4:30–7:30 PM PRESIDIO Crissy Field Clean-up 9 AM Letterman Legacy 1–2:30 PM
CRISSY FIELD CENTER Kids on Trails 1–2:30 PM MARIN HEADLANDS Spring Wildflower Slide Show 1–2 PM MUIR WOODS Bones, Bones, Bones 10 AM–1 PM PRESIDIO Ridge-to-Bridge Ride 10 AM–1 PM	20	PRESIDIO National Cemetery Walk 10 AM–12 NOON	22		24	FORT FUNSTON Green Team 10 AM–12:30 PM A Million Years in 2 Miles 2–4 PM FORT POINT Pier Crabbing 10 AM–12 NOON LANDS END Shipwrecks at the Golden Gate 2–3 PM MARIN HEADLANDS Scrub-to-Beach Exploration Hike 11 AM–1 PM MUIR WOODS Wildflower Hike 10 AM–2 PM PRESIDIO Horseshoes and Carrots 12 NOON–1:30 PM
MUIR WOODS Muir Beach Tidepool Walk 2–4 PM	27		29		31	
26		28		30		

Program Information

ALCATRAZ

Open daily. Join ranger-led programs, use self-guiding brochures, and take an audio tour of the cellhouse to learn about this historic island. A captioned video program of Alcatraz history is shown every 30 minutes in the museum. Transcripts of the cellhouse audio tour are available for hearing-impaired visitors. Phone 561-4900, 9 AM to 4 PM, for program information.

SEAT (shuttle) transport is available for wheelchair users and visitors physically unable to walk up the quarter-mile, 12 percent-grade hill. Children under 14 must be escorted by an adult; service animals allowed.

Daily ferry service originates at Pier 41, Fisherman's Wharf. (The cellhouse audio tour can be purchased with ferry tickets.) Visit www.nps.gov/alcatraz for the latest information on ferry service. Note: Alcatraz tickets frequently sell out as much as one week in advance.

Visit Alcatraz's website: www.nps.gov/alcatraz

ONGOING

Alcatraz—Escape from Reality
 Explore the connections between Alcatraz and Hollywood.

We Hold the Rock

In 1969, a group of Native Americans began a highly publicized 19-month occupation of Alcatraz Island, marking the beginning of the modern Indian movement by America's indigenous people. This award-winning permanent exhibit interweaves photographs, music, video clips, and contemporary interviews with former occupiers.

Ranger-led programs are offered daily. Ask at the dock-level ranger station for times, locations, and topics. Following are some examples.

- Alcatraz Is Indian Land
- Escapes
- Fortress Alcatraz
- The Natural Side of the Rock
- 200 Years on the Rock
- US Penitentiary Alcatraz Island

Alcatraz Night Tour

Feel a chill run down your spine as you venture into dark corners of the old island prison—limited to just a few hundred visitors, Alcatraz Night Tour programs include topics, tours, and activities not offered during the day. For more detailed information, visit www.parksconservancy.org. Buy boat tickets well in advance, as they sell out quickly. For tickets, phone 705-

5555. For program information, phone 561-4926.

Alcatraz Kidz Tour

Looking for something fun, unusual, and educational to do with your family? For more information, visit www.parksconservancy.org. Buy boat tickets well in advance, as they sell out quickly. For tickets, phone 705-5555. For program information, phone 561-4926.

■ Creative Escapes (5/13)

Learn about creative and unusual Alcatraz escape attempts. For kids age 5+ and their families. Buy tickets for 4:20 PM Night Tour boat.

■ The Kids of Alcatraz (4/15)

Find out why growing up on Alcatraz was such fun! For kids age 6 to 12 and their families. Buy tickets for 4:20 PM Night Tour boat.

■ On Duty at Fort Alcatraz (3/12)

Find out what it was like to be a Civil War soldier at Fortress Alcatraz. For kids ages 6 to 12 and their families. Buy tickets for 4:20 PM Night Tour boat.

CLIFF HOUSE

Enjoy the views of the Pacific Ocean and Seal Rocks from the public outdoor terraces of the Cliff House. The newly rehabilitated Cliff House Restaurant is open seven days a week for lunch and

dinner and the Camera Obscura on the lower terrace is open seven days a week, weather permitting.

CRISSY FIELD CENTER

The Center, open Wednesday through Sunday, 9 AM to 5 PM, is operated cooperatively by the National Park Service and the Golden Gate National Parks Conservancy and is dedicated to viewing the environment through multicultural perspectives in partnership with communities. Located in Building 603 at the corner of Mason and Halleck streets in the Presidio, it offers a full roster of interpretive, educational, and environmental programs as well as drop-in labs and multicultural events. Programs are free and suitable for all ages unless otherwise noted. For a complete quarterly catalog and registration and scholarship information, please phone 561-7690 or visit www.crisseyfield.org. Following is a partial listing of programs. All Crissy Field Center programs require reservations; phone 561-7752 to register. Programs meet at the Center unless otherwise noted.

Come to Your Senses at Crissy Field (5/21)

Experience the sights, sounds, smells, and flavors of Crissy Field on an easy 1-mile walk at the Crissy

Field marsh. Look for crabs, taste strawberry treats, listen to cultural legends, smell a seashore habitat, and touch the sands of Crissy Field. Bring your lunch, sand toys, walking shoes, layers of clothes, and love of nature. For families with children ages 4 to 9. Meet Ranger Fatima Colindres at the Center.

Crissy Field Aviation Walk (4/8)

Explore Crissy Field and learn about its role in early aviation history on this easy 1-mile walk. Meet Docent Don Gray at the Warming Hut, end of Mason Street. ☺

Ecological Restoration of the Waterfront (3/9, 4/13, 5/11)

Experience Crissy Field's living tidal salt marsh! On this easy 2-mile walk, we will savor the wind, tides, sand, plants, and people who affect this ecosystem. Rain cancels. Meet Docent Bob Halsey in front of the Center.


History, Heroes, and Houses (5/13)

Explore the heart of the Presidio and learn about this former army post's rich history on an easy 1-mile walk. Rain cancels. Meet Docent Bob Bowen at the NPS Visitor Center inside the Presidio Officers' Club, 50 Moraga Avenue. ☺

[Continued on next page]

Park Programs

A P R I L

SUNDAY	MON	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				<p>During the month of April, the Golden Gate National Parks observe the centennial of the 1906 Earthquake and Fire with a series of related programs, walks, and special exhibits. Check the program descriptions in this calendar and visit www.nps.gov/goga/pphtml/events.html for more information.</p>		<p>FORT FUNSTON Clean-up Day 9:30 AM Green Team 10 AM–12:30 PM MUIR WOODS Medicinal Plant Walk 10 AM–12 NOON PRESIDIO The Last Gun 11 AM–3 PM Are We There Yet? Army and the Refugees 1–3 PM</p>
<p>CRISSY FIELD CENTER Juana Briones: Una Leyenda Una Mujer 1–3 PM MARIN HEADLANDS Nike Missile Site Open House 12:30–3:30 PM MUIR WOODS Muir Beach Bird Walk 9–10:30 AM OCEAN BEACH Adopt-a-Beach Clean-up Day: Sloat Street 10 AM–12 NOON PRESIDIO The Last Gun 11 AM–3 PM</p>		<p>PRESIDIO National Cemetery Walk 10 AM–12 NOON</p>				<p>CRISSY FIELD CENTER Crissy Field Aviation Walk 10 AM–12 NOON FORT FUNSTON Green Team 10 AM–12:30 PM FORT POINT Pier Crabbing 10 AM–12 NOON MARIN HEADLANDS Wildflower Woods and Hills 11 AM–2:30 PM MUIR WOODS Birds, Bees, and Wind AKA Sex in the Woods 10 AM–12 NOON PRESIDIO Are We There Yet? Army and the Refugees 1–3 PM</p>
<p>MARIN HEADLANDS Beginning Birding 9:30–11:30 AM MUIR WOODS Muir Woods Geology Hike 10 AM–1:30 PM</p>				<p>CRISSY FIELD CENTER Ecological Restoration of the Waterfront 10:30 AM–12:30 PM MARIN HEADLANDS Sunset Full Moon Walk to Point Bonita Lighthouse 7:15–9:15 PM MUIR WOODS Muir Woods by Moonlight 7–9 PM PRESIDIO Shuttle through Time 12:50–2 PM</p>	<p>PRESIDIO Are We There Yet? Army and the Refugees 1–3 PM</p>	<p>ALCATRAZ Alcatraz Kidz Tour: Kids of Alcatraz 4:20–7:15 PM FORT FUNSTON Green Team 10 AM–12:30 PM MARIN HEADLANDS Smashing Plates and Elastic Rocks 9 AM–2 PM MUIR WOODS Wildflower Hike 10 AM–2 PM PRESIDIO Crissy Field Clean-up 9 AM The Presidio Rocks and Roles 10 AM–12 NOON Are We There Yet? Army and the Refugees 1–3 PM</p>
<p>CRISSY FIELD CENTER Juana Briones: A Legend, a Woman 1–3 PM MUIR WOODS Easter Morning Wildflower Hike 10 AM–1:30 PM PRESIDIO 1906 Earthquake Centennial Walk 1–3 PM</p>		<p>PRESIDIO National Cemetery Walk 10 AM–12 NOON Earthquake Refugee Tent Camps of Tennessee Hollow 12 NOON–1:30 PM</p>	<p>PRESIDIO From Rubble to Renaissance 10–11:30 AM Post to Park 1–3 PM</p>		<p>PRESIDIO Are We There Yet? Army and the Refugees 1–3 PM</p>	<p>FORT FUNSTON Green Team 10 AM–12:30 PM A Million Years in 2 Miles 1–3 PM FORT POINT Pier Crabbing 10 AM–12 NOON LANDS END Shipwrecks at the Golden Gate 2–3 PM MARIN HEADLANDS Wildflowers of Wolf Ridge 9:30 AM–2 PM Spring Family Camp 3 PM–12 NOON, APRIL 23 PRESIDIO 1906 Refugee Camp Walk 10–11 AM Presidio 1906 Earthquake Commemoration 11 AM–3 PM</p>
<p>MUIR WOODS Alice Eastwood Earthquake Centennial Hike 10 AM–1 PM PRESIDIO The Earth Shook, the Sky Burned 1–2:30 PM</p>						<p>FORT FUNSTON Green Team 10 AM–12:30 PM MARIN HEADLANDS Tennessee Valley Ramble 11 AM–1:30 PM PRESIDIO Great Scott! 1–2:30 PM Are We There Yet? Army and the Refugees 1–3 PM</p>

Program Information

Juana Briones: A Legend, A Woman (4/16)

Find out more about one of the Presidio's legendary women. We will color, draw, and hear stories as we walk to El Polin Spring (walk ends at El Polin). For families with children ages 4 to 9. Meet Ranger Fatima Colindres at the Center; space is limited.

Juana Briones: Una Leyenda Una Mujer (4/2)

Acompañeme en un paseo recordando a una mujer legendaria en la historia del presidio. Caminaremos, dibujaremos, y escucharemos historias des de Crissy Field asta llegar al Polin uno de los lugares donde residió Juana. Paseo comienza en El Crissy Field Center y culmina en El Polin. Familias con niños de 4 a 9 años de edad; el espacio es limitado, inscripción es necesaria llame a Ranger Fatima Colindres, 561-4405.

Kids on Trails (3/19)

Join Ranger Fatima Colindres on a 2/3-mile walk along the Ecology Trail using a new guide designed for young park visitors. The walk begins near the NPS Visitor Center and ends at the Inspiration Point overlook. For families with children ages 5 to 9. Meet at the Presidio Officers' Club on the Main Post. Space is limited.

Kids on Trails (Caminata Infantil) (3/5)

Kids on trails es un guía diseñada para los jóvenes que visitan el parque. Durante la caminata de 2/3 millas explore el mundo natural dentro del bosque histórico del Presidio y aprenda sobre un hábitat natural. El paseo comienza enfrente del Main Post Centro al Visitante, 50 Moraga Avenue en el Presidio de San Francisco y culmina en Inspiration Point. Familias con niños de 5 a 9 años de edad; el espacio es limitado, registracion es requerida llame a Ranger Fatima Colindres, 561-4405.

Lower Tennessee Hollow Watershed (3/14)

Discover little-known El Polin Spring on a moderate, 1-mile, lunch-hour walk. Explore the history of this unique ecosystem where fresh water flows to the Crissy Field marsh, serpentine grasslands bloom, and fertility myths were born. Wear shoes suitable for descending and climbing slopes. Rain cancels. Meet the docent at Center.

Presidio Birdlife (3/11)

See and learn about the diverse Presidio birdlife on a moderate 1-mile walk. Meet Ranger Will Elder at the Center.

Use sus sentidos en Crissy Field!* (5/7)

Venga y experimente el paisaje,

sonidos, sabores y olores en Crissy Field. En nuestro paseo vamos a buscar cangrejos y saborearemos dulces de fresa. Escucharemos leyendas culturales y oleremos el hábitat del océano. Tocaremos las arenas de Crissy Field, mientras jugamos en la arena bajo los árboles de cipreses. Cosas que pueden traer: juguetes para la arena, zapatos confortables, abrigo y su amor por la naturaleza. Familias con niños 4-9 años. Registracion es requerida llame a Ranger Fátima Colindres, 561-4405.

FORT FUNSTON

For information, phone 561-4323.

ONGOING

Fort Funston Clean-up Day (3/4, 4/1, 5/6) Bring dogs, friends, and family to help keep Fort Funston clean for everyone; held in conjunction with Fort Funston Dogwalkers. Bring gloves; trash bags are provided. Volunteers meet on the first Saturday morning of the month at 9:30 AM in the parking lot. Phone Fort Funston Dogs at 468-1262 for more information and to confirm event, as it is occasionally rescheduled.

Fort Funston Green Team (every Saturday) Restoring the habitats that once dominated San Francisco's dunes, Fort Funston's Green Team is propagating and planting up a storm. Food, friends,

and fun every Saturday morning at the ranger station from 10 AM to 12:30 PM. Reservations suggested; phone 239-4247.

PROGRAM

A Million Years in 2 Miles (3/25, 4/22, 5/6) The San Andreas Fault has been "remodeling" the cliffs of Fort Funston for over one million years. Multiple layers tell an interesting geologic story. Join a talk on the dynamics of the San Andreas Fault Zone and a moderate 2-mile hike along the beach. Dress in layers, wear hiking shoes, and bring water. Meet Docent Jim Hyde at the ranger station. Reservations required; phone 561-4323.

FORT POINT

During the retrofit of the Golden Gate Bridge, the fort will be open on Friday, Saturday, and Sunday only, from 10 AM to 5 PM. Phone 556-1693 to verify open hours. Visit Fort Point's website: www.nps.gov/fopo/home.htm

ONGOING

"Building the Golden Gate Bridge"

Video made by Bethlehem Steel Company on the construction of this national engineering landmark. & CC

Cannon Loading Demonstrations

During a Civil War artillery drill, learn how soldiers were taught to load and fire a Napoleon 12-pounder cannon.

"Fort Point, Guardian of the Golden Gate"

Award-winning 30 minute video program about the history of Fort Point from 1776 through World War II. Shown throughout the day in the theater. & CC

Fort Point staff offers a variety of programs. A schedule is posted at the entrance to the fort.

PROGRAM

Pier Crabbing (3/25; 4/8, 4/22; 5/6, 5/20) Learn about crabbing in the San Francisco Bay. We'll discuss bait, equipment, and regulations, and then let you try your luck with our nets. Reservations required; call 556-1693.

LANDS END

For information, phone 561-4323.


PROGRAM

Shipwrecks at the Golden Gate (3/25, 4/22, 5/20) On a moderately strenuous hike, see and learn about some of the ships that perished on the rocky cliffs of the Golden Gate. Meet Docent Rich Harned at the

[Continued on next page]

Park Programs

M A Y

SUNDAY	MON	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	FORT FUNSTON Clean-up Day 9:30 AM Green Team 10 AM–12:30 PM A Million Years in 2 Miles 1–3 PM FORT POINT Pier Crabbing 10 AM–12 NOON MARIN HEADLANDS Wildflowers of Wolf Ridge 9:30 AM–2 PM MUIR WOODS Gravity Car Hike 10 AM–1:30 PM PRESIDIO Heart of the Presidio 10 AM–12 NOON The Last Gun 11 AM–3 PM SOUTHERN LANDS 360 Degrees of Pacifica 9:30 AM–4 PM
CRISSY FIELD CENTER Use sus sentidos en Crissy Field! * 10 AM–1 PM MARIN HEADLANDS Beginning Birding 9:30–11:30 AM Nike Missile Site Open House 12:30–3:30 PM MUIR WOODS Muir Beach Bird Walk 9–10:30 AM Whales and Wildflowers 11 AM–1:30 PM OCEAN BEACH Adopt-a-Beach Clean-up Day: Balboa Street 10 AM–12 NOON PRESIDIO The Last Gun 11 AM–3 PM	8	PRESIDIO National Cemetery Walk 10 AM–12 NOON Springtime at Tennessee Hollow 12 NOON–1:30 PM	PRESIDIO Barracks, Buildings, and Bunkers 2–4 PM	CRISSY FIELD CENTER Ecological Restoration of the Waterfront 10:30 AM–12:30 PM PRESIDIO Shuttle through Time 12:50–2 PM	MARIN HEADLANDS Sunset Full Moon Walk to Point Bonita Lighthouse 7:45–9:45 PM MUIR WOODS Muir Woods by Moonlight 7:30–9:30 PM	ALCATRAZ Alcatraz Kidz Tourz: Creative Escapes 4:20–7:15 PM CRISSY FIELD CENTER History, Heroes, and Houses 10–11:30 AM FORT FUNSTON Green Team 10 AM–12:30 PM MARIN HEADLANDS Smashing Plates and Elastic Rocks 9 AM–2 PM MUIR WOODS Muir Beach Bird Festival 7 AM–12 NOON Miwok Uses of Plants and Animals 10 AM–12 NOON
MUIR WOODS Mother's Day Wildflower Hike 10 AM–1:30 PM PRESIDIO Buffalo Soldiers at the Presidio 1–3 PM	15	16	PRESIDIO From Post to Park 1–3 PM	18	19	FORT FUNSTON Green Team 10 AM–12:30 PM FORT POINT Pier Crabbing 10 AM–12 NOON LANDS END Shipwrecks at the Golden Gate 1–2 PM MARIN HEADLANDS Bones, Bones, Bones 10 AM–1 PM Bunkers of Hill 88 11 AM–1:30 PM MUIR WOODS Medicinal Plant Walk 10 AM–12 NOON PRESIDIO Crissy Field Clean-up 9 AM Earth, Wind, and Flowers 10 AM–12 NOON
CRISSY FIELD CENTER Come to Your Senses at Crissy Field 10 AM–1 PM MUIR WOODS Bones, Bones, Bones 10 AM–1 PM PRESIDIO Patriotism and Prejudice 1–3 PM	22	23	PRESIDIO National Cemetery Walk 10 AM–12 NOON	25	26	FORT FUNSTON Green Team 10 AM–12:30 PM PRESIDIO Horseshoes and Carrots 12 NOON–1:30 PM
28	PRESIDIO Memorial Day Ceremony 11 AM–12 NOON	30	31			 <p>April 27 May 5 May 13 May 20</p> <p>*Offered in Spanish; English translation available</p>

Program Information

USS *San Francisco* Memorial parking lot on El Camino del Mar, just north of 48th and Point Lobos avenues. Reservations required; phone 561-4323.

MARIN HEADLANDS

The visitor center is open daily, 9:30 AM to 4:30 PM. We invite you to begin your exploration of the park here. Plan your outing or relax afterward. Our award-winning exhibits introduce you to the parks' stories. Unless otherwise noted, all programs require reservations. For general program information and to make reservations, phone 331-1540.

Visit Marin Headlands' website: www.nps.gov/goga/mahe

ONGOING

Nike Missile Site Open House (3/5, 4/2, 5/7) Open the first Sunday of each month, and Wednesday, Thursday, and Friday afternoons from 12:30 to 3:30 PM. Come explore a restored Cold War era-anti-aircraft missile battery at Nike Site SF-88 on Field Road. On-leash pets are welcome. Buildings above-ground are accessible. For information, phone 331-1543, or visit www.nps.gov/goga/mahe/nimi.

Point Bonita Lighthouse (every Saturday/Sunday/Monday) Open hours are 12:30 to 3:30 PM.

Meet Point Bonita docents along the lighthouse trail. This historic setting offers breathtaking views and many stories. The 1/2-mile trail is steep in places. For more information, phone 331-1540.

PROGRAMS

(Reservations required; phone 331-1540.)

Beginning Birding (3/12, 4/9, 5/7) Spring is here—join Docent Jane Haley for an easy walk around Rodeo Lagoon to discover spring-time birds of the Marin Headlands. Bring binoculars and field guides. For ages 8 and up. Meet at the visitor center.

Bones, Bones, Bones (3/18, 5/20) Drop by the visitor center to meet "Roadkill Nancy" Valente and view her collection of skulls and bones. A hands-on experience for children of all ages. For information, phone 331-1540. ☺

Bunkers of Hill 88 (5/20) Take a strenuous 3-mile roundtrip hike up Hill 88 to enjoy breathtaking views and learn about gun emplacements and anti-aircraft sites in the Headlands. Meet Katrina Wagner at the Rodeo Beach fire gate.

Cats of the Marin Headlands (3/18) On this moderate 4-mile round-trip hike to Tennessee Beach

and back, we will be on the lookout for cats that inhabit or visit the Marin Headlands: feral cats, bobcats, and (of course) mountain lions. We'll make several stops to learn more about these stealthy creatures. As a bonus, we'll enjoy a postcard sunset over the Pacific Ocean. Meet Steffen Bartschat at the Tennessee Valley trailhead. Limited to 25 people (sorry, no dogs). Bring water, snack, and warm layers.

Scrub-to-Beach Exploration Hike

(3/25) Rove the lagoon, valley, and beach, seeking what's "uniquely Headlands." Meet Katrina Wagner at the visitor center for this moderate 3-mile hike.

Secret Gardens of the Headlands

(3/11) Explore the wildflower gardens along Julian Trail, where moss and lichen embrace miniature flowers, and rock gardens open into wild views of the Pacific. Join Docent Gail Lester on this gentle, easy stroll in celebration of spring. Meet at the Julian Trail section of the Coastal Trail at McCullough and Conzelman roads. Dress in layers. Heavy rain cancels. Limited to 15.

Smashing Plates and Elastic Rocks

(3/11, 4/15, 5/13) Discover how the rocks of the Marin Headlands became the epicenter of plate tectonics. This hike will cover about 5 miles of uneven terrain. Ages 10 and up. Meet Ranger (and Geonaut) Roxi Farwell at the visitor center. Bring water and bag lunch and wear sturdy shoes. Persistent rain cancels.

Spring Family Camp

(4/22) Bring your family (with kids ages 5 to 15) on a short overnight backpack (1 mile) to beautiful Haypress Camp. Learn about local flora, fauna, and history as we share in the fun of a traditional campfire program. Meet at the Tennessee Valley trailhead. Program ends at noon the following day (4/23). Limited to 8 families and/or 24 people (sorry, no dogs); reservations required. Phone 331-1540 and leave your email address; trip leader will contact you with more information.

Spring Wildflower Slide Show

(3/19) Join Lynda Bartek at the visitor center to view a wildflower slide presentation. Afterwards, Lynda will lead a short, easy hike to identify flowers along the trail. Slide presentation ☺

Sunset Full Moon Walk to Point Bonita Lighthouse (3/14, 4/13, 5/12) Greet the rising moon at this

wild edge of the continent. The 1/2-mile trail is steep in places. Meet park staff and docents at the Point Bonita Lighthouse trailhead. Limited to 40.

Tennessee Valley Ramble

(4/29) On a moderate 2-mile, one-way hike to the beach, examine patterns of life on the landscape and imagine how humans have figured in the picture over time. Stay and enjoy lunch on the beach, or hike back at your own pace. Meet Katrina Wagner at the Tennessee Valley trailhead.

Wildflower Photography Hike

(3/18) Bring your camera and tripod to photograph spring wildflowers on this moderate 2- to 3-mile hike. Meet Al Greening at the visitor center.

Wildflower Woods and Hills

(4/8) Join Susan Ovington for a moderate 5-mile hike up shady Oakwood Valley, across the ridge, and down Old Springs Trail. Dress in layers and bring lunch and water. Meet at the Oakwood Valley trailhead on Tennessee Valley Road.

Wildflowers of Wolf Ridge

(4/22, 5/6) It's a hearty hike to this special wildflower community 900 feet above sea level. Wear sturdy shoes and dress in layers. Bring

[Continued on next page]

LIVING IN EARTHQUAKE COUNTRY

Earthquakes are a fact of life in Northern California. We get literally thousands of earthquakes a year and while not all of them are serious, scientists say a big one is a certainty. Unfortunately, they can't predict when it will strike. But you can take preventative measures now to prepare yourself for an earthquake later.

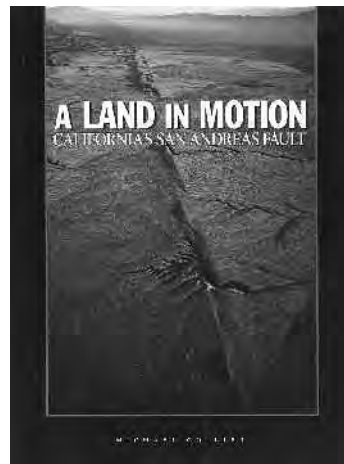
Here's a checklist of things to do to prepare for an earthquake.

- Assemble an emergency supply kit. Supplies should include flashlight, extra batteries, portable battery-operated radio, gas shut-off tool, first-aid kit and first-aid manual, canned food, at least three gallons of water per person, non-electric can opener, essential medicines (including prescription medications), protective clothing and rainwear, sleeping bag or blanket, and sturdy shoes.
- Learn how to turn off gas, water, and electricity in case the lines are damaged.
- Know the danger spots—windows, mirrors, hanging objects, fireplaces, tall furniture.
- Know the safe spots in each room—under sturdy tables or desks, against inside walls.
- Secure heavy items of furniture and appliances using flexible mount furniture straps.

- Secure water heaters with two-strap kits.
- Secure breakables and collectibles with Quake putty, wax, or museum gel.
- Secure TVs and monitors with adhesive buckle kits.
- Keep flammable or hazardous liquids such as paints, pest sprays, or cleaning products in cabinets or secured on lower shelves.
- Learn Cardiopulmonary Resuscitation (CPR).
- Always know the possible ways to exit your house and workplace in emergency situations.
- Decide where your family will reunite if separated.
- Choose an out-of-state friend or relative whom family members may call after an earthquake to report whereabouts and conditions.

LEARN MORE ABOUT EARTHQUAKES

The Parks Conservancy has published an informative book and produced two sets of educational playing cards for those who want to learn more about California's geology and earthquakes. To purchase them, visit the Conservancy's online store at www.parksconservancy.org or stop by one of the Conservancy's nine park stores. Store addresses are listed on our website.



A Land in Motion: California's San Andreas Fault

Join author Michael Collier as he travels the San Andreas Fault and talks to the scientists who study it. Incorporating an amazing collection of photographs, clear writing, maps, and diagrams, *A Land in Motion* gives readers a new appreciation of the science, history, and impact of the most famous fault on Earth. \$19.95



1906 Earthquake Playing Cards

Read about the facts, stories, and scandals of the 1906 earthquake and subsequent fire in this unique set of playing cards. Learn about tremendous acts of bravery, how the Presidio provided critical services to earthquake refugees, the role of Alcatraz in hous-

ing the city's prisoners, and much more. \$5.95



Earthquake Safety Tips Playing Cards

Being prepared is the best defense against the natural disasters that threaten our lives and properties.

Use the 54 safety tips

contained in these playing cards as suggestions to help reduce loss of life and property damage at your home and workplace. \$5.95

1906 EARTHQUAKE QUIZ

QUESTIONS:

What was the magnitude of the 1906 earthquake?

Where was the earthquake's epicenter?

How many residents were left homeless after the earthquake and fires?

What was the estimated cost of the property damage?

How did the military attempt to control the fires?

ANSWERS:

Estimated at 7.8 on the Richter scale.

Under the Pacific Ocean, within a mile of Daly City.

More than 225,000 of the city's 400,000 residents were displaced.

\$400 million, or more than \$8 billion in today's dollars.

By dynamiting firebreaks, which itself caused additional fires.

Do You Enjoy the Parks? JOIN US!

More than ever before, the Golden Gate National Parks need the support of people like you. By joining the Conservancy—the parks' nonprofit partner—you'll become part of the effort to preserve the national parks at the Golden Gate.

Your support helps restore native habitats, maintain miles of trails, preserve historic landmarks, and develop park education programs for young people.

JOIN THE PARKS CONSERVANCY AND YOU'LL RECEIVE:

- Two membership cards plus a special gift.
- *Gateways*, the quarterly membership newsletter filled with news of the parks and tips on special places.
- *Park Adventures*, the quarterly calendar of NPS and special membership programs and events, delivered to your home.
- Free monthly e-mail newsletter.
- Invitations to members-only walks, talks, and excursions.
- Discounts at park bookstores.
- Free use of the Alcatraz and Fort Point audio tours.

Yes, I would like to join the Parks Conservancy. Enclosed is my membership contribution of:

- \$35 Park Partner — Receive all benefits of membership
- \$50 Park Sponsor — Receive the award-winning book, *Guide to the Parks*
- \$100 Park Steward — Receive a Mount Tamalpais sweatshirt

Donations are tax-deductible. For information, or to join online, visit our website www.parksconservancy.org. To join by phone, call the Parks Conservancy at (415) 4R-PARKS.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____ EMAIL _____

DAY PHONE (INCLUDE AREA CODE) _____ TOTAL ENCLOSED \$ _____

Make check or money order payable to Golden Gate National Parks Conservancy
Charge to: Visa Mastercard Am Ex Discovery

ACCOUNT NUMBER _____ EXPIRATION DATE _____

SIGNATURE _____

Mail this coupon with payment to:
Golden Gate National Parks Conservancy, Building 201, Fort Mason, San Francisco, CA 94123

THE GOLDEN GATE NATIONAL PARKS CONSERVANCY—OUR MISSION

The Golden Gate National Parks Conservancy is a nonprofit membership organization created to preserve the Golden Gate National Parks, enhance the experiences of park visitors, and build a community dedicated to conserving the parks for the future.

We seek private contributions to augment federal funds for the parks, and work in collaboration with the National Park Service and the Presidio Trust to improve park sites, enlist volunteers in restoration projects, provide services and education programs for visitors and local communities, and engage diverse audiences in the national parks at the Golden Gate.





The Camp No One Used

The Plight of the Chinese After the 1906 Earthquake

Will Elder, NPS Interpretive Ranger, Presidio

Catastrophe draws people together, but at the same time, can magnify class and race distinctions. Like the recent Hurricane Katrina disaster, the 1906 San Francisco earthquake and fire were no exceptions to this paradox. Although heroes arose from the dire circumstances, not everyone afflicted was treated with the same respect, or obtained the same level of assistance in the aftermath. Following the 1906 disaster, the people of San Francisco's Chinatown received some of the poorest treatment of any group in the city.



One of the first camps established for refugees from Chinatown near Fort Mason is documented in this undated photo; suffering not only from the dislocation experienced by the rest of the city's residents, the Chinese also had to contend with racial prejudice.

The 1849 Gold Rush and the building of the trans-continental railroad had brought people to San Francisco from all over the world. For a number of sociological reasons, by the early 20th century, there was great prejudice against Asians in America, particularly on the West Coast. Though a small part of this larger story, the army's approach to dealing with Chinatown's earthquake refugees is unfortunately representative.

SHOCK, PANIC, CONFUSION

Like much of the city, when the violent earthquake struck in the dawn light of April 18, 1906, Chinatown suffered some damage, but its complete destruction came later as a result of the firestorm that engulfed much of downtown San Francisco. Similar to most of the city's residents, the Chinese were overcome by shock, panic, and confusion after the powerful quake. Watching helplessly as the fires approached their homes and businesses, they no doubt wondered which of their possessions they should take. What would they require, or desire, after all else was gone? And where would they go? Would they be safe away from Chinatown?

As did others across the city, the Chinese scrambled to gather their belongings and flee the encroaching flames. As they left, the National Guard moved in to evacuate and "safeguard" Chinatown. Hugh Kwong Liang, only fifteen at the time, recalled, "I turned away from my dear

old Chinatown for the last time. . . . City officials directing the refugees approached us and told us to proceed toward the open grounds at the Presidio Army Post."

However, the majority of Chinese refugees left San Francisco entirely, most traveling to camps in Oakland, which had its own small Chinatown. The 400 or so Chinese who chose to remain in the city endured much confusion as military officials shuttled them from camp to camp in the ensuing days. The first move was to roust them from a "mixed-race" camp near the entrance to Fort Mason and take them to a camp on Van Ness Avenue. James Phelan, a prominent San Francisco capitalist and politician, objected to this site, arguing that the camp would prove difficult to dismantle once the Chinese settled in a location so close to the original Chinatown.

The army then moved the camp to the Presidio Golf Links, but the post's Presidio Heights neighbors were greatly displeased, saying "the summer zephyrs would blow the odors of Chinatown into their front doors." The next day, Chinese refugees were again transferred to a remote location on the Presidio near Fort Point. With each move, the number of refugees dwindled. By the time they reached this third and final location on April 28, less than 300 remained to occupy a camp capable of holding up to 10,000 refugees. (The Chinese camp at the Presidio was the shortest-lived of any

official camp, only lasting a little more than a month as its residents, not surprisingly, found accommodations elsewhere.)

LAND GRAB ATTEMPTED

Despite the military presence, there was extensive looting by city residents and even by the National Guard troops. Consequently, the National Guard was replaced by regular military soldiers, who, though they did not themselves loot, reportedly turned a blind eye to Chinatown's civilian looters.

The Chinese, who numbered around 15,000 in San Francisco in 1906, were one of the largest and least-welcomed immigrant populations. As Ching Wah Lee, a Chinatown historian, explained, "At the time there was no work for white men, never mind the Chinese. But the Chinese would take any work at any pay. This just increased their unpopularity." With the destruction of Chinatown by the 1906 earthquake and fire, city officials had a convenient excuse to drive the Chinese out of the city and claim the land Chinatown occupied for profitable commercial development.

By then, reports of poor treatment of the Chinese had gained the attention of both the Chinese Legation and President Theodore Roosevelt. The president sent Secretary of Commerce Victor H. Metcalf to San Francisco to investigate incidents of discrimination. After meeting with city officials, Metcalf telegraphed the President: "It is reported to me that no discrimination of any kind has been shown against anyone on account of race or color. The spirit has been and is to assist the suffering, whoever and wherever they may be." At the same time, the inhabitants of the Chinese camp were briefly detained in camp after many "became demoralized and were leaving camp in body."

This action prompted a visit by the first secretary of the Chinese Legation, Chow Tsz Chi, who requested that the refugees be permitted to go in and out of the gate unmolested and that the current site of the camp be made per-

manent. He stated that should circumstances necessitate a further move, there should be adequate warning and sensitivity to the language barrier. He assured military authorities that if this were done, the Chinese would give no trouble.

Meanwhile, a Committee on the Location of Chinatown was formed and debated numerous permanent sites for its rebuilding, including Hunter's Point in San Mateo County. This idea was dismissed after officials realized that property and poll taxes collected from the Chinese in Hunter's Point would no longer benefit San Francisco. The relocation of Chinatown also posed a threat to the "Oriental trade" dominated by San Francisco ports. As the committee struggled with the mounting pressure from local and national concern over the treatment of the Chinese, Seattle and Los Angeles offered to take them in, no doubt further alarming the committee members. Slowly, the Committee on the Location of Chinatown lost momentum, and the Chinese were allowed back into their former neighborhood, which they rebuilt into one of the city's cultural icons.

RISING LIKE A PHOENIX

In a round-about way, the earthquake and fire may have benefited the Chinese. With municipal records destroyed, many were able to fill out new certificates of residence and claim American citizenship; this paved the way for their wives, children, and "paper sons" to join them. Many of the original Chinatown shacks were replaced with Asian-style architecture—graceful pagodas, ornate balconies, and colorful façades.

Today, Chinatown is a bustling community of 70,000, one that opens its doors to immigrant newcomers and tourists alike. It represents a story not only of survival, but of overcoming prejudice. The city's Chinese earthquake refugees, determined to stay and rebuild, also improved their community for the benefit of the entire city.



Historical Tidbits

Questions & Answers

Following is a potpourri of intriguing information, short pieces that ask—and answer—some surprising questions.



For weeks after the catastrophe, food was obtained by standing in line for it; at one point, more than 150 relief stations were in operation across the city. US Army soldiers were widely utilized to maintain order; here, they're shown patrolling the breadline on 6th Street, between Market and Mission.

WHERE DID ALL THE CONVICTS GO?

One fine spring morning, the newly completed Alcatraz barracks—and the entire island—had their structural stability sorely tested in what history has titled the Great Earthquake. The entry in the 1906 annual report was concise: “At about 5:30 on the morning of [April] 18th, a very severe earthquake shock occurred, shaking all buildings, cracking many walls, and wrecking many chimneys.” Soldiers living in the Building 64 barracks made a simultaneous dash for the only stairway, causing momentary panic and an impressive human traffic jam. A hurried inspection revealed that Alcatraz had suffered relatively minor damage—mostly, broken chimneys and some cracked plumbing.

San Francisco had not been so lucky. Water mains and cisterns had ruptured throughout the city and fires burned out of control, fueled by broken gas mains under a hundred twisted streets. By late morning, several fires had joined into one long front, eating away at the downtown financial district. Alcatraz troops were ferried in to assist in evacuating citizens, dynamiting fire breaks, and protecting abandoned buildings from looters.

By the morning of April 19, a firestorm approached the city’s municipal jail on Broadway Street. Guards could hear an unearthly roar as oxygen rushed toward the flames. Buildings exploded in the superheated air, and asphalt on the streets burst into flames as temperatures soared. The jailers decided it was time to evacuate their charges. Talking some National Guardsmen and sailors into assisting them, the guards removed 176 prisoners from

their cells, herded them through the blazing streets, and made their way to the emergency headquarters at Fort Mason.

Later in the afternoon, the city’s prisoners embarked on a heavily guarded launch headed for Alcatraz. When they pulled up alongside the island dock, the commanding officer had no option but to let the motley crew land. Space was found for the new arrivals in the already crowded cellblocks, and for the next nine days, the Rock’s military prisoners were joined by an eclectic mixture of muggers, thieves, junkies, and drunken revelers—refugees from the Barbary Coast.

~John A. Martini, from *Fortress Alcatraz: Guardian of the Golden Gate* (reprinted with permission)

WHERE ON EARTH IS CLYDE’S RIDGE?!

And the answer is, Right here in Golden Gate National Recreation Area, immediately north of Point Bonita and Bonita Cove!

Who Is Clyde? Clyde Wahrhaftig was a noted geologist whose lifelong work included extensive geological study of the San Francisco Bay Area. A professor in the geology and geophysics department at the University of California, Berkeley, from 1960 to 1982, Clyde was also a long-term employee of the US Geological Survey in Menlo Park. Known to “distrust and dislike the speed of automobiles and airplanes,” Clyde traveled the Bay Area by public transportation, studying its various seismic sites. He also researched and published numerous geologic field trip guides, including *A Walker’s Guide to the Geology of San Francisco and the Hayward Fault in Hayward*

and Fremont, via BART, and the appropriately titled *A Streetcar to Subduction and Other Plate Tectonic Trips by Public Transport in San Francisco*. Clyde made numerous contributions to studies and projects undertaken in the GGNRA landscape.

Where can I find out more about Clyde’s work? Clyde’s extensive collection of personal and professional papers, maps, photographs, and publications is now housed at the GGNRA Park Archives and Records Center and is available for research by appointment; phone (415) 561-4804 for more information. In this year commemorating the centennial of the Great Earthquake and Fire of 1906, it is only right to recognize and remember the magnificent work of a student of the Earth, Clyde Wahrhaftig.

~Susan Ewing Haley, Archivist, Park Archives and Records Center

WHO WAS GENEROUS, WHO WAS BRAVE?

The earthquake that rumbled through San Francisco in the early-morning hours of April 18, 1906, left Sequoia Canyon—home to what is now Muir Woods—virtually unscathed. None of the redwoods fell, none of the redwoods burned. But San Francisco burned, and the aftershocks from that conflagration nearly spelled doom for these towering trees.



Through the efforts of President Theodore Roosevelt (left) and William Kent (right), the lush stand of old-growth redwoods we know today as Muir Woods was saved from destruction.

A year earlier, in 1905, William Kent had purchased the canyon to save the trees from the logger’s axe. Now, in the wake of the earthquake, North Coast Land and Water Company went to court to take the land away from Kent through the power of eminent

domain. North Coast planned to log the redwoods and sell the lumber to rebuild San Francisco. They also schemed to build a dam near where the park entrance arch is today and flood the canyon to create an emergency water supply.

Once again, William Kent stepped forward to save this natural treasure. He offered to make a gift of the canyon to the people of the United States under the provisions of National Antiquities Act recently passed by Congress. This act allowed for the creation of national monuments through presidential decree. Kent knew that such an action would take precedence over North Coast’s legal machinations.

President Theodore Roosevelt gratefully accepted Kent’s bequest, and in January 1908, signed the proclamation establishing Muir Woods National Monument, the first to be created through the gift of an individual donor. From the devastation wrought by the earthquake, “the greatest tree lover’s monument to be found in all the forest of the world” was saved for posterity.

While William Kent was busy saving Muir Woods, Alice Eastwood, another Muir Woods luminary, was hard at work rescuing the California Academy of Science’s literally invaluable plant collection.

Eastwood, a pioneering botanist, was head of the botanical collection at the Academy for over fifty years. In the days following the earthquake, Eastwood salvaged the Academy’s botanical specimens (or “type collection,” examples that define a species) as flames from post-quake fires crept ever nearer to the Academy building. At great personal risk, Eastwood removed the collection to places of safety.

Today, Eastwood is remembered at Muir Woods through the Alice Eastwood Trail, which climbs from the floor of Muir Woods to Camp Eastwood in Mount Tamalpais State Park. The upper reaches of the Eastwood Trail are adorned with Eastwood manzanita, one of many plant species identified by Alice Eastwood during her sojourns in and around Muir Woods.

~Ken Lavin, NPS Interpretive Ranger, Muir Woods

The National Parks at the Golden Gate



Golden Gate National Recreation Area (GGNRA)

This 75,500-acre national park is located where the Pacific Ocean meets San Francisco Bay. Extending north and south of the Golden Gate, the park offers a spectacular blend of natural beauty, historic features, open space, and urban development as well as a vast coastal preserve along its shoreline. Muir Woods National Monument, Fort Point National Historic Site, and the Presidio of San Francisco are within GGNRA's boundaries and are managed as part of GGNRA.

EMERGENCY (POLICE, FIRE, AMBULANCE).....911

Park Visitor/Information Centers (area code 415 unless otherwise noted)

Crissy Field	561-7761 (Center) or 561-3040 (Warming Hut)
Fort Funston	239-2366
Fort Mason/GGNRA Headquarters (Monday-Friday)	561-4700
TDD/V	556-2766
Fort Point	556-1693
TDD	561-4399
Marin Headlands	331-1540
Muir Woods	388-2596
Pacifica	(650) 355-4122
Presidio	561-4323
TTY	561-4314

If the park destination you wish to visit or learn more about does not have a corresponding phone number listed on this page, please phone GGNRA Headquarters at 561-4700 (Monday through Friday) and park staff will assist you.

ADDITIONAL USEFUL NUMBERS

(area code 415 unless otherwise noted)

Alcatraz Program Information	561-4900
Beach Chalet Visitor Center, Golden Gate Park	751-2766
Camping Reservations	331-1540 (backcountry sites) or 800-365-2267 (Kirby Cove)
Crissy Field Center (main)	561-7690
Fort Mason Center	441-3400
Golden Gate National Parks Conservancy	561-3000
Golden Gate Raptor Observatory	331-0730
Gulf of the Farallones National Marine Sanctuary	561-6625
NPS Volunteer Information	561-4755
Nike Missile Site	331-1453
Ocean Beach Fire Hotline	561-4741
Park Archives and Records Center	561-4807
Point Reyes National Seashore	464-5100
Presidio Habitat Restoration Team	561-4848

San Francisco Maritime National Historical Park

Maritime Museum	561-7100
Visitor Center	447-5000
Special Park Uses Group	561-4300
Stinson Beach Weather	868-1922

NATIONAL PARKS ON THE INTERNET

Golden Gate National Recreation Area	www.nps.gov/goga
Alcatraz	www.nps.gov/alcatraz
Fort Point	www.nps.gov/fopo
Marin Headlands	www.nps.gov/goga/mahe
Muir Woods	www.nps.gov/muwo
Nike Missile Site	www.nps.gov/goga/mahe/nimi
Presidio	www.nps.gov/prsf

ADDITIONAL PARK-RELATED SITES

Crissy Field Center	www.crissyfield.org
Fort Mason Center	www.fortmason.org
Golden Gate Club	www.presidio.gov/venues
Golden Gate National Parks Conservancy	www.parksconservancy.org
Golden Gate Raptor Observatory	www.ggro.org

Gulf of the Farallones National Marine Sanctuary

.....	www.farallones.org
Presidio Trust	www.presidio.gov
San Francisco NMHP	www.nps.gov/safr

The National Park Service Web page at www.nps.gov includes ParkNet, an online magazine providing natural and cultural history, travel and tourism information, and basic information on all national park sites.

GULF OF THE FARALLONES NATIONAL MARINE SANCTUARY

The sanctuary comprises 948 square nautical miles of the Pacific Ocean off the California coastline, west and north of San Francisco and includes the Gulf of the Farallones and the nearshore waters of Bodega, Tomales, and Drakes bays, Estero de San Antonio, Estero Americano, Duxbury Reef, and Bolinas Lagoon. It is managed by the National Oceanic and Atmospheric Administration (NOAA) and provides special protection and management for marine areas of national significance, for the benefit of the public and the world's oceans.

Read ParkNews on the Web:
www.nps.gov/goga/parknews