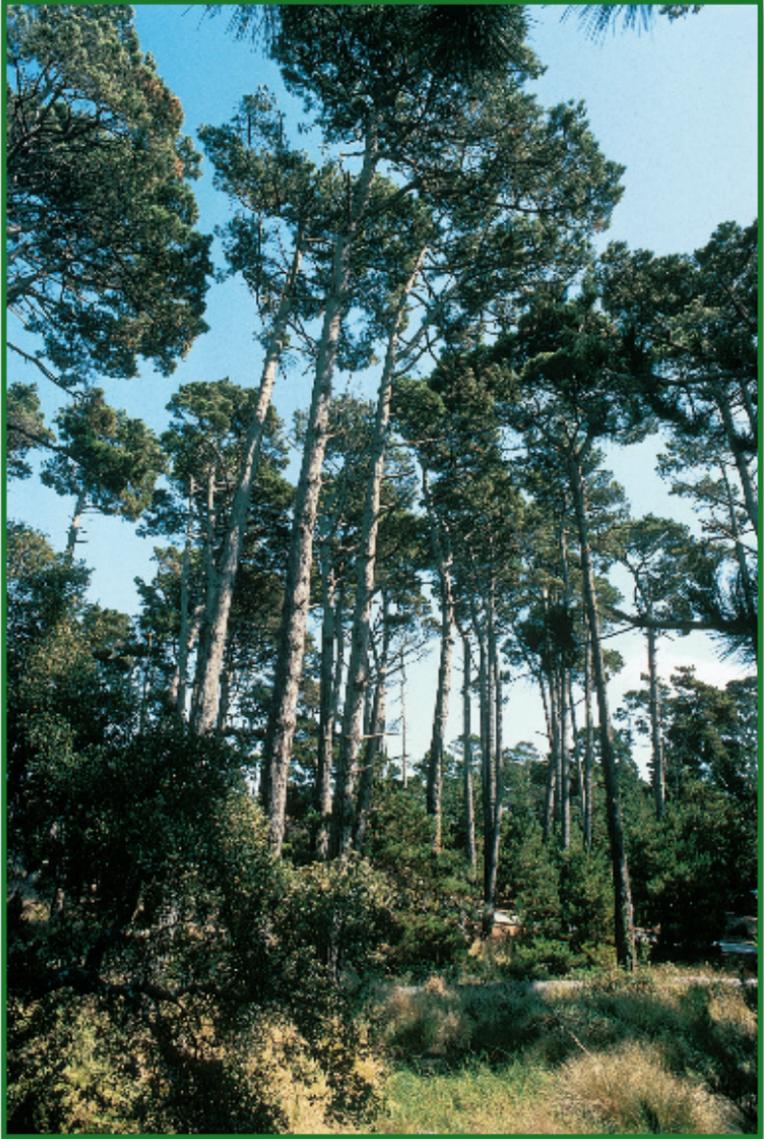


Nature's Forest



Discover Asilomar



Self-guided walking tour

Asilomar State Beach & Conference Grounds



The Forest of Asilomar

Asilomar's unique character is largely due to its Monterey pine forest ecology. It is a system of native plants and wildlife that have adapted to a relatively damp, mild climate and sandy soils.

Prior to the arrival of Europeans to the Monterey Peninsula, the area's forests were rich with Monterey pines, coast live oaks, Monterey cypresses, and bishop pines. When the Spanish arrived in the 1760s, and through the Mexican and early-American period (1820s-1880s), the Monterey Peninsula's forests were burned, logged, and cleared for grazing cattle, homes, and industry. By the 1900s, these impacts created an even-aged pine forest over much of the area.

At Asilomar, the pine and oak forest was thinned for the construction of buildings beginning in 1913 and continued until 1981 as each building complex was built.

Today, Asilomar's forest ecosystem struggles to survive due, in part, to the pine's natural age span of 90 to 100 years, forest fragmentation, loss of habitat, and fire suppression. These stress factors on the pines have made them more susceptible to disease. Since 1992, thousands of pines at Asilomar have been killed by an introduced fungal disease called pine pitch canker.

California State Park staff is using a multi-strategy approach to restore Asilomar's native Monterey pine forest:



- Grow pine seedlings and treat them for natural resistance to the pine pitch canker disease
- Spread wood chips with Monterey pine seeds in areas where pines are sparse
- Remove non-native plants and oaks that inhibit the growth of pines
- Protect young pines from deer with shelters and cages

You Can Protect the Forest

The forest vegetation and wildlife are sensitive to human disturbance. Stay on paved walkways to prevent damage to plants, soil erosion, and to reduce impacts on wildlife.

All plant materials, alive or dead, are protected. Please do not collect or transport plant materials from the forest.

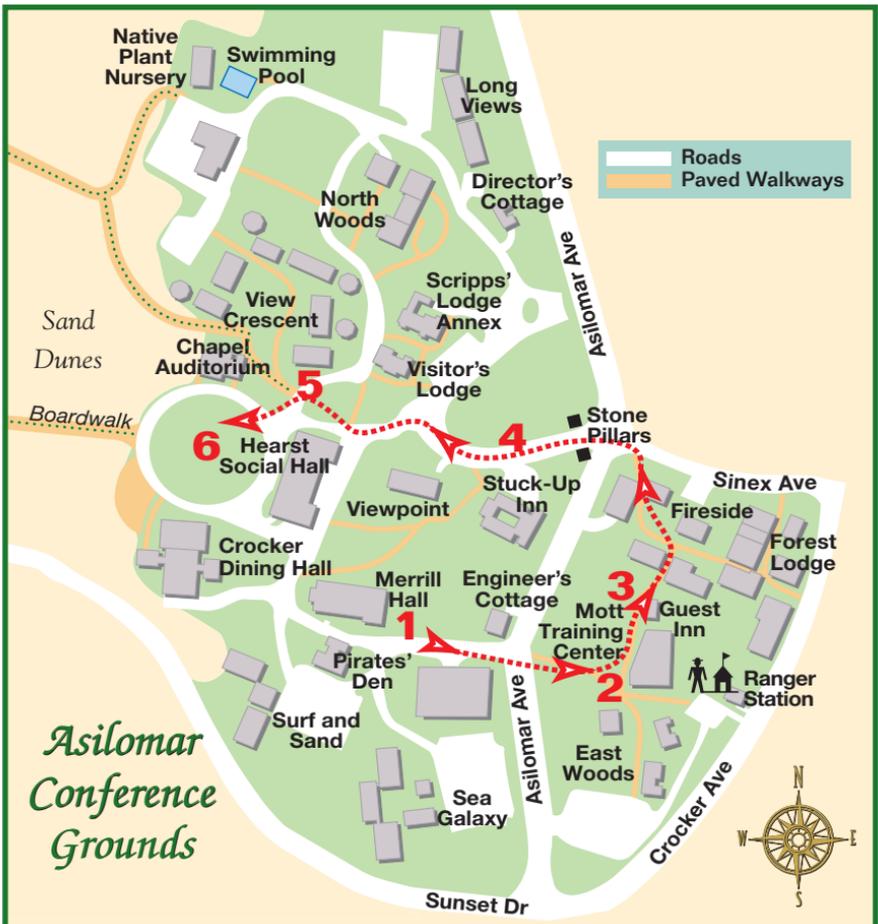
For Your Safety

Poison oak thrives in the forest. Ground-nesting wasps live in the soil. Stay on the paved walkways and roads to avoid these hazards.

Start Here...

Your tour begins east of Merrill Hall. It meanders along roads and walkways. Refer to the map to follow the route.

Allow 45 minutes for this forest walk. The distance is less than $\frac{3}{4}$ mile. It is accessible to all visitors.



SITE 1 – Monterey Pines



Fast growing Monterey pines can reach heights of 100 feet.

Just 10,000 years ago, Monterey pine forests thrived along California's coast from San Francisco to Los Angeles. But, as the climate warmed at the end of the glacier period, the pines receded to a few locations where environmental conditions were still suitable for their survival—Santa Cruz, Monterey, and Cambria.

Today, however, new threats are affecting the pines' health and endangering their survival. Urban and agricultural developments continue to cut stands of unprotected trees; competition from exotic plants prevent new pine seedlings from regenerating; and, in the absence of fire or other major disturbance, oaks are replacing the pines. Accelerated global warming from human-induced greenhouse gases may soon create conditions that are unfavorable for pines to exist.

In combination, these threats stress the health of Monterey pines; as a result, they become more susceptible to various pests and diseases. Since 1992, much of Asilomar's old-aged pine forest has succumbed to the pine pitch canker fungal disease that is spread by native bark and twig beetles. Nearly all of the pines at Asilomar show signs of infection—rust-colored needles at the ends of branches and sap oozing from the trunk or branches. A few pines are genetically resistant to the disease, while others appear to be developing an immunity to the disease through repeated exposure.

Shelters are often placed around new pines to accelerate their growth and protect them from deer antler rubbing.



SITE 2 – Coast Live Oaks

The coast live oaks at Asilomar represent the climax stage in plant succession in the pine forest. Starting with herbaceous shrubs, then Monterey pines, and in the absence of a wildfire or other forest clearing disturbance, the pine forest will eventually be replaced by oaks.

Unlike many species of oaks that produce very strong wood used for furniture, cabinets and floors, the coast live oak is prone to cracking and twisting.

Some coast live oaks at Asilomar have distorted trunks and twisted branches. This growth pattern is the result of growing in a windy location, salt spray, and the persistent browsing by deer. In this section of the forest, oaks grow upright with straight, thick trunks because the affects of wind and salt spray are less severe.

Most of the oaks at Asilomar are 50 to 100 years old. Acorns are an important food source for wildlife.



Acorn woodpeckers drill small cache holes in oak and pine trees to store the gathered acorns, as well as, to attract and hunt for insects.



Tumor-like growths on oak twigs are galls that vary in size and shape. Female gall wasps in the Cynipidae family lay eggs in the oak twig causing the plant tissue to swell. The resulting gall provides food and shelter for the developing young. Galls do not harm the tree.

SITE 3 – Forest Understory



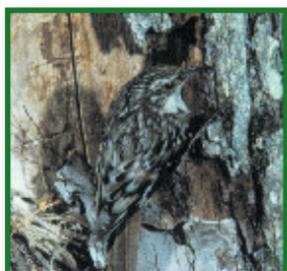
Blue blossom



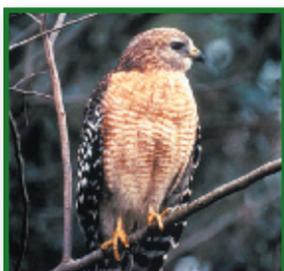
Sticky monkeyflower



Wood mint



Brown creeper



Red-shouldered hawk



Raccoon

The understory of the forest is made up of grasses, shrubs, wildflowers, and tree seedlings. A dense forest canopy can create ideal conditions for the understory by increasing soil nutrients, shade, and moisture retention.

But, ideal conditions are not always found at Asilomar. Forest fragmentation, the declining age of the pines, and diseases that kill the pines have opened up the forest canopy. With longer periods of sunlight weakening the shade tolerant native plants and drying out the soil, non-native grasses invade the ecosystem disrupting the balance. The loss of native vegetation reduces or eliminates wildlife populations.

State Park forest management plans guide staff on what vegetation should be removed, planted, and maintained. These management practices will help restore the balance to Asilomar's forest ecosystem.

Much of the dead plant material in the understory is left on the forest floor. It provides habitat for small animals, insects, fungi, and plants. As plants decompose, nutrients are released back into the environment. Old tree snags are left standing to attract brown creepers, chickadees, and acorn woodpeckers.

SITE 4 – The Swamp



The roots of a fallen pine tree.

This swamp was once a pond, one of a series of nine small ponds that existed along Asilomar Avenue nearly 100 years ago. Today, the pond is filled with sediment and plant life. The soil remains moist year-round from a high water table.

Monterey pine, blackberry, poison oak, and giant ryegrass are a few of the native plants that grow here.

High winds can uproot Monterey pine trees. As a forest, trees collectively buffer each other from the full force of winds. Root systems of nearby trees intertwine and together provide better strength and support for each tree. But as trees die and the forest thins, the remaining trees are more easily prone to being blown down. You can see the roots of a fallen pine that was toppled during a winter storm in 2008.

The decaying roots hold soil that once enriched the tree's root system. The soil is crowded with tiny creatures like earthworms, beetles, slugs, and spiders. They scurry and slither their way through the soil feeding on the decaying roots and dead insects. As the inhabitants break down the bodies of dead animals and plant material, the chemicals they once contained are returned back to the soil. This helps to provide fresh nutrients for growing plants.



Lucia Salamander



Darkling beetle

SITE 5 – Poison Oak

Poison oak is one of California's most common native plants. It is recognized by its leaves divided into three leaflets. One of the best known sayings is, "Leaves of three, let them be." Touching any part of the plant may cause an allergic reaction from the colorless oil, urushiol, in the plant's sap. It causes severe itching and a red, blistering skin rash.



Western poison oak

Poison oak can grow as a shrub or as a vine. In spring, new leaves are generally bright green. White flowers form and develop into berries. By summer, leaves turn yellow-green and shades of red; by late fall, most of the leaves have shed and cover the forest floor.

Poison oak is ideal for stabilizing soil. The dense vegetation provides shelter and protection for birds and small mammals. The stems, leaves, berries and seeds provide food.

Blackberry bushes are often confused with poison oak. Both have "leaves of three," but blackberry stems have thorns while poison oak does not.

"Murder" of Crows

The common crow is perhaps the best-known bird in the forest with its scratchy caw and black plumage, legs and bill. A year-round resident, it nests high in the Monterey pines. During the late spring and summer, crows are usually found in groups called a "murder" because they work together to hunt insects, small rodents, and mice.



Crows mate for life and can live up to 17 years.

A very social bird, crows alert each other of dangers and of nearby food sources.

Considered "intelligent," crows seem to apply reasoning to situations new to them.

SITE 6 – Meadow

Historically this area was designated the “circle” on Julia Morgan’s architectural drawings. It is actually a “back dune swale,” a low area between the back dune ridge where many of the conference buildings stand and the mid-dunes where the boardwalk traverses its way to the beach.

Like other swales in our dune system where nutrients and moisture content are high, the vegetation consists mostly of sedge grass and woody shrubs like coyote brush. Monterey pines can survive because the area is far enough away from salt-laden winds off the ocean. Generally broader and shorter in height, the pines and cypress trees form the leading edge of the “forest front” of Asilomar’s interior forest.

The meadow provides habitat for various small mammals and birds. Deer use the meadow as a corridor from the dunes into the forest.

Portions of the meadow are fenced off periodically to protect one of the world’s rarest plants—Pacific Grove clover. This tiny clover grows only in a few isolated places on the central coast. This meadow is the only place it is found at Asilomar; therefore, this meadow is vital to the clover’s survival. During wet years, the clover may be abundant, but in dry years only a few plants may be found.



Monterey cypress



Scrub jay



Coyote brush



Pacific Grove clover

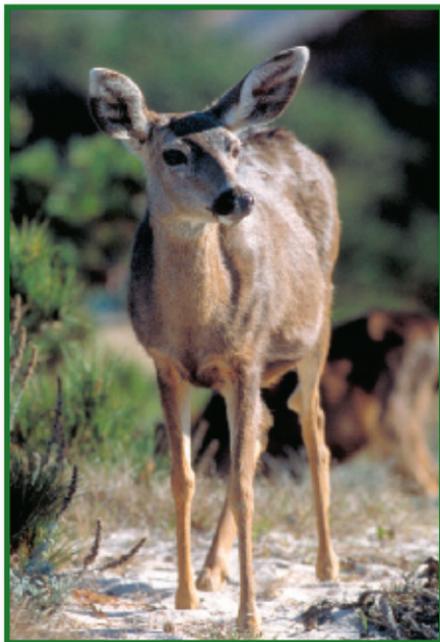
photo by: B. Freiermuth

Black-tailed Deer

Deer are commonly seen resting in areas with good cover or browsing. Among their favorite foods are tree seedlings, shrubs, grasses, acorns, poison oak, and nearby residential gardens.

The population of deer at Asilomar varies between 20 to 25 animals, depending on how many fawns are born and survive and how many older animals die each year. The breeding season is from September to November with fawns born seven months later. It appears that all deer born at Asilomar spend their entire lives within a one-mile radius of their birthplace.

Deer have grown used to people and may seem tame, but they are wild and can cause injury to people and pets (dogs). Stay back!



California State Parks supports equal access. Prior to arrival, visitors with disabilities who need assistance should contact the park office. This publication is available in alternate formats and on the Asilomar State Beach & Conference Grounds website: www.parks.ca.gov.

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