

Managing Eucalyptus



A Complex Challenge

Several species of non-native eucalyptus are found throughout California. *Eucalyptus globulus*, also called Tasmanian blue gum, is by far the most common. It was first introduced to the San Francisco Bay region in 1853 as an ornamental tree, and later planted widely for both aesthetic and commercial purposes. There are hundreds of acres of eucalyptus within GGNRA lands today, presenting managers with a variety of challenges.

Some eucalyptus trees within the park were part of the original landscaping plans for Fort Baker, Fort Barry and Fort Cronkhite, which are now protected as historic sites. Eucalyptus trees were also planted along many ridges as windbreaks, and later spread to larger areas. In some cases, single rows of trees have become large groves. Human communities have also expanded, and there are now many subdivisions bordering eucalyptus groves along the park's boundaries.

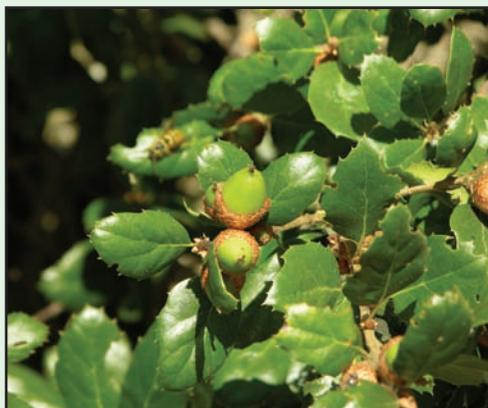
The fragrant oils in eucalyptus leaves can be very pleasing, but also alter soil chemistry, and can become highly flammable when the leaves accumulate as surface fuel. Studies have shown that native species are displaced in eucalyptus groves and fuel loads are higher. Without active management, historic landscapes can become overgrown, biological diversity can decline, and the potential for catastrophic wildfire can increase. Eucalyptus management at Golden Gate National Recreation Area strives to achieve three main goals—fire safety, historic preservation, and ecosystem health.



Cultural Resources

The original design for Fort Baker in 1903 called for planting 10,000 eucalyptus trees. It is not known exactly how many were planted, but it was far fewer than planned.

Management of the landscape was an ongoing concern during the historic period. An example is the 1936 WPA work party trimming trees on the Fort Baker parade ground in the photo above. In a continuing effort to preserve cultural resource values, historic trees are pruned and surface debris is removed. This is also good fire-safe practice.



Natural Resources

Coast live oak and California bay communities are often overtaken as eucalyptus groves expand outward. Coastal dunes, grasslands, wetlands, riparian vegetation, and coastal scrub have also been affected by the spread of eucalyptus.

Alterations to wind, shade, and moisture conditions that occur when a eucalyptus grove becomes established often create a vastly different habitat than native species are adapted for. Natural resource objectives for eucalyptus management aim to improve conditions for native plants and animals.



Wildland Fire

Constant shedding of bark contributes to the blue gum fire hazard. The 1991 Tunnel Fire in the Oakland Hills and the 2004 Tam Fire in Tamalpais Valley demonstrated how intensely eucalyptus debris can burn.

Fire management objectives focus on hazardous fuel reduction. Priority treatments are within 100 feet of structures, both privately owned structures near the park boundary, and structures within the park. Treatments along roads which are primary emergency response routes are also a high priority.

Many Ways to Manage Eucalyptus

Eucalyptus management takes many forms. It can entail simply removing lower limbs, thinning trees, or removing entire stands. Most projects have several phases involving trees, stumps and slash.

Eucalyptus removal near developed areas is a fire management priority. Ecosystem restoration is often the ultimate goal.

Trees

Working with different sized trees requires different skills and equipment. Removing larger trees is highly technical and can be dangerous if not done properly. Trees are often removed in stages. The smaller trees are cleared to make room for felling the larger ones. Harnesses may be needed to lower the largest trees in sections. Sometimes only surface fuel and lower branches are removed, leaving the majority of the trees intact. There are three management approaches:

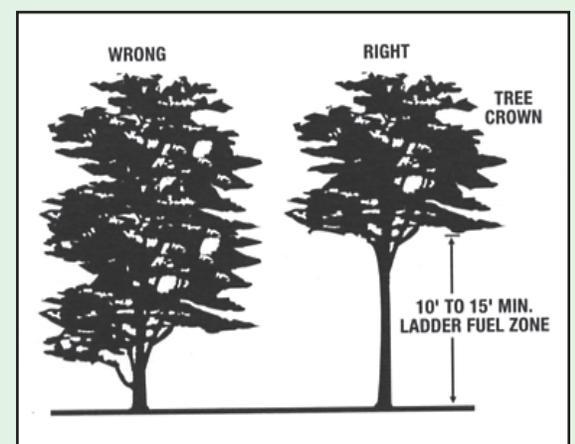
- **Understory Fuel Reduction**
Litter and duff is burned or removed by hand.
- **Stand Thinning**
Select trees, often the smaller ones, are removed, leaving the remaining trees evenly spaced.
- **Stand Removal**
All trees are removed.



Above: Eucalyptus branches are hauled to a chipper during a fuel reduction project.

Below: Removing lower branches, also called limbing, increases fire safety. Clear a minimum of 10 feet off ground or 1/3 height of tree.

Illustration courtesy: California Department of Forestry & Fire Protection



East Bay Regional Parks



Stumps

Left untreated, stumps will resprout, and will need to be cut again. Stumps can be treated with herbicide around the circumference where the actively growing cambium layer is. Grinding to destroy the stump is also done, but is labor intensive and is sometimes not feasible. Tarping with heavy plastic prevents sprouting with light deprivation and a physical barrier. Many factors are considered.

Slash

Debris left over from vegetation management activities includes branches, leaf litter, and tree trunks. Larger materials may be hauled away to a composting site or a landfill, cut into logs for firewood or left intact for use in landscaped areas. Material up to 24" in diameter can be chipped and used as mulch or to generate electricity. Burning debris piles is another option and is often the most cost-effective approach.

Habitat Restoration

Left to right: Oak seedlings growing in nursery in Tennessee Valley (photo courtesy: Golden Gate National Parks Conservancy); Removal of resprouting eucalyptus at the Tam Fire Site.



Once eucalyptus is cut, an area may be vulnerable to invasions by other non-native plants. Complete site restoration involves collecting local seed, growing native plants in a nursery, transplanting seedlings, and monitoring them until they get established. While the site is being transformed, vigilant weed removal must also be in progress.

These projects take many years and provide many opportunities for public involvement.

Comments or questions? (415) 464-5133

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