

Client: Fire Safe Bolinas
Project Location: Intersection of Mesa and Olema Bolinas Roads
Inspection Date: December 30, 2021
Arborist: Ben Anderson



Assignment

Jon Cozzi asked me to assess the stand of blue gum eucalyptus (*Eucalyptus globulus*) trees at the intersection of Mesa and Olema Bolinas Roads and to opine on the general condition and fire risk they pose to the community. I performed a Level 1 limited visual assessment¹ of the trees from the road and the walking trails. I met with Jon Cozzi and Mark Fraser while onsite.

Observations

I assessed the general condition of the stand of eucalyptus trees at the intersection of Mesa and Olema Bolinas Roads (Figure 2). The overstory is pure blue gum eucalyptus. The stand on the south side of Mesa Road is maintained by the Bolinas Public Utility District. In this area, the understory is open and appears to be regularly cleaned of debris. There are scattered groups of native understory plants including coffeeberry (*Frangula californica*) and California blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*). The trees directly adjacent to Mesa Road have Algerian ivy (*Hedera algeriensis*) growing up their trunks. These same trees along Mesa Road have leaf and bark debris piled up to approximately one foot deep at their bases. Fallen foliage displays prolific tortoise shell beetle (*Trachymela solanei*) activity.

When viewed from outside the stand, the canopies appear to have normal vigor, but when viewed from inside the stand, the canopies are generally sparse, and the sky is highly visible through the trees (Figure 1). Many have been topped over the years. They range in size from small trees in the 12-inch diameter range to very large trees with trunk diameters over four feet and are more than 150 feet in height. Several of the smaller trees are standing dead and there is large deadwood in the canopies of the larger trees, some of which targets the road and walking path through the stand.

Most of the trees on the north side of Mesa are on 30 Mesa Road, but also on 20 and 10 Mesa. The trees on 30 appear to be mostly unmaintained, particularly the understory, which is piled deep with leaves and bark debris (Figure 3).

The trees border the main entrance to the Bolinas community. Both Mesa and Olema Bolinas Roads have overhead utility lines that are targeted by the subject trees.

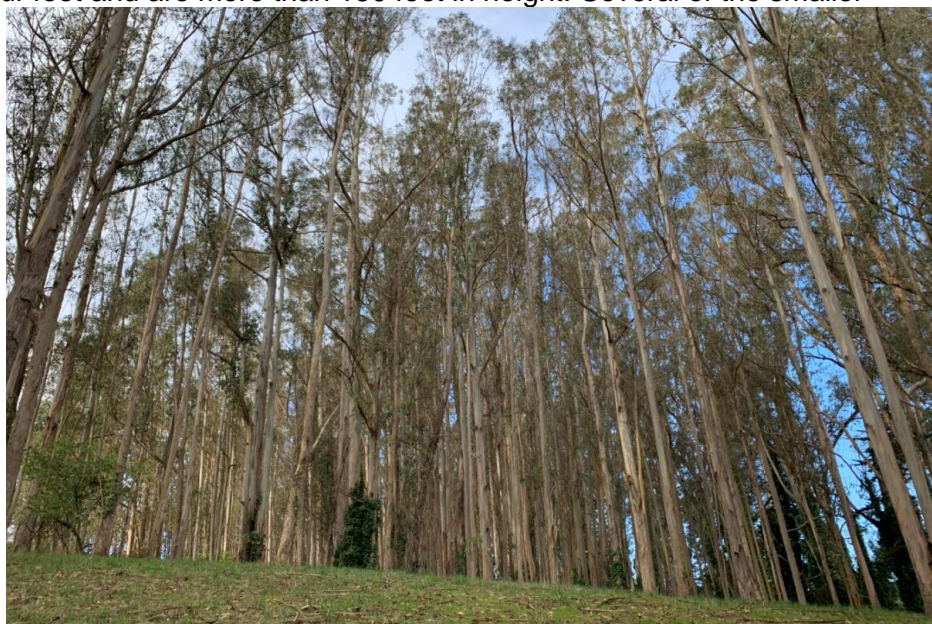


Figure 1. Image of subject stand on BPUD property.

¹ Limited Visual Assessment (Level 1) – a visual assessment from a specified perspective such as a foot, vehicle, or aerial (airborne) patrol of an individual tree or a population of trees near specified targets to identify conditions or obvious defects of concern.

Conclusions

Eucalyptus trees, and blue gum eucalyptus trees in particular, are a very polarizing issue in California land management. They clearly offer a mix of risks and benefits and which outweighs the other is a matter of opinion and personal values. Two key characteristics are generally considered to be true about the species: 1) the bark is highly flammable, both as it sits on the ground and as it hangs on the trunk, and 2) the foliage contains volatile compounds that ignite when in gas form. Due to their immense size, the trees can produce an incredible amount of debris/fuel year-round. The height of the trees and the characteristics of the bark create conditions favorable for windblown embers to spread out away from a burning tree. This stand of trees is typical of the aging stands of eucalyptus found all over California. There is some age diversity, but it is dominated by the large, old, overstory trees.

While the management decisions of a stand are ultimately up to the controlling parties, the questions are the same for all stands: 1) Do we wish to maintain this as a eucalyptus stand in perpetuity, or do we wish to convert it back to native vegetation? Given the current concerns of wildfire and the changing climate, maintaining eucalyptus seems less and less practical. 2) If we wish to convert it, over what timeframe? Total removal of all eucalyptus has a high upfront monetary cost, and the rapid change in the appearance can be hard for many to accept, but this results in a lower per tree cost over time and immediately abates risk. It also accelerates conversion to the desired replacement ecosystem (commonly native). 3) What level of risk are we willing to accept as the stand is converted or maintained? An aging eucalyptus stand will pose greater and greater risks both in terms of annual fuel production and risk of failure. This will result in either greater maintenance costs or greater risk to the public.

Eucalyptus is not meant to reach a late seral stage of old growth like coast redwood. It is adapted to periodic stand replacing fires. In the absence of such a fire, the stand enters an unnatural pattern of decline. I believe this stand is entering this stage, which is likely accelerated by recent droughts and warmer weather. While much work as gone into mitigating the fire hazard associated with this stand, the fact remains that were a fire to reach the stand, it would burn intensely, hindering access/egress, and depending on wind conditions, rain embers down on the community. A failure of a single tree over the road could spark a fire and cut off the primary access to the mesa. It is my professional opinion that the appropriate management for the stand is total removal of all eucalyptus and conversion to a native plant community.

SCOPE OF WORK AND LIMITATIONS

Urban Forestry Associates has no personal or monetary interest in the outcome of this investigation. All observations regarding trees in this report were made by UFA, independently, based on our education and experience. All determinations of health condition, structural condition, or hazard potential of a tree or trees at issue are based on our best professional judgment. The health and hazard assessments in this report are limited by the visual nature of the assessment. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Since trees are living organisms, conditions are often hidden within the tree and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time. Likewise, remedial treatments cannot be guaranteed. Trees can be managed but they cannot be controlled. To live near trees is to accept some degree of risk and the only way to eliminate all risk associated with trees is to eliminate all trees.



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Figure 2. Location of subject stand indicated in green. Primary community access (indicated with red arrows) runs through and adjacent to the stand.



Figure 3. Understory at 30 Mesa Road with accumulation of fuels.