

Valley Ranch

Hazardous Fuels Assessment

Mohawk Valley, Plumas County, California



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By:

Danielle E. Bradfield

California Registered Professional Forester #2808

PO Box 1411, Quincy, CA. 95971

I. PURPOSE AND NEED

The Valley Ranch Hazardous Fuel Assessment has been completed at the request of subdivision's Homeowners Association in effort to better prepare for wildfire. During the spring of 2019, a group of concerned residents and fire and resource professionals participated in a site tour of Valley Ranch community in regards to current conditions, fuel reduction needs, and emergency response in a wildfire event. Attending were Valley Ranch community members, the United States Forest Service, Cal Fire, Graeagle Fire District, Plumas County Office of Emergency Services, Plumas County Fire Safe Council, Graeagle Fire Protection District Firewise, and a Registered Professional Forester.

The intent of this Assessment is to provide an educational tool for the community going forward. Specifically, this assessment is intended to provide a general strategy of fire preparedness for the subdivision, as well as a prioritization of identified strategy components. This Assessment will also provide recommendations on landscape level fuel reduction as it relates to the Valley Ranch subdivision, to support Cal Fire's current "all lands" approach to the topic.

II. OBSERVATIONS

The Valley Ranch residential subdivision is located within Mohawk Valley in Plumas County, California. The subdivision is located upon gentle slopes of east and southeast aspect. The subdivision is bound by the Middle Fork of the Feather River to the north, County Road A-15 to the east, State Route 89 to south, and privately-owned pasturelands to the west. Adjacent landholdings are held largely by private landowners, though public lands managed by the United States Forest Service are present along the subdivisions northwest and northeast margins. A commercial rail line and public roadways are specific landscape features present within the immediate vicinity of the subdivision. Each of these features presents a known fire risk.

Prevailing winds in the area are out of the southwest. Forests within and immediately adjacent to Valley Ranch are of the Sierra Mixed Conifer and Eastside Pine stand types. Due to a century of fire suppression and past cultural practices, these forests are generally overstocked, containing substantial continuity of both vertical and horizontal fuels. In other words, the existing fuel loading supports catastrophic wildfire potential due to the continuity of ladder fuels which may help initiate and support a crown fire.

Review of the fire history of the Valley Ranch vicinity, fires have sporadically occurred around Mohawk Valley, recorded as early as 1918, though very little significant fire activity (greater than 100 acres) has occurred in the general Valley Ranch area and immediate vicinity. In the early 2000's, a small fire occurred between Valley Ranch and County Road A-15, which offered residents that responded both real-world training and a reminder of the potential of wildfire.

The current forest conditions predispose the conifer stands to damage from pests, pathogens, and large-scale high intensity fires that can significantly alter ecosystem processes. Historically, eastern Sierra Nevada Jeffrey Pine forests burned every 5-18 years. According to the US Forest Service's Fire Return Interval Departure system of classification, forests that miss two or more fire events are considered at moderate to high risk of wildfire, and the general Valley Ranch area and vicinity is consistent with that classification.

III. RECOMMENDATIONS

California's abundant fire history has provided a wealth of post-fire information from which to gain insight into how homes burn in a wildfire situation. The post-fire studies have shown that homes ignite due to the condition of the home, and everything around it, up to 200 feet from the foundation. Specifically, homes and the surrounding area are vulnerable to three ignition sources – embers, surface fires, and crown fires. Embers are burning pieces of airborne wood and other vegetation that are carried in the wind, potentially causing spot fires, igniting homes, forest debris, or other objects. Both low and high intensity surface fires burn through vegetative material on the ground and can readily ignite houses and attachments like decks. Crown fires burn in tree crowns and spread by radiation and convection and are heavily influenced by the wind. Crown fires generate embers that can travel over a mile and create spot fires ahead of the main fire. A general fuel reduction strategy for Valley Ranch is to begin work in the Home Ignition Zone, and work outwards. The considerations and recommendations below are supportive of this approach.

Home Ignition Zone: As research shows that both the house and landscape around it significantly influence the ability of the home to survive wildfire, the Home Ignition Zone (HIZ) should be where wildfire risk reduction efforts start. Since Valley Ranch is a recognized Firewise Community, efforts to implement the Firewise Community tree spacing and pruning guidelines for the Immediate, Intermediate, and Extended Fuel Zones should be emphasized. Due to the parcel arrangement within the subdivision, neighbors will need to work collaboratively to properly address when HIZ's run together, to reduce the overall shared risk. Each year, the community should consider a brief revisit of the current HIZ guidelines, to ensure community members understand the general guidelines ,and tree spacing and related landscaping/hardscaping recommendations as the guidelines are under continual revision.

The Graeagle Fire Protection District Firewise Community does free Home Ignition Zone consultations to help people understand not only PRC 4291 requirements, but also what can be done beyond those requirements and even on undeveloped lots to make the entire community more fire resilient.

Recommendation #1: All Valley Ranch homeowners should reduce wildfire risk in the Home Ignition Zone 200 feet from the home foundation following the current Firewise USA Guidelines.

Undeveloped Lots, Ingress/Egress Routes: Unimproved and/or uninhabited lots within Valley Ranch, even in the absence of a residential structure, should be considered for fuel reduction implementation as such lots will influence the survivability of neighboring parcels. Unimproved lots immediately adjacent to ingress and egress routes should be treated, at a minimum, according to the "Extended Zone" guidelines of the Firewise Community guidelines.

Related, developed/improved lots along the subdivision ingress/egress routes should similarly implement the same standards where a parcel adjoins the ingress/egress route. By doing so, a shaded fuel break will be created along the ingress/egress routes, which is another key component of the Firewise Community Landscaping and Hardscaping recommendations. These standards include a 6-12 foot spacing between tree crowns, tree pruning, and removal of vegetation within the dripline of overstory trees. Implementation of these standards may not be feasible in all situations, but due to the importance of safe ingress and egress in a fire situation, achieving the maximum tree spacing and ladder fuel reduction feasible for parcels along the subdivision's ingress/egress route(s) is of great importance to the overall subdivision.



Picture 1: Young growth conifer regeneration between residences along Valley Ranch Drive. This vegetation complex of brush, young trees, and overstory trees creates high vertical and horizontal fuel continuity, capable of enhancing wildfire behavior, including flame length, intensity, rate of spread, and duration.

Related, where the 200-foot Home Ignition Zone extends to an undeveloped parcel, efforts to collaborate with neighbors to ensure compliance with the HIZ "Extended Zone" guidelines should be emphasized to reduce the shared risk.

Recommendation #2: Reduce hazardous fuels upon unimproved parcels within the subdivision, especially when these lots are within the 200-foot HIZ of an adjacent residence.

Recommendation #3: Establish fuelbreaks along ingress/egress routes by implementing the tree spacing, pruning, and vegetation clearance guidelines established for the "Extended Zone" by Firewise USA.

Parcels with Young-Growth Conifer Regeneration: Regardless of the level of parcel improvement, residential lots within Valley Ranch that contain high site occupancy by young growth conifer regeneration present a significant wildfire risk to the subdivision. These young growth conifers present a highly flammable ladder fuel that will support surface fires, potentially provide a ladder for flame to travel vertically into overstory tree crowns, and will contribute to ember production. Young growth conifer vegetation was noted along parcels adjoining Valley Ranch Drive in its southeast portion, though an exhaustive inventory was not completed. As a Firewise Community, a thorough inventory of this vegetation within the community should be considered.

Recommendation #4: Identify the Valley Ranch parcels with dense, young growth conifer regeneration, and work to significantly reduce the density and spatial arrangement of this highly flammable fuel.

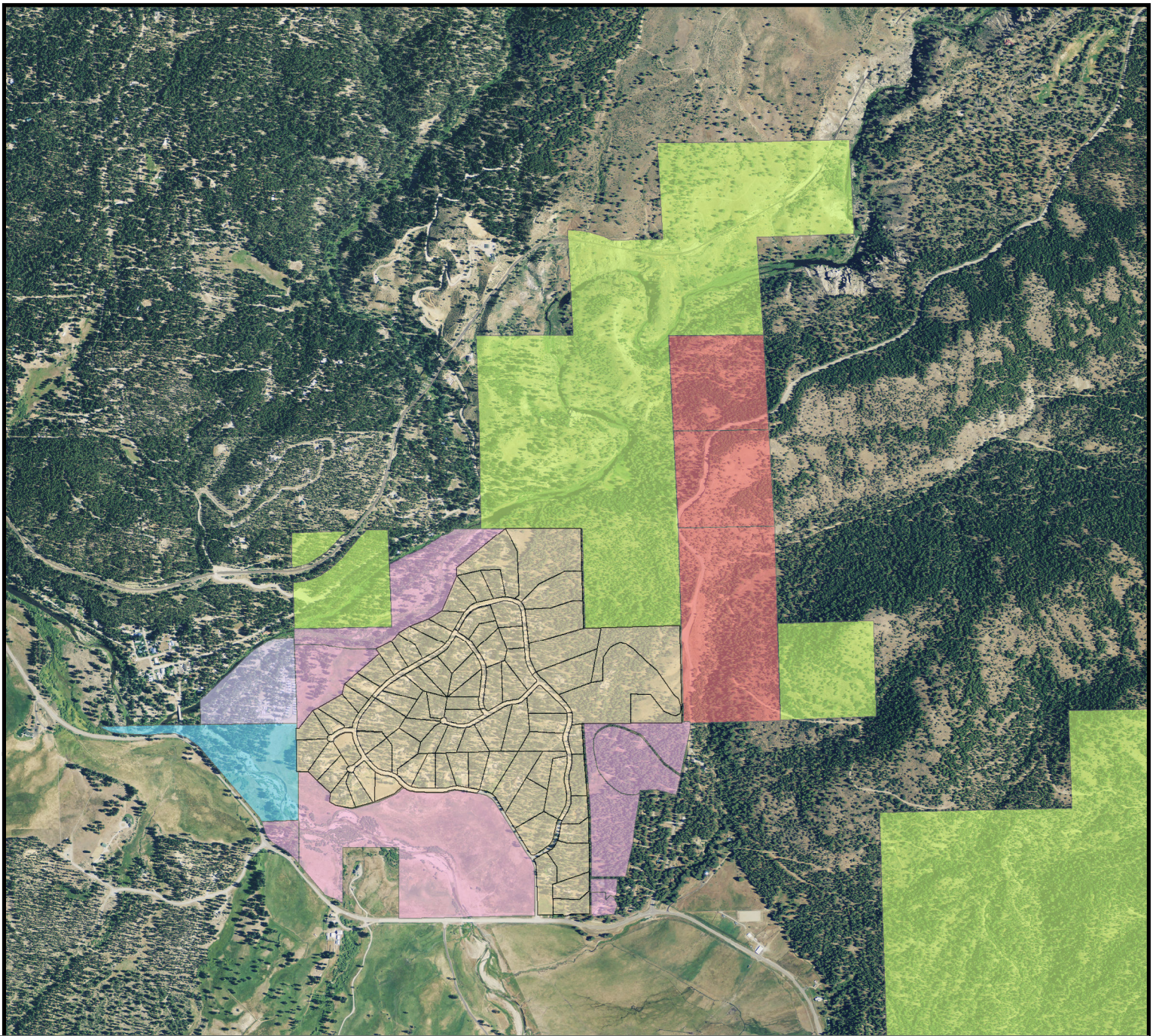
Strategic Landscape Level

Planning: Analysis of the General Vicinity Map provided indicates that there is a large degree of privately-owned parcels adjacent to the Valley Ranch subdivision. Current State grant funding for fuel reduction largely emphasizes fuel reduction treatments on the landscape level, crossing the property lines between private and public ownerships. Reviewing the ownerships adjacent to the Valley Ranch subdivision, an excellent opportunity exists to consider a landscape-level fuels reduction project across private and Federal landholdings in the vicinity of the subdivision. Continued discussions and project planning efforts with the Plumas Fire Safe Council are each a worthwhile effort. A landscape level project in the general Mohawk Valley will greatly compliment the Firewise Community guidelines underway at Valley Ranch.









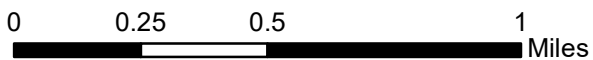
Picture 2: Treated area in foreground shows stark contrast with untreated area in background. Young growth conifer regeneration forms an effective surface fuel, capable of carrying fire between ownerships within the Valley Ranch subdivision.

Recommendation #5: Continue to collaborate with adjacent landowners and the Plumas Fire Safe Council to develop a Mohawk Valley Fuel Reduction project. Such a project could also be designed to include treatment of unimproved lots and areas beyond the 100-foot Defensible Space within Valley Ranch.



**Valley Ranch Hazardous Fuel Assessment
General Vicinity Map
Mohawk Valley, CA.**

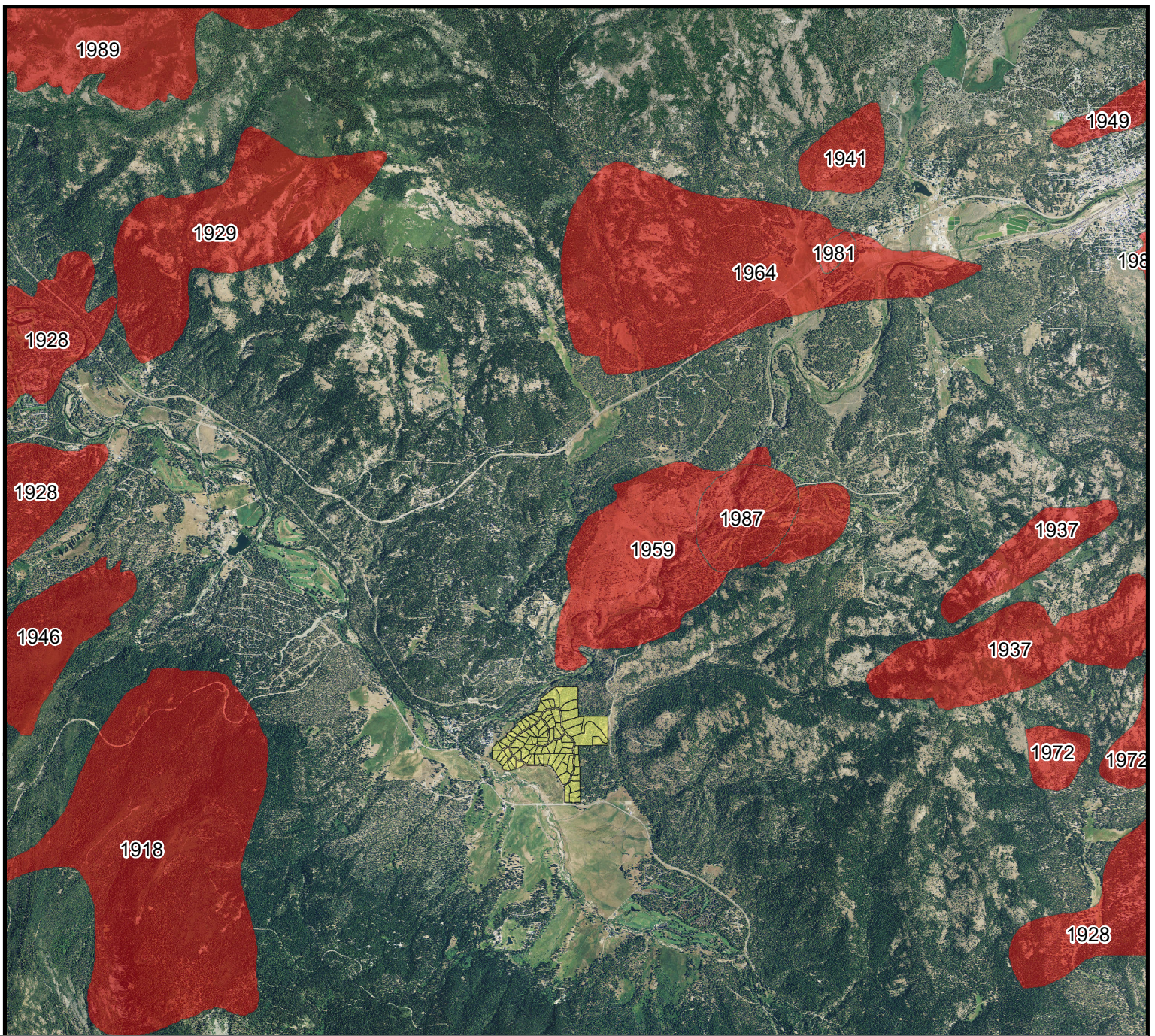
	Valley Ranch Subdivision		Other Private
Adjacent Landowner			Private - GL&W
Owner			Private - Rivers Edge RV
	Federal		Private - SPI



1:24,000



North Valley Resource Management
P.O. Box 1411
Quincy, CA. 95971
(530) 927-7095



**Valley Ranch Hazardsou Fuel Assessment
Fire History Map
Mohawk Valley, CA.**

- Fire History - Perimeter & Year
- Valley Ranch Subdivision

0 0.75 1.5 3 Miles

1:80,000



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