BREAKING THE FLAMES
IDENTIFYING AREAS WITHIN CALIFORNIA TO MINIMIZE FUEL LOADS WITH GRAZING

“Fire now largest in state’s history”...

CALIFORNIA HAS BEEN EXPERIENCING A LARGE INCREASE IN THE NUMBER OF FOREST FIRES THAT ARE DEVASTATING HUMANS, DOMESTIC ANIMALS, AND WILDLIFE. BECAUSE THE HISTORY OF FIRE SUPPRESSION AND CONTINUING DROUGHT CONDITIONS, THERE ARE INCREASED FUEL LOADS THAT CAN CAUSE LARGE AMOUNTS OF DAMAGE QUICKLY.

876,225 ACRES HAVE BURNED FROM JANUARY 1ST, 2018 TO DECEMBER 24TH, 2018 IN CALFIRE AREAS ALONE. WHEN WILDFIRES BURN THEY STERILIZE THE SOIL. THIS MAY NOT BE an ISSUE on a small scale, BUT WHEN LARGE AMOUNTS OF LAND ARE BURNING, CALIFORNIA WILL SEE A LOSS IN BIODIVERSITY.

IN THE WAKE OF THE FIRES, RANGELAND EXPERTS NOTE THAT THE PLANTS THAT BEGIN TO GROW IN THE BURNED AREAS ARE NOT NATIVE GRASSES, BUT EXOTIC ANNUAL GRASSES THAT WILL OUT COMPETE NATIVE GRASSES. INTRODUCING GRAZING AS ONE SOLUTION TO DECREASE FUEL LOAD WILL REDUCE THE NUMBER OF WILDFIRES AND IT WILL REDUCE THE SEVERITY OF THE FIRES THAT BURN.

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Grazing Area

It takes on average 2 acres of land per cow pair to allow for 1 year. Grasslands will have a high amount of fuel load which will be reduced by grazing. Areas in dark purple are locations which you will not use for livestock to graze. Land use data was collected via the California Department of Fish and Wildlife and was obtained under a license to use data. Source: Sanborn. Table 1 (for scoring).

Slope

Fire is harder to manage and control in areas with steep slopes because they burn faster and they become less accessible. Steeper slope areas are also harder to mow. It is more difficult for cattle to graze, but due to re-routes and brush control, it continues to have some access. Areas in dark green (low elevation) areas are easier to burn and are more likely to have a higher percentage of fire (Table 1 for scoring).

Proximity to Water

California’s water supply has been historically low over the last few years. Contributing to the amount of dead or dry plant materials fuel load, livestock producers must ensure water sources are always available to livestock within 1 mile. Taking into account all the water sources in California, fuel load distribution varies and is highly dependent on the water source availability (Table 1 for scoring).

Population Density

Increasing populations across the state cause more habitat destruction and forested areas. Large population densities do not allow for grazing to create fire breaks wide enough to protect population from wildfire destruction. The most classified carbon stores are less densely populated areas which are valuable in terms of available land (Table 1 for scoring).

Critical Areas

We didn’t start the fire

Cattle graze down annual and perennial grasses to promote new growth and reduce the amount of dead brush. Firefighters are able to contain wildfires within less time in areas where browsing has occurred.

Goats are selective grazers and prefer brush over grass. They are becoming a “niche species” for small scale producers and can easily be backhanded pets. They prefer grazing off the ground and are less sensitive to toxic plants than other grazers.

Wildlife has coexisted with wildfires, however with shrinking habitat due to human encroachment they have less and less area to escape the flames. Wildfires aid reproduction of certain native plants and promote growth after the flames, but with wild fire season in California inching in from 5 to 7 month periods, there is little chance for wild species to thrive or recover.

METHODS

OVERALL ASSESSMENT

Final suitability analysis provides areas that would allow for grazing to naturally reduce fuel loads based on factors in Table 1. The best areas are shown in dark green, illustrating the highest priority areas to start grazing. The final map also calls out to 6 of the major fires that burned in 2018.

CONCLUSION

WILDFIRES ARE AN IMPORTANT FACTOR TO A HEALTHY Ecosystem. They promote growth and reproduction of certain plant and fungus species as well as clearing the soil. With human encroachment on most of California’s land wildfires are beginning to have more fuel, and are becoming more destructive. Using grazing as a method to reduce fuel load and creating natural firebreaks between heavily forested areas and major cities may allow for wildfires to continue to work within the ecosystem without continuing to make headlines in the media.