Cultural Fire Management Council

Vegetation Study Program

Two months after Spring 2021 burns. Hazel and wormwood, important cultural plants, grow vigorously in the 'black,' where they have access to nutrients, water, and light unavailable before.

Introduction

In October of 2020, the Cultural Fire Management Council (CFMC) initiated a Vegetation Study Program in order to better understand and track the effects of cultural burns on plant communities and culturally important plant species. The program is designed as a long term monitoring project guided by the cultural values and management goals of the Yurok people. This document is a brief summary of the program to date.

The development of the Vegetation Study Program is significant for many reasons. Thorough monitoring of prescribed fire effects is relatively rare, largely due to funding resources being dedicated to implementation. However, the CFMC Board decided that an organized system for understanding how cultural burns affect the land is crucial for guiding how to practice burning in current times. Yurok ancestral lands are in a dynamic state where fire suppression, invasive plants, seasonal restrictions on burning, and countless other factors interact and influence how the land receives fire. Documentation of pre-burn conditions, factors influencing fire behavior, and post-burn vegetation response is a method for sorting the complexity and gaining a meaningful story. Understanding and sharing this story is crucial to empowering the community to bring fire back to the land on their own terms and in a good way.

The CFMC Board developed a list of questions and goals to guide the study. These include the following:

Questions

- How are plants currently distributed in the landscape?
- Are cultural burns increasing or decreasing the abundance of native/ invasive plants?
- What kinds of fire (intensity, season, etc.) increase or decrease native/ invasive plants?
- How is fire affecting culturally important plants, and do burn conditions influence effects?

Goals

- Establish long term photo monitoring points;
- Have results summarized and easy to use;
- Return frequently after burns to document post-burn regrowth across the following seasons and years;
- Create a field guide and other educational materials;
- Involve kids and interested community members.

Study Summary

Given the questions and goals, the program was established with three basic components: pre- and post-burn surveys, burn conditions/fire effects monitoring, and education/community involvement.

Pre- and Post- Burn Surveys

For each burn area, pre-burn surveys are conducted to establish a baseline of existing conditions. Vegetation communities, cultural plants, and invasive plant populations are mapped and documented. Permanent vegetation sampling plots and permanent photo point locations are established.

After burns, post-burn surveys are conducted at intervals across the following seasons. Permanent photopoints and vegetation sampling plots are revisited, as are cultural plant and invasive plant populations, to allow comparison to pre-burn conditions over time.

Burn Conditions and Fire Effects Monitoring

For each burn, conditions influencing fire behavior and fire effects are recorded. During and after burns, fire intensity and immediate fire effects are recorded, and how these factors vary across the burn is mapped.

Education/Community Involvement

CFMC staff take schoolchildren and other community members on plant walks in the burn areas to learn, see, and talk about the effects of fire and what it means to the community. In spring of 2021, kids harvested various food and medicine plants and prepared them together.

During the growing season of 2021, dozens of native plant species were photographed to be included in a locally-focused plant ID guide for the community.

Preliminary Conclusions

We are three-quarters of the way through our first year of monitoring. Thus far, the documentation we have established is only the beginning. However, the photos alone already speak eloquently to the power of fire to bring health and vitality to the plant communities of Yurok lands. We have been able to share photos and stories about vegetation fire response with the CFMC Board and the wider community that both inform the fire planning process and inspire the hard work it takes to make it all happen.

Photo Monitoring

The following are photo series from some of the photo monitoring points established in Spring 2021 burn units.

Photo 1. Pre-burn in early April, 2021. Hazel sticks decadent and branchy.

Photo 2. One month post-burn, early May, 2021. Green growth is bracken fern, one of the first to re-sprout post fire.

Photo 3. Two months post-burn in early June. Hazel, thimbleberry, wormwood, vine tea, Indian potatoes, iris, soap root and dozens of other species growing long, vigorous shoots.

Photo 4. Three months post-burn in early July. Hazel shoots are already over two feet long.

Photo 5. Pre-Burn in late March.

Photo 6. Two months post-burn. Long straight hazel shoots and dozens of other food and medicine plants

Photos: Plant Response to Fire

Photo 7. Hazel shoots one month after spring 2021 burns.

Photo 8. Hazel shoots two months after spring 2021 burns.

Photo 9. Hazel shoots two months after spring 2021 burns.

Photo 10. Mock orange two months after spring 2021 burns.

Photo 11. Iris with long straight growth, two months after spring 2021 burns.

Photo 12. Soap Root one month after spring 2021 burns. The plants have burnt tips on their leaves, showing how they just kept growing after being burned to the ground.

Photo 13. Deer potato (Indian potatoes) one month after spring 2021 burns. The plants have burnt tips on their leaves, showing how they kept growing after being burned to the ground.

Photo 14. Black oak vigorously resprouting after Spring 2021 burns. Oaks become weak without fire, but when these weakened trucks get consumed during burns they resprout and form healthy open-grown structures.