



Credit: D. Wells

The Ojai Community Defense Zone Project

A Southern California Climate Change Adaptation Case Study

Overview

Climate change may affect the ability to achieve on-the-ground project goals and objectives. The following case study demonstrates how climate change vulnerability and adaptation information can be integrated into existing and future fire and fuels management projects to increase overall project resilience. For this example, resource managers and regional stakeholders worked together to evaluate: 1) how climate and non-climate vulnerabilities could impact the ability to achieve project goals, 2) what current project actions help to address or minimize vulnerabilities, and 3) what new actions could be added to the project to address remaining vulnerabilities. While this specific project has already been completed, establishing and/or maintaining fuelbreaks is a common activity in southern California, and this type of process could easily be replicated in future projects.

Ojai Community Defense Zone Project Goals & Actions

The Ojai Ranger District within the Los Padres National Forest restored and expanded an existing fuelbreak system in chaparral habitat to increase defensible space within the forest and the wildland-urban interface (WUI) of Ojai, Meiners Oaks, and Upper Ojai Valley. The goals of this project were to:

1. Reduce the threat of wildfire to communities in the WUI;
2. Create safer conditions for the public and firefighters;
3. Protect watershed habitat value and water quality;
4. Reduce potential impacts of high-intensity wildfire; and
5. Increase the efficiency and cost effectiveness of fire suppression activities.



Credit: U.S. Forest Service

The Forest removed potential fuels that could increase the size, intensity, and rate of wildfire spread, creating fuelbreaks in strategically located areas. Primary project actions included:

- Managing ground cover to result in a mixture of bare ground, grasses, and forbs
- Using irregular widths, shapes, and patterns in the fuelbreak design
- Expanding width of fuelbreak
- Using mechanical treatments for fuel removal around dwellings and other occupied buildings

Step 1: Identify Climate & Non-Climate Vulnerabilities

How may climate change and non-climate stressors affect the ability to meet goals or implement project actions?

Increased temperature

- Contributes to fast-moving, more severe wildfires under hot/dry conditions (e.g., Santa Ana winds)

Altered wildfire regimes

- Increases post-fire erosion in severely burned areas, negatively impacting watershed value and water quality
- Increases resources needed for longer fire seasons and more severe/larger fires

Increased extreme precipitation events

- Increases flooding and associated erosion in burned areas

Increased invasive grasses

- Alters availability and continuity of fine fuels, contributing to more severe wildfires and altered timing of fires

Increased drought/precipitation changes

- Extends the length of the fire season
- Increases amount of dead/dying plant matter than can act as fuel
- Reduces water availability and increases distance to water used for fighting fires

Increasing human population

- Increases number of fire ignitions and the number of people at risk during a wildfire



Step 2: Reducing Vulnerabilities Through Existing Project Actions

Which existing project actions help address potential vulnerabilities?

Action: Managing ground cover to result in a mixture of bare ground, grasses, and forbs

- ✓ Removes/Controls invasive grasses

Action: Use irregular widths, shapes, and patterns in the fuelbreak design

- ✓ Reduces the potential for increased erosion by decreasing areas of complete vegetation removal and minimizing the distance that soil can move

Action: Expanding width of the fuelbreak

- ✓ Reduces wildfire rate of spread by decreasing available fuels

Action: Using mechanical treatments for fuel removal around dwellings and other occupied buildings

- ✓ Reduces wildfire rate of spread and potential severity by decreasing available fuels
- ✓ Decreases the risk of ignitions and potential wildfire damage in the WUI by reducing fuels



Credit: J. Wapotich

Step 3: Integrating New Project Actions to Address Remaining Vulnerabilities

What additional actions could be implemented in the future to further reduce identified vulnerabilities?

Action: Plant native perennial grasses within the fuelbreak

- ✓ Reduces invasive grass establishment by maintaining dominance of native species, helping decrease flashy fire behavior
- ✓ Increases water infiltration
- ✓ Reduces erosion potential by minimizing bare soil

Action: Establish trigger points for recreation closures and restrictions

- ✓ Reduces the number of ignitions by minimizing the number of humans in the area during high-risk times

Action: Include energy corridor planning and/or establish restrictions

- ✓ Reduces the number of ignitions and Santa Ana (high-wind event) vulnerabilities

Action: Install emergency grey water systems in 'safety zones'

- ✓ Provides nearby water for fighting fires