

Wildfire in California

Introduction

In the western of United States, the million acres substantially burned in recent decades caused by the alteration of environment and human activities. It can be observed that the severity of wildfires significantly damage many aspects of lives and ecosystems.

We focus on California, the top 6 largest wildfires in the world, which is a difficult place to determine the causes of shifting wildfire activity. There are many factors that can influence the fire such as climate change and human activities, which adversely affect the livelihood of humans in the state. In addition, it would have widespread impacts on vegetation distribution, forest condition, and greatly increase the risk to property, natural resources and human life.

The policy and land-management could be enhanced to prevent and reduce the risk of the severity of fire. The preparation for an emergency and unexpected situation are significantly essential for preventing fires that often happen in the wildfire-prone area and what to do when one occurs.



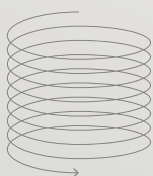
California has experienced devastating and historic fire activity over the past two years. In fact, there have been roughly 15,800 fires statewide since 2020, while the five-year average from Jan. 1 to mid-September is 6,900 fires. Nearly six million acres have burned since 2020, or six times the average acreage over a five-year period.

How does wildfire happens?

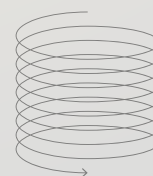
The real problem is human caused ignitions both accidental and intentional, which account for 88 percent of ignitions globally, but are closer to 90 to 95 percent of ignitions in California.

Most common cause of wildfire

- Unattended campfires
- Equipment use or malfunction, including lawnmowers, tractors, trucks and power lines
- Burning of debris
- Car fires or blown tires
- Fire danger is increasing due to drought and warming temperature



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Goals

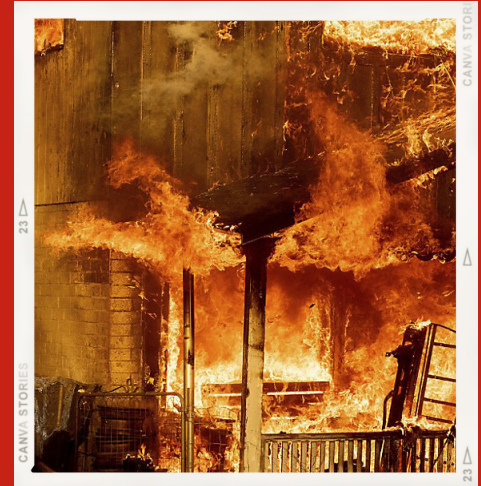
Improve air quality over the long term.

Increase public safety.

Protect and improve soil productivity, and decrease erosion over the long term.

Propagate rare and endangered plant species that are fire dependent.

Reduce the number and intensity of large, damaging wildfires with corresponding savings of suppression costs.



Examples

The August complex was ignited by lightning in mid-August 2020 and became California's largest wildfire which covered nearly 4,055 square kilometers. The blaze burned near the coast of Northern California and continued to burn slowly and steadily across several counties. These fires killed one person and destroyed 242 structures. Scientists and California authorities have blamed the climate crisis from the burning of coal, oil, and gas that caused the higher temperatures.



August 16 - November 12, 2020
AUGUST COMPLEX- Northern California



July 13 — October 25, 2021
DIXIE FIRE - Northern California

The Dixie fire is the second largest wildfire in Greenville, California began in mid-July 2021 and was burning for nearly three months which shows that the wildfires have grown more than 2.8 million acres across the state. Due to the extreme drought and the wind that keeps coming up, the massive blazes spread and scorching quickly. Aircraft have dropped about 21 million gallons of flame retardant mixture on the Dixie fires which cost 4.62 USD per gallon. As the aircraft caused the high budget but air attacks are the most visible show of force and can cover lots of ground quickly when the smoke thickens. The Dixie fire damaged and destroyed nearby communities and historic buildings. Moreover, three firefighters have been injured and eight civilians reported missing. Therefore, California pays for large wildfires through an emergency fund with unlimited spending, in this case, California has spent about 1.1 billion dollars to put out fires.

ECONOMIC INSIGHT

In Economic insight, the economic impacts can be direct, which is the consequence of the fire, and indirect, which is changes in business and consumer demand affect specific sectors. There are three sectors of the economy that we concentrate on tourism, working land, and construction.

TOURISM

Wildfires have the potential to impact tourism and visitation in recreational areas around the states. The impact of tourism can happen both during and after a wildfire occurrence due to safety concerns and changes in the natural landscapes. Changes in recreational visits have an indirect impact on the entire tourist industry around an impacted area, while also supply chain and income multiplier impacts due to changes in tourism expenditure.

WORKING LAND

Wildfires frequently occur in diverse landscapes that include both natural and working lands. When fires expand on working lands, they have the potential to have a significant direct impact on agricultural and forestry goods. These consequences are highly particular to wildfire activity, control attempts, and meteorological circumstances.

This section provides an overview of the studies on wildfire losses to working lands.

CONSTRUCTION

As communities try to repair damaged structural assets after a wildfire, wildfires may have a huge impact on the construction sector.

Studies of other natural disasters have indicated that construction employment may grow significantly after a disaster event.

POLICIES

law regulations

Wildfires are unexpected and unplanned situations that have beneficial impacts on many aspects, especially threatening the properties of humans and impacting an ecosystem. The policies and management can be a road map for reducing the risk of wildfire and its severity.

The overgrowth of the forest combined with hot and dry weather is one of the significant leading causes of perfect fires, damaging more than a million acres in California. The well-managed control of the fire is an essential aspect of controlling the fire. It can be done by eliminating tall brush and dead foliage that can cause out of control fires in bad weather. However, there is some law that actively discourages the owner of the land from following these conditions. Additionally, most of the burned land in California owned by the government with no authority can be solved and seriously accused them of being the country's problem.

Changing a few law regulations and stricting the management can be one key to solve the wildfire problem that has been happening for a decade and still the major of ruining the ecosystem and citizens' properties now.

Some law establishments can prevent and reduce the severity of wildfires that often happen where people live.

For example:



The regulation should prohibit any houses or buildings constructed in wildfire-prone areas to minimize the risk for humans and livelihood.



Cities and countries should create safety standards for early protection, especially for high-risk areas. The application can improve the wildfire emergency preparation for the unexpected situation in the communities and prevent the high speed of the transmission of the flame.

FIRE

Management Planning

Sierran management prioritizes restoring fire to its ecological role in ecosystems. There are **three zones** in all of the three plans.

The high elevation zone can be attributed to the fact that all fires are managed.

A middle elevation is to return fuel to a variable of nature defined as natural is used.

The suppression zone serves as a park's boundaries and enhancement.

According to management, ASR can replaced acre objectives for wildfire. Moreover, for individual Management Areas and Guides for fire management, the USFS intends to use acre objectives which also relate to forest plans. Various fire sizes and fire management zones can be defined in Sierran forest plans, depending on the number of fire-intensity stages. Some examples of relying on units of the size limit include forest management and watershed management.

Both the USFS fire strategy and policy budgeting for the future are based on the cost of suppression plus the change in the resource's net value. The advantages and disadvantages of wildfire are factored into the net value change. The cost of fire suppression plus the change in the net value of resources which can be used to define the prevention of level on each forest. In terms of USFS planning, there is currently no method to illustrate the impact of fire on the environment. Fuel management has the advantage of minimizing suppression costs.

The fire plan for the CDF is currently being modified. According to the new fire plan, the damage-plus-cost of fire protection strategy is identical to the USFS method. The intent of the report is to provide fire protection that is equally effective on land of similar types. In addition, the analysis can be compared to the level of fire protection offered in California's wilderness areas. Thus, the quality of service that California citizens can expect will be adjusted based on public input.