

BUILDING COMMUNITY AND REGIONAL WILDFIRE RESILIENCY THROUGH
EXPANDING SIXTH-GRADE WILDFIRE EDUCATION IN BUTTE COUNTY

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Spring 2023

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TABLE OF CONTENTS

	PAGE
Publication Rights.....	iii
Acknowledgements	iv
Abstract	viii
 CHAPTER	
I. Introduction.....	1
Statement of the Problem.....	1
Purpose of the Project.....	2
Scope of the Project.....	2
Significance of the Project	3
Limitations of the Project.....	3
Definition of Terms.....	4
Frequently Used Abbreviations.....	4
II. Literature Review.....	5
Introduction	5
History of Federal Fire Education Programs, 1940-Present	7
National Fire Protection Association Youth Reports, 2013-2018....	8
The Role of Teenagers in Wildfire Preparedness	14
Wildland Urban Interface Challenges	15
Youth Wildfire Education Programs in Butte County.....	16
Conclusion.....	21
III. Methodology	23
Purpose.....	23
Identified Area for Improvement.....	23
Program Update Strategy.....	25
2021 Program Update.....	26
Program Availability and Outreach... ..	30
2021-2022 Program Challenges	32

IV. Findings and Results	35
V. Conclusions and Recommendations	38
Conclusions	38
Recommendations	39
References	40
Appendix	
A. Wildfire in the Foothills Program Manual	47

ABSTRACT

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A review of the literature and available resources for wildfire education in Butte County revealed a lack of programming and support for teenagers, grades 6-12. Due to a combination of negative impacts from the 2018 Camp Fire, high volunteer and educator turnover, and disruptions to learning from the COVID-19 pandemic, multiple youth wildfire programs were discontinued or outdated. The purpose of this project was to update the sixth-grade program, Wildfire in the Foothills, a 15-year running program of the non-profit organization, Butte County Fire Safe Council. The revised program updated lesson content, added media and graphics, and expanded topics from being Paradise Ridge-focused to applicable anywhere in Butte County's wildland urban interface. The first version of the updated program became available for teachers to access on the Butte County Fire Safe Council's website in December 2021. The program structure and content were revised a second time in October 2022, following a pilot test with Paradise Charter Middle School. Updating the Wildfire in the Foothills program enables students

to make a real impact on their family's and community's wildfire safety and preparedness. It serves as a catalyst for teenagers to take a more active role and participate in other wildfire programs as they continue through middle and high school. Successful implementation of the program could serve as a model for other fire safe councils to develop their own place-based wildfire education programs.

CHAPTER I

INTRODUCTION

Statement of the Problem

In 2020, CAL FIRE reported 8,648 wildfire incidents which burned over 4.3 million acres in California (2020 Fire Season Incident Archive | CAL FIRE, n.d.). In this one year alone, five of California's six largest fires since 1932 occurred. Wildfires have a particularly destructive impact in wildland urban interface (WUI) areas, where structures and housing meet or intermingle with undeveloped wildland or vegetation fuels (National Wildfire Coordinating Group, 2022). Butte County is approximately 1.1 million acres, with 463,000 acres identified to be in the WUI (*Butte County's Wildland Urban Interface (WUI) – Buttefiresafe.net*, 2022). Butte County's catastrophic wildfire history includes the 2018 Camp Fire, the 2020 North Complex Fire, and the 2021 Dixie Fire, which contributed to the over 832,000 acres of Butte County burned during the past fifty-five years (*Butte County Community Wildfire Protection Plan*, 2022).

Teenagers in Butte County have had significant experience and negative impacts from wildfires. Climate change exacerbates future wildfire risk in Butte County, bringing drought conditions, tree mortality, and extreme temperatures. Teenagers and parents have reported a strong interest in expanded wildfire education programs in schools, as detailed in the National Fire Protection Association's (NFPA) 2013 and 2018 youth reports (Wildland Fire Operations

Division, 2013; Madsen & Berry, 2018). Multiple youth wildfire education programs in Butte County have been discontinued in recent years, including Fire PALS, Trail Days, and FAST Camp. The only remaining education program is Wildfire in the Foothills, the sixth-grade program of the Butte County Fire Safe Council. However, the content is outdated, keystone classroom teachers have retired, and the program has not been used since the 2018 Camp Fire. Beyond grade six, there are no school-delivered wildfire education programs in Butte County, outside of individual teacher initiatives. Teenagers need place-based, relevant wildfire education as part of their 6-12 school experience that gives them the knowledge and tools to take positive action at home and in their communities for wildfire safety. Such a program does not exist with the current education offerings in Butte County.

Purpose of the Project

The purpose of the project is to update and expand the sixth-grade program, Wildfire in the Foothills, to reflect the most up-to-date understanding of wildfire issues and include local resources for living in Butte County's WUI. Updating the content, expanding the lesson topics, including information about Butte County as a whole, and making the format digital and fully accessible to teachers will increase the likelihood it is integrated into sixth-grade classrooms county-wide. The long-term goal is to build more fire-resilient communities by educating and empowering youth to participate in wildfire solutions.

Scope of the Project

The intended participants in the Wildfire in the Foothills program are sixth-grade students who live in or go to school in Butte County's WUI, including Chico and Oroville. The program

is designed to be used in the classroom and is not recommended for distance learning or independent study. The program is equally intended for public, charter, and private schools. While it is preferred that teachers use the full program, the lessons can be used independently. Teachers can choose to skip or expand upon the offered lessons, depending on time constraints and topic prioritization. Program content, particularly related to emergency response and evacuation, will need future updates, as Butte County programs and resources evolve.

Significance of the Project

Teenagers have untapped potential and can offer real-world solutions to wildfire issues within their communities. They are witnessing the consequences of climate change and the increased threat from wildfires in real time. Not only can they help spread information and resources to their immediate family and social circles, but they also have the power to influence those in their wider community. By incorporating service-learning activities and content creation, such as informational media and videos, students can showcase their learning while contributing to public wildfire education campaigns led by the Butte County Fire Safe Council and agency partners. The information students learn in Wildfire in the Foothills about forest health and home preparedness sets students up to be more ecologically mindful and fire-safe land and/or homeowners. Youth in the WUI are directly impacted by wildfires, and they deserve the opportunity to contribute to solutions.

Limitations of the Project

The impacts of COVID-19 heavily disrupted the 2021-2022 school year, and Wildfire in the Foothills was not piloted with a sixth-grade class as intended during this school year. There

was a lack of participation and availability for new teachers to pilot the program independently. Surveys with teachers and students using the updated program will be needed to analyze the program’s impact. Wildfire in the Foothills is designed for Butte County, and some of the lesson material would not be relevant if used elsewhere.

Definition of Terms

Wildland Urban Interface

“The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels” (National Wildfire Coordinating Group, 2022). Wildland Urban Interface areas put human life and property at high risk from wildfires.

Trauma-Informed Education

“A school-wide system that recognizes the prevalence of adverse and traumatic childhood experiences and equips teachers and staff with knowledge to recognize trauma and strategies to support students who experience trauma” (Colorado Department of Education, 2022).

Frequently Used Abbreviations

(BCFSC) Butte County Fire Safe Council

(CAL FIRE) California Department of Forestry and Fire Protection

(NFPA) National Fire Protection Association

(WUI) Wildland Urban Interface

CHAPTER II

LITERATURE REVIEW

Introduction

Since 1940, the United States government has made efforts to educate the American public about wildfire prevention and safety. Programs are presented in a variety of ways, from recognizable media campaigns such as Smokey Bear to school and community programs run by organizations including the U.S. Forest Service and the National Fire Protection Association (NFPA). Many public programs and research studies are focused on adult education, examining influences, public opinion of land management practices, and homeowner safety and fire mitigation practices, but as of 2012, there was no research on wildfire education programs for youth (Ballard et al., 2012). Today, grades K-6 have multiple programs designed for their age group, primarily focused on fire safety at home and prevention awareness. A key demographic that has historically been underserved by wildfire information, programming, and research are teenagers, ages 13-18 (Wildland Fire Operations Division, 2013).

Teenagers are valuable community members, as they can make many of their own decisions about safety actions and spread important messages to their friends and family. Survey and focus group discussions conducted by the NFPA's Wildland Fire Division reveal that teenagers have a great interest in learning about wildfire safety and preparedness. Teenagers' interest level in learning about wildfire increased significantly when there was a wildfire close to

where they live or a place they are familiar with (Wildland Fire Operations Division, 2013).

Without question, every teenager in Butte County has been negatively affected by wildfire, with a recent catastrophic wildfire history that includes the 2018 Camp Fire, the 2020 North Complex Fire, and the 2021 Dixie Fire (CAL FIRE, 2022).

Much of Butte County's 1.1 million acres are in a wildland urban interface (WUI) zone, an area with high wildfire risk, where human development meets or intermingles with wildland vegetation (Butte County Community Wildfire Protection Plan, 2022). Before the 2018 Camp Fire, Butte County offered multiple youth wildfire education programs, few of which included teenagers (Ballard and Evans, 2012). The case study, "Wildfire in the Foothills: Youth Working with Communities to Adapt to Wildfire", analyzes the effectiveness of the sixth-grade program, Wildfire in the Foothills, and the extent to which it was implemented in local wildfire planning and management (Ballard and Evans, 2012). An evaluation of Butte County could provide insight to other WUI communities on the effectiveness and influence of youth wildfire education programs.

An increase in school and community-supported wildfire education programs for teenagers will result in more informed, prepared, and fire-resilient communities. This paper will highlight the development of youth wildfire education programs in the United States, with a focus on grades 6-12. Notable gaps in research and programming will be identified. It will highlight research-based recommendations for reaching teenagers and the challenges to establishing wildfire education in schools. Butte County's past and present wildfire education programs will be noted to demonstrate challenges in implementing and maintaining programs, as well as areas of significant success.

The following topics and relevant evidence will be presented:

- History of Federal Fire Education Programs, 1940-Present
- National Fire Protection Association Youth Reports, 2013-2018
- The Role of Teenagers in Wildfire Preparedness
- Wildland Urban Interface Challenges
- Youth Wildfire Education Programs in Butte County

History of Federal Fire Education Programs, 1940-Present

Wildfire education programs in the United States date back to the early 1940s and have been delivered through a variety of government programs. During World War II, the U.S. was short on experienced firefighters and had no resources to waste on domestic natural disasters. The U.S. Forest Service joined the War Advertising Council and the Association of State Foresters to organize the Cooperative Forest Fire Prevention Program to convey to the public that safe forests at home could help win the war (*Story of Smokey | Smokey Bear*, n.d.). From the first forest fire prevention posters in 1941 and the colorful, charismatic images of Smokey Bear in 1944, the U.S. Forest Service delivered a message of personal responsibility and caution with fire (*Story of Smokey | Smokey Bear*, n.d.). The Smokey Bear campaign encouraged a century of fire suppression in the United States (Donovan & Brown, 2007; Minor & Boyce, 2018). In 2001, Smokey's language was updated from '... can prevent forest fires', to '...can prevent wildfires' (*About the Campaign*, 2021; Faler, 2002). The National Park Service defines a wildfire as an unplanned fire caused by lightning or other natural causes, by accidental or arson-caused human ignitions, or by an escaped prescribed fire (*Wildfires, Prescribed Fires, and Fuels*, n.d.). Smokey Bear is the longest-running and most successful wildfire education campaign in U.S. history

(Minor & Boyce, 2018). Today, Smokey Bear's message has evolved to reflect the scientific consensus that fire is an essential part of a healthy ecosystem and fire suppression has contributed to worsening wildfire issues. In the *Benefits of Fire* website section, Smokey Bear shares, "Fire managers can reintroduce fire into fire-dependent ecosystems with prescribed fire. Under specific, controlled conditions, the beneficial effects of natural fire can be recreated, fuel buildup can be reduced, and we can prevent the catastrophic losses of uncontrolled, unwanted wildfire" (*Benefits of Fire*, n.d.). Factors that shape the public's knowledge and attitudes toward fire include education campaigns, such as Smokey Bear, social interactions, personal experience, and media influence (Brenkert-Smith et al., 2013). Mass media is used to influence Americans' attitudes and behaviors related to wildfire prevention and suppression, forest protection, and resource management (Minor & Boyce, 2018; Jacobson et al., 2001).

National Fire Protection Association Youth Reports, 2013-2018

The NFPA has developed multiple fire education programs, such as Learn Not to Burn, Sparky the Fire Dog, TakeAction, and Firewise USA®, to reach a wide portion of the population, from school children to homeowners (Public Education, n.d.). The NFPA's most recent and comprehensive reporting on the development and evaluation of wildfire education programs for teenagers was carried out between 2013 and 2018. In 2012, the NFPA assessed what types of wildfire education programs existed for grades 6-12, discovering it was an underserved population (Wildland Fire Operations Division, 2013). They found that a nationwide wildfire education program that focused on changing youth behaviors and attitudes as they relate to prevention, preparedness, and mitigation did not exist. In 2013, the NFPA estimated that one-third of the U.S. population lived in a WUI zone, with 8.8 million students in

grades 6-12 who would benefit from wildfire education. That number is significantly higher today, as the WUI continues to grow by approximately 2 million acres per year (*Wildfire and the Wildland Urban Interface (WUI)*, 2023).

Engaging Youth in Reducing Wildfire Risk: Community Conversation Workshop Findings and Research

“Engaging Youth in Reducing Wildfire Risk: Community Conversation Workshop Findings and Research”, was produced in cooperation with the U.S. Forest Service, U.S. Department of the Interior, and the National Association of State Foresters (Wildland Fire Operations Division, 2013). The report collected information through conversation workshops from 105 participants- 81 students and 24 parents. Six conversation workshops were conducted in communities in Texas and Colorado that experienced a wildfire event in the past 18 months. The primary workshop objective was to give teenagers and their parents a voice in the development of future resources and programming for teenagers.

Student and Parent Feedback

Teenagers’ interest in learning about wildfire increased significantly when there was a wildfire close to where they live or a place they were familiar with. Teens reported limited information was shared with them at school, even when a fire had taken place during that school year. Parents of teens agreed that the information being shared at school was limited and they would like to see more formal education on the subject. Parents believed teachers needed additional training to do this (Wildland Fire Operations Division, 2013).

Topics of most importance to students were fire dangers, how to reduce risk, the impact on the area they live and the land, how to educate others, and how to protect pets and animals. Teenagers reported that their priority in an evacuation is to get their pets out safely and help others to do the same. Middle and high school students suggested that school was the most effective way to reach other teenagers. Traditional classroom learning was viewed as equally effective as non-traditional classroom options. The use of technology and videos were ranked highly, and they wanted multiple products to appeal to different learning styles. Students emphasized that they did not want to hear from celebrities or politicians, preferring to learn from people with first-hand fire experience. Teens were more interested in listening to peers with wildfire experience, or fire experts, than their teachers. They viewed group learning opportunities as one of the most effective ways to deliver information, rather than any form of advertising (Wildland Fire Operations Division, 2013).

Teacher Feedback

The report did not include the total number of teachers that gave feedback. Teacher responses were represented as a percentage. After the local wildfire event, 38% of teachers provided classroom time for a discussion of fire topics, and 36% searched for grade-appropriate wildfire curriculum. Only 33% of teachers in high-risk wildfire areas thought there was time and opportunity for schools to provide awareness and education. 85% of teachers said they did not receive parent requests for classroom discussions about wildfire topics. Without numbers determining the survey size, the data is not statistically significant. However, the responses point to trends backed up by student and parent feedback. Despite parents' desire for increased wildfire education in the classroom, most teacher respondents did not hear those requests. The small

percentage of teachers incorporating wildfire curriculum and discussions in the classrooms validates student and parent concerns that schools are not providing adequate information and support (Wildland Fire Operations Division, 2013).

Findings and Recommendations

Future wildfire education programs must actively engage youth in learning how to reduce community vulnerability. The presentations and learning outcomes must be motivational and empowering, avoiding scare tactics. Scare tactics, like showing graphic wildfire content, intended to produce an emotional reaction and drive behavior change, is potentially triggering for students with traumatic stress related to direct or indirect wildfire experiences. Students experiencing traumatic stress are negatively affected in their ability to engage in the learning process, self-regulate, be attentive, and retain information (Hossain, 2022). Programs must be offered in English and Spanish. Programs must be free, easy to use, on-demand, and not require additional training or resources to use them (Wildland Fire Operations Division, 2013).

Community feedback and the resulting recommendations led to the development of the NFPA's TakeAction teen program. This wildfire education program provides resources and projects to benefit young adults, their families, and their neighbors. TakeAction online resources include three video field trips, links to YouTube, animal preparedness information, community service project ideas, and emergency preparedness documents for download (*TakeAction- Teens for Wildfire Safe Communities*, n.d.). This program addressed students' top concerns and followed most report recommendations. One video could be viewed in Spanish, however, the downloadable files and tools for teens are only offered in English, as of 2022.

Youth as Change Agents in Wildfire Preparedness: Findings to Guide NFPA Outreach Strategy

This 2018 follow-up report from the NFPA, authored by Dr. Rachel Madsen and Faith Berry, increased the geographic range and survey size (Madsen & Berry, 2018). Surveys and focus group discussions were held in two phases between June 2017 and April 2018. Phase one was an online survey for teachers and students. The online survey received 663 responses: 481 from middle school students and 182 from high school students. The survey was administered by teachers representing seven schools in Arizona, California, Florida, Texas, and New Mexico. Phase two was conducted in four, 45-minute focus group discussions in California, New Mexico, and Florida at middle and high schools in fire-prone areas. These schools were in a suburb or rural community intentionally picked for their diverse populations.

Student Feedback

Consistent with the 2013 report findings, students' biggest concern was the safety of their family, friends, and pets. Wildfire safety and prevention were the topics of most interest. The topics of least interest were how fires get started and how they spread. In terms of program delivery, students were interested in learning through demonstrations from professionals, videos, and virtual reality. Student engagement with technology is evident again, with YouTube cited as the top source teenagers use to get information outside of school about natural disasters and emergency preparedness. Students wanted information and resources to help drive change in their communities. Many expressed interest in participating in a community wildfire preparedness project. Motivators for participating in a service project include receiving community service credit and knowing they were helping other people and making a difference (Madsen & Berry, 2018).

Teacher Feedback

Once again, the report did not get a statistically significant survey size of teachers, with only 13 out of 500 teachers responding to the online survey. Of the 13 teachers that did respond, they reported that one reason they do not teach about wildfire topics is that it is not part of their required curriculum. A second reason is that they lack class time. There is a clear gap in research that adequately surveys teachers about their attitudes and experience teaching wildfire topics. There appears to be a disconnect between teacher participation and student and parent interest in wildfire education. Examining educator attitudes and barriers to teaching about wildfire is a topic in need of a more comprehensive survey and focus (Madsen & Berry, 2018).

Findings and Recommendations

Students did not indicate substantial knowledge of the causes and effects of wildfires. Fifty-one percent did not know wildfires can help keep forests healthy. Forty-five percent falsely believed most wildfires are caused by lightning. This is interesting to note, as these topics of misconception were rated by teens as the least interesting to learn about. Despite being interested in learning what they could do to protect their family and community, few teens had emergency plans with their families about what to do if threatened by a wildfire or evacuated. Only 13% had helped their families prepare for a wildfire, and 6% had helped neighbors prepare. Another important area of future study is to survey parents about their perspectives and experience with family wildfire preparedness.

“Youth as Change Agents in Wildfire Preparedness: Findings to Guide NFPA Outreach Strategy” prioritized the following four areas for a new youth outreach strategy:

1. Raising awareness of wildfire risk and risk reduction actions.
2. Reducing vulnerability to wildfire loss.

3. Reaching others through youth.
4. Reinforcing collaborative efforts with youth and community leaders to address place-specific wildfire risks proactively (Madsen & Berry, 2018).

The Role of Teenagers in Wildfire Preparedness

Research shows that teenagers serve as valuable messengers and translators to communicate lifesaving information to their friends and family (Monroe & Oxarart, 2012; Sturtevant & Myer, 2013; Wisner, 2006). Social interactions may allow mitigation and prevention behaviors to “catch fire” within a community, and wildfire education programs could benefit from harnessing these interactions (Dickinson et al., 2015). Teenagers can help overcome language and cultural barriers to learning (Campbell et al., 2001). According to 2020 U.S. Census data, 15.5% of Butte County families speak a language other than English at home, with Spanish accounting for 10% of the county’s second language (*U.S. Census Bureau QuickFacts*, n.d.). Teenagers can help make connections and disseminate disaster preparedness information to their families (Sturtevant & Myer, 2013). Adults can continue to spread information learned from their children to their wider social, and cultural communities, filling gaps in the reach of public wildfire education programs.

The NFPA recognizes students as agents of change, not only within the context of their families, but also as future leaders and developers of wildfire safety solutions (Madsen & Berry, 2018). Youth can offer both practical and creative ideas for disaster preparation and offer solutions for helping communities recover from a major disaster (Peek, 2008). Teenagers have the social connections and influence to transform these ideas into actions. Youth can also be involved in collecting data and mitigation work that furthers the ability of homeowners and

organizations to take appropriate action to address wildfire risk (Sturtevant & Myer, 2013). Through wildfire education programs, teenagers gain lifelong knowledge about mitigation and preparedness that will serve the community as they become land and homeowners (Wildland Fire Operations Division, 2013).

Wildland Urban Interface Challenges

In 2020, CAL FIRE reported 8,648 wildfire incidents which burned over 4.3 million acres in California (2020 Fire Season Incident Archive | CAL FIRE, n.d.). In this single year, five of California's six largest fires occurred since 1932. Wildfires present a significant threat to life and property when they enter the Wildland Urban Interface (WUI), defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels (*Wildland Urban Interface (WUI)* | NWCG, n.d.). "...The WUI in the United States grew rapidly from 1990 to 2010 in terms of both number of new houses (from 30.8 to 43.4 million; 41% growth) and land area (from 581,000 to 770,000 km²; 33% growth), making it the fastest-growing land use type in the conterminous United States" (Radeloff et al., 2018, p.1). A 2018 assessment found that roughly one-third of homes in the United States are in WUI areas (USDA Northern Research Station, 2018). New home building in the WUI continues, despite the high financial and human costs of fighting fires in these areas (Miller et al., 2013). "Wildfires within the WUI create conditions that overwhelm response capabilities, resulting in billions of dollars in economic losses, damage to natural resources, devastation to communities, and tragic loss of human life" (*Wildland Urban Interface: A Look at Issues and Resolutions*, 2022, p.5).

An estimated 463,000 acres of Butte County are located within the WUI (*Butte County's Wildland Urban Interface (WUI) – Buttefiresafe.net, 2022*), and thirty-one Butte County communities were identified to be at risk in the 2015 Butte County Community Wildfire Protection Plan (BCCWPP, 2015). Despite this foreknowledge, 1,887 structures were destroyed in the North Complex Fire, and 18,800 structures were lost in the 2018 Camp Fire (CAL FIRE, 2022). An estimated 30,000 people lost their homes and 85 people lost their lives in the Camp Fire, California's deadliest fire on record (CAL FIRE, 2019). Climate change and a growing WUI contribute to an increased risk of wildfire in the future (Radeloff et al., 2018). In the *National Geographic* news article, The science connecting wildfires to climate change, Borunda states, "Climate change exacerbates the factors that create perfect fire conditions. Lower precipitation and warmer air temperatures dry the forests and other vegetation. Add strong winds and decades of fire suppression into the mix and you have a dangerous recipe for wildfire" (Borunda, 2020, para. 2). In response to the growing threat of wildfire, multiple Butte County organizations provide educational resources to residents. Historically, education efforts have focused on adult populations, specifically homeowners. Elementary-age students are a secondary area of focus, with a reported 3,700 Butte County students reached in 2015 (BCCWPP, 2015). As of 2020, Butte County does not have school-implemented wildfire education beyond grade six.

Youth Wildfire Education in Butte County

Fire PALS, Trail Days, FAST Camp, and Wildfire in the Foothills were the available youth wildfire education programs in Butte County before 2018, pre-Camp Fire, and COVID-19 disruptions. Only one program remains active past 2018, Wildfire in the Foothills. The 2015

Butte County CWPP detailed efforts to reach youth through the Fire PALS (Fire Prevention and Life Safety) program. The multi-agency group made up of staff from CAL FIRE/Butte County Fire, Paradise Fire, Oroville Fire, and Butte County Sheriff, presented theatrical assemblies at local elementary schools. The shows included fire safety topics as part of a larger safety-themed presentation, including topics like bicycle helmet use and firearm safety. In 2013, 3,700 Kindergarten-5th-grade students, across ten schools, viewed this program (BCCWPP, 2015). The official Butte County CAL FIRE Facebook page posted, “By using popular songs and turning them into skits about a variety of life and fire safety topics, kids are better equipped to know what to do when they hear a smoke alarm or what to do if their clothes catch on fire. These smart kids then take that message home with them and educate their parents and siblings” (CAL FIRE, 2017). According to Butte CAL FIRE’s Public Information Officer, Fire PALS was last delivered in 2017 and is non-operational, despite a remaining webpage.

The fifth-grade students from two schools in Magalia, Cedarwood Elementary School and Pine Ridge Elementary School, participated in Trail Days. The Trail Days program, supported by the Butte County Fire Safe Council and community volunteers, took students out of the classroom to learn about a variety of outdoor and environmental topics on a day-long field trip. Fire-related activities included presentations from CAL FIRE personnel and trying on a firefighter suit (Ballard and Evans, 2012). Although running for over twenty years, the program relied heavily on volunteers, and the program was discontinued after the Camp Fire when key leaders retired or moved out of the area.

Starting in 2006, FAST (Fire and Safety Training) Camp was a week-long training program for Butte County teenagers, ages 16-19. Participants learned about career opportunities

through hands-on activities and training in fire safety, rescue, and EMS skills. Students received credit from Butte Community College and a certification in CPR and Basic First Aid. Twenty students were selected to participate each year, with more applications than the program was able to accept. The no-cost program was funded through the Butte County Fire Safe Council (“FAST Camp Gives Butte County Teens a Dose of Reality”, 2013). The program is no longer in operation, with the last mention of the program in a 2014 Facebook post (Fast Camp, 2014).

Wildfire in the Foothills is the Butte County Fire Safe Council’s sixth-grade wildfire education program. The program, pilot tested in 2004, is available with a series of four PowerPoints on the BCFSC’s website. Along with the online PowerPoints, teachers are delivered a binder with overhead transparencies, lesson plans, pre/post-tests, and DVD videos to accompany the lessons. Wildfire in the Foothills is divided into four 1-hour lessons that cover wildfire behavior, mitigating fire danger through defensible space, and family planning and preparedness. Students end the program by creating a family emergency plan at home and participating in a town hall skit in class. The program was designed to facilitate students in reaching out to their families about fire safety and involving them in assignments. Some teachers expanded upon the provided lessons with their own activities, such as a poster contest and designing a defensible space model (Ballard and Evans, 2012). In the case study “Wildfire in the Foothills: Youth Working with Communities to Adapt to Wildfire”, Ballard and Evans (2012) recommend the next steps to improve program effectiveness. Their following paraphrased suggestions reinforce the 2013 and 2018 NFPA youth report recommendations:

- Add more visual aids, photos, and video graphics.
- Make learning more interactive.

- Structure activities for students to contribute to community outreach.
- Provide a wider variety of student assessment activities to show learning.
- Align curriculum more closely with BCFSC goals and programs.
- Engage youth more directly in community service and volunteer activities.
- Create stronger ties to education standards.

An updated Wildfire in the Foothills curriculum is needed to provide a relevant, trauma-informed, and digitally accessible wildfire program for Butte County teachers and students. The recommendations of Ballard and Evans are a strong foundation to guide needed program updates.

A program that has continued in Butte County, despite numerous community challenges, is Outdoor Classroom, an experiential education program operated through California State University, Chico. Outdoor Classroom, although not exclusively wildfire-focused, includes wildfire topics in their 3rd-5th-grade field trip offerings at the Butte Creek Ecological Preserve. Activities are based on California State Standards and offer fire and forest health as one of nine program topics. Students learn about fire up-close in protective suits with fire demonstrations and experiments. Over 1,300 elementary school students from Chico, Paradise, and Oroville participate in the program annually. According to their webpage, Outdoor Classroom field trips are in such high demand by local educators that it is unable to accommodate all requests (*Outdoor Classroom – Big Chico Creek Ecological Reserve*, n.d.).

With the discontinuation of multiple wildfire education programs in Butte County, and outdated content of Wildfire in the Foothills, there is a clear gap in school-supported wildfire education. “Schools can enhance student voice, agency, and participation through educational

and administrative practices. These activities, then, work strategically to create new opportunities, norms, and structures that enable these young people to become both partners and collaborators in school and community change” (Schafft, 2016, p.146). While some wildfire education, such as defensible space principles and the Ready, Set, Go model are widely applicable, Butte County students would benefit from the incorporation of place-based wildfire education. Youth who grow up in rural communities can develop place-based ecological knowledge, notice environmental changes over time, and develop an understanding of the environmental systems around them. In comparing the place attitudes of ‘residency’ versus ‘inhabitation’, David Orr explains, “Good *inhabitation* is an art requiring detailed knowledge of a place, the capacity for observation, and a sense of care and rootedness” (Orr, 2013, p.187). Wildfire education that is built around local content and teaches the importance of attention and care for place, can support students in becoming better lifelong stewards and fire-conscientious community members. For example, incorporating the use of the Butte County Forest Health Guidebook in a lesson introduces students to the common plant species, traditional ecological knowledge, and fire factors that are specific to the forest zone they live in. Students can learn to recognize whether their local plant community, and the vegetation on and around their property is healthy or vulnerable to wildfire. Students also learn how humans are an important part of environmental systems and the role we can play in land stewardship, the incorporation of good fire, and how to help landscapes heal from catastrophic wildfire.

David Grunewald, who defined the term "Critical Pedagogy of Place", in 2002, argues, “Place-based pedagogies are needed so that the education of citizens might have some direct bearing on the well-being of the social and ecological places people actually inhabit” (Grunewald, 2003, p.308). Students learn that surrounding systems are malleable, and they can

have a positive influence on their area's health and wildfire protection. Place-based education strengthens children's and adult's social connections to one another and to the regions in which they live (Smith, 2002). Lessons that support students working collaboratively and creating content to share with their families and community aims to strengthen their connection to the region and to each other. In "Wildfire Preparedness, Community Cohesion and Social-Ecological Systems", Prior and Eriksen share their research findings that feeling a 'sense of community' dramatically increases an individuals' willingness and ability to prepare for a wildfire and take risk reduction measures. They go on to say, "...refocusing on individuals and empowering their local action through social processes at the community level may yield more success when it comes to developing adaptive capacity to the impact of climate change on wildfire and other natural hazards" (Prior and Eriksen, 2013, p.1584). A place-based approach to empower students to take an active role in wildfire risk reduction and emergency preparedness is a critical component of building wildfire-resilient communities in Butte County.

Conclusion

Statewide, educators are grappling with how to support and engage students in a meaningful way, while meeting required California state's standards. Given the extensive range of challenges facing classroom teachers, along with the growing threat from wildfire, non-profit organizations such as the Butte County Fire Safe Council can play a pivotal role in how wildfire education reaches youth and communities. The prioritized outreach strategies from the NFPA's 2018 youth report, and the recommendations from Ballard and Evans' evaluation of the Wildfire in the Foothills program, are pertinent to improving and expanding place-based youth wildfire education in Butte County. There is a need for updated content, new opportunities for students in

grades 6-12, and improved systems that support classroom teachers and administrators in establishing wildfire education in schools.

CHAPTER III

METHODOLOGY

Purpose

The purpose of the project was to update and expand the BCFSC’s sixth-grade program, *Wildfire in the Foothills*, to reflect the most up-to-date understanding of wildfire issues and include local resources for living in Butte County’s WUI. This was pursued by updating the program content, expanding the lesson topics, including information about Butte County as a whole, and repackaging the program in a digital, accessible format for teachers. Follow-up actions were taken to promote *Wildfire in the Foothills* to BCFSC staff, educators, and the public.

Identified Areas of Improvement

The following key areas for improvement were synthesized from “*Wildfire in the Foothills: Youth Working with Communities to Adapt to Wildfire*” (Ballard & Evans, 2012), feedback from BCFSC staff, and an analysis of program materials compared to current educational best practices. Program weaknesses include the difficulty of access, outdated content, not being trauma-informed, a lack of connection to education standards, a lack of student engagement opportunities, and a lack of interdisciplinary activities.

- Difficulty of Access

Although the PowerPoints were available for download on the BCFSC's website, to use the program, teachers needed to request a physical binder. This slowed teacher access to materials and required BCFSC staff time to deliver, retrieve, and refresh printed materials for the binders. It made it more difficult for teachers to review the program in advance of planning a lesson. It also put pressure on teachers to complete the program within a certain timeframe to make the binder accessible for other classes.

- Outdated Content

The lesson plans did not connect to the most important local resources for wildfire information. The program contained some photos and graphics that were of low quality. Lesson content about the Paradise Ridge was outdated, and potentially triggering for Paradise students impacted by the Camp Fire.

- Not Trauma-Informed

PowerPoint slides featured photo backgrounds of forests in flames for multiple lessons. The program did not include resources to support teachers in delivering wildfire content or supporting students with trauma. An activity where students read aloud about the experience of other children evacuating from a wildfire could be triggering, as many Butte County students have that first-hand experience.

- Lack of Connection to Education Standards

Ballard and Evans noted the program's weak connection to education standards (Ballard and Evans, 2012). The program did not connect to Next Generation Science Standards (*Read the Standards*, n.d.) or California's Environmental Principles and Concepts (Environmental Principles & Concepts - California Education and the Environment Initiative (EEI), n.d.).

- Lack of Student Engagement

The program was heavy on direct teaching, with most of the program read by the teacher from the PowerPoint slides or the binder. There were few opportunities for student participation, and the activities component took place out of the classroom as homework.

- Lack of Interdisciplinary Activities

The program's activities depended on students completing homework outside of class time. If a student had an unsupportive home environment or other reasons for not being able to include their family, they were unable to fulfill the activities. Students did not have multiple ways to show their learning or choice in the assignments.

Program Update Strategy

Each identified area for improvement was addressed with the following strategies when updating the program format and content:

- Difficulty of Access

Strategy: Make the full program available on the BCFSC website. The full program is downloadable as a combined pdf, as well as individually by lesson, with the PowerPoint presentations. The BCFSC is available to deliver larger printed resources, such as the Butte County Forest Health Guidebook (*Forest Health Guidebook*, 2021) and Ready-Set-Go Evacuation Guides (*Evacuation Plans by Community*, n.d.), but they are also linked in the lesson plans for digital access. No materials need to be returned to the BCFSC, and teachers can spread the program over their preferred length of time.

- Outdated Content

Strategy: Re-do each lesson plan and PowerPoint presentation and connect the program to the most up-to-date resources, such as materials from the NFPA, CAL FIRE, and Butte County.

Develop a system where a BCFSC staff member annually reviews the program and updates content or weblinks as needed.

- Not Trauma-Informed

Strategy: Address the subject directly in the *Forward to Educators* section and provide links to resources for teachers to review before beginning the program. Follow best practices outlined in the “Trauma Informed Toolkit: A Resource for Educators” (Hossain, 2022) for lesson plan and PowerPoint content. Construct messages from a place of student empowerment, actions for the future, and remove potentially triggering content.

- Lack of Connection to Education Standards

Strategy: Include a *Standards* box on the first page of every lesson plan that details the NGSS and EP&C’s covered in the lesson.

- Lack of Student Engagement

Strategy: Include student discussion questions on the PowerPoint slides for each lesson. Include assessment activities that can be started or completed in class with other students. Make lesson content local and give students opportunities to connect lessons to their lives and the real world. Include lesson extension recommendations in each lesson plan to give teachers additional options to deepen learning and expand on the topics.

- Lack of Interdisciplinary Activities

Strategy: Design assessment activities to incorporate a variety of student skills and disciplines. Provide flexibility in the lesson plan for teacher and student choice.

2021 Program Update

The initial revised program, released in December of 2021, was expanded from four lessons to seven lessons. The structure is an inverted pyramid, beginning with large-scale

landscape topics and narrowing to end with family and individual wildfire preparedness. The lesson structure covers the following topics:

Lesson 1: Geography & Landscapes

Guiding Question: How does wildfire impact the landscapes we live in?

Lesson 2: Cultural Fire

Guiding Question: How do Indigenous Californians, past and present, use fire?

Lesson 3: Fire Physics & Ignitions

Guiding Question: What causes wildfires?

Lesson 4: Community Wildfire Mitigation

Guiding Question: What actions are being taken around Butte County to build community wildfire resilience?

Lesson 5: Fire Resistant Structures

Guiding Question: What can be done to improve a structure's chance of surviving a wildfire?

Lesson 6: Family Preparedness - Get Ready!

Guiding Question: What can we do now to prepare for a wildfire close to home?

Lesson 7: Wildfire Response - Get Set, Go! Guiding Question: What do we do if a wildfire leads to an evacuation?

Student Assessment Activities

Each lesson has an activity that is written with variations. Activities could be completed in class or as take-home assignments, and as an individual or small group project. All resources

needed to complete the activity are linked in the lesson plan, and the BCFSC offers to deliver some printed materials. Teachers are encouraged to share student work back with the BCFSC.

Lesson 1: Using the Butte County Forest Health Guidebook, students make a side-by-side graphic to demonstrate the characteristics of a healthy versus unhealthy forest.

Lesson 2: Students create two Google Slides to summarize their learning about cultural fire using information from the presentation slides, the videos, or the TEK sections of the Butte County Forest Health Guidebook.

Lesson 3: Students research an ignition source and create a wildfire public service announcement to reduce accidental ignitions in their area.

Lesson 4: Students work in a small group to select and present an idea for a class community service project in fire mitigation, education, or recovery.

Lesson 5: Students use their Firewise checklists to make observations about three photographs and write a reflection paragraph about home preparedness.

Lesson 6: Students work with a small group to make a short video about one of the key topics from the lesson. Topics include how to make a Go Bag, the steps and importance of a Family Communication Plan, and how to make a pet/livestock preparedness plan and Go Bag.

Alternatively, students make a storyboard or script for a video that is not filmed.

Lesson 7: Students reflect on and share their program takeaways by writing a letter to Wildfire Ready Raccoon.

Lesson Extensions

In addition to the seven lessons, the program includes a Jeopardy-style review PowerPoint with questions covering key topics from all seven lessons. There is also a write-up for a mock Firewise Community Meeting, where students take on the part of a stakeholder or professional with something important to share about wildfire education, mitigation, or recovery. Students receive a character card with a short script to share, which has blank spaces they need to research information for.

Each lesson includes a *Lesson Extension Recommendations* section at the end that provides links to connecting programs for a deeper dive into a topic. Two programs recommended throughout the program are the REDI Jedi Master Program (*REDI Jedi Master Program*, n.d.) and the FireWorks curricula for the Sierra Nevada and the Northern California Oak Woodlands (*FireWorks Educational Program*, n.d.).

The REDI Jedi Master Program is a fire nature journaling guide with nine exercises (*REDI Jedi Master Program*, n.d.). The program was created for the Butte County Fire Safe Council by consultant and illustrator, Miriam Morrill, of Pyrosketchology. This program was developed concurrently with the Wildfire in the Foothills program, containing overlapping topics and potential for lesson integration. With the guide, students develop a sense of place and enhance their situational awareness related to fire. Students are introduced to the practice of nature journaling through the observation of the nature signs and signals that inform us of the forces influencing fire. If all lessons are completed, students will have created a story zine of eight sketches, forming their personal fire story. REDI Jedi lessons are encouraged to take place in nature, however, lessons are written with options for journaling on a school campus, or even

in the classroom, if an outdoor space is not available. Fire nature journaling exercises could take place before or after a Wildfire in the Foothills lesson on a similar topic.

FireWorks is designed for students in grades K-12, and provides them with interactive, hands-on approaches to studying wildland fire (*FireWorks Educational Program*, n.d.). The FireWorks Educational Program is produced by the Fire Modeling Institute of the U.S. Forest Service, Rocky Mountain Research Station, Fire, Fuel, and Smoke Science Program. It offers lessons specific to six ecosystems in the United States, including the Sierra Nevada and the Northern California Oak Woodlands. Both ecosystem cycles have lessons designed for the sixth-grade level, with the Oak Woodlands cycle narrowed to focus on middle school alone.

The Northern California Oak Woodlands program was created by the University of California's Agriculture and Natural Resources employees (Stefancich et.al., 2021). It is revised from select lessons in the Sierra Nevada curriculum, with a focus on applying Next Generation Science Standards (NGSS) and trauma-informed education. The Northern California Oak Woodlands program contains the three learning cycles of Natural and Cultural Ecology, Fire Behavior, and Wildfire Preparations (Stefancich et.al., 2021). The Natural and Cultural Ecology cycle fills gaps in Wildfire in the Foothills lessons, covering topics on California's historic fire regimes and cultural fire. The Fire Behavior cycle requires a trunk of materials for the fire experiments, either compiled independently by teachers, or requested from FireWorks program staff.

Program Availability and Outreach

Wildfire in the Foothills became available on the BCFSC website in December 2021. To make youth education more accessible, a new webpage was built as part of the BCFSC's total

website redesign. Part of the project entailed working with the contracted web developer to ensure that the page layout was set up to support the new program and it was in a new section with the BCFSC's other youth resources. The youth programs are found by navigating to www.buttefiresafe.net >> Programs >> Youth Education. Along with Wildfire in the Foothills, there are pages for the REDI Jedi Master Program, Wildfire Ready Raccoon, and the children's book "Once Upon a Wildfire", created by the BCFSC's Executive Director, Calli-Jane West.

To promote Wildfire in the Foothills to the public and to educators, a variety of approaches were taken. Multiple emails were sent to teachers who had used the Wildfire in the Foothills program in previous years. A press release was written and sent to the BCFSC's email list, as well as posted on Facebook. Follow-up social media posts were made about the education page and educator resources over the months of December 2021-March 2022. It was important to ensure the project was understood by the BCFSC staff and board members so they could direct teachers to the resource and give accurate information to the public. A program presentation was given to the full BCFSC staff, and a separate presentation was given at a monthly BCFSC Board of Directors meeting. A Wildfire in the Foothills presentation was also given to the professional development educator group, the Inland Northern Science Project (INSP), in March 2022. The program was presented along with the REDI Jedi Master program as the monthly featured presentation for the INSP. Follow-up resources were brought two weeks later for teachers at the INSP's nature journaling field trip at the Big Chico Creek Ecological Reserve.

The California Fire Safe Council requested that the BCFSC's youth education initiatives be featured at their Resilience Brilliance Awards and Workshop in October 2021. Wildfire in the Foothills was featured in a presentation along with the REDI Jedi Master Program and Wildfire

Ready Raccoon. This presentation strengthened relationships with the California Fire Safe Council and county-level fire safe councils from across the north state. Although Wildfire in the Foothills is uniquely written for Butte County, it provided motivation for other counties to create their own youth-centered programs and spotlighted the importance of engaging youth in wildfire preparedness. It also led to the expansion of the North State Youth Education Committee, an initiative that was spearheaded during the updating of Wildfire in the Foothills. After the presentation, the Youth Education Committee grew from exclusively a Butte County group, to a statewide networking and support group.

2021-2022 Program Challenges

Despite the efforts detailed in the previous section, the updated version of Wildfire in the Foothills was not used by classroom teachers during the 2021-2022 school year. Although there was not an official teacher survey or concrete evidence, the following circumstances may have contributed to why the program was unutilized.

Seven lessons, plus a review game lesson, and a Firewise community meeting is a large time commitment. The lesson structure may have been too expansive and unappealing, since it could not be completed in a single week. A similar sentiment was shared in a meeting by a FireWorks program creator, that the number of lessons in the FireWorks Sierra Nevada program may have been too extensive and overwhelming for new teachers to try. Due to COVID-19 disruptions, and a year of distance learning in some areas, students were below grade-level in core subjects. Teachers prioritized required content and bringing students up to grade-level, making it more challenging to take on extra subjects and use class time to pilot a new program during this year.

The program format puts the burden on the classroom teacher to deliver the lessons. In meetings with the Paradise Ridge charter school administrators, it was made clear that teachers prefer an outside subject matter expert to present new programs. It is not enough to provide the material, if there is not support with the delivery. If BCFSC staff or volunteers are not made available to be the lesson presenter, it proved unlikely to be used independently by a classroom teacher. While the program will continue to be available online for teachers to access independently, in 2023, Wildfire in the Foothills will be offered as a presentation by the BCFSC. Classroom teachers can still play a valuable role in Wildfire in the Foothills by continuing conversations about wildfire preparedness and leading lesson extensions independently. Ideally, once teachers have experienced the program as an outside presentation, they will be willing to deliver the lessons themselves in following years. This would allow for the BCFSC to lead wildfire education programs with other grade levels, or host experiential learning opportunities, like field trips and fire nature journaling.

There were additional actions that could have been taken to boost Wildfire in the Foothills that were missed, due to staff time constraints and shifting priorities for the BCFSC. Two of these actions to connect with teachers would have been to host a paid teacher training and work directly with the Butte County Office of Education. These actions could be taken in the future to strengthen the program and maintain institutional contacts over the years. Another challenge was that new important resources became available between Fall 2020 and Fall 2022 that did not make it into the updated Wildfire in the Foothills program. This meant that sections of the program had already become outdated and required revision, particularly the essential lessons about family preparedness and evacuation safety. For example, in 2022, Butte County shifted to a new county-wide evacuation zone numbering system with a digital, interactive map

(*Butte County Evacuation Zones*, n.d.). While some new resources would have been a nice option to include in an update, elements such as this were essential to Butte County's wildfire preparedness.

While the 2021 Wildfire in the Foothills was a visual and technical improvement from the pilot program, it was still lacking. Upon further review, the lesson presentation slides were too text heavy, and not visually engaging enough for students. There were also new opportunities for improved graphics from the Be Ready Butte campaign, content created for the BCFSC by Blue Flamingo Marketing, and a BCFSC media creation account with Canva Pro. A second round of updates was needed to include new Butte County resources, consolidate the lessons back to a shorter program that could be delivered over one school week, and improve the visual quality of the presentation slides and student printed materials.

CHAPTER IV

FINDINGS AND RESULTS

Wildfire in the Foothills was piloted as a BCFSC presenter-led program with two classes of Paradise Charter Middle School (PCMS) sixth-grade students in October 2022. The presenter led four lessons and made content adjustments between the first week and second week, based on the experience with students. The lessons were abbreviated from one hour to 50 minutes to fit with the school's schedule. For the pilot, the 2021 PowerPoint presentation slides were remade, and new activities were added. The program begins with an introduction to forest health and Butte County's ecology, and then follows the 'Ready, Set, Go' model of fire preparedness, the format used by CAL FIRE. Adjusting Wildfire in the Foothills to fit the 'Ready, Set, Go' model aligns it closely with local, and state resources. It increases program credibility and strengthens partnerships with wildfire professionals and emergency service organizations. Upon reviewing the new program structure, Butte CAL FIRE has agreed to participate in Wildfire in the Foothills by sending firefighters and a firetruck to the campus on the final program day. This partnership will be implemented during the 2023 spring season.

The following lesson structure was piloted with PCMS over four consecutive days with two groups of students:

Lesson 1: Fire-Resilient Landscapes

Guiding Question: How can we support healthier and more fire-safe forests?

Lesson 2: Get Ready (Home Preparedness)

Guiding Question: How can we get our home and property fire-ready?

Lesson 3: Get Set (Family Preparedness)

Guiding Question: What can we do now to prepare for wildfire with our families?

Lesson 4: Go! (Emergency Planning & Response)

Guiding Question: What do we do if a wildfire leads to an evacuation?

The Jeopardy-style review game was updated with new questions to cover only content from the four lessons and rebranded as ‘Review with Ready’. The review game was not used with PCMS students, due to time constraints.

During the pilot program, a student survey was not administered. This is an area in need of further focus to evaluate the student learning outcomes and program impact. Additionally, to count the program hours as ‘Climate Education’ for the California Climate Action Corps program, administering a pre-and-post survey is required. Anecdotally, both classroom teachers and the principal of PCMS shared their observations that their students were interested and engaged in the lessons. The majority of students were active in volunteering to answer questions and participated appropriately in the lesson activities. In both groups, students successfully recalled the key information from the previous lesson during discussions and activities. Many students were already familiar with the Wildfire Ready Raccoon mascot, and the class erupted when one student in class was spotted with his family in the Wildfire Ready Raccoon music video, shown as part of the fourth lesson. If there are further Wildfire in the Foothills program

updates, or new BCFSC programs to pilot, PCMS serves as an excellent test group. Their school is located on the same street as the BCFSC office, there is strong buy-in from the administration and classroom teachers, and their charter school status allows for more flexibility with class time and topics.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

“Our nation is on the precipice of an all-hands moment in which landowners, citizens, communities, infrastructure organizations, academia, researchers, not-for-profit organizations, governmental agencies, and others have critical roles in coordinating a collaborative approach to contain and control the threat of wildfire in the WUI” (*Wildland Urban Interface: A Look at Issues and Resolutions*, 2022, p.3). There has never been a greater need or opportunity for non-profit organizations such as the Butte County Fire Safe Council to collaborate with schools and natural resource partners to implement youth-centered wildfire programs. Doing so could transform the role youth play in fire-resilient communities and lead to a cultural shift in how people live in high-risk wildfire areas, such as Butte County’s WUI. An updated wildfire education program for Butte County sixth-graders will support schools and teachers in including wildfire education in the classroom. Educating and empowering youth to participate in wildfire solutions supports the long-term goal of building more fire-resilient communities in Butte County.

Recommendations

At the time of this final paper and project submission, the 2022 version of Wildfire in the Foothills has not been updated on the BCFSC website. The following next steps are recommended for the BCFSC to implement the updated Wildfire in the Foothills program in 2023.

1. Upload the most updated version of Wildfire in the Foothills to the BCFSC website and promote the update through social media and email.
2. Network with school administrators and teachers to schedule spring 2023 presentations of Wildfire in the Foothills. Update the contact roster of Butte County's sixth-grade teachers to continue communications and develop working relationships over time.
3. Oversee the spring 2023 implementation of Wildfire in the Foothills, with program delivery support from the California Climate Action Corps program.
4. Develop a Wildfire in the Foothills Educator Workshop over summer 2023 and collaborate with school administrators to include wildfire education topics as part of existing staff development days.
5. Increase the BCFSC's capacity with staff, Climate Action Fellows, volunteers, or college students to deliver youth wildfire education programs.

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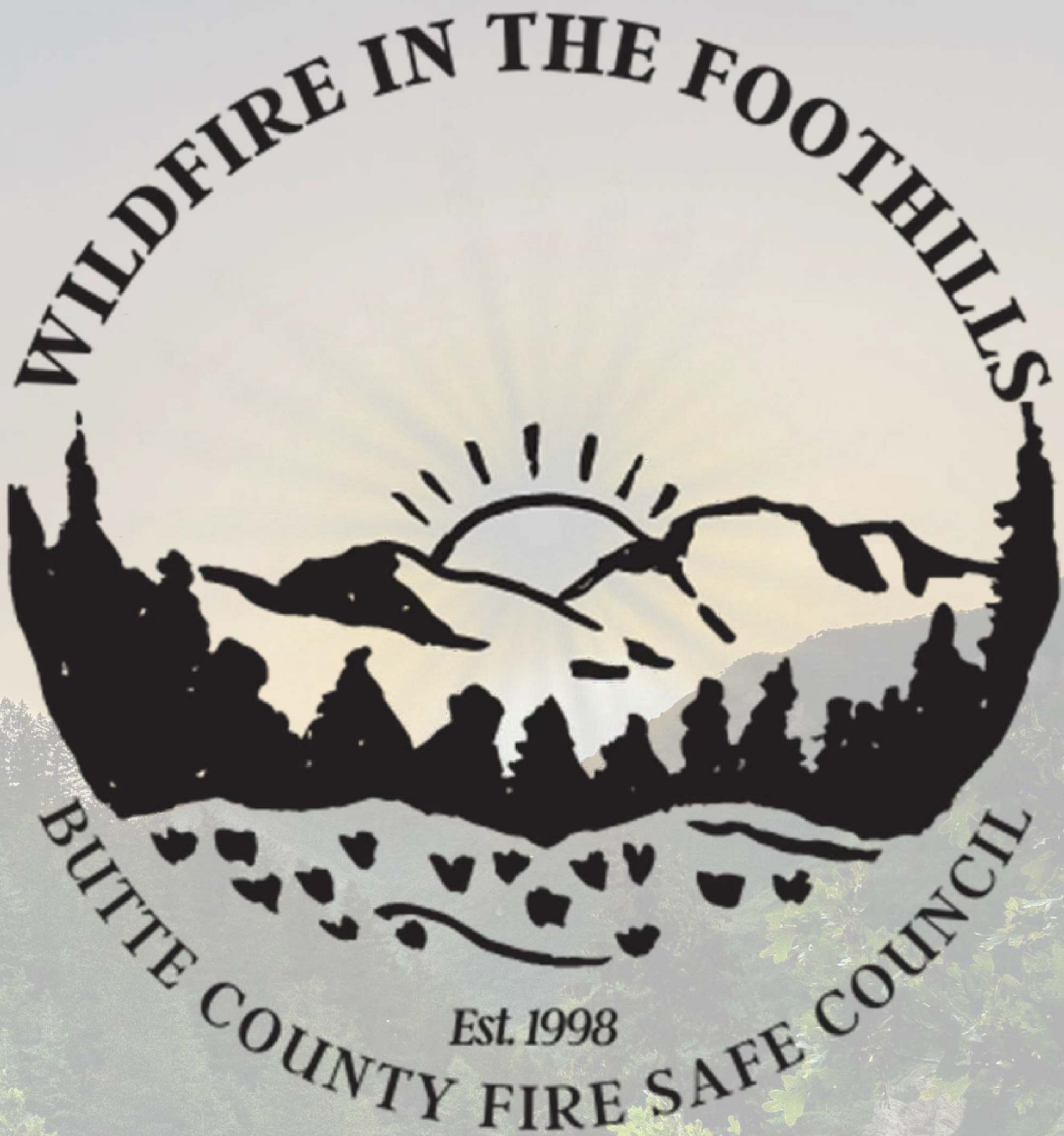
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APPENDIX A



**Butte County Fire Safe Council
Sixth Grade Program
Revised December 2022**

Wildfire in the Foothills

Table of Contents

Forward to Educators.....	1-3
Program Overview	4
Glossary	5-8
Lesson 1: Fire-Resilient Landscapes	9-17
Lesson 2: Get Ready (Home Preparedness)	18-27
Lesson 3: Get Set (Family Preparedness)	28-37
Lesson 4: Go (Emergency Planning & Response)	38-45
‘Review with Ready’ Game Q&A.....	46-51
Appendix: Lesson Prints	
Lesson 2: Worksheet from Wildland Fire Jr. Rangers (National Park Service)	
Lesson 3: Family Communication Plan & Go Bag Worksheet (TakeAction, NFPA)	
Lesson 4: Emergency Communications Trifold (Butte County Office of Emergency Mgmt.)	

Forward to Educators

Thank you for your time and effort to bring wildfire education into your classroom. Education is a key component of the Butte County Fire Safe Council's mission to build wildfire resilience in Butte County. Educating youth can move us towards living better with fire and, when a wildfire does occur, we are better prepared to stay safe. We strive to have every Butte County school include wildfire and emergency preparedness topics in classroom learning, because wildfire impacts everyone in the region.

Each of your students can play a valuable role in their family's and community's wildfire preparedness. Wildfire in the Foothills is most relevant for sixth-grade students who live in Butte County's wildland urban interface (WUI), where human development and wildland vegetation meet or intermix, contributing to the area's high wildfire risk. This 2022-updated curriculum is also relevant for students living outside the "foothills", including Chico and Oroville. This program gives your students the opportunity to take positive action and be a part of wildfire preparedness and solutions for their families and wider community.

About the Program

Wildfire in the Foothills is intended to be used in the classroom, and not as distance learning or independent study. You may elect to spread the program out across multiple weeks or deliver it over one week. Wildfire in the Foothills is broken into four lessons with PowerPoint presentations, covering topics in forest health, defensible space and home hardening, family preparedness, and evacuation and emergency response. The lesson plans contain slide images with speaker notes and background information. Each lesson is approximately one hour, with the option to extend with additional activities. Some activities can be completed in class, while others have the option for multi-day projects or homework assignments. Activities are written with variations, and you are encouraged to adapt the activity to best fit your students, class goals, and time available for the program. Some activities can be shared back with the Butte County Fire Safe Council, students' families, or others at your school, to grow community awareness and preparedness.

At the end of the four lessons, you have the option to play 'Review with Ready', a Jeopardy-style review game. There is also the option for a school visit from Wildfire Ready Raccoon and/or Butte CAL FIRE. Please contact the Butte County Fire Safe Council in advance to arrange a visit at the end of the fourth lesson, or after 'Review with Ready' on a fifth program day.

Program Extensions

Apart from this program, there are other fire education programs appropriate for Butte County elementary and middle school students. At the end of each lesson plan, you will find links to suggested programs that have lessons that connect or build on the Wildfire in the Foothills

lesson you just completed. Two of these programs are FireWorks and the fire nature journaling REDI Jedi Master Program.

[FireWorks](#) is designed for students in grades K-12 and provides students with interactive, hands-on materials to study wildland fire. While many of the activities can be used in any ecosystem, FireWorks has specialized curricula to learn about the Sierra Nevada and Northern California Oak Woodland. Lesson cycles can be accessed through the FRAMES website, and recommendations for specific lesson are linked in the lesson plans.

The [REDI Jedi Master Program](#) has nine nature journaling exercises to develop a sense of place and enhance situational awareness related to fire. Wildfire Ready Raccoon's Great Aunt teaches students to observe the nature signs and signals that inform us of the seen and unseen forces influencing fire. If eight sketches are completed, students will end with a story zine that forms their own fire story. Access the REDI Jedi program guide through the link above or navigate to Buttefiresafe.net >> Programs >> Youth Education.

Including a guest speaker is another way to increase learning and engagement with the program. Please contact the Butte County Fire Safe Council if you are interested in learning more about connecting with a subject matter expert who could speak with your class.

Supporting Students

As Butte County residents, students in your class have been negatively impacted by wildfire and may be suffering from community or personal trauma. Student experiences could range from losing a home, person, or animal they know, to the lingering effects from community rebuilding, hazardous air quality, and relocations. The lessons steer away from potentially triggering content, but some of your students may still have a difficult time. Starting lessons with a grounding activity, stretching or physical movement, a breathing exercise, a visualization activity, or a simple game, can help lower stress and begin lessons from a calm place.

It is recommended to let your school administrators know when you begin this program and have a school counselor on hand, if possible. Some students may need additional support during or after lessons. It is advised not to talk about specific past wildfires in your area, and to keep discussions more general, as students may have trauma associated with a particular fire. It is recommended to focus on actions for the future, rather than rumination and storytelling of past wildfire experiences. You may want to make a signal students can show if they want to step outside or are feeling anxious. On the next page, you will find resources that can support you in teaching this program and creating a safe space for your students to learn about wildfire topics.

Class Ground Rules

It is important to set the tone for the program and make ground rules with your class. Creating agreed upon rules can help students feel safer and more comfortable talking about wildfire and keep lessons on-track. Have students brainstorm ideas for rules and record them on a large piece of butcher paper.

Some ground rules could include:

- No jokes or sarcasm about fire.
- Appropriate and respectful comments only.
- It is okay to not share or to take a break.

Post the ground rules up front and bring the poster out each time you start the next lesson. Review expectations before starting the more personal lessons on family preparedness and emergency response. Instead of writing on a poster, you could also edit the PowerPoint to type into a new slide and add it to the beginning of each lesson.

Supporting Resources for Educators

[Trauma-Informed Toolkit](#) (2022)

Yasmeen Hossain, Ph.D. Oregon State University

The Trauma-Informed Toolkit supports and complements educators' knowledge and skillset in implementing trauma-informed approaches in educational settings.

[Resources for Dealing with Wildfire Related Trauma](#)

The National Childhood Traumatic Stress Network

[Trauma-Informed Care](#)

The National Childhood Traumatic Stress Network

[Helping Teens Cope After a Natural Disaster](#)

Centers for Disease Control and Prevention

[Helping Children Cope with Emergencies](#)

Centers for Disease Control and Prevention

[Coping with Disaster](#)

Ready.gov

Program Overview

Lesson 1: Fire-Resilient Landscapes

Guiding Question: How can we support healthier and more fire-safe forests?

Objectives

Students will be able to:

- 1) Name and describe the Butte County forest zone they live in.
- 2) Describe characteristics of a healthy and unhealthy forest.
- 3) Explain at least two actions people can take to improve forest health.

Assessment Activity: Using the Butte County Forest Health Guidebook, students make a comparison graphic to show characteristics of a healthy versus unhealthy forest.

Lesson 2: Get Ready (Home Preparedness)

Guiding Question: How can we get our home and property fire-ready?

Objectives

Students will be able to:

- 1) Explain defensible space by describing the priorities for each Home Ignition Zone.
- 2) Make recommendations to improve a structure's likelihood of surviving a wildfire.

Assessment Activity: Students review as a group with the Ember Blocker game and write a reflection paragraph.

Lesson 3: Get Set (Family Preparedness)

Guiding Question: What can we do now to prepare with our families?

Objectives

Students will be able to:

- 1) Describe the characteristics and contents of a complete Go Bag.
- 2) Explain the components of a Family Communication Plan.
- 3) Communicate why making a Go Bag and Family Communication Plan are important.

Assessment Activity: Students make a storyboard or create a short how-to video demonstrating how to make a Go Bag, Family Communication Plan, or pet/animal emergency plan.

Lesson 4: Go! (Emergency Planning & Response)

Guiding Question: What do we do if a wildfire leads to an evacuation?

Objectives:

Students will be able to:

- 1) Describe how they will put their Family Communication Plan into practice in the event of an evacuation warning or order.
- 2) Recite their home address and what zone number they live in.
- 3) List three or more resources they could use to find information or get help during a wildfire emergency.

Assessment Activity: Students write a reflection letter to Wildfire Ready Raccoon.

Lesson 5: Optional Review Day

'Review with Ready' game with Wildfire Ready Raccoon and/or a visit from Butte CAL FIRE.

Glossary

Lesson 1: Fire-Resilient Landscapes

Elevation

The height above a given level, especially sea level. Butte County's elevation ranges from 60 to approximately 7,000 feet.

Fire Hazard Severity Zones

A mapped area that designates zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (moderate, high, and very high). They do not take into account modifications such as fuel reduction efforts.

Prescribed Fire

The controlled application of fire by trained practitioners and experts under specific conditions to reduce fuels and meet objectives to improve ecosystem health.

Resilient

The ability to withstand or recover quickly from difficult conditions.

Topography

The physical features on Earth's surface or the technique of representing elevations of land on maps. Topography includes mountains, ridges, valleys, plateaus, or water features on the land.

Lesson 2: Get Ready (Home Preparedness)

Crown Fire

Fires that burn across the tops of trees. Wildfires are much harder to control if they turn into crown fires.

Defensible Space

The buffer created between a building that can burn and the grass, trees, shrubs, or any wildland area that surrounds it. This space is needed to slow or stop the spread of wildfire and it helps protect your home from catching fire, either from direct flame contact or radiant heat. It also provides fire fighters a safer space to work in when protecting structures.

Embers

Small pieces of burning or glowing fuel.

Ember Storm

Embers that are blown into the air and can be carried over a mile from the fire front with strong winds.

Home Hardening

Efforts to prepare a house for wildfire and an ember storm. Home hardening addresses the most vulnerable components of a house with building materials and techniques that increase resistance to heat, flames, and embers.

Home Ignition Zones

The three priority zones for defensible space around a structure. Depending on your source, the zones may have different names. However, the measurements and guidelines are consistent.

The following is according to the National Fire Protection Association:

Immediate Zone (0 to 5 feet around the house)

Intermediate Zone (5 to 30 feet)

Extended Zone (30 to 100 feet or property line)

Ladder Fuel

Fuel that can carry a fire burning in low-growing vegetation up to the taller vegetation. This can move fire up into the tree canopy and crown where it can quickly spread to surrounding trees.

The North Winds

Local, dry, seasonal winds that occur during the late summer and fall months. These strong winds travel downslope from the mountains toward the valley. The North Winds blow from the north and travel down the Sierra Nevada Mountains, heating and drying the air as it moves.

Lesson 3: Get Set (Family Preparedness)

Family Communication Plan

A written document that is completed during a family meeting. The plan includes family member contact information, an out-of-town contact, a neighborhood meeting place, a regional meeting place, school information for children.

Go Bag

A pre-packed, easily accessible bag that holds essential items for 72 hours. Every family member should have their own Go Bag, as well as an emergency bag/kit for pets.

Red Flag Warning

Issued for weather events which may result in extreme fire behavior that will occur within 24 hours. This is the highest alert, above **Fire Weather Watch**.

Lesson 4: Go! (Emergency Planning & Response)

Evacuation Shelter

A temporary place opened to offer safety and resources for people who have evacuated from a disaster.

Evacuation Warning

Alerts people of a potential threat to life and property. People who need additional time should consider evacuating at this time. Start your Family Communication Plan now to prepare for a changing situation.

Immediate Evacuation Order

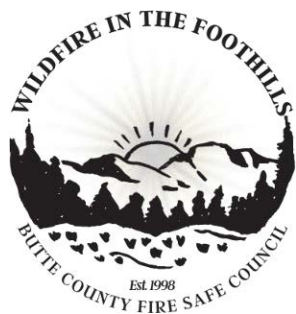
Requires the immediate movement of people out of an affected area due to extreme danger. Choosing to stay could put your life in danger and obstruct the work of firefighters and rescue workers. Orders will be announced over official social media pages, the radio, and on the interactive Butte County evacuation map, though no single source should be relied on exclusively.

Public Assembly Point

A temporary assembly area that provides a safe place for evacuees to assemble. People will stay here until the threat is past or evacuation routes are accessible. This is also a place for evacuees who cannot evacuate on their own and need assistance getting to a shelter. Evacuees who are capable of evacuating on their own do not need to go to Public Assembly Points unless directed by public safety officials.

Shelter-In-Place

Advises people to stay secure at their current location by remaining in place. There may not be a safe evacuation route at this time. The Ready-Set-Go Evacuation Plan advises what to do if trapped at home, in a vehicle, or on foot.



Lesson 1: Fire-Resilient Landscapes

Guiding Question: How can we support healthier and more fire-safe forests?

Goals:

- To build confidence in making observations and sharing ideas about fire in class.
- To highlight regional and ecological differences in Butte County forests.
- To learn what a healthy forest looks like and how people can support forest health.

Objectives:

Students will be able to:

- 1) Name and describe the Butte County forest zone they live in.
- 2) Describe characteristics of a healthy and unhealthy forest.
- 3) Explain at least two actions people can take to improve forest health.

Materials and Preparation:

- Read *Forward to Educators* section about the Wildfire in the Foothills program and recommended resources.
- Prepare to project the PowerPoint slideshow for *Lesson 1: Fire-Resilient Landscapes*.
- Butte County Forest Health Guidebook for each student.
- Optional- Butcher paper to make a Ground Rules poster.

Subjects: Science, Speaking and Listening, Reading, Art

Duration: 60 minutes

Setting: Classroom

Vocabulary:

Elevation, Fire Hazard Severity, Topography, Resilient, Prescribed Fire

Standards:		
NGSS	Crosscutting Concepts	Patterns Scale, Proportion, and Quantity Structure and Function Stability and Change
	Science and Engineering Practices	Developing and Using Models Analyzing and Interpreting Data Constructing Explanations and Designing Solutions Obtaining, Evaluating, and Communicating Information
	Disciplinary Core Ideas	LS2.A: Interdependent Relationships in Ecosystems LS2.C: Ecosystem Dynamics, Functioning, and Resilience

		LS4.C: Adaptation ESS3 (A-C): Earth and Human Activity
Environmental Principals and Concepts		Principle 1: People Depend on Natural Systems Principle 2: People Influence Natural Systems Principle 3: Natural Systems Change in Ways that People Benefit From and Can Influence Principle 5: Decisions Affecting Resources and Natural Systems are Complex and Involve Many Factors

Lesson Overview:

Fire is commonly viewed as dangerous, destructive, and uncontrollable. While fire can be those things, this is not the whole picture. This lesson frames fire as a natural process that is part of every landscape. Fire exclusion is not a sustainable strategy for living with fire, and nationally we are experiencing the consequences of a century of fire suppression. Fire suppression has led to dense, overcrowded forests. Overcrowded forests, combined with drought, extreme weather, and expanding human development in the wildland, contributes to Butte County’s history with and vulnerability to catastrophic wildfire. The lesson builds to examine how fire affects the landscape you live in, and differentiates between low-intensity, prescribed fire, and unplanned, high-intensity wildfire. The lesson’s focus is on fire impacts to forest health and ecosystems, rather than human impact.

Following the presentation slides, students use the Forest Health Guidebook, created by the Butte County Fire Safe Council and Butte County Resource Conservation District, to learn about one of Butte County’s three “forest zones”: blue oak woodland, Sierran mixed hardwood, and mixed conifer woodland. Students use information from the Guidebook to make a diagram of a healthy versus unhealthy forest for one forest zone. The activity could be expanded as an outdoor nature journaling opportunity or completed in the classroom.

Butte County Background Information:

Abbreviated from the 2021-2025 [Butte County Community Wildfire Protection Plan](#):

Butte County is located on the eastern side of the northern Sacramento Valley and encompasses over 1.1 million acres. The county ranges in elevation from 60 feet to 7,000 feet above sea level and is divided in half with two topographical features. The Sacramento Valley section in the western portion of the county is relatively flat and is predominantly grassland and farmland. The foothills and mountainous regions of the northern Sierra Nevada and southern Cascade Mountains comprise the eastern portion of the county. This area is scattered with homes and communities intermixed amongst woodland fuels creating a serious Wildland Urban Interface (WUI) problem. These are areas where wildland fire once burned only vegetation but now burns homes as well.

Butte County has a Mediterranean climate with cool, wet winters and hot, dry summers. Precipitation is normally in the form of rain, ranging from approximately 20 to 80 inches per year, with snow in the higher elevations. The average high temperature for January is 55 degrees and for July is 96 degrees, with many days in which temperatures reach over 100 degrees.

Procedure:

1. Go through presentation slides for *Lesson 1: Fire-Resilient Landscapes*. Notes are included in the speaker notes section of the presentation, as well as here. To save space in the lesson plans, reference links and photo credits are included in the PowerPoint speaker notes only.



The Butte County Fire Safe Council has worked in Butte County since 1998 in wildfire hazard education, mitigation, and recovery. We are non-profit organization based in Paradise, CA that serves communities across Butte County. A key part of our community education is working and learning with students and teachers! Thank you for taking the time to participate in this program and bring this important topic into your classroom time.



In the foothills, it is not a matter of IF a fire will occur, but WHEN a fire will occur.

Pictured: Wildfire Ready Raccoon, the Butte County and Paradise Ridge Fire Safe Council mascot.

Ready's mission is to prepare Butte County residents, especially kids and families, for wildfire. Ready helps the Fire Safe Councils spread the word about actions everyone can take to keep their family and communities safer from wildfire. Sixth graders can play a significant role in their family's preparedness! Have you seen Wildfire Ready Raccoon at a community event? Where?



Prepare students for the program by giving an overview of the key topics, split into four lessons.

This first lesson will cover forest health and fire-resilient landscapes.

Wildfire
Lessons

Ground
rules

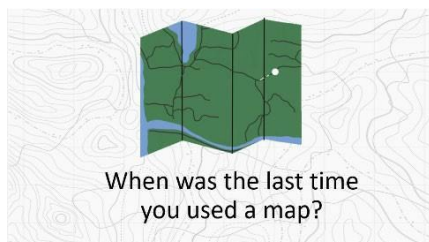


Have students brainstorm a list of class expectations for learning about and discussing wildfire. Preview “Forward to Educators” section for recommendations for tone setting and ground rules. Write rules up on the whiteboard and take a picture, record on a large piece of paper, or create a new slide and type directly into the presentation to capture student ideas. Have everyone give a thumbs up or other agreement signal to commit to the group rules, before continuing with the lessons.

Every lesson will have a Ready Raccoon guiding question that we will explore and discuss as a class.

Guiding Question: How can we support healthier and more fire-safe forests?

We don’t need to answer this question yet. We will gather evidence and learn more about the forest type we live in. People who live in and around forests have a great responsibility. To live more safely with wildfire, particularly in the wildland-urban interface (WUI), where human development meets or intermingles with wildland vegetation, we need to learn how to keep our property and the forest around us healthy and fire-safe. This lesson will explore larger strategies for forest health, as well as small-scale actions people can take around their homes to create a more fire-safe landscape.



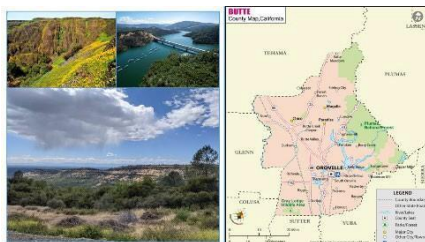
Group share: What did you use the map for? Was it printed or digital?

Go through the next six slides with introductory questions to get students talking, sharing observations, interpreting graphics, and establish a sense of place within Butte County.

What types of information can maps tell us?

What features should be included on a useful map?

Pair share discussion then select volunteers to answer. Some useful features to include on a map: title, legend, scale, north arrow, and labels.

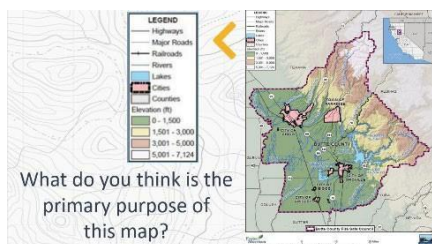


Review features on the Butte County map to see if students got the major features.

We can also see where the major cities/towns are, state roads, and other features like parks, lakes, and forests.

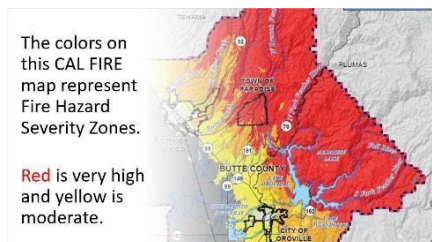
We live in a beautiful and unique area with many land features and natural places to explore.

Pictured: Table Mountain, Lake Oroville, Butte Creek Canyon



What do you think is the primary purpose of this map?

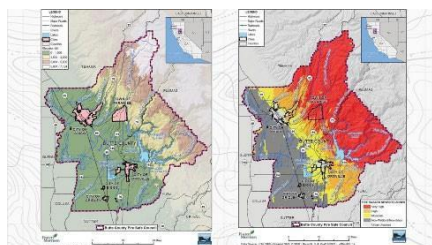
Representing elevation.
 Have you been to an area with a higher elevation than where you live? Can you remember some differences in how it felt or looked compared to where you live?



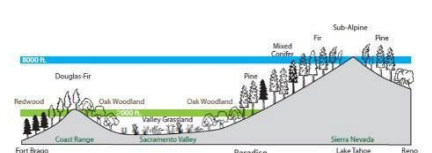
The colors on this CAL FIRE map represent Fire Hazard Severity Zones.

Red is very high and yellow is moderate.

CAL FIRE uses various types of data to map wildfire risk and categorizes areas into Fire Hazard Severity Zones. This represents not just the likelihood of a wildfire, but also how much harm it could cause to people and structures. Dark gray areas are non-wildland/non-urban, and light gray around the City of Chico and City of Oroville represents urban areas.
 These maps are created at a general scale and do not account for local actions that reduce wildfire risk.



What similarities do you notice between these two maps?
 What connection could you make between elevation and fire hazard severity?
 Other than elevation, can you think of other factors that could affect the fire hazard severity of an area?



What new information does this graphic represent?
 This cross-section of California shows what plant communities are present, and at what elevation. Take a moment to review California's basic topography with a quick demonstration. Invite students to make a cup shape with one hand, like they are trying to hold water in their palm. Compare their hand shape to the high and low points on the graphic. Coastal Range (heel of hand), Sacramento Valley (palm), and Sierra Nevada Mountains (four fingers). Where do you live in relation to the model you made with your hand?
 Based on the graphic, which plant communities are found in your area? What are some basic differences in plant structure you notice on the graphic? (Short and fine structured plants in the valley, leafy trees at or below 2,000 feet, and tall, needled trees at higher elevations.)

Topography: The physical features on Earth's surface or the technique of representing surface areas of land on maps.
 Topography includes mountains, ridges, valleys, plateaus, or water features on the land.

Elevation, climate, light, water, soil, and temperature all contribute to where plants can survive and how plant communities are formed on a landscape.

Every landscape has its own history and relationship with fire, which is heavily influenced by humans.

What can we learn from our landscapes?



Video Review

1. What are signs of an unhealthy forest?
2. What are some strategies to improve or maintain forest health?



Ecosystem health, plant structure and arrangement, and the presence of certain species in a landscape gives us clues about that area's history and relationship with fire. Knowing how our landscapes have been shaped by fire in the past can help us to live more sustainably and safely with fire now and in the future.

What do you notice about this landscape?

Photo: Skyway lookout point above Butte Creek Canyon

Discussion of the word "resilient".

Resilient: Able to withstand or recover quickly from difficult conditions.

What does it mean to be fire-resilient? (As people? As forests?)

In the next two videos we will learn about what people can do to improve forest health and help forests be more resilient to wildfire.

Background: Artwork from Ali Meders-Knight, Mechoopda Tribal Citizen and educator, from the Butte County Forest Health Guidebook.

Video Length: 5:04

Visit an active fuels reduction project in Magalia to witness strategies the Butte County Fire Safe Council uses to support forest health.

Class discussion

1. Overcrowded. Lots of brush, small trees, and ladder fuel. Sunlight cannot reach the forest floor.
2. Mechanical thinning, chipping, grazing with goats, and prescribed fire.

Have you seen herds of goats grazing for fire safety around your community?

We will learn about prescribed fire in the next video.



A side-by-side comparison of a dense, overcrowded forest and a thinned, healthy forest.

Photos: Forestland in Magalia before and after BCFSC project work.



Video Length: 5:30

Learn about the ecological benefits and uses of prescribed fire with CSU Chico professor and fire practitioner, Dr. Don Hankins, at a recently burned area on Doe Mill Ridge in Forest Ranch.

Video Review



1. What is the difference between a prescribed fire and a wildfire?
2. What are some benefits prescribed fire can bring to an ecosystem?

Class discussion

1. A prescribed fire is a low-intensity, intentional fire set to meet ecological objectives, reduce fuels, and improve wildfire safety. A wildfire is an unplanned, unwanted fire, with the potential to be high-intensity and ecologically damaging.

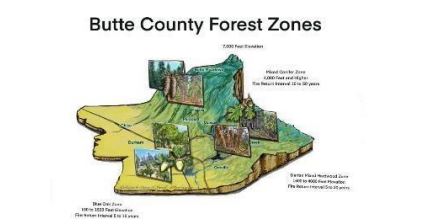
2. Prescribed fire benefits:

- Reduces hazardous fuels under more controlled circumstances with less smoke than wildfires.
- Minimizes the spread of pest insects and disease.
- Removes unwanted plant species and improves habitat.
- Recycles nutrients back to the soil.
- Promotes the growth of trees, wildflowers, and other plants.

Photo: A prescribed fire in progress at the Big Chico Creek Ecological Reserve (BCCER) in Forest Ranch. Courtesy of BCCER.

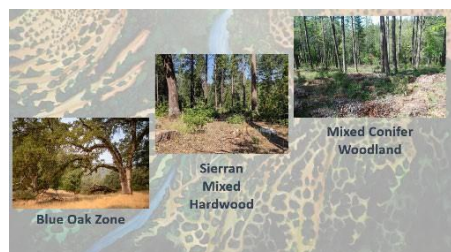
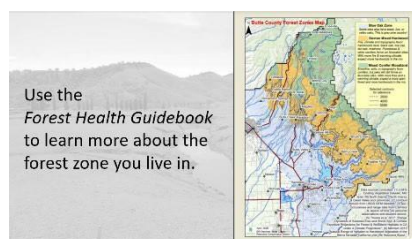


Natural Fire Cycle graphic from Open Space Authority <https://www.openspaceauthority.org/>



Butte County Forest Zones from low to high elevation: Blue Oak, Sierran Mixed Hardwood, Mixed Conifer Zone

Image: Miriam Morrill of Pyrosketchology, from the Butte County Forest Health Guidebook.



Pass out a [Butte County Forest Health Guidebook](#) to each student.

(Inside cover) Read the key aloud that gives a brief description and notes common plant species for each forest zone.

Which forest zone best describes where your school is located? Do you live in a zone that is different from where you go to school?

If you live in an uncolored area, you likely live in an urban or agricultural area.

Assessment Activity:

Contact the Butte County Fire Safe Council for copies of the Butte County Forest Health Guidebook.

Access the Guidebook online: <https://buttefiresafe.net/forest-health-guidebook/>

Use the Guidebook and content from the presentation to make a side-by-side graphic comparing a healthy versus unhealthy forest. In addition to illustrations, bullet point or make notes describing elements for each side. It is recommended students learn about the forest zone they live in, not necessarily the forest zone their school is located in. Depending on time, color can be added, the activity could be taken outdoors to sketch the forest around you, or students can share their work with a partner. This activity can also be given as homework or saved for another day to give more time for quality work.

Encourage students to take the Guidebook home to share with their families. The Guidebook is intended to give Butte County landowners information and recommendations to improve forest health and reduce wildfire risk on their property. Each section contains background information, signs of health, strategies for maintaining or improving health, proper care after a wildfire, Traditional Ecological Knowledge connections, and a local success story. It also demonstrates the differences between good fire and harmful fire, and the impact each could have on a forest.

Students will read through and base their graphics on one section:

- Blue Oak (Pages 2-10)
- Sierran Mixed Hardwood (Pages 11-19)
- Mixed Conifer Woodland (Pages 20-28)

Option 1: The whole class focuses on the forest zone closest to their school or where they live.

Option 2: Divide the class into three and have one-third of the class learn about each forest zone. After students are finished with their diagrams, make groups of three with a student representing each zone. Students share their findings and compare similarities and differences between the three forest zones.

Evaluation:

	Good	Fair	Poor
Diagram	Students make a comparison illustration and include three or more written points about forest health.	Students make a comparison illustration and include one or two written points about forest health.	Comparison sketches do not include written points about forest health.
Explanation	Students can give three or more examples of elements of a healthy versus unhealthy forest.	Students can give one or two examples of elements of a healthy versus unhealthy forest.	Students cannot give an example of element of a healthy versus unhealthy forest.

Lesson Extensions Recommendations:

Fire Nature Journaling: REDI Jedi Master Program

Lesson 1: Landscape Patterns, Patches, and Fire

<https://buttefiresafe.net/education-programs/fire-redi-master-program/>

FireWorks: Northern California Oak Woodlands

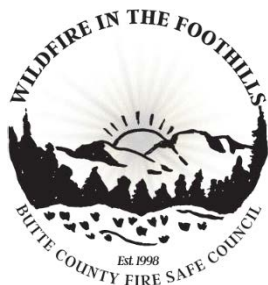
Natural and Cultural Ecology Cycle (M.1.1- M.1.7)

<https://www.frames.gov/fireworks/curriculum/norcal-oak-woodlands>

FireWorks: Sierra Nevada

M11 Who Lives Here? Adopting a Plant, Animal, or Fungus

<https://www.frames.gov/catalog/24552>



Lesson 2: Get Ready (Home Preparedness) Defensible Space & Home Hardening

Guiding Question: How can we get our home and property fire-ready?

Goals:

- To give students an introduction to wildfire preparedness.
- To give students agency in wildfire preparedness by building knowledge they can communicate to their families.

Objectives:

Students will be able to:

- 1) Explain defensible space by describing the priorities for each Home Ignition Zone.
- 2) Make recommendations to improve a structure's likelihood of surviving a wildfire.

Materials and Preparation:

- Print a defensible space worksheet for each student. (Last page of the lesson plan.)
[Full Wildland Fire Junior Ranger Book](#)
- Prepare PowerPoint for *Lesson 2: Get Ready (Home Preparedness)*

Subjects: Writing, Speaking and Listening

Duration: 60 minutes

Setting: Classroom

Vocabulary:

The North Winds, Embers, Ladder Fuel, Defensible Space, Home Hardening, Home Ignition Zones

Standards:		
NGSS	Crosscutting Concepts	Scale, Proportion, and Quantity Structure and Function
	Science and Engineering Practices	Developing and Using Models Engaging in argument from evidence
	Disciplinary Core Ideas	ESS3.B Natural Hazards
Environmental Principles and Concepts		Principle 3: Natural systems change in ways that people can benefit from and can influence.

Lesson Overview:

This lesson is the beginning of the series on wildfire preparedness. These topics may be more difficult for students to discuss, especially students who have experienced a personal loss or community trauma from wildfire. It is recommended to review the class Ground Rules and remind students that discussion will be steered towards actions that can be taken in the future. Reiterate that everyone has a unique experience or feeling about fire, but discussion will be kept more general. Students are encouraged to show a signal if they would like to step outside or take a break and it is okay to choose not to share during discussion.

Students are a key component of the social and cultural shift that is needed to live with fire and drive behavior change. The purpose of this lesson is to give students knowledge about achievable actions they can communicate to their families about defensible space and home hardening. Students may not have the ability to make physical changes at home now, but as future adult community members and potential land or homeowners, they are important concepts to be familiar with. Try to focus the lesson on actions that do not require expensive remodels or major landscaping, which could feel unachievable and overwhelming. Families who live in rentals may be limited on the changes they can make to structures and property. It is recommended to refer to houses as “structures” whenever possible and acknowledge that these structures come in many shapes and sizes, including apartments and mobile homes. In a wildfire recovery area, students may be living in vastly different housing situations. Some may be in a new, rebuilt home with sparse or no vegetation on their property, while others are living in an older, surviving home that is surrounded by thick vegetation.

Students can start discussions at home and help with smaller projects such as removing surface fuels and ladder fuels. They can also be valuable observers, pointing out potential hazards and offering suggestions and encouragement to be more fire-safe. The printable handout is another way to support students in starting wildfire preparedness discussions at home.

Ember Blocker Game Description:

This game is an opportunity to end the lesson on a fun note, review key topics, and shake off the seriousness of the lesson with physical movement. Ideally, split the class into two groups to have two games played at the same time with smaller numbers. The game can also be played as a large group.

Materials:

One or more soft balls such as a dodgeball or rubber ball.

An optional orange safety vest for the Ember Blocker.

Have the group form a big circle. One volunteer comes to stand in the middle of the circle and will represent a structure. That student cannot move their feet once in place; they must be stationary like a building. A second volunteer will be the “Ember Blocker” and can move freely around the structure. The rest of the group must stay in the large circle formation and cannot

move in closer once the game begins. Make sure there is at least 10 feet of distance between the structure in the center and the outside circle. The object of the game is for the students in the large circle to hit the structure with the ball. The ball represents an ember. Students in the circle can try and throw the ember directly at the structure or pass to a student in the circle with an open shot. The Ember Blocker can defend the structure by standing between the thrower and hitting away the ball. To avoid injury, students throwing the ball may not throw above chest-height.

If the structure is hit by an ember, the student who threw the ball must give one way that a structure can be protected from embers either by improving an element of defensible space or home hardening. The thrower then becomes the next Ember Blocker, and the Ember Blocker becomes the structure, creating a rotation of students between the positions. Play until students have sufficiently summarized the lesson's topics or time is up. It is recommended to play for 5-10 minutes.

The activity leader should maintain safety and fair play, while encouraging discussion and appropriate sharing about defensible space and home hardening. Encourage students not to repeat an answer that has already been shared. Ask follow-up questions when appropriate to encourage deeper answers. For extra challenge, multiple embers can be added, and there could be a second Ember Blocker.

At the end of the game, remind students that they can be the Ember Blocker in real life by sharing what they learned with their families and helping by pointing out fire hazards on and around their home.

Procedure:

1. Go through the PowerPoint presentation for *Lesson 2: Get Ready (Home Preparedness)*



Review ground rules. Replace this slide with the picture or new slide of brainstormed expectations or review the paper poster.

"In today's world, there really isn't any one project or agency or landowner that can make a community fire-safe. It takes everyone working towards improving their land and homes for us to truly move towards becoming a fire resilient community."

- Paradise Forest Management Plan (2021)



Factors that can put structures at risk from a wildfire:

- Windy conditions
- Flying embers
- Dense vegetation and fuels

Wind-driven Fire

- "The North Wind" is a local, seasonal wind that occurs during the late summer and fall months, traveling downslope from the mountains toward the valley.
- Dry wind dries out fuel and increases the air temperature from friction.
- Wind-driven fires produce large amounts of embers.

Ask a student volunteer to read the quote aloud. Class gives a "thumb-o-meter" response to show agreement with the quote. (Thumb up- strongly agree, in the middle-somewhat, thumb down-disagree)

Share thoughts on the statement or reaction.

[The Paradise Forest Management Plan](#) is available as a digital StoryMap on the BCFSC website. It contains many topics in the four lessons about forest health, lessons learned, and protecting communities from wildfire. This is a great resource to share with adults.

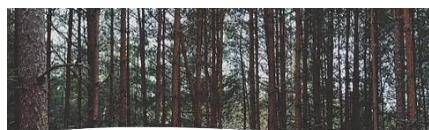
Students can help at home by educating the rest of the family about today's lesson and contribute to fire-safe projects on their home and property.

Video Length: 2:28

Introductory video from the National Interagency Fire Center about home hardening and ember defense.

Today's lesson will look at these factors and what can be done to lessen the risk from wildfire by preparing the space around a structure, and the structure itself.

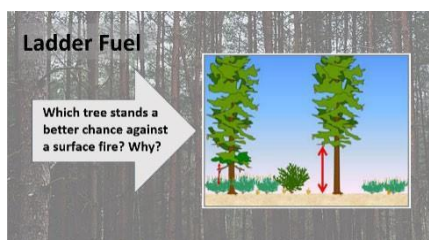
Dry, downslope winds can speed through mountain passes at nearly 100 mph. The North Winds blow from the north and travel down the Sierra Nevada Mountains. Wind is the most critical factor affecting fire behavior.



Fuel-driven Fire

- Supported by dense vegetation.
- Fires can burn as:
 - Surface fires (surface litter and duff)
 - Canopy fires (through the trees)
 - Crown fires (across the tops of trees)
- In urban areas, structures can act as fuel.

Wildfires are much harder to control if they turn into crown fires. Firefighting efforts are focused on keeping fire on the ground where it is easier to defend against and extinguish.



Ladder fuel is fuel that can carry a fire burning in low-growing vegetation up to the taller vegetation. This can move fire up into the canopy and crown where it can quickly spread to surrounding trees. The tree will not survive this fire, whereas it could often survive a surface fire.

The tree on the right does not have ladder fuels around the base. Pruning trees up six to ten feet high and removing brush and ladder fuel are key parts of fire-safe landscaping.



Defensible space addresses the land around your home, while home hardening addresses improving the fire-resistance of the structure itself.



Video Length: 3:30

Join BCFSC Field Coordinator, Ben TestHart, for a defensible space inspection with one of Butte County's most recognizable residents. Wildfire Ready Raccoon has been working hard to get his property ready, but did he miss anything?



What is defensible space?

Defensible space acts as a buffer between a building and the surrounding vegetation. It is meant to slow or stop the spread of wildfire and protects the structures from direct flame contact and radiant heat. It also reduces the flammable area an ember can land and start a spot fire. Defensible space is explained through the Home Ignition Zone model that divides a structure's required 100 feet of defensible space into three zones: 0-5, 5-30, and 30-100 or the property line.

Pass out the worksheet about defensible space from the National Park Service Wildland Fire Junior Ranger Activity Book.



Popcorn read aloud the points for each zone from the worksheet.

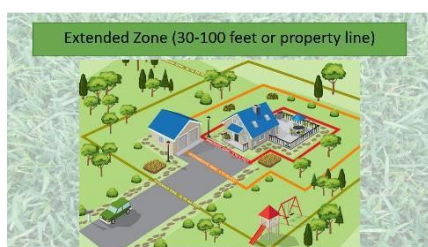
0-5 feet

- ✓ Make sure gutters, patios, and roofs are clear of dead leaves and pine needles.
- ✓ Remove flammable mulch and vegetation within 5 feet of your home.
- ✓ Use rock mulches or hard surfaces surrounding your home.



5-30 feet

- ✓ Clear flammable objects (furniture, lawn mowers, wood piles, propane tanks).
- ✓ Remove all dead plants/leaves and weeds.
- ✓ If you have a lawn, keep it watered and mowed to 4 inches or less.
- ✓ Remove tree or shrub branches that overhang within 10 feet of your house, roof, or chimney.



30-100 feet (Or property line. 200 feet if structure is on a steep slope)

- ✓ Remove dead vegetation.
 - ✓ Trim tree limbs 10 feet above the ground.
 - ✓ Create separation between trees and shrubs.
- Trees between 30-60 feet from the home should have at least 12 feet from canopy tops and trees 60-100 feet from the home should have at least 6 feet between canopy tops.



Uh oh, there's a lot of work that needs to be done to make this property fire-safe.

Students write in complete sentences four recommendations to improve the fire safety of the house pictured. Share findings after 5 minutes.



Fire-hardened means your home is prepared for wildfire and an ember storm. It does not mean *fireproof*. Home hardening addresses the most vulnerable components of your home with building materials and techniques that increase resistance to heat, flames, and embers that accompany most wildfires.

What parts of a structure should be hardened?

Roof	Deck/Porch	House Siding
Skylights	Patio Furniture	Garage Door
Chimney	Flowerbeds	Garbage Cans
Windows	Woodpiles	Fencing
Vents	Rain Gutters	

You're the defensible space inspector!

Use your worksheet and learning from the lesson to evaluate the wildfire readiness of the houses on the next 5 slides.



What did they do well?

What needs more work?

Butte CAL FIRE, as well as the Butte County Fire Safe Council, can lead voluntary defensible space inspections to make recommendations and help educate people about how to protect their property.



Play "Ember Blocker" outside to review the lesson content. You will need a soft ball like a dodgeball or foam ball. See the lesson plan overview for a game description.

Assessment:

Students write a short paragraph about their thoughts on the importance of creating defensible space and home hardening to prepare for a wildfire. Students can respond to the following questions in their paragraph:

- What are three *home hardening* actions you think are particularly important?
- What are three *defensible space* actions you think are particularly important?
- Is there anything you learned today that you think your family should know about?
- What are some wildfire preparedness actions you think people your age could help with at home?

Evaluation:

	Good	Fair	Poor
Paragraph Response	Students show a strong understanding of wildfire home preparedness topics in their paragraph reflections.	Students show an understanding of wildfire home preparedness topics in their paragraph reflections.	Students do not show an understanding of wildfire home preparedness topics in their paragraph reflections.

Lesson Extension Recommendation:

FireWorks: Northern California Oak Woodlands

M.3.4.A Assessing Your School

<https://www.frames.gov/fireworks/curriculum/norcal-oak-woodlands>

Protect Your Home

Wildland Urban Interface

The Wildland Urban Interface (WUI) is where homes or other buildings are built near or in the forest, grassland, or other natural area. People living in this area must take extra precaution to protect their home from wildfire.



Immediate Zone (0-5 feet from the home):

- ✓ **Make sure gutters, patios, and roofs are clear of dead leaves and pine needles.**
- ✓ **Remove flammable mulch and vegetation within 5 feet of your home.**
- ✓ **Use rock mulches or hard surfaces surrounding your home.**



Intermediate zone (5-30 feet from the home):

- ✓ **Clear flammable objects (furniture, lawn mowers, wood piles, propane tanks).**
- ✓ **Remove all dead plants/leaves and weeds in this area.**
- ✓ **If you have a lawn, keep it watered and mowed.**
- ✓ **Remove tree or shrub branches that overhang within 10 feet of your house, roof, or chimney.**



Extended zone (30-100 feet from your home):

- ✓ **Remove dead vegetation.**
- ✓ **Trim tree limbs 10 feet above the ground.**
- ✓ **Create separation between trees and shrubs. Trees between 30-60 feet from the home should have at least 12 feet from canopy tops and trees 60-100 feet from the home should have at least 6 feet between canopy tops.**

Go to [Firewise.org](https://www.firewise.org) or [LivingWithFire.info](https://www.livingwithfire.info) to learn more about preparing your home for wildfire.

Fire Safety Starts with YOU!



Look at the picture below and list at least 4 things that this homeowner should fix to make their home more safe from wildfire.



1.

2.

3.

4.



Lesson 3: Get Set (Family Preparedness)

Guiding Question: What can we do now to prepare with our families?

Goals:

- To support students with information, resources, and encouragement to start conversations at home about wildfire preparedness.
- To empower students to take the steps to make a Family Communication Plan and Go Bag at home.

Subjects: Listening and Speaking, Writing, Health

Duration: 60 minutes

Setting: Classroom

Vocabulary: Go Bag, Family Communication Plan, Red Flag Warning

Objectives:

Students will be able to:

- 1) Describe the characteristics and contents of a complete Go Bag.
- 2) Explain the components of a Family Communication Plan.
- 3) Communicate why making a Go Bag and Family Communication Plan are important.

Materials and Preparation:

- Print the student handout for this lesson. (Last page of the lesson plan)
- Prepare PowerPoint for *Lesson 3: Get Set (Family Preparedness)*

Standards:		
NGSS	Crosscutting Concepts	
	Science and Engineering Practices	
	Disciplinary Core Ideas	ESS3.B Natural Hazards
Environmental Principles and Concepts		Principle 3: Natural Systems Change in Ways that People Benefit From and Can Influence

Lesson Overview:

After the lesson about defensible space and home hardening, Lesson 3 continues to focus on wildfire preparedness at home. The three main topics for this lesson are the Family Communication Plan, Go Bags, and pet/animal preparedness. Students are encouraged to think about how they can take an active role in wildfire preparedness with their family. We can't know exactly when the next fire will occur, but we can be ready!

People across the world have created Family Communication Plans and prepared Go Bags to respond to other types of disasters, such as hurricanes, earthquakes, and tornados. This information is widely useful, and not unique to wildfire preparedness. When people develop a Family Communication Plan, there is less chance of panicking during an emergency. If the family is separated, family members have a planned meeting location and way to communicate. Since every wildfire is different, those who have planned have more options than those who are simply reacting to the situation.

At the end of the lesson, students should be able to explain the significance of each topic and understand how to fill out the Family Communication Plan. Students should be given a few days to fill out their Family Communication Plans, allowing for time to reflect and coordinate with family availability. Ideally, every member of the family is at the meeting, and they have involved the out-of-town emergency contact in the process. You may want to require students to get a family sign-off and bringing a copy back to class to review in the next lesson. Every family member should keep a copy of their Family Communication Plan in their Go Bag and it is a good idea to keep a copy in the car, in case you are not able to return home for Go Bags.

The suggested assessment activity is to have students work in small groups to make short how-to videos about one of the three main lesson topics. These videos can then be shared back with students' families or shared with a wider audience to grow community awareness.

Procedure:

Go through the PowerPoint presentation for *Lesson 3: Get Set (Family Preparedness)*



Guiding Question: What can we do now to prepare with our families?



The topics in today's lesson are widely useful and are a good idea for every family to have planned for. Having a Go Bag, Family Communication Plan, and animal preparedness plan can be applicable in many emergency situations beyond a wildfire. These topics are the easiest way for sixth graders to make an impact in their family's preparedness! Encourage students to take home all the resources from the lesson and share with their family!



Draw an outline of a backpack on the whiteboard. Have students brainstorm elements of a good Go Bag (not what goes inside it) and mind map around it. A Go Bag should be sturdy, spacious, easily carried, and may have additional helpful features like pockets, waterproofing, or expandable sections. Students might have more ideas. Every family member should have their own personal Go Bag. This includes pets, which will be discussed later in the lesson. Having a Go Bag ready will give you confidence that you have your most important items with you, and you don't have to worry about leaving behind valuables during a rushed and stressful situation.



Optional activity: Go Bag Sort
 Spread out a wide variety of items across a table in the front of the room and have students sort the items into a Take and Don't Take pile. Depending on the class size and time, students could physically move items or vote with thumbs up or down on items the presenter holds up. Have students share explanations to justify their decisions. Preview the worksheet to make sure there are examples of important items represented. You can have fun adding in items that may not be the best fit, or items that could be a good fit, but are in the wrong form. For example, would you really pack an entire roll of paper towels, or could you bring a small container of wet wipes? Would you bring a big chip bag filled with air space or packaged trail mix?
 This activity could take 10-15 minutes, depending on time availability, discussion, and level of interest.

Basic Needs



- Water bottle
- Nutritious packaged snacks (trail mix or energy bars keep well)
- Change of clothes
- Sturdy shoes and a jacket
- Glasses/contacts if you use them
- Prescription medication you regularly take
- N-95 style face mask
- Toiletry bag (toothbrush, toothpaste, hand sanitizer, small liquid soap, wet wipes)

Tools



- Flashlight/headlamp with extra batteries
- Whistle
- Money
- Sunglasses
- Waterproof zip bag
- Small First Aid Kit (Band-aids, Q-tips, elastic bandage, gloves, small scissors, bandana)
- Plastic poncho

Communication and Information



- Cell phone and charger
- Battery or crank powered radio
- Copy of your Family Communication Plan
- Printed evacuation route map
- Small notebook and pen/pencil.

In a wildfire emergency, there may not be cell service and phones can run out of battery. It is important to have numbers physically written down. The radio can be used to listen to local emergency updates. Important phone numbers can be the numbers listed your communication plan, plus a contact person at your guardian's workplace, relatives who live out of the area, close friends, and neighbors.

Comfort and Keepsakes



- Headphones
- Journaling, coloring, or art materials
- Book
- Blanket
- Valueable items
- Photographs and mementos
- Favorite toy, stuffed animal, or other comforting item

Students may not be able to fit everything on the list, but they should think about their most important items that would bring comfort or enjoyment during a difficult time.



Pass out the student handout.

Have students write in and/or draw additional desired items for their Go Bags that are not on the handout.

Keep in mind size, weight, and personal importance when selecting additional items.



The Go Bag should be saved for emergencies and not taken as an overnight bag for recreational trips. While it is recommended to have a Go Bag year-round, it should be readily accessible during red flag warnings and fire weather watches.



Red Flag Warnings signal an increased risk of wildfire danger as temperatures increase, winds whip up and humidity drops.

From CAL FIRE: "A Red Flag Warning is issued for weather events which may result in extreme fire behavior that will occur within 24 hours. A Fire Weather Watch is issued when weather conditions could exist in the next 12-72 hours. A Red Flag Warning is the highest alert. A Fire Weather Watch is one level below a warning, but fire danger is still high."

Check CAL FIRE's [Red Flag Warning & Fire Weather Watches](#) webpage, look for fire stations with the flag out, check official social media sources, and listen for announcements on the news and radio for warnings.



A **Family Communication Plan** is a written document that prepares each family member to know what to do and how to stay in contact during an emergency.

Having a Family Communication Plan will set up students and their families to stay safer and calmer in the event of an emergency or evacuation. This document should be kept in a place that is easy to access, such as on the refrigerator or in an envelope with other emergency related documents such as printed local maps, copies of important documents, and area-specific emergency information. Keep a copy in your Go Bag. The plan should include what to do if you are all home together or separated. It is also a good idea to take a picture and upload a digital copy.

Photo: [Be Ready Butte](#)

Family Communication Plan

Start by filling in the school's information together. Write your school's address, phone number, and Facebook name (if applicable) on the whiteboard to be copied by students. Leave the rest of the spaces blank for students to fill in during the family meeting. Discuss the school's on and off-campus evacuation location. Discuss the importance of having an out-of-town contact and what role that person could play in an emergency.

Identify two safe exit points from inside your home.



This is important in the event of a house fire or if a typical exit point is unsafe to use. Students can volunteer examples of exit point options from their homes.

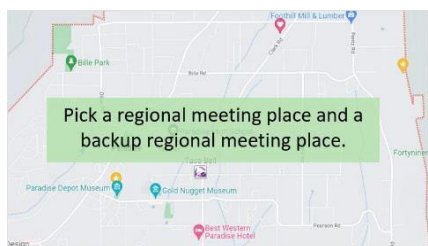


Make sure you practice with your family periodically, so you remember what to do in a moment of stress. The first time you try something shouldn't be during an emergency. Make sure you check with an adult before trying any new escape routes, especially out windows.



Pick a neighborhood meeting place.

Perhaps this place is a street corner, trusted neighbor's house, or somewhere with a clear identifying feature. It should be no more than a two-minute walk from home. Share ideas about areas students would suggest and why it could be a good place to meet. If students live in a wildfire recovery or remote area, there may not be a lot around them, and the safest meeting place is just outside their home.



It may not be possible for the whole family to meet up at home. The fire's progress, road closures, or evacuation orders could affect where family members are able to get to. Set a regional meet up place and a backup meeting place. This place should be somewhere easy to access with people around who could help you, such as a school, public library, store, police/fire station, or official public assembly point. If you are not able to get home or to either meeting location, stay with friends, teachers, or a trusted adult and evacuate with them. Begin your Family Communication Plan by checking in with your family's out-of-town contact person to tell them who you are with and where you are going. In an emergency, texts can go through easier than phone calls and it is easier to make calls going out of the affected area than to someone else inside the emergency zone.



Call out a handful of categories of pets/animals and have students raise their hand if their family has them. All types of pets should be part of the family emergency plan and depending on the type of pet, they will need very different care and planning. A horse vs. a fish vs. a parrot all need special items and care.



Video length: 1:48
Pet preparedness [Video](#) from TakeAction teen program.



Pass out the [North Valley Animal Disaster Group](#) (NVADG) trifold. Label and add the Hotline **(530) 895-0000** to the Family Communication Plan. Even if you don't have a pet now, you might later. You may also be in a situation where your family is helping another person who has an animal.

People who create a Family Emergency Plan and have **practiced it** have more options during an emergency. They can react more quickly and calmly during a stressful situation.

Homework: Hold a family meeting and fill out the rest of the Family Communication Plan. If you already have a written plan, review it together and make a copy for your Go Bag or to turn in for credit.

Control what is within your ability to control. Make sure your whole family knows about the importance of having Go Bags, creating a Family Communication Plan, and planning for your pets or animals. If students already have a Family Communication Plan, they can review it, make sure everything is up-to-date, and make a copy of it, rather than making a new plan.

Assessment Activity (multi-day):

Students work in a small group to make a three to five-minute how-to video about one of the key topics from the lesson. Topic options include how to make a Go Bag, the steps and importance of a Family Communication Plan, or how to make a pet/livestock preparedness plan and Go Bag. It is recommended to have students film the videos at school. This activity could be spread over several days, depending on how much time you can apply to this and what students can accomplish outside of class time.

If students are covering pet/animal preparedness, they may want to take video footage of their animals, since they are not allowed to be brought to school. While the format and rules are up to you, students could show animals in other creative ways, such as using a stuffed animal or editing in already filmed videos of animals. If you opt not to do the how-to video, students could make a comic strip or a video storyboard describing the steps instead.

1. Decide if students will make a how-to video or a comic strip/storyboard.
2. Split the class into small groups, explain the project, and set guidelines and the timeline.
3. If you select making how-to videos, explain how you want videos to be captured and edited. Clarify what equipment your class has available and what personal equipment may be used.
4. Give groups time to develop their topic, brainstorm how they want to present it, and make an outline. Oversee video filming, editing, and project process.
5. When finished, share the final products! This can be as a movie premiere in class, shared with other grades at your school, sent to students' families digitally, or shared back with the Butte County Fire Safe Council. The more that students see their work and ideas being recognized by other people the better, and the more wildfire preparedness reaches outside the classroom walls to the community.

Evaluation:

Assessment Activity	Good	Fair	Poor
How-to activity - Go Bag - Family Emergency Plan - Pet/animal preparedness	Students' video or comic strip demonstrates a strong understanding of the topic and communicates all the steps involved.	Students' video or comic strip demonstrates a fair understanding of the topic and communicates most of the steps involved.	Students' video or comic does not demonstrate an understanding of the topic and misses many of the important components.
Group Project Cooperation	Students collaborate positively in their small groups and contribute to the success of the project.	Students collaborate semi-positively in their small groups and contribute.	Students did not collaborate positively or not everyone contributed.

Lesson Extension Recommendations:

Lead a peer review and facilitate students in giving positive feedback and observations about each other's videos.

Students imagine their videos will be posted on the Butte County Fire Safe Council's YouTube page to share with the community. Students write a title, one-paragraph video description, and create a thumbnail graphic that would appear with their video.

Family Communication Plan



Step 1: Hold a family meeting and make your plan.

Step 2: Make a copy for each family member's Go Bag.

Step 3: Scan or take a picture for digital back-up.

Home Information

Name: _____
Phone: _____
Address: _____
Zone #: _____

Out-of-Town Contact

Name: _____
Address: _____
Cell: _____
Email: _____

Guardian # 1 Information

Name: _____
Workplace: _____
Work Phone: _____
Cell: _____

Guardian # 2 Information

Name: _____
Workplace: _____
Work Phone: _____
Cell: _____

Neighborhood Meeting Place

Regional Meeting Place

Primary: _____

Secondary: _____

***Review as a family every year and keep it up to date.**

Go Kit!

Continued



Suggested items and actions to take to complete your Go Kit (you can probably think of a few more!)

IMPORTANT CONTACTS

- » Fill a small notebook with information about your important contacts. Ask your parents or guardians to help get this information for you:
 - * Work and cell phone numbers for your parent(s) or guardian(s), as well as their work address and an alternate contact at their work in case they are away from their phone.
- » Phone numbers of relative(s) who live out of state, in case local cell towers don't work.
- » Addresses and phone numbers of your closest friends.
- » Names/addresses of three safe locations to meet in case you are away from home and school, such as the local library, a friend or neighbor's home, local police station, hospital, or community center.
- » Information about any medical condition you have or medication that you are on and the name and phone number of your doctor.
- » If you wear glasses, the prescription information for them.
- » Phone numbers for neighbors. They may be

able to check on your home or pets.



|



Lesson 4: Go! (Emergency Planning & Response)

Guiding Question: What do we do if a wildfire leads to an evacuation?

Goals:

- To give an overview of what could happen during an evacuation and how to find local information during a wildfire emergency.
- To connect students to resources to share with their families.

Objectives:

Students will be able to:

- 1) Describe how they will put their Family Communication Plan into practice in the event of an evacuation warning or order.
- 2) Recite their home address and what zone number they live in.
- 3) List three or more resources they could use to find information or get help during a wildfire emergency.

Materials and Preparation:

- [“Ready, Set, Go” Evacuation Plan and Community Map](#) for each student or access it online to project overhead.
- Print an [Emergency Communications Trifold](#) for each student.
- Prepare PowerPoint for *Lesson 4: Go! (Emergency Planning & Response)*

Subjects: Health, Listening and Speaking, Writing

Duration: 60 minutes

Setting: Classroom

Vocabulary: Evacuation Warning, Evacuation Order, Public Assembly Point, Shelter-In-Place

Standards:		
NGSS	Crosscutting Concepts	
	Science and Engineering Practices	
	Disciplinary Core Ideas	ESS3.B Natural Hazards
Environmental Principles and Concepts		Principle 3: Natural Systems Change in Ways that People Benefit From and Can Influence

Lesson Overview:

This lesson builds on personal and family preparedness topics and contains potentially life-saving information about what to do in the event of a wildfire emergency and evacuation. Ideally, continue with this lesson after students have had time to complete their Family Communication Plans. This lesson may be triggering for students who have been through an evacuation or had family members or friends impacted. It is recommended that you have a school counselor on hand to support students who wish to leave the classroom or want to talk with a mental health professional. It is important to keep control of the lesson by focusing discussions on the actions that students can take in the future.

The two printable resources for this lesson are from the Butte County Office of Emergency Management and the Butte County Fire Safe Council. The *“Ready, Set, Go” Evacuation Plan* contains an inserted community map, however, the map does not include the community zones, as of 2022. The map is still useful to identify travel routes, emergency assembly points, and cross-reference your location with the digitally accessed zone map. Request copies or print these resources ahead of time so students can review them in class and take copies home.

Families may want to designate an emergency envelope on the refrigerator or other prominent place at home that every family member can access to keep important documents such as these and a copy of the Family Communication Plan. These take-home resources support the program's goal of using youth to reach a wider community audience with wildfire preparedness and safety information.

Procedure:

1. Go through the PowerPoint presentation for *Lesson 4: Go! (Emergency Planning & Response)*



Guiding Question: What do we do if a wildfire leads to an evacuation?



Video length: 3:40

[The Official Wildfire Ready Raccoon Rap](#)

Listen for three things that Wildfire Ready Raccoon suggests to help people get ready for wildfire.

What does he say related to evacuation?

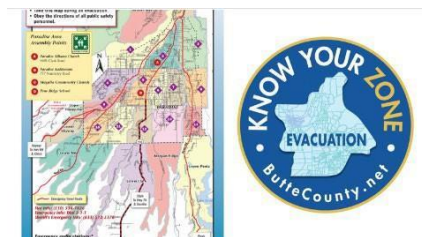


Review the school's wildfire emergency plan with participation from the classroom teacher.

What should happen for the following:

- Shelter-in-place
- Evacuate to another part of campus
- Evacuate off-campus

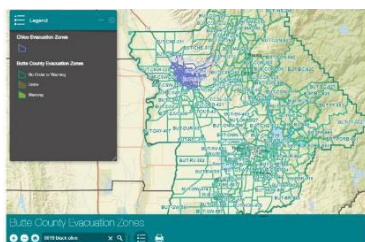
To students: No matter what action your class takes, stay calm, stay with the group, and pay attention to your teacher for directions.



Do you KNOW YOUR ZONE?

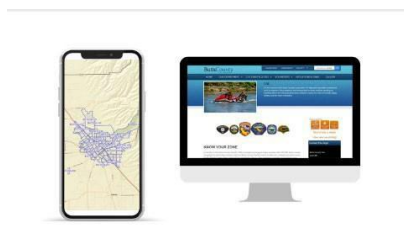
The zone program started with Town of Paradise, which is divided into 14 zones. As of 2021, there are evacuation zone numbers for all of Butte County.

Zone numbers will be used for public alerts during a wildfire or other emergency that may require an evacuation. It is important to remember the **numbers** of the zone, as every zone has a different number and no two are the same.



Butte County's zone map is available online through Buttecounty.net or [HERE](#). The map will auto-update to show an active **Evacuation Warning** or **Order** affecting any zone in Butte County. If the zone is not colored in yellow or red, there are no current alerts.

To find your zone number and updates, enter an address in the lower left search bar. You can also drag the map and zoom in to search, if your address is not found.



The map can be accessed by computer or phone.

It is a good idea to bookmark the map on your computer for easy access.

Search "[Butte County Sheriff](#)" scroll down and click on the *Know Your Zone* logo in blue.

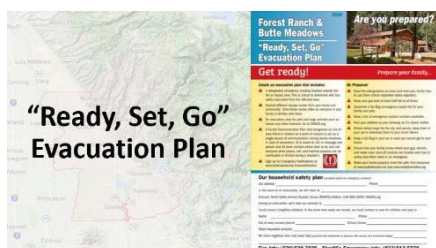


What zone is your school in?

What zone do you live in?

Get out class-provided individual devices, such as Chromebooks, to practice using the interactive map to look up zone numbers. If there is time, you can also give students challenges to find the zone of other well-known locations or businesses in your area.

The map is not the easiest to use the first time, so it's a good idea to practice and familiarize students with the search feature and how to find information. After sufficient time for every student to be successful, check in about zone numbers and have students add their home zone number to their Family Communication Plans, if they have them in class. Write the zone number in the information section of the *"Ready Set Go" Evacuation Guide*. The most important part is the zone number, not the lettering that describes the location within the county (ex: BUT-TOP- ____)



Compare the digital map with the printed map of your area inside the *"Ready, Set, Go" Evacuation Plan*. The digital map has the most up-to-date information regarding zone numbers and boundaries, but the printed map can be used as a supporting resource. Check your community's emergency travel route and emergency assembly points.

Group Brainstorm:

Where would you look for updates during an emergency?



After a quick discussion, pass out the Emergency Communications Trifolds with information about the zone program, signing up for alerts, and trusted social media sources.

Prep your phone

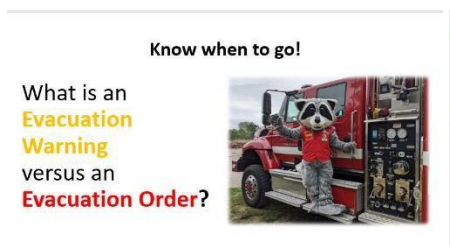
Sign up for emergency alerts, save important numbers, save map locations



A cell phone is one more tool in the toolbox that students should use if they have one. You can sign up for CodeRED mobile alerts, save emergency contacts and map locations, take a picture of your Family Communication Plan, and upload important photos and documents digitally. If students don't have a cell phone, they can encourage their family to do this and may remember this information when they do get a phone. Remember, text, don't talk. In an emergency impacted area, text messages have a better chance of going through than calls. Group texts can share the same information quickly to multiple family members.



Official Twitter accounts are a reliable and quick way to get emergency updates. CAL FIRE and Butte County Sheriff will share real time updates as they can to Twitter. It is also a social media source that does not require an account to log in. Accounts can be viewed on the [Be Ready Butte website](#)



Evacuation Warning
Potential threat to life and/or property. Those who require additional time to evacuate, and those with pets and livestock should leave now.

Evacuation Order
Immediate threat to life. This is a lawful order to leave now. The area is lawfully closed to public access.

Assessment Activity:

Write a letter to Wildfire Ready Raccoon.

Explain expectations for letter format, content, and length. Writing a letter guides students in reflecting on the most important or memorable Wildfire in the Foothills topics. This activity has the option to share student conclusions and stand-out topics back with the Butte County Fire Safe Council to help improve youth outreach. Ready Raccoon loves hearing from students! Illustrations, poetry, and other creative mediums are encouraged as an alternative. You can mail letters in a class envelope to:

Butte County Fire Safe Council
PO Box 699
Paradise, CA. 95967

Optional sentence starters:

- Something that surprised me about wildfire is _____.
- I used to think _____, but now I think _____ about wildfire.
- Something that my family and I have already done to prepare for a wildfire is _____.
- Something I plan to do in the future to prepare for a wildfire is _____.
- Some things I will put, or already have, in my Go Bag are _____.
- Something important I learned in class that I shared with my family is _____.
- When I talked with my family about the Family Communication Plan they said _____.
- Something I think more people in my community should know about wildfire is _____.
- I can help my family protect our home from embers by _____.
- To prepare my pets for a wildfire I can _____.
- If my friends do not know about wildfire preparedness, I would tell them _____.

Evaluation:

Letter to Ready Raccoon	Good	Fair	Poor
Length and Format	Students write a small paragraph to one page in length in a letter format.	Students write a small paragraph in a letter format.	Students write a few sentences of reflection, but not in a letter format.
Content	The letter demonstrates a strong understanding of three or more program topics with strong personal relevance.	The letter demonstrates an understanding of one or two program topics and gives some personal relevance.	The letter demonstrates a weak understanding of program topics and does not make the connection to personal relevance.
Spelling Punctuation Grammar Readability	The letter is mostly free from errors, easy to understand, and well organized.	The letter contains a few errors and is overall understandable and organized.	The letter contains many errors and is difficult to understand or unorganized.

Lesson Extension Recommendations:[REDI Jedi Master Program](#)

Nature Journaling Support For Evacuation Planning

Lesson 9: [Illuminating Fire Practices](#)

Review with Ready!

Play a Jeopardy-style review game covering content from Lessons 1-4.

Pre-schedule a visit with Wildfire Ready Raccoon and/or Butte CAL FIRE. Call the Butte County Fire Safe Council office (530)877-0984 to schedule visits.

Do You Need Assistance During an Emergency?

The Special Needs Awareness Program is a voluntary program for individuals with Access and Functional Needs, such as physical/developmental or intellectual disabilities, chronic conditions or injuries, limited English proficiency, older adults, children and low income households, homeless and/or transportation disadvantaged and pregnant women. The SNAP program will provide additional evacuation information, which may include evacuation assistance, as well as notification for extreme heat/cold events and Public Safety Power Shutoffs (PSPS) events. For more information, visit www.buttecounty.net/dess

Do You Live in a Public Safety Power Shutoff area with low or no cellular coverage?

Butte County is partnering with Bare on the Ridge, PG&E and Alert FM to provide Alert FM devices to the community. Households can check their eligibility and register at www.buttecounty.net/dess or by calling **530.552.6887**. To learn more about Alert FM, visit www.alertfm.com

Helpful Information and Links

For Evacuation Plans and Emergency Preparedness Information, visit www.buttecounty.net/oem

Toll Free Butte County Emergency Information Line: **833.512.5378**

Television and Radio Stations
KHSL Channel 12 KNVN Channel 24
KRCR Channel 7 KPAY 1290AM
Yankee Hill Community Radio 1630 AM
Magalia Community Radio 1460AM
Paradise Community Radio 1500AM

General Mobile Radio Systems (GMRS)
Information is available at www.buttecountycert.com

Facebook

Facebook.com/ButteCounty
Facebook.com/bcsonews
Facebook.com/CALFIREButteCo
Facebook.com/buttecountypublichealth

Twitter

@CountyofButte @ButteSheriff
@CALFIRE_ButteCo @BC_PubHealth



Be Informed

Know your zone-memorize your zone number. Know how you will receive information.

Be Prepared

Have a plan. Think ahead. Organize an emergency kit or go-bag. Register for emergency alerts.

Be Ready

When you are informed and prepared, you are in a better position to respond.

Do You Know Your Zone?

Butte County has established individual evacuation zones throughout the County. These zones will be used during fires or other emergencies requiring evacuations in our county. Each zone has a different number. It is important to memorize the last three numbers of the zone you live in. It's also a good idea to memorize other important zones, such as the zones that family members live in, or the zone your children's school is in.

How Do I Find My Zone Number?

View the Evacuation Zone Map at www.buttecounty.net

Don't have access to a computer? No problem, Call 2-1-1, or text 898211 for assistance.

Are You Familiar with Evacuation Terms?

Evacuation Warning, Evacuation Order and Shelter in Place. It's important to know what these terms mean.

Evacuation Warning

Alerts people in an affected area(s) of **potential threat to life and property**.

People who need additional time should consider evacuating at this time. An Evacuation Warning considers the probability that an area will be affected and prepares people for the potential of an Evacuation Order.

Evacuation Order

Requires the immediate movement of people out of an affected area due to **imminent threat to life**. Choosing to stay could result in the loss of life. Staying may also impede the work of emergency personnel. Due to the changing nature of the emergency, the Evacuation order may be the only warning people in the affected area(s) receive.

Shelter in Place

Alerts people in an affected area to seek immediate shelter inside of a building. This action may be taken during a release of hazardous materials to the outside air, severe weather, hostage situation, or other emergency.

Have You Registered for Code Red Emergency Notifications?

Code Red is a platform Butte County uses to issue Emergency Notifications. Residents must sign up to receive these notifications, residents are not automatically enrolled. To sign up, visit www.buttecounty.net/massnotification. You can sign up to receive Notifications via Text, Phone or Email.

For Code Red Enrollment Assistance, Call:
1-866-939-0911



Wildfire in the Foothills

Review with Ready!

100- True/False

200/300- Multiple Choice

400/500- Short Answer

Lesson 1: Fire-resilient Landscapes

100

True or False, tropical savannah is one of the forest zones found in Butte County.

False

200

Which of the following terms describes the mapped representation of the likelihood of a wildfire and the potential harm it could cause to people and structures?

Elevation Risk

Fire Hazard Severity Zones

Wildland Hazard Charts

Evacuation Planning

300

Which of the following landscapes has a dense structure with many cone-bearing, evergreen trees?

Grassland

Chaparral

Blue Oak Woodland

Mixed Conifer Woodland

400

What are two actions people can do to improve the health of the forest zone you live in?

Answers vary. Information can be found in the Forest Health Guidebook and videos in the presentation about fuels reduction and prescribed fire.

500

What are three positive benefits that low-intensity fire can bring to a landscape?

Answers may include:

Replenish nutrients, stimulate plant growth and food productivity, reduce hazardous fuels, reduce pests and disease, remove competition for light and water, and support seed germination.

Lesson 2: Get Ready (Home Preparedness)

100

True or False, if you have 100 feet of defensible space, embers cannot reach your house during a wildfire.

False

200

Most wildfire home ignitions are caused by:

Fire tornados

Embers

Electricity malfunction

Ponderosa pine trees

300

Which of the following parts of a structure need to be considered for “home hardening” to protect from wildfire?

Decks

Windows

Gutters

Vents

All of the above

400

What characteristics or types of plants are fire hazards and should be removed from around a home?

Answers may include:

Plants with oils and waxes, such as juniper. Non-native, flammable plants such as weeds, seasonal grasses, and broom plants. Plants that grow on, up against, or are overhanging a structure. Trees with low limbs creating ladder fuels. Trees growing too close together in the 100 foot zone (Closer than 10 feet). Dead or dying vegetation and leaf/needle debris.

500

What is one recommendation for each of the three Home Ignition Zones? (0-5, 5-30, 30-100)

From the defensible space Jr. Ranger worksheet:

0-5 feet

Make sure gutters, patios, and roofs are clear of dead leaves and pine needles.

Remove flammable mulch and vegetation within 5 feet of your home.

Use rock mulches or hard surfaces surrounding your home.

5-30 feet

Clear flammable objects (furniture, lawn mowers, wood piles, propane tanks).

Remove all dead plants/leaves and weeds.

If you have a lawn, keep it watered and mowed to 4 inches or less.

Remove tree or shrub branches that overhang within 10 feet of your house, roof, or chimney.

30-100 feet (Or property line. 200 feet if structure is on a steep slope)

Remove dead vegetation.

Trim tree limbs 10 feet above the ground.

Create separation between trees and shrubs.

Trees between 30-60 feet from the home should have at least 12 feet from canopy tops and trees 60-100 feet from the home should have at least 6 feet between canopy tops.

Lesson 3: Get Set (Family Preparedness)

100

True or False, a family should all share one large Go Bag.

False

200

Which of the following actions should a family do to prepare for wildfire?

Each person has a personal Go Bag.

The family has designated an out-of-town contact person.

The family has written and copied a Family Communication Plan.

The family has made a plan and Go Bag for their pets.

All of the above.

300

Which item would you not put in a Go Bag?

Filled water bottle

Printed evacuation map

Blow-up mattress

Change of clothes

400

Why should a family select a regional meeting place and a backup meeting place in their Family Communication Plan?

It may not be possible to all meet back at home before evacuating. The fire may block access to home, close roads, or make the first chosen meeting place unsafe to get to. Evacuation orders may direct traffic out of certain areas.

500

Describe three things you should do to prepare your pets or livestock for an evacuation.

Answers may include:

Build a Go Kit for your pet. Make sure you have a collar with ID tags and a harness or leash.

Have copies of your pet's documents available online. Practice loading them into carriers or cages. Have a picture of you and your pet together. Have phone numbers and addresses for emergency animal shelters (NVADG).

Lesson 4: Go! (Emergency Planning and Response)

100

True or False, Twitter is not a reliable source to find information during a wildfire.

False, depending on what source you are looking at.

200

What is true about an Immediate Evacuation Order?

You will receive three orders before you must leave.

It is safe to stay if you have defensible space around your home.

It requires the immediate movement of people out of an area.

CAL FIRE could use your help fighting the fire at this point.

300

How is Butte County broken up to communicate emergency updates and evacuation orders?

By color

By elevation

By forest type

By zone number

400

What is the name and/or location of your closest Public Assembly Point?

*Note, people do not have to go to an Emergency Assembly Point if they have a safe evacuation route and do not need help. People who can evacuate should go independently.

Answers vary, refer to the Emergency Travel Routes and Public Assembly Point Map

500

In the "Get Set!" section of the *Ready, Set, Go Evacuation Plan*, what are two things people should do inside the home and two things outside of the home before evacuating?

Bonus: What could you do to help your family and what do you think is a task better left for an adult?

Inside

- Shut all windows and doors, leaving them unlocked.
- Remove flammable window shades and lightweight curtains. Close metal shutters.
- Move flammable furniture to the center of the room, away from windows and doors.
- Shut off gas at the source (meter or tank). Turn off pilot lights.
- Leave your lights on so firefighters can see your house under smoky conditions.
- Shut off the air conditioning.

Outside

- Put your Go Bag in your vehicle.

- Back your car into the driveway with vehicle loaded and all doors and windows closed. Carry car keys with you and have a spare. Leave gates open for access.
- Check on neighbors and make sure they are preparing to leave.
- Gather up flammable items from the exterior of the house and bring them inside (patio furniture, toys, door mats, trash cans, etc.) or place them in your pool.
- Turn off propane tanks.
- Move propane BBQs and appliances away from structures.
- Connect garden hoses to outside water valves or spigots for use by firefighters. Fill water buckets and place them around the house.
- Don't leave sprinklers on or water running, they can affect critical water pressure.
- Leave exterior lights on so your home is visible to firefighters in the smoke or darkness of night. Have a ladder available and place it at the corner of the house so firefighters can quickly access roof.
- Seal attic and ground vents with pre-cut plywood or commercial seals.

Protect Your Home

Wildland Urban Interface

The Wildland Urban Interface (WUI) is where homes or other buildings are built near or in the forest, grassland, or other natural area. People living in this area must take extra precaution to protect their home from wildfire.



Immediate Zone (0-5 feet from the home):

- ✓ **Make sure gutters, patios, and roofs are clear of dead leaves and pine needles.**
- ✓ **Remove flammable mulch and vegetation within 5 feet of your home.**
- ✓ **Use rock mulches or hard surfaces surrounding your home.**



Intermediate zone (5-30 feet from the home):

- ✓ **Clear flammable objects (furniture, lawn mowers, wood piles, propane tanks).**
- ✓ **Remove all dead plants/leaves and weeds in this area.**
- ✓ **If you have a lawn, keep it watered and mowed.**
- ✓ **Remove tree or shrub branches that overhang within 10 feet of your house, roof, or chimney.**



Extended zone (30-100 feet from your home):

- ✓ **Remove dead vegetation.**
- ✓ **Trim tree limbs 10 feet above the ground.**
- ✓ **Create separation between trees and shrubs. Trees between 30-60 feet from the home should have at least 12 feet from canopy tops and trees 60-100 feet from the home should have at least 6 feet between canopy tops.**

Go to [Firewise.org](https://www.firewise.org) or [LivingWithFire.info](https://www.livingwithfire.info) to learn more about preparing your home for wildfire.

Fire Safety Starts with YOU!



Look at the picture below and list at least 4 things that this homeowner should fix to make their home more safe from wildfire.



1.

2.

3.

4.

Family Communication Plan



Step 1: Hold a family meeting and make your plan.

Step 2: Make a copy for each family member's Go Bag.

Step 3: Scan or take a picture for digital back-up.

Home Information

Name: _____
Phone: _____
Address: _____
Zone #: _____

Out-of-Town Contact

Name: _____
Address: _____
Cell: _____
Email: _____

Guardian # 1 Information

Name: _____
Workplace: _____
Work Phone: _____
Cell: _____

School Information

School: _____
Address: _____
Phone: _____
Facebook: _____
Zone #: _____
Evacuation Location: _____

Guardian # 2 Information

Name: _____
Workplace: _____
Work Phone: _____
Cell: _____

School: _____
Address: _____
Phone: _____
Facebook: _____
Zone #: _____
Evacuation Location: _____

Nighborhood Meeting Place

Regional Meeting Place

Primary: _____

Secondary: _____

School: _____
Address: _____
Phone: _____
Facebook: _____
Zone #: _____
Evacuation Location: _____

***Review as a family every year and keep it up to date.**

Go Kit!

Continued



Suggested items and actions to take to complete your Go Kit (you can probably think of a few more!)

IMPORTANT CONTACTS

- » Fill a small notebook with information about your important contacts. Ask your parents or guardians to help get this information for you:
 - * Work and cell phone numbers for your parent(s) or guardian(s), as well as their work address and an alternate contact at their work in case they are away from their phone.
- » Phone numbers of relative(s) who live out of state, in case local cell towers don't work.
- » Addresses and phone numbers of your closest friends.
- » Names/addresses of three safe locations to meet in case you are away from home and school, such as the local library, a friend or neighbor's home, local police station, hospital, or community center.
- » Information about any medical condition you have or medication that you are on and the name and phone number of your doctor.
- » If you wear glasses, the prescription information for them.
- » Phone numbers for neighbors. They may be

able to check on your home or pets.



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Do You Need Assistance During an Emergency?

The Special Needs Awareness Program is a voluntary program for individuals with Access and Functional Needs, such as physical/developmental or intellectual disabilities, chronic conditions or injuries, limited English proficiency, older adults, children and low income households, homeless and/or transportation disadvantaged and pregnant women. The SNAP program will provide additional evacuation information, which may include evacuation assistance, as well as notification for extreme heat/cold events and Public Safety Power Shutoffs (PSPS) events. For more information, visit www.buttecounty.net/dess

Do You Live in a Public Safety Power Shutoff area with low or no cellular coverage?

Butte County is partnering with Bare on the Ridge, PG&E and Alert FM to provide Alert FM devices to the community. Households can check their eligibility and register at www.buttecounty.net/dess or by calling **530.552.6887**. To learn more about Alert FM, visit www.alertfm.com

Helpful Information and Links

For Evacuation Plans and Emergency Preparedness Information, visit www.buttecounty.net/oem

Toll Free Butte County Emergency Information Line: **833.512.5378**

Television and Radio Stations
KHSL Channel 12 KNVN Channel 24
KRCR Channel 7 KPAY 1290AM
Yankee Hill Community Radio 1630 AM
Magalia Community Radio 1460AM
Paradise Community Radio 1500AM

General Mobile Radio Systems (GMRS)
Information is available at www.buttecountycert.com

Facebook

Facebook.com/ButteCounty
Facebook.com/bcsonews
Facebook.com/CALFIREButteCo
Facebook.com/buttecountypublichealth

Twitter

@CountyofButte @ButteSheriff
@CALFIRE_ButteCo @BC_PubHealth



Be Informed

Know your zone-memorize your zone number. Know how you will receive information.

Be Prepared

Have a plan. Think ahead. Organize an emergency kit or go-bag. Register for emergency alerts.

Be Ready

When you are informed and prepared, you are in a better position to respond.

Do You Know Your Zone?

Butte County has established individual evacuation zones throughout the County. These zones will be used during fires or other emergencies requiring evacuations in our county. Each zone has a different number. It is important to memorize the last three numbers of the zone you live in. It's also a good idea to memorize other important zones, such as the zones that family members live in, or the zone your children's school is in.

How Do I Find My Zone Number?

View the Evacuation Zone Map at www.buttecounty.net

Don't have access to a computer? No problem, Call 2-1-1, or text 898211 for assistance.

Are You Familiar with Evacuation Terms?

Evacuation Warning, Evacuation Order and Shelter in Place. It's important to know what these terms mean.

Evacuation Warning

Alerts people in an affected area(s) of **potential threat to life and property**.

People who need additional time should consider evacuating at this time. An Evacuation Warning considers the probability that an area will be affected and prepares people for the potential of an Evacuation Order.

Evacuation Order

Requires the immediate movement of people out of an affected area due to **imminent threat to life**. Choosing to stay could result in the loss of life. Staying may also impede the work of emergency personnel. Due to the changing nature of the emergency, the Evacuation order may be the only warning people in the affected area(s) receive.

Shelter in Place

Alerts people in an affected area to seek immediate shelter inside of a building. This action may be taken during a release of hazardous materials to the outside air, severe weather, hostage situation, or other emergency.

Have You Registered for Code Red Emergency Notifications?

Code Red is a platform Butte County uses to issue Emergency Notifications. Residents must sign up to receive these notifications, residents are not automatically enrolled. To sign up, visit www.buttecounty.net/massnotification. You can sign up to receive Notifications via Text, Phone or Email.

For Code Red Enrollment Assistance, Call:
1-866-939-0911

