

2023

# Lincoln County Community Wildfire Protection Plan (CWPP)



Sikorsky S-64 Skycrane near Lake Koocanusa  
Photo: Jacob Jersek

Document prepared by:  
Jennifer Nelson, Lincoln County Forester

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## Acknowledgments

Fire professionals in Lincoln County are a dedicated group of individuals, passionate about their work, committed to protecting lives and properties, but also to the vast and beautiful natural resources that make Lincoln County a special place to live. Their knowledge of, and experience with, fire and wildfire is a resource unto itself.

The revised 2023 Lincoln County Community Wildfire Protection Plan (CWPP) reflects a concerted effort to utilize the most recent wildfire risk data available. The State of Montana's strong commitment to protection of its citizens and natural resources resulted in a collaboration of the Northern Rockies Fire Science Network and the Montana Department of Natural Resources to create the 2020 Montana Forest Action Plan and the 2020 Montana Wildfire Risk Assessment. The information provided from the two documents allowed for a level of wildfire risk analysis not previously available to the county.

Lincoln County would like to thank the following entities for their support in developing the 2023 Lincoln County Community Wildfire Protection Plan.

The State of Montana - Department of Natural Resources and Conservation - Montana Forest Action Plan Team, Montana Wildfire Risk Assessment Team, Local Government Assistance and GIS/Mapping

USDA Forest Service – Kootenai National Forest

Lincoln County FireSafe Council

Flathead County FireSafe Council

Also, the dedicated CWPP team: Steve Lauer – City of Libby, Logan Sandman – DNRC, Tom Lane, Jennifer Nelson, Brent Teske – Lincoln County, Jacob Jeresek – USFS

*"We may have all come on different ships, but we're in the same boat now."*

*— Martin Luther King, Jr.*

## **APPROVAL AND ADOPTION**

The Lincoln County Community Wildfire Protection Plan 2023 is hereby approved and adopted by the Lincoln County Commissioners on April , 2023.

Josh Letcher, Chairperson \_\_\_\_\_

Brent Teske, Commissioner \_\_\_\_\_

Jim Hammons, Commissioner \_\_\_\_\_



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	Society of American Foresters			



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## **Glossary of Acronyms**

BLM- Bureau of Land Management

CE- Categorical Exclusion

CWDG- Community Wildfire Defense Grant

CWPP – Community Wildfire Protection Plan

DNRC – Montana Department of Natural Resources and Conservation

EA - Environmental Assessment

EIS- Environmental Impacts Statement

EPA - Environmental Protection Agency

FS -Forest Service

FSA – Fire Service Area

GA – Geographic Area

GNA – Good Neighbor Authority

HFRA - Healthy Forest Restoration Act

HIZ - Home Ignition Zone

HVRA – Highly Valued Resources and Assets

IWUIC – International Wildland-Urban Interface Code

KNF – Kootenai National Forest

MFAP – Montana Forest Action Plan

MOU – Memorandum of Understanding

MWRA – Montana Wildfire Risk Assessment

NRCS – Natural Resource and Conservation Service

OU3 - Operable Unit 3

PLOD – Primary Line of Defense

RFD - Rural Fire Department

USDA – United States Department of Agriculture

WUI – Wildland Urban Interface

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## Executive Summary

Lincoln County has undergone substantial and impactful changes in the past 10 years. While many county residents have lived in and near the forests for generations, the county has had an influx of new residents in recent years, many who have chosen to live away from towns. Private landowners are subdividing property and the conversion of large amounts of industrial forest lands to real estate has provided new housing in areas that were considered remote a few years ago. Expanded cell phone coverage and internet fiber give people a sense of security and connectivity, even miles from town and allow people to work remotely. Like many areas in the western United States, the Wildland Urban Interface (WUI) in Lincoln County is growing rapidly.

This revision of the Lincoln County Community Wildfire Protection Plan (CWPP) has taken that trend into consideration by expanding the WUI boundary using property lines and parcel-based mapping, rather than buffering currently existing structures using arbitrary and unlocatable delineation. The revision also reconciles the definition of WUI between the Healthy Forest Restoration Act (HFRA, 2003) definition and the one used in the 2013 CWPP.

Serendipitously, the CWPP revision aligned with the development and release of the Montana Forest Action Plan (MFAP) and the Montana Wildfire Risk Assessment (MWRA) providing analysis models that were used to determine wildfire risk at the county-scale. These tools were invaluable in identifying and prioritizing areas for treatment and providing context for local wildfire professionals concerns.

The models showed how widespread the wildfire risk is in Lincoln County. They conveyed that the threat doesn't stop at property lines but is a landscape-scale problem. A problem that must be addressed through cross-boundary treatments, not just by public land managers, but by private landowners as well. If we are to adequately address the problem of wildfire risk in the WUI, we must all take responsibility for the condition of our forests and work together to reduce the threat of wildfire to our homes and communities.



New home construction in the WUI

Photo: Jim Wilson

## Introduction

Community Wildfire Protection Plans (CWPPs) were first authorized as part of the 2003 Healthy Forest Restoration Act (HFRA) to provide a planning tool for communities to aid in protecting them from the impacts of wildfire. HFRA legislation provided statutory incentives for the USDA Forest Service (USFS) and the Bureau of Land Management (BLM) to consider the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects. But in order for agencies to know what a community's priorities are, the community must first identify and refine its priorities in order to protect life, property, and critical infrastructure in the wildland-urban interface (WUI) from wildfire. This product is the Community Wildfire Protection Plan (CWPP), and therefore, each CWPP is unique to the community for which it is written.

The first Lincoln County CWPP was adopted in 2003, followed by updates in 2005 and 2013. The 2023 CWPP is the county's third update and includes substantial changes to the 2013 plan. These changes include an increase in WUI acres based on current land use and ownership, using new data to conduct county-wide risk analysis, and dividing the county into geographic areas to better identify areas needing treatment and maximizing grant funding opportunities.

The wildland-urban interface (WUI) is generally defined as the zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildlands. According to a 2018 study, the WUI grew by 41 percent between 1990 to 2010, nationally. In 2020, an estimated 33 percent of all US homes were located in the WUI, 4.5 million of which are at high or extreme wildfire risk.

Between 2016 and 2020, an average of 88 percent of US wildfires were started by human activities including ignitions from powerlines, vehicles, trains, and other equipment; unattended campfires, fireworks, field and debris burning, arson, and other ignition sources. Human-caused wildfires have tripled the length of wildfire season, because while thunderstorms occur most frequently in the summer, human-caused ignitions can occur year-long. Human-caused wildfires can be more destructive than naturally ignited fires because they are more likely to occur near homes and communities.

Increased wildfire activity and threats to private property have led to substantial increases in the costs of managing wildfires. Fire suppression costs have almost quadrupled since 1985, and direct damage to structures and property can add up to billions of dollars in losses. A 2020 study found that in 2018, wildfires caused a total of almost \$28 billion in capital losses in California. As a result, homes in some high-risk areas are becoming more difficult to insure. Disruption of commerce, destroying physical capital, loss or interruption of communication, utilities and transportation systems, impacting workers' health and hours worked, and decreased tourism and recreation have widespread economic effects and costs which affect communities both in the short and long-term. In 2018, prior to the Camp Fire that burned through the town of Paradise, California killing 85 people, and destroying thousands of homes, the population was 26,532. A year later, the population was 4,171.

As more people live in and near the WUI, the threat of wildfire to the lives and health of people has increased significantly. The smoke produced by wildfires can have a significant negative human health impact, especially for older people and children. Stress and fear brought on by experiencing a threat from a wildfire event and possibly evacuations, can affect people's mental health.

While fire ignitions have declined nationally, the number of acres that burn each year has increased. Between the 1970s and the 2000s, the annual average acres burned in wildfires in the U.S. grew by about 1,200 percent. Lincoln County is no exception. Between 1991 to 2022, wildland fires burned roughly 242,000 acres in Lincoln County, with approximately 214,372 of those acres having burned in fires greater than 1,000 acres in size.

There are several factors that have contributed to the increase in wildfire size, but the most significant one is the current unnaturally high tree densities and accumulations of ground and ladder fuels. Wildfires are a common occurrence in Lincoln County but since the late nineteenth century, when traditional indigenous cultural burning practices ended and decades of aggressive fire suppression by federal and state land management agencies began, fire has been largely excluded from our forests.

Under these dense forest conditions, wildfires are more likely to spread to the canopy, where they burn at higher intensity, are more dangerous and harder to contain. In 2017, the Caribou Fire, a 25,000-acre wind-driven crown fire that started in the Yaak, burned 11 homes and numerous other structures in the community of West Kootenai. In the same year, the 20,000-acre West Fork Fire near Libby and the 13,000-acre Gibraltar Fire near Eureka, both grew into crown fires threatening lives and homes, prompting evacuations.

Climate changes are also impacting wildfire size. In general, spring is arriving earlier, resulting in earlier snowmelt each year. This creates longer periods in which fuels are dry and primed to burn. Lighter snowpacks, higher summer temperatures, and lower humidity all contribute to drier conditions in which fuels are more likely to burn. In turn, wildfires have a negative impact on climatic changes compounding the problem and creating a feedback loop. Wildfires emit an enormous amount of carbon dioxide, methane, and carbon monoxide into the atmosphere, as well as other compounds and particulates. In 2020, wildfires burned approximately 4.3 million acres in California releasing an estimated 112 million metric tons of carbon dioxide or approximately the annual emissions of 24.2 million cars.

In addition to the destruction of forests, loss of plant and animal habitat, impacts to air quality and climate, and threats to human health and safety, wildfires can also result in physical and chemical changes to soil that can affect its ability to absorb water, trigger soil movement, and increase surface flow resulting in sedimentation that can affect water quality and impact municipal water supplies.

In Lincoln County, the forests occupy ninety-five percent (95%) of the land, and typically begin just outside of our towns, creating WUI that can extend outward from communities for miles. A Profile of Wildfire Risk developed by Headwater Economics' showed that 100% of homes in Lincoln County are at risk of wildfire exposure, 63% from direct sources of wildfire and 37% from indirect sources. It is this risk that the CWPP is meant to address.

Many residents of Lincoln County are aware of the high risk to their communities from wildfire. A survey conducted for the 2019 Lincoln County Growth Policy of Lincoln County residents showed 59% of respondents in Libby asserted that wildfire risk reduction should be a high priority of the county. In Eureka and Troy, the figures jumped to 67% and 62%, respectively.

In order to measure the risk of a community against other communities in the State of Montana and across the nation, the Wildfire Risk to Communities project team developed a nationally consistent risk dataset to support the Community Wildfire Defense Grant (CWDG) program funded through the

Infrastructure Investment and Jobs Act (2021). Two variables, Risk to Homes and Wildfire Hazard Potential, are derived from Wildfire Risk to Communities, a national risk assessment created by the USDA Forest Service. Communities ranking above the 70th percentile Risk to Homes are considered having “high or very high wildfire hazard potential” in the context of communities. Communities ranking above 84th percentile Wildfire Hazard Potential are considered having “high or very high wildfire hazard potential” in the context of landscape. Rankings for Lincoln County and its communities are shown in Table 1.

**Table 1: Lincoln County and Lincoln County Communities Wildfire Risk and Wildfire Hazard Potential Rankings**

Location	Wildfire Risk to Homes - State Ranking	Wildfire Risk to Homes- National Ranking	Wildfire Hazard Potential -State Ranking	Wildfire Hazard Potential -National Ranking
<b>Lincoln County, MT</b>	<b>91%</b>	<b>91%</b>	<b>98%</b>	<b>92%</b>
Bull Lake, MT	81%	91%	92%	91%
Eureka, MT	78%	90%	82%	82%
Happy’s Inn, MT	64%	85%	81%	81%
Libby, MT	60%	83%	83%	83%
Pioneer Junction, MT	84%	92%	92%	90%
Rexford, MT	53%	81%	71%	72%
Trego, MT	95%	96%	98%	95%
Troy, MT	69%	87%	88%	88%
West Kootenai, MT	85%	92%	88%	88%
White Haven, MT	77%	89%	85%	86%
Yaak, MT	88%	93%	91%	90%

Data in this table are provided by the Wildfire Risk to Communities project team, including Headwaters Economics and Fire Modeling Institute of the Rocky Mountain Research Station, USDA Forest Service



High density forest near Libby Elementary School

Photo: Jennifer Nelson

## The Lincoln County Profile

Lincoln County, located in the northwest corner of Montana, has an area of 3,675 square miles (2,351,935 acres). The County's landscape is characterized by mountainous terrain, expansive forests, and clear-running rivers and streams. Forests occupy ninety-five percent (95%) of the land in Lincoln County. Approximately seventy-five percent (75%) of the land is federally owned and administered by the USDA Forest Service. Private land accounts for twenty-two percent (22%) of the ownership, including lands owned by private lumber companies. The remaining three percent (3%) is owned by the State of Montana and is administered by the Department of Natural Resources and Conservation (DNRC) and Montana Fish, Wildlife and Parks (FWP). Land development has occurred primarily in the larger valleys.

**Table 2: Lincoln County Land Ownership in Acres**

USFS	State of MT	Industrial Private	Non-Industrial Private
1,752,041 ac (74.5%)	71,299 (3.0%)	296,532 ac (12.6%)	232, 063 (9.9%)

The 2020 U.S. Census estimates Lincoln County's population at 19,677 in 8,622 households. A rural county, Libby is the largest community with a population of 2,758 and urban development is concentrated in the incorporated areas of Eureka, Libby, Troy, and Rexford. Other significant communities are Bull Lake, Fortine, McCormick, Stryker, Thompson Chain-of-Lakes, Trego, West Kootenai, and Yaak.

Summers are often hot and dry. Average high and low temperatures in July for Libby are 87° F and 49° F, respectively. Both summer and winter temperatures can vary considerably with elevation and local topography. Brief spells with temperatures above 100°F occur. The highest temperature recorded in Libby was 109° F (2018). Extended periods with temperatures above 90° F occur every few years.

Mean annual precipitation averages approximately 30 inches for the Kootenai River basin and generally increases with increasing elevation, varying from 14.5 inches per year at Eureka, to an estimated 60 or more inches on some of the higher mountains. Little of the annual precipitation comes during the summer months. The ten-year (2012-2021) average rainfall for the three-month fire season (July-September) is 3.8 inches, averaging 1.3 inches per month. Summer thunderstorm events are common and can bring heavy, brief precipitation and may be accompanied by high winds.

The elevation in Lincoln County ranges from about 1,820 feet above sea level near Troy, to over 8,700 feet in the Cabinet Mountain Wilderness. The Kootenai River, along with several smaller rivers and their tributaries, is a major feature in the county. The Cabinet, Purcell, and Salish Mountains, and the Galton and Whitefish Ranges, are all part of the county's rugged terrain. Lincoln County is one of the most heavily forested counties in the western United States with approximately 95 percent of the land covered in forest. Diverse and productive, these forests are valuable to the county's economy.

Much of Lincoln County's population is located in rural areas, with over 76% of the county's population residing outside of the three incorporated communities of Troy, Libby, and Eureka. Most of these homes are in the WUI and lack sufficient defensible space, ingress and egress, and water supplies.

## Fire History

Lincoln County has had many large wildfires that have impacted property, timber resources, scenery, and air quality. The most well-known wildland fire in Lincoln County's past was the Big Burn of 1910, which burned three million acres in Idaho and Montana, of which over 380,000 acres were in Lincoln County. In the 35 years from 1988 to 2022, there were 99 fires greater than 100 acres in size totaling 296,014 acres burned. Sixty thousand (60,000) acres burned during the 1994 fire season alone. In 2000, the area experienced another record fire season with 270 fires burning a total of 45,465 acres. That year the Kootenai National Forest (KNF) managed four large fire complexes, requiring eight incident management teams. Federal wildfire disasters were declared in both 1994 and 2000. The 2017 fire season saw 85,000 acres burned, the most since 1910, and included the Caribou Fire (25,000 ac) that burned through the Amish community of West Kootenai. Wind-driven, the fire made a 4½-mile run in just a few hours giving people little time to evacuate. No lives were lost, but the fire destroyed 11 homes and many outbuildings. Large fires in Lincoln County from 1988 through 2023 are shown on Map 1 on page 7.

In the past five years, Libby, Troy, Eureka, and West Kootenai have all had major fires in the WUI that resulted in evacuation and property losses. In the summer of 2021, the City of Troy and surrounding rural properties were threatened by fires from the north, south, and west simultaneously creating fear in the community and challenges for fire protection agencies.

Even small fires can create great concern depending on where they occur. The OU3 Hwy 37 fire was only 70 acres but created great concern and demanded numerous aerial firefighting resources to prevent the fire from burning into the now defunct W.R. Grace and Company vermiculite open pit mine. The mine was a source of asbestos that sparked a public health emergency and a 20-plus year Environmental Protection Agency (EPA) Superfund cleanup in Libby. Officials feared that a large wildfire near the old mine, referred to as Operable Unit 3 (OU3), could release asbestos-laden ash into the air. Because of the proximity to the former mine site, local and federal firefighters aggressively attacked the blaze from the ground and air using eight helicopters and nine fixed-wing aircraft, including a 10-person contract crew specially trained and equipped to operate in and near the asbestos contaminated forest.

## Local Forest Conditions

Over 100 years of fire suppression in Lincoln County has increased fuel loads, tree densities, and ladder fuels, in nearly all forest types. The forests in Lincoln County are typically overstocked with trees which leads to decreased moisture and nutrient availability. This in turn makes trees more vulnerable to insect and disease problems and increases mortality. The State of Montana's 2018 Insect and Disease Forest Conditions Report survey shows that increases were seen in Douglas-fir bark beetle infestation and substantial increases in fir engraver activity over the previous year. In addition, western pine beetle activity increased to a level that allowed for detection in 2018.

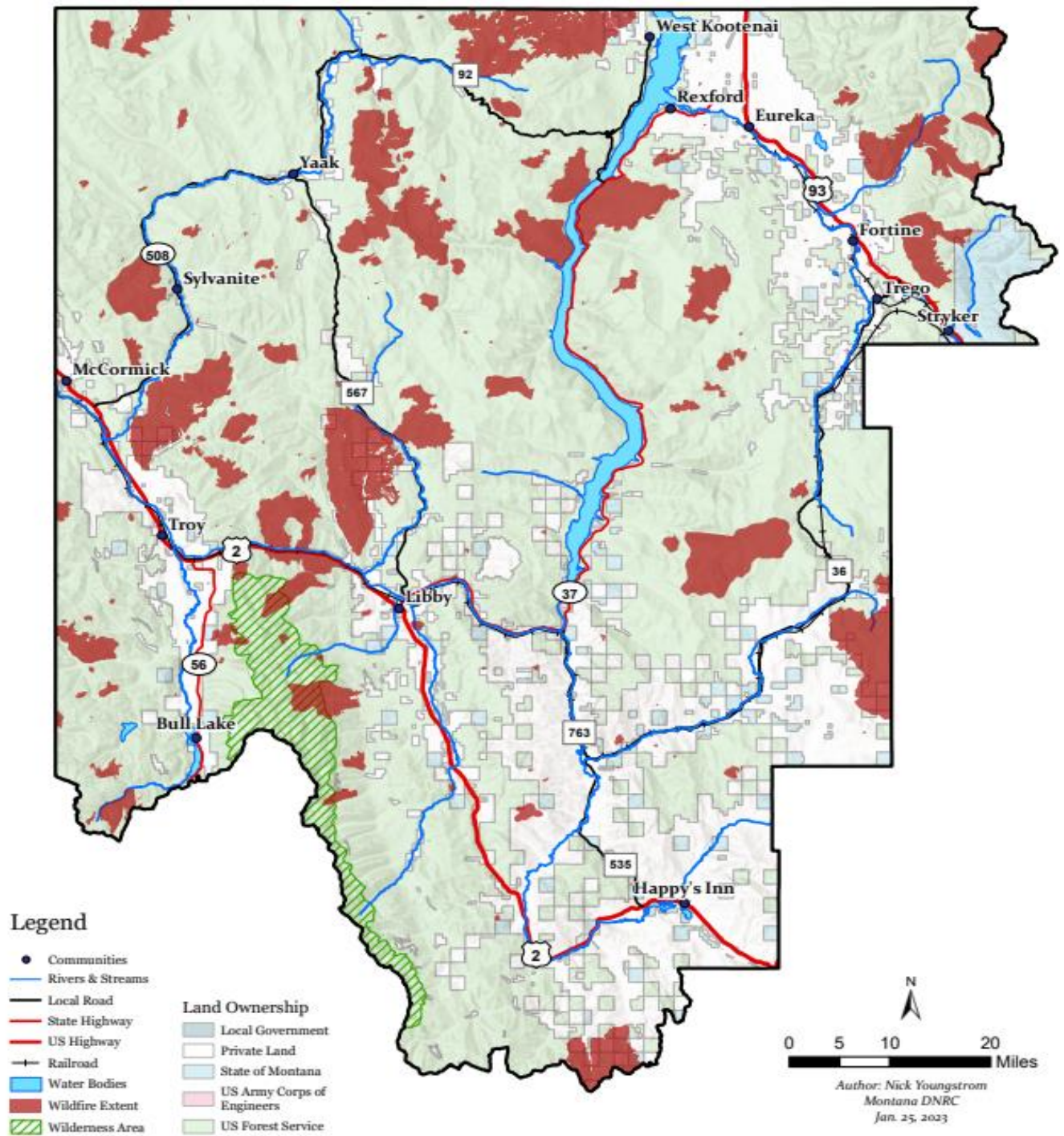
Overcrowding also reduces the amount of sunlight that reach the trees. This results in conversion from shade intolerant, fire-resistant tree species like ponderosa pine, western larch, and Douglas-fir to more shade tolerant, less fire-resistant tree species like grand fir, spruce, cedar, and hemlock as a result.

Recent studies indicate that tree mortality either exceeds or is close to exceeding net growth in nearly all local tree species. Declining forest health with increased mortality, in combination with overcrowded forests and years of fire suppression, has led to conditions that have adversely affected wildfire behavior.



# Lincoln County

Wildfire History 1988-Present



Map 1: Lincoln County Fire History Map 1988-2022

## **Climate Change**

In addition to increased fuel loads, climate change is affecting the severity of wildfires and duration of fire season. According to the 2017 Montana Climate Assessment, Montana has experienced a 2 to 3 °F temperature increase in annual average temperature between 1950 and 2015. Both winter and spring annual temperatures have increased by 3.9 °F during the same period and are associated with earlier spring snowmelt. The average fire season in Montana is now 40 days longer than it was 30 years ago.

Drought has contributed to the increase and severity of fires in Lincoln County, as well. Between the months of June and August in the 2017 and 2018 fire seasons, Libby experienced 50 to 60 days without wetting rain resulting in very low forest fuel moisture. These longer fire seasons allow for greater likelihood of fire spread, and a longer burning duration. As the climate changes and forest health declines, Lincoln County will continue to have more frequent and larger wildfires.

## **Wildfire Risk Today**

The aftermath of the 1910 Big Burn brought about changes in the way the United States managed wildfire, resulting in policies for aggressive fire suppression. In the 60-year period from 1931 to 1990, only about 105,000 of Lincoln County's 2,352,000 acres burned, with most of those fires being less than 1,000 acres in size. In the latter half of the century, the absence of large-scale wildfires in Lincoln County resulted in increased forest density, mortality, and fuels accumulation. These conditions have resulted in an increase of large fires (over 1,000 acres) in the county.

These concerns are supported by the Montana Forest Action Plan (MFAP, 2020). That analysis shows that Lincoln County has the most combined "at risk" forest acres in the state; 407,552 acres of wildland fire risk, 54,037 acres of forest health risk, 530,459 acres of combined risk bringing the total "at risk" acres to 992,048. These conditions point to a significant threat of wildfire to people and private property in Lincoln County. The MFAP also identifies Lincoln County as having the third largest total WUI area in Montana.

The primary concern for the county during a wildfire event is the safety of residents. Other concerns include threats to homes, structures, power lines, communication sites, municipal watersheds, and other critical infrastructure.

In the last decade, Lincoln County has seen many new homes built in and near the forest. When fires occur, homes and structures are vulnerable. Many properties in the WUI have only one access road and during a wildfire, use of that road may not be possible. As people, homes, and structures increase in the WUI and hazardous wildfire conditions continue, a volatile and dangerous situation exists.

## **Air Quality**

Atmospheric inversions affecting air quality are common in Lincoln County, especially in the winter when temperatures are low, and residents use wood burning stoves for heating. The mountains surrounding the valley-bottom communities block air currents and can contribute to atmospheric conditions that create inversions and air stagnation.

Air quality concerns in Libby were addressed during the EPA Libby Asbestos Superfund cleanup (2002 - 2021) when PM 2.5 levels were found to exceed EPA standards. Efforts to improve air quality were multi-



faceted including designating an air pollution control district around the vicinity of Libby, installing air monitoring stations, developing and implementing regulations that addressed air contaminants, requiring the installation of EPA approved woodstoves, providing an air quality alert system, and other measures.

It is known that long-term exposure to smoke can cause serious health problems, but wildfire smoke can't be planned for or mitigated easily. Lincoln County has experienced prolonged periods of heavy smoke from local wildfires and also from wildfires as far away as California and British Columbia in recent years, creating health concerns for county residents, especially those with asbestos related diseases. Local monitoring in Libby allows the county to alert the residents of Libby when conditions are unhealthy, but that system is not available for the rest of the county. USDA FS air quality specialists have developed a wildfire mitigation document entitled "Wildland Fire Smoke Ready Community Information and Smoke/Air Quality Mitigations" to provide information to forest managers on how to mitigate impacts from smoke, including Identifying at risk members of the community, effectively monitoring and messaging air quality conditions, and taking efforts to reduce exposure.

In this CWPP, it is recognized that one way to reduce incidents of prolonged smoke exposure from wildfires is by treating areas with high fuel loads and tree densities to reduce the risk of wildfires that create the smoke. Through coordination with county, state, and federal agencies, debris generated from recent fuel reduction work has been successfully burned in the Libby Air Pollution Control District without, or with only minor impacts to the community.

Prescribed fire is also used to reduce fuels and keep tree densities within normal ranges to lower wildfire risk. The forests in Lincoln County have evolved with fire. However, after a century of fire suppression and various land management practices, many forests are now categorized as high density, multistoried stands with ladder fuels and high fuel loads. This in turn has resulted in forests being more susceptible to insects and disease problems and wildfire. Prescribed fire is a valuable tool in the fire-resistant forest types which include ponderosa pine, western larch, and to a lesser extent Douglas-fir. These forest types are often found at lower elevations adjacent to communities within the WUI. Studies have shown that frequent ground fire in forests with these species result in increased bark production. Increased bark thickness increases survivability in ponderosa pine, western larch, and Douglas-fir when exposed to heat from fires. Prescribed fires in ponderosa pine stands near Eureka have been well managed and controlled, with smoke emissions limited to burning operation times.

### **Lincoln County Fire Protection**

The fire services in Lincoln County are made up of two types of protection agencies: county level organizations and forest fire protection agencies at both the State and Federal level. Community wildland fire protection in Lincoln County is provided by a mixture of rural fire districts (RFD) and fire service areas (FSA). The organizations are as follows: Lincoln County (Libby) RFD, Bull Lake RFD, Troy RFD, McCormick RFD, Eureka FSA, Fisher River Valley FSA, Trego-Fortine-Stryker FSA, Yaak FSA, West Kootenai Volunteer Fire Protection Company, City of Libby, City of Troy, and Town of Eureka Fire Departments. County level fire district and fire service area coverage is displayed in Map 2 on page 11.

All fire districts in Lincoln County use the Lincoln County Emergency Operating Plan, ESF 4 Firefighting, which identifies responsibilities and provides the concepts of operation. Additionally, the county is developing a Sub-geographic Area Operating Plan in conjunction with the DNRC that replaces the Lincoln County Operations Plan, which outlines specific wildland firefighting procedures. Finally,

Montana Fire Service Mutual Aid is a consortium of emergency response agencies across Montana that will respond to calls for assistance from other districts in Montana. The State Fire Marshal office in Kalispell assists with commercial inspections, training, and inspections of suspicious fires. There are small portions of the county that are without structure fire protection, primarily due to distance from a rural fire department.

In Lincoln County, fire suppression on public lands is the responsibility of the Kootenai National Forest (KNF) and the Montana DNRC. The KNF provides wildland fire protection on all federal lands, and on certain state and private forested lands within their jurisdictional boundaries. The DNRC has primary responsibility for fire protection on all private and State lands within Lincoln County. The agencies have an offset exchange agreement, the Montana Cooperative Wildland Fire Management and Stafford Act Response Agreement, also known as the Six Party Agreement, that exchanges blocks of land for fire protection to facilitate faster response. This agreement can be viewed at the following link.

[Montana Six Party Agreement](#)

In the agreement, the State agrees to protect an agreed upon number of acres of federal land in exchange for the USFS protecting acres of private land within the forest boundary. This agreement and coordination provides for efficient wildland fire protection in Lincoln County. The wildfire protection jurisdictions are shown on Map 3 on page 12.

In addition, there are two areas in Lincoln County that are not protected by a recognized agency. One area is approximately 3300 acres in the Tobacco Valley, near the City of Eureka. The other area is near the City of Libby. The DNRC has entered into a wildfire agreement with Lincoln County to address these two areas through the Cooperative Fire Control Agreement. The state also assists with wildland fire suppression activities in areas of county protection when wildland fires exceed the suppression capabilities of the county.

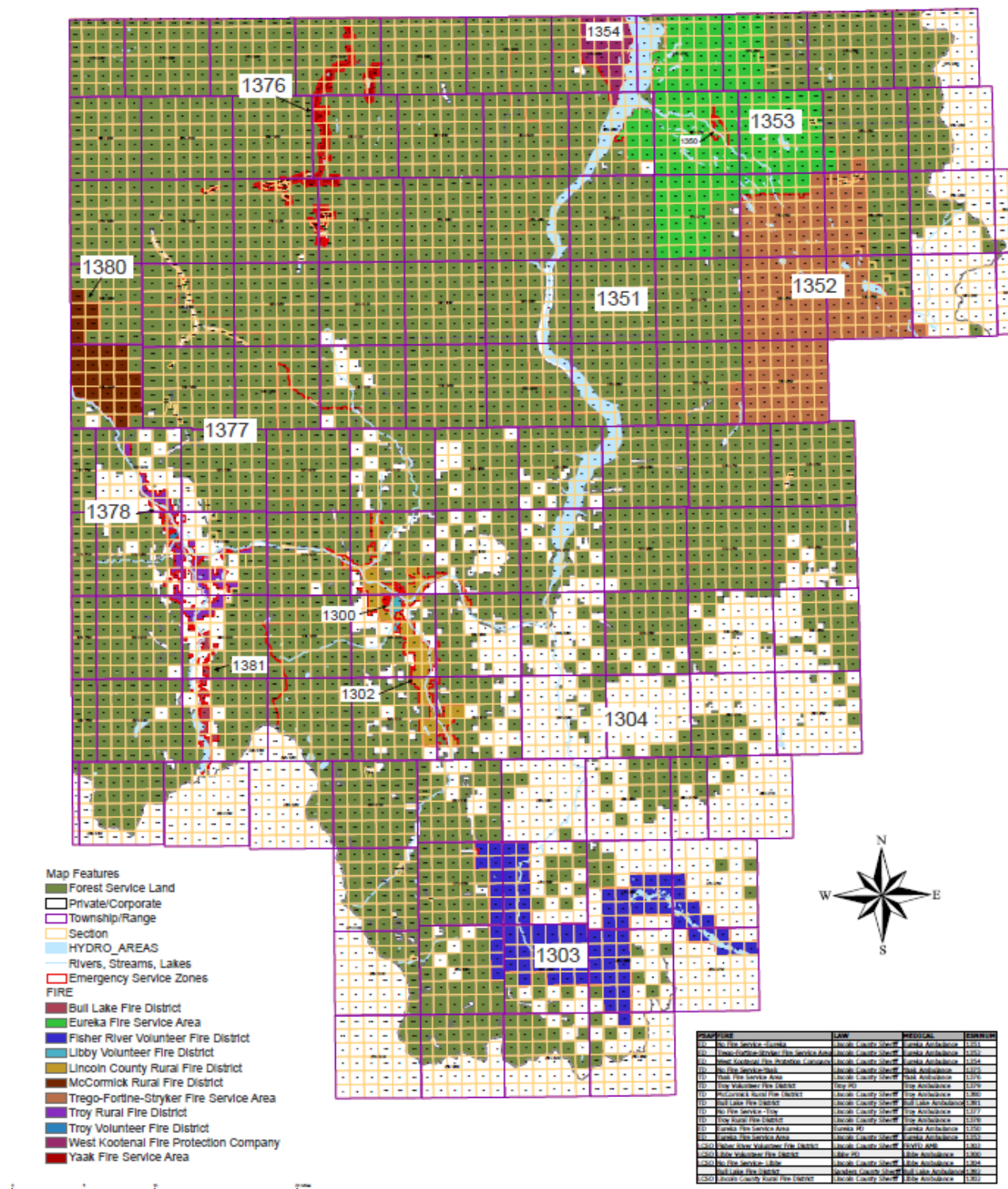
These agencies are also responsible for pre-attack planning, fire prevention, equipment procurement, fire detection, fire suppression, fire cause determination, and reporting. All fires, including structural and wildland fires, are reported through the Lincoln County 911 system.



KNF and DNRC dual agency wildfire response

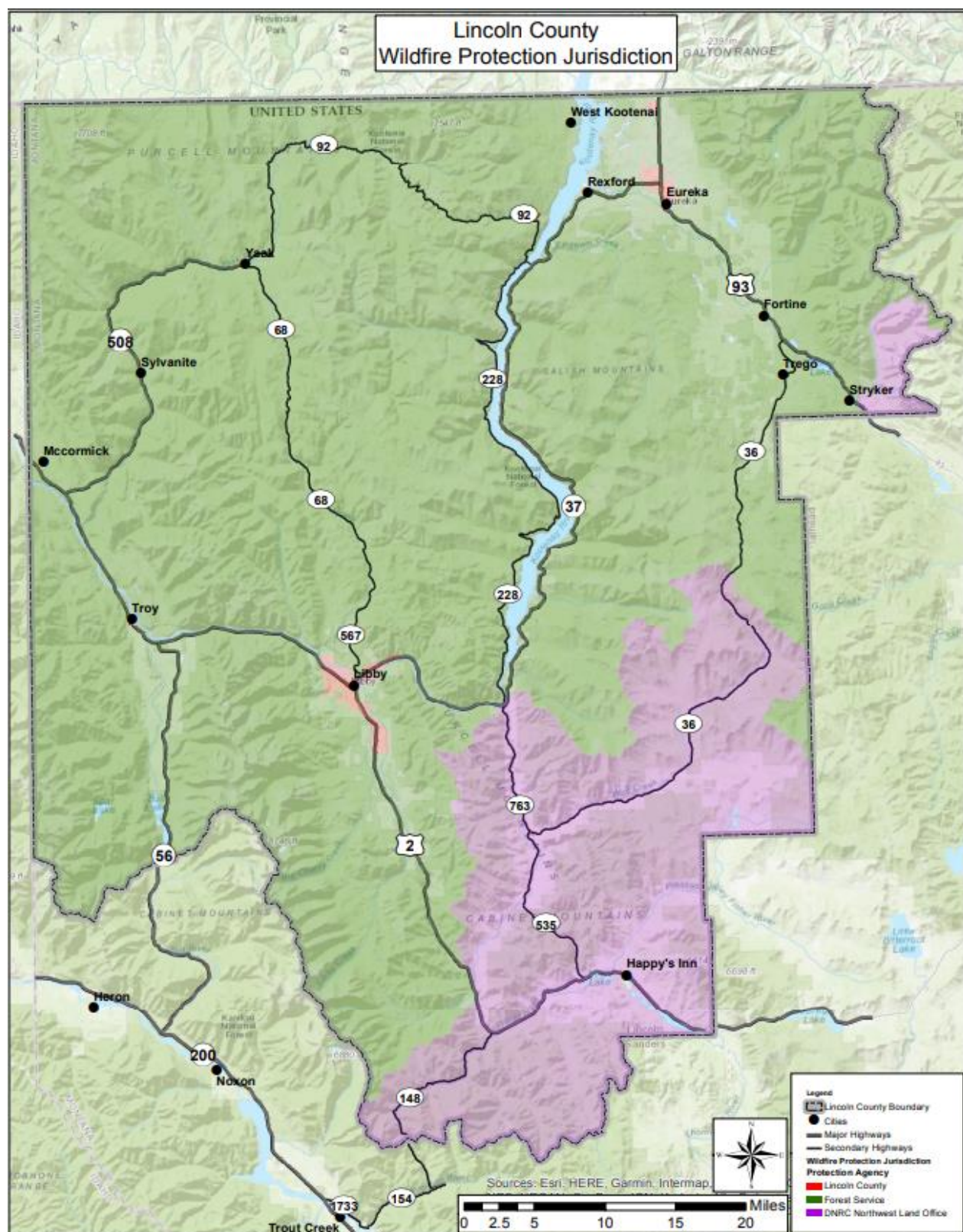
Photo: DNRC

# LINCOLN COUNTY FIRE DISTRICTS / SERVICE AREAS



Map 2: Lincoln County Fire Districts/Areas Coverage (2022)





### Map 3: Lincoln County Wildfire Protection Jurisdictions

## **Lincoln County FireSafe Council**

Lincoln County's FireSafe Council membership represents several county departments, DNRC, KNF, Natural Resource Conservation Service (NRCS), local fire departments, and local emergency management. The FireSafe Council mission is "To help reduce the loss of lives, homes and other high value resources from wildfire through Firewise Community programs and coordination between agencies, business and private citizens in the Wildland Urban Interface."

The council is actively involved in federal, state, and local fire and fuel mitigation efforts and participated in drafting the Lincoln County Shared Stewardship Memorandum of Understanding (MOU) which encourages and supports cross-boundary wildfire risk reduction between the DNRC, KNF, USDA NRCS, and Lincoln County. It also plays an important role in updating and revising the CWPP, including identifying the WUI and prioritizing areas for fuel treatments and wildfire protection. The CWPP core team members are all active members of the FireSafe Council. In addition, the council helps establish treatment goals and ensure the goals are implemented and accomplished.

In 2020, the council drafted the Rabbit Tracts Forest Partnership Project grant proposal for fuel mitigation and wildfire protection near Troy in the first round of the 2020 MFAP grant opportunities. The proposal included projects from seven partners including fuel reduction, shaded fuel breaks, powerline right-of-way treatments, forest species conversion and education, resulting in a grant award of \$430,000.

Through its public information programs and materials, website, and special events trailer complete with video, the council helps to raise public awareness of local wildland fire threats and issues. The council provides the expertise and resources to help homeowners take positive action to reduce risk and prepare for wildfires.

## **Fire Adapted Kootenai**

Fire Adapted Kootenai (FAK) is a concept adopted by the FireSafe Council that promotes the idea that when properly prepared, human populations and infrastructure can withstand wildfires without loss of life and property. The idea of fire-adapted communities was developed from the National Cohesive Wildland Fire Management Strategy (2014). A fire-adapted community is defined as "A human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire." More fully, fire-adapted communities are knowledgeable, engaged communities where actions of residents and agencies in relation to infrastructure, buildings, landscaping, and the surrounding ecosystem lessen the need for extensive protection actions and enable the communities to safely accept fire as part of the surrounding landscape."

Fire Adapted Kootenai is not a structured program, because each community has its own unique characteristics. As a result, the strategies needed to improve wildfire resiliency can vary. The Lincoln County FireSafe Council developed and established the Fire Adapted Kootenai website in 2021 as a place to go for information on wildfires and information on how Lincoln County landowners can take action to protect their families and property before a wildfire occurs. Visit [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org). The Lincoln County FireSafe Council is a member of the state-led Fire Adapted Montana Learning Network which provides support and resources to communities across Montana, and can be accessed at <https://www.fireadaptedmontana.org/>

## Kootenai Forest Stakeholders Coalition

The Kootenai Forest Stakeholders Coalition (KFSC) is a Montana-made partnership of recreationalists, business owners, timber mill operators and conservationists, dedicated to working with the FS to address public land management challenges. The KFSC works in tandem with land managers on the KNF to make recommendations and represent the needs of the community. They provide a forum and a means for residents to have a voice in the management of federal lands in the county. The KFSC have fully supported several projects that address fuel reduction in the WUI over the years and continue to do so.

## FireWise Communities

An important component of being a fire adapted community is the Firewise Program which teaches communities how to adapt to wildfire and take actions to reduce wildfire risk. The Firewise program was developed by the National Fire Protection Association (NFPA). Lincoln County Firewise Communities include Em Kayan Village subdivision and the community of McCormick. The County's Firewise Communities program is administered by the Lincoln County Forester and is part of the county's multi-pronged approach to addressing wildfire safety.

## Cost-Share Grants

Cost-share grants provide financial support to private landowners to encourage them to reduce wildfire risk on their land by treating fuels on their properties and creating defensible space around their homes. Funding is provided by the USDA State and Private Forestry and awarded through the Montana DNRC. In Lincoln County, cost-share grants are administered by the Lincoln County Forester. To qualify, landowners must obtain a home assessment and agree to an approved treatment prescription for reducing hazardous fuel. The treatments include thinning of trees and removal of ground and ladder fuels, and improvements in the Home Ignition Zone (HIZ).

## Title III Funding

Title III is part of the Federal Secure Rural Schools (SRS) funding distributed to Lincoln County. Title III funding may be used for wildfire education and fuel mitigation. Lincoln County has also utilized the funding on a variety of education and outreach projects.



Chipping debris in the WUI



[www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)



## Wildland Urban Interface (WUI) and the Community Wildfire Protection Plan (CWPP)

### The Wildland Urban Interface (WUI)

The Wildland Urban Interface, often referred to as the WUI, is most commonly defined by fire protection agencies as “(t)he line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels”. This is a definition that is easily understood. Unfortunately, policy requires the term “wildland-urban interface” to have a more specific definition by necessity. In the Healthy Forest Restoration Act (HFRA) of 2018, the definition of WUI found in Sec.101(16) is as follows:

*The term "wildland-urban interface" means—*

*(A) an area within or adjacent to an at-risk community that is identified in recommendations to the Secretary in a community wildfire protection plan; or*

*(B) in the case of any area for which a community wildfire protection plan is not in effect—*

*(i) an area extending ½-mile from the boundary of an at-risk community;*

*(ii) an area within 1½ miles of the boundary of an at-risk community, including any land that—*

*(I) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community;*

*(II) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or*

*(III) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis; and*

*(iii) an area that is adjacent to an evacuation route for an at-risk community that the Secretary determines, in cooperation with the at-risk community, requires hazardous fuel reduction to provide safer evacuation from the at-risk community.*

Lincoln County has had an approved CWPP since 2003, so section (A) applies to this document as the definition of wildland-urban interface and is underlined above. The statement speaks to the power a county with a CWPP has to help protect its citizens from wildfire and the importance of a CWPP. It says that if the community is identified as an “*at-risk community*” and there is a community wildfire protection plan, the community can define the WUI to fit their specific conditions provided they meet the requirements for the development of a CWPP.

But what is an at-risk community? According to HFRA Sec. 101(1), an at-risk community is defined as follows.

*The term "at-risk community" means an area—*

*(A) that is comprised of—*

*(i) an interface community as defined in the notice entitled "Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire" issued by the Secretary of Agriculture and the Secretary of the Interior in accordance with title IV of the Department of the Interior and Related Agencies Appropriations Act, 2001 (114 Stat. 1009) (66 Fed. Reg. 753, January 4, 2001); or*

*(ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land;*

*(B) in which conditions are conducive to a large-scale wildland fire disturbance event; and*

*(C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event*

Identification of at-risk communities was first completed and published in the Federal Register on January 4, 2001. The list included all the Lincoln County communities with zip codes- Eureka, Fortine, Libby, Rexford, Trego, and Troy, plus Stryker and the Highway 93 corridor. The notice provided a list of wildland urban interface communities in the vicinity of Federal lands that have a high risk from wildfire. The list, compiled from information provided by States and Tribes, and prepared for publication by the Secretaries of Agriculture and the Interior, responded to Congressional direction to identify communities within the vicinity of Federal lands that are at high risk from wildfire, and publish the list of communities in the Federal Register.

Eight months later, on August 17, 2001, a second, updated list that superseded the first was published in the Federal Register to also include the Bull River Corridor, West Kootenai and the Yaak, thus identifying nearly all of Lincoln County's communities as "at-risk". Since 2001, these Lincoln County communities have been recognized at the national level to be at-risk from wildfire.

### **The Community Wildfire Protection Plan (CWPP)**

Over twenty years ago Congress recognized the need for communities adjacent to federal land to have a provision to protect those "at-risk" communities from wildfire and to provide them with a method to influence planning and implementation of treatments on federal land that would help provide that protection. This provision is the CWPP and is defined in HFRA Sec 101(3) as follows:

*The term "community wildfire protection plan" means a plan for an at-risk community that-*

*(A) is developed within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and agreed to by the applicable local government, local fire department, and State agency responsible for forest management, in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community.*

*(B) identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure; and*

*(C) recommends measures to reduce structural ignitability throughout the at-risk community.*

### **The Lincoln County CWPP**

Lincoln County's first CWPP was approved in 2003, followed by revisions in 2005 and 2013. The 2005 revision defined the WUI boundary as "the area that extends two miles beyond clusters of private, non-corporate land with known structures". This boundary definition allowed for the inclusion of Forest Service lands and other ownerships in the WUI at the suggestion of the Lincoln County FireSafe Council for two reasons. First, the inclusion of federal, state, or private industrial lands would allow focused fuel treatments on those lands adjacent to private land reducing the risk of wildfire moving from public or private industrial lands onto private lands or vice versa, and secondly, recognizing the rate of which a



wind-driven crown fire can travel, that a buffer of two miles around private property is necessary to provide an area for fire-fighting defense.

### **Changes to the WUI Delineation in the 2023 Revision**

While a sizable boundary from structures is sound reasoning for fire protection, such delineation often bisects properties along undefinable and unlocatable lines, resulting in a “bubble” map that lacks legal boundaries. The 2013 CWPP WUI map (Map 4) is shown on page 18.

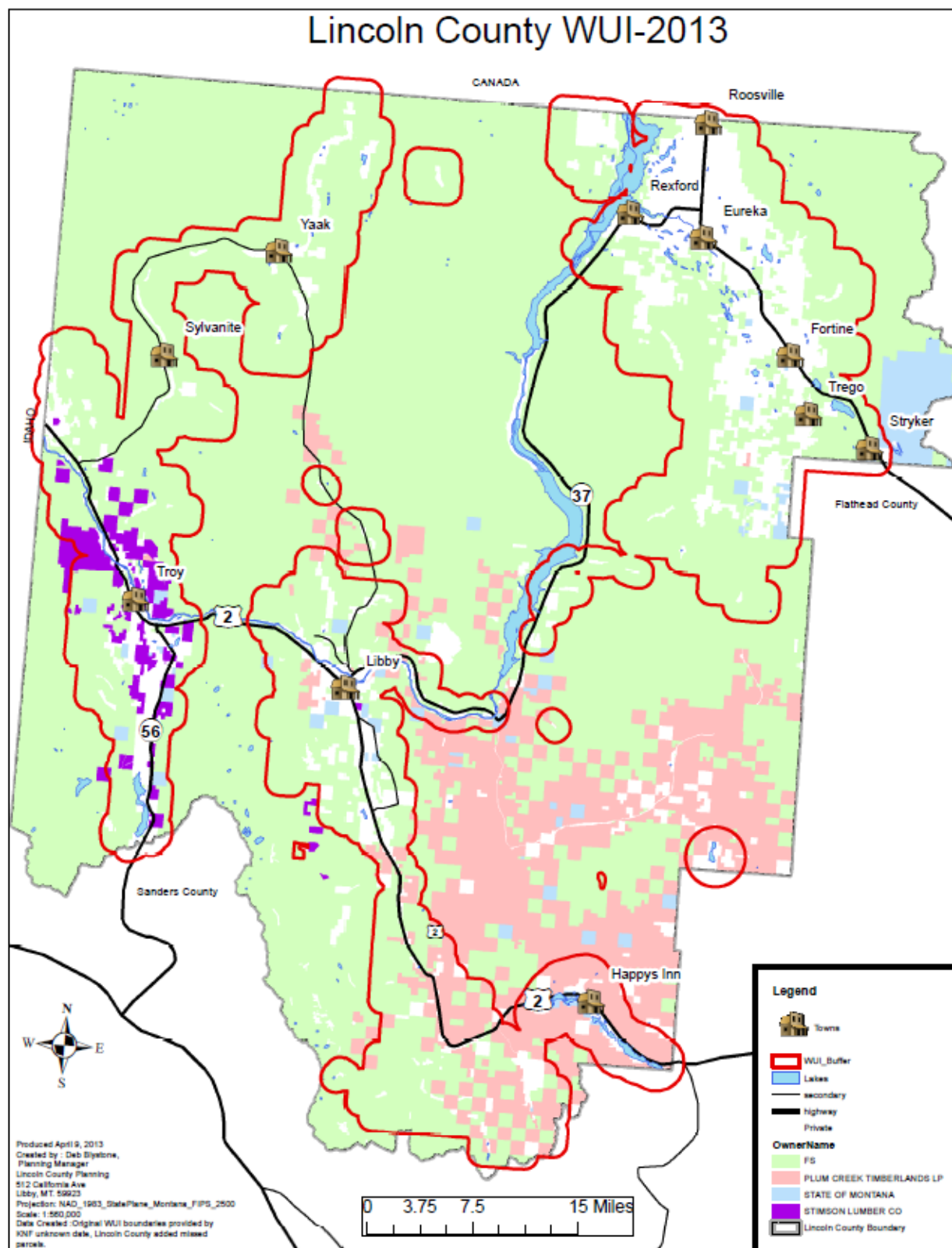
In this revision, the WUI boundary is extended to the nearest section line past the 1.5-mile boundary providing a clear, legal delineation of the WUI. This type of mapping is referred to as parcel-based mapping and allows for exact determination of the amount of land in the WUI using established legal land surveying units.

Parcel-based mapping also allows this CWPP to include a degree of planning based on predicted private land development. The WUI was the fastest-growing land use type in the United States between 1990 and 2010, increasing nationally by 18% per decade, and 97% was the result of new housing. Lincoln County is no exception. Growth of the WUI has been exponential in the county as private timber companies have liquidated many of their land holdings through real estate sales. Approximately 25,600 acres of industrial timberlands have been sold as real estate in Lincoln County in the past 15 years. Housing developments in these previously remote areas, far from formerly established communities, have added significantly to the number of WUI acres in Lincoln County.

In addition to using non-industrial private land to delineate the WUI boundary, priority infrastructure that could be damaged or destroyed by wildfires was identified and included in the WUI. Priority infrastructure identified include:

- Municipal watersheds
- High voltage powerlines
- Electronic sites including cell towers, radio transmission and repeater sites
- Airports and heliports
- Railroad lines and the Flathead Tunnel

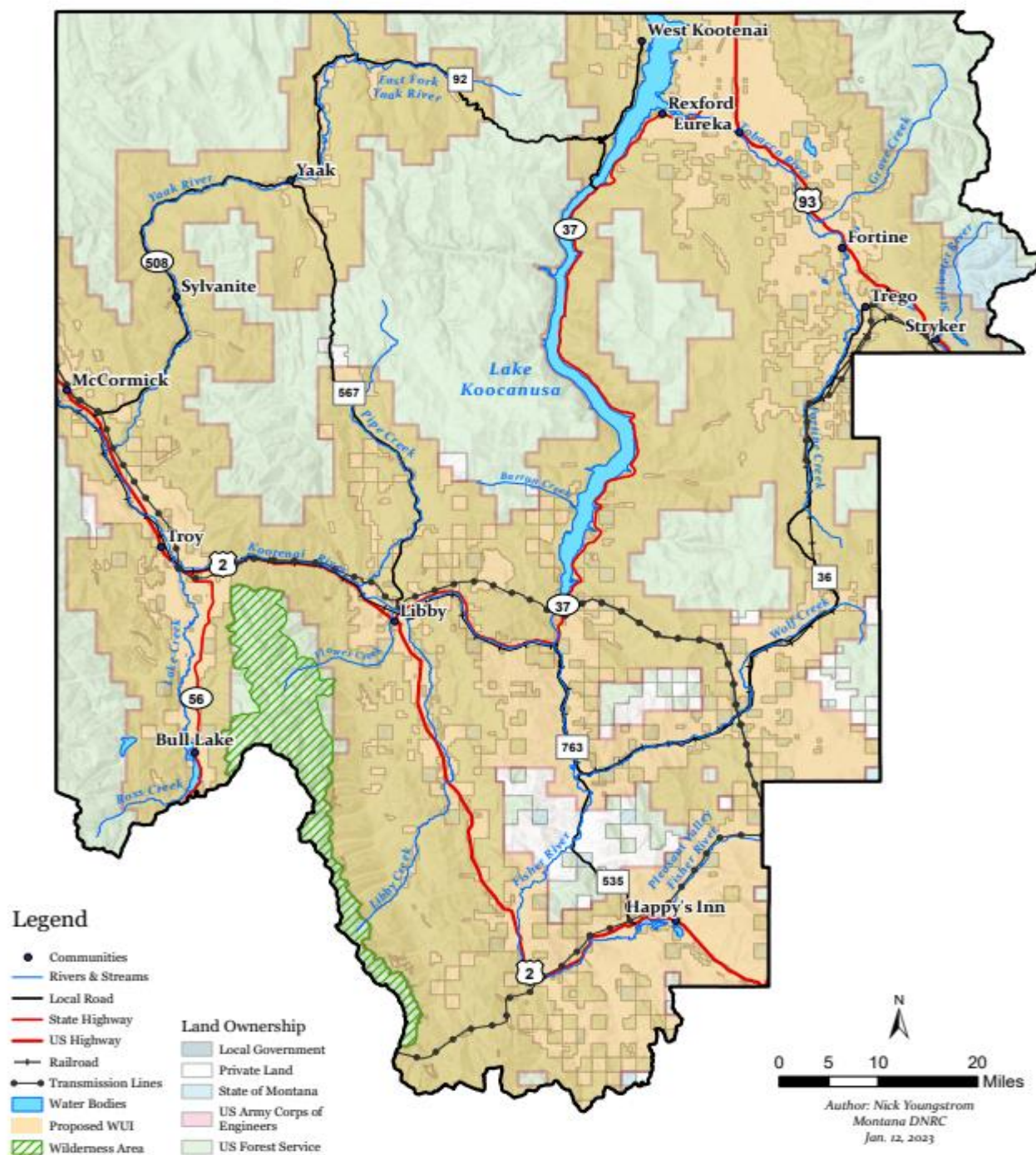
All primary and secondary highways were recognized as infrastructure for their value as evacuation routes and were included in the WUI. Using these methods, the Lincoln County WUI is measured at 1,543,799 acres and is a substantial increase over WUI acres identified in the earlier CWPPs. The revised Lincoln County WUI with priority infrastructure is shown in Map 6, page 20.



**Map 4: 2013 CWPP WUI Designation**

# Lincoln County

## WUI Boundary



**Map 5: Proposed 2023 WUI Designation**

## Wildfire Risk Assessment

### Data and Methods Used

The revision process of the Lincoln County CWPP coincided with the release of the Montana Wildfire Risk Assessment (MWRA, 2020) and the development of the new Montana Forest Action Plan (MFAP, 2020). Both documents were invaluable tools for determining wildfire risk in the Lincoln County CWPP.

The MWRA analysis considered the following:

- likelihood of a fire burning
- the intensity of a fire should one occur
- the exposure of assets and resources based on their locations
- the susceptibility of those assets and resources to wildfire.

The two outputs from the MWRA analysis used in Lincoln County CWPP wildfire risk assessment were flame length maps, derived through extensive wildfire modelling which is fully explained in the MWRA report, and risk to Highly Valued Resources and Assets (HVRA) maps. The MWRA report can be found at: [https://www.nrfirescience.org/sites/default/files/MWRA\\_WildfireRiskReport\\_05\\_08\\_20.pdf](https://www.nrfirescience.org/sites/default/files/MWRA_WildfireRiskReport_05_08_20.pdf)

HVRA assets are defined as human-made features, such as commercial structures, critical facilities, housing, etc., and HVRA resources are natural features, such as wildlife habitat, vegetation type, or water, etc. Only assets and resources negatively impacted by fire were identified. They include:

- People and Property (Structures)
- Transmission Lines and Substations
- Telecommunication Sites
- Municipal Drinking Water Watersheds
- Railroads

The MFAP utilized data from the MWRA and other sources to create data layers for Wildfire Risk and Forest Health. This analysis provides a view of the potential for high-intensity wildfire and the potential for additional fuel loads (and economic losses) contributed by mortality from extensive insect and disease outbreaks. Then by using road density and lower elevation forest type datasets, the MFAP was able to display Priority Areas for Focused Attention in close proximity to communities and infrastructure. The MFAP can be found at: <https://www.montanaforestactionplan.org/>

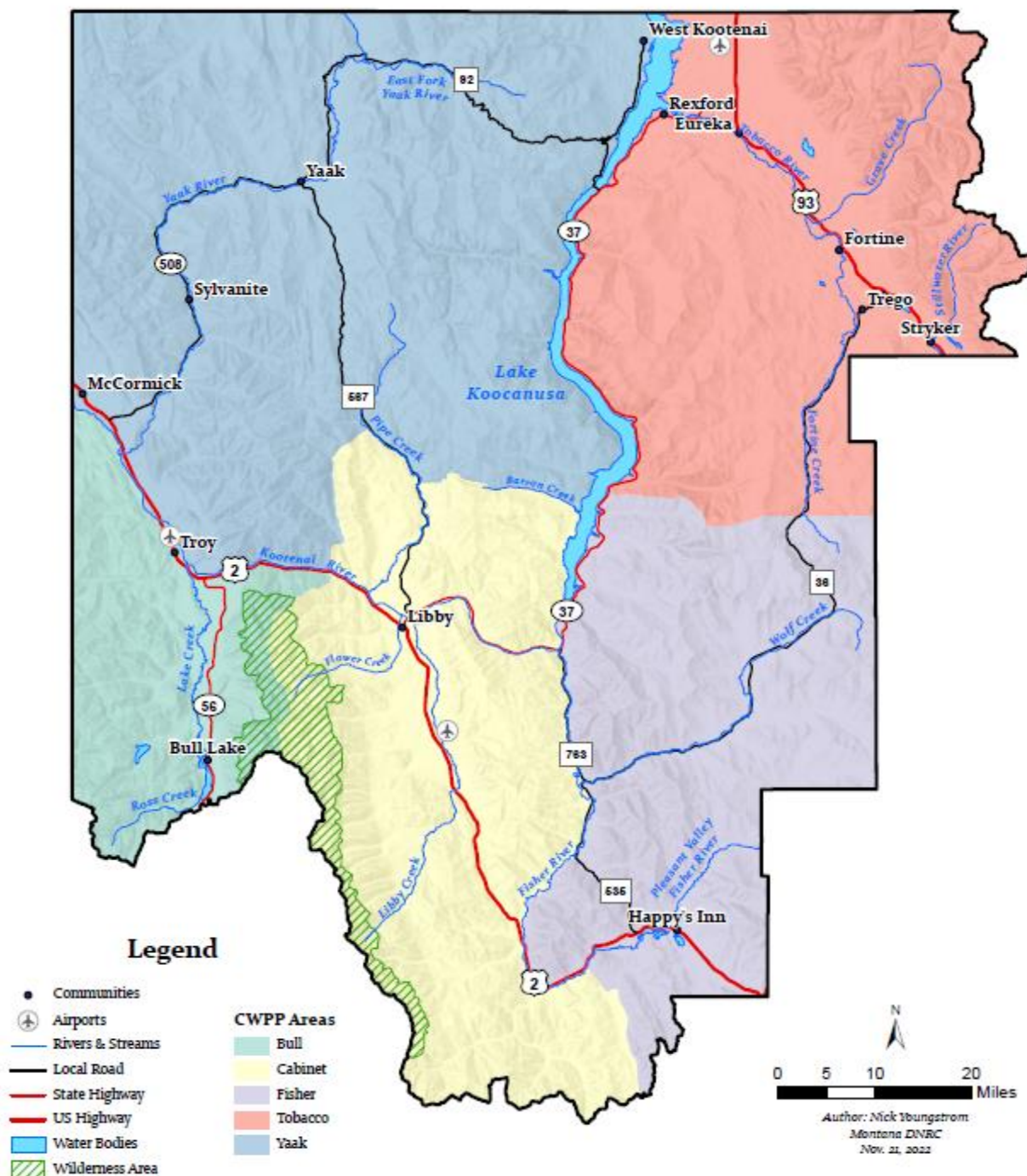
For the fire risk analysis, Lincoln County was delineated into five geographic areas (GA) to better address the unique characteristics of each GA and needs of the communities within them. The GAs are as follows – Bull, Yaak, Tobacco, Fisher, and Cabinet and the boundaries of each are shown on Map 7 on page 22.

The maps from the MWRA (Flame Length, HVRA) and MFAP (Priority Areas for Treatment) were selected for use in determining wildfire risk for the county and were reviewed by local fire organizations for accuracy. Based on local knowledge, additional acres were added to the Priority Areas for Treatment layer where it was determined that some lands at risk were not included in the MFAP data, most notably in the Fisher GA. Current forest health conditions and fuel loads, along with increasing housing densities, have elevated the wildfire risk to life and property in those areas. Review of the MFAP product is encouraged by the State to adapt plans that more accurately reflect local conditions.



# Lincoln County

## CWPP Geographic Areas



**Map 6: Lincoln County Geographic Area (GA) Boundaries**

The delineated WUI boundary and the Priority Areas for Focused Attention for each GA were overlaid, and the resulting overlapped areas were compared with the flame length and HVRA maps to verify severity of wildfire risk to values. The verification process of the proposed WUI boundary and the wildfire risk analysis was completed by local fire agency personnel for each GA. These groups also provided local knowledge of specific conditions, including population density, access, prevailing winds, etc.

It is important to understand what the analysis tools are predicting in real terms. For example, where the MWRA highly valued resources and assets (HVRA) modeling shows Extreme Risk to HVRA, a wildfire entering those areas is anticipated to have a higher likelihood of having widespread impacts. These impacts include critical infrastructure such as electricity, water, communications, and transportation, in addition to damaging numerous homes and businesses. Whereas, if the risk is low/medium or high, damage is likely to be limited primarily to residences in limited locations with higher risk levels being a function of housing density and larger areas affected.

The MWRA flame length data is a prediction of how intense a wildfire will burn under extreme conditions. Greater flame lengths increase the likelihood of a wildfire moving from the ground, where it can more easily be controlled through ground-based firefighting efforts, up into the tree crowns where ground-based firefighting tactics are ineffective and put firefighters at risk. Crown fires result from a combination of environment factors including available fuels, wind, low fuel moisture, an unstable atmosphere, and terrain features. Crown fires are more unpredictable than ground fires and can create their own weather causing conditions that exacerbate fire behavior. Fire suppression tactics for crown fires are mostly limited to aerial attack, burnout operations, and indirect tactics such as building firebreaks far from the fire front.

The Montana Forest Action Plan (MFAP) priority areas for treatment model identifies areas with relative potential for wildfire, based on how difficult it would be for fire crews to contain a fire, and combines them with insect and disease infested forest areas that increase fuel loads through tree mortality. Areas with higher wildland fire potential values represent fuels with a higher likelihood of experiencing high-intensity fire with torching, crowning, and other forms of extreme fire behavior.

### **CWPP Priorities and Treatment Focus Areas Selection Process**

The CWPP priority areas were selected through a collaborative process with the local fire protection agencies in each GA. Using the models described, separate meetings were conducted with fire personnel to identify the areas in each GA that have a high risk for wildfire and a serious threat to lives and infrastructure.

After verifying the WUI and the wildfire risk maps, the groups identified and ranked the areas they believed were most at risk. The top three priority areas for each GA were selected as treatment focus areas for the 2023 CWPP.

These priority areas are discussed in the next section by GA, giving the rationale for the area's inclusion as a priority along with a general description of the work needs to be accomplished, and who the cross-boundary partners are and identifying other partners that may play a role in accomplishing the work identified. Areas of concern not selected as the top priorities, but recognized as also needing treatment, are listed in Appendix A. A list of individuals and their affiliated organizations that participated in the risk assessment verification and selection of priority areas is listed in Appendix B.



## Primary Lines of Defense (PLODS)

Primary lines of defense (PLODS) are linear features that are utilized by firefighters to defend communities and other highly valued resources in wildland firefighting situations. Most often PLODS are existing roads, skid trails, or previously used firelines in the area, but they can also be accessible areas of vegetation transition zones, like fields and pastures, recent timber harvest units or burns, or topography that would allow fireline development. Ideally, PLODS are established by firefighting agencies prior to any wildfire threat and maintained for access if the need to utilize them arises. But often PLODS are developed during a wildfire event to protect threatened resources.

As part of the development of the updated CWPP, KNF and the DNRC fire specialists were asked to map the PLODS for each GA. The following GA maps show the lines of defense and their relationship to both the communities and/or highly valued resources and the WUI boundary. Because PLODS are a critical part of firefighting strategies and wildfire mitigation planning, where CWPP priority treatments are planned in the WUI, identified PLODS will be considered for development or for maintenance as part of the proposed treatments.



An established road used as a firebreak

Photo: DNRC

## Geographic Area (GA) Descriptions, Proposed WUI, and Priority Treatment Areas

### Bull Geographic Area (GA) - Maps 7 - 13

The Bull GA encompasses the Bull Lake and the Lake Creek areas, bound to the east by the Cabinet Mountain Wilderness and the Idaho border to the west. The Kootenai River forms the northern border where the City of Troy is located. Characterized by steep mountainous terrain and deep drainages, the Bull GA has a single V-shaped valley with the highest moisture levels in the county, with frequent fens and marshes. The forests here are dense and largely a mix of cedar, hemlock, spruce, western white pine, western larch, and Douglas-fir transitioning to sub-alpine fir and spruce forests in the higher elevations of the Cabinet Mountains. Private, non-industrial lands are primarily located in the valley bottom along the Kootenai River, Lake Creek and Iron Creek, and Schoolhouse, Savage, and Bull Lakes



Bull Lake

Photo: Rocket Homes



Bull Lake Estates

Photo: PureWest

### Bull GA Watersheds

Kootenai River  
Lake Creek

Bull Lake  
Callahan Creek

### Bull GA Communities

Troy  
Bull Lake

### Bull GA Infrastructure

Homes, businesses, schools and places of worship  
Health care facilities  
Banks  
US Hwy 2, MT Hwy 56  
Telecommunication tower  
Fire and ambulance stations  
Airport – general aviation  
Railroad – passenger and freight  
Drinking water and sewage facilities  
Recreational facilities – multiple sites



High voltage transmission lines and substations  
Fire detection lookout

#### **Bull GA Unique Assets at Risk**

Cabinet Mountain Wilderness  
Ross Creek Cedars Scenic Area  
Kootenai Falls Scenic Area

#### **Bull GA Community Values at Risk**

US Hwy 2 corridor and MT Hwy 56 corridor – access for residents, tourists, commercial transportation, and emergency services

#### **Bull GA Land Ownership**

- MT-DNRC: There are scattered timberland parcels of state lands along the Highway 56 corridor and around the City of Troy.
- Private land: The most common use for the area around Troy is small lots and subdivisions with commercial businesses along main roads. Outside of Troy, there are larger private landowners in rural areas and along the Highway 56 corridor.
- Stimson Lumber Company: Stimson Lumber Company is the largest private landowner in this area with lands used primarily for commercial timber production.
- USDA Forest Service: The Forest Service is the largest landowner in this area with lands adjacent to private land around Troy and along the Highway 56 corridor.

#### **Bull GA Fire Probability and Response**

The valley floor has the highest potential for human-caused fires while fires outside of the valley floor are likely to be lightning-caused. Response time in the valley floor is typically within 30 minutes while areas outside of the valley floor are typically longer and limited by access and terrain.

#### **Bull GA Factors Influencing Fire Behavior**

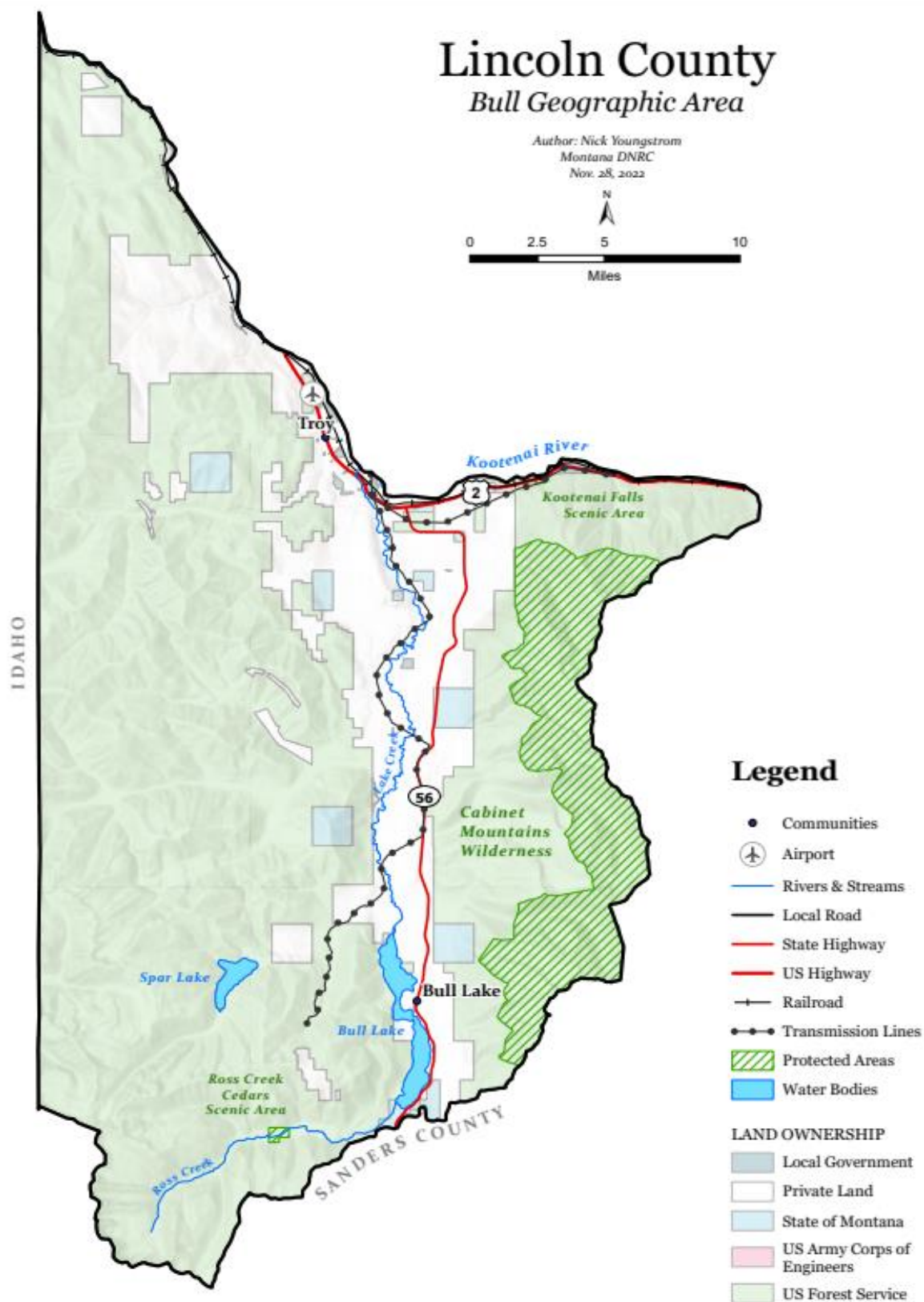
Strong west-southwest winds push fires to the east towards the valley floor. Because of heavy fuels and closed canopies, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

#### **Bull GA Most Recent Large Fire**

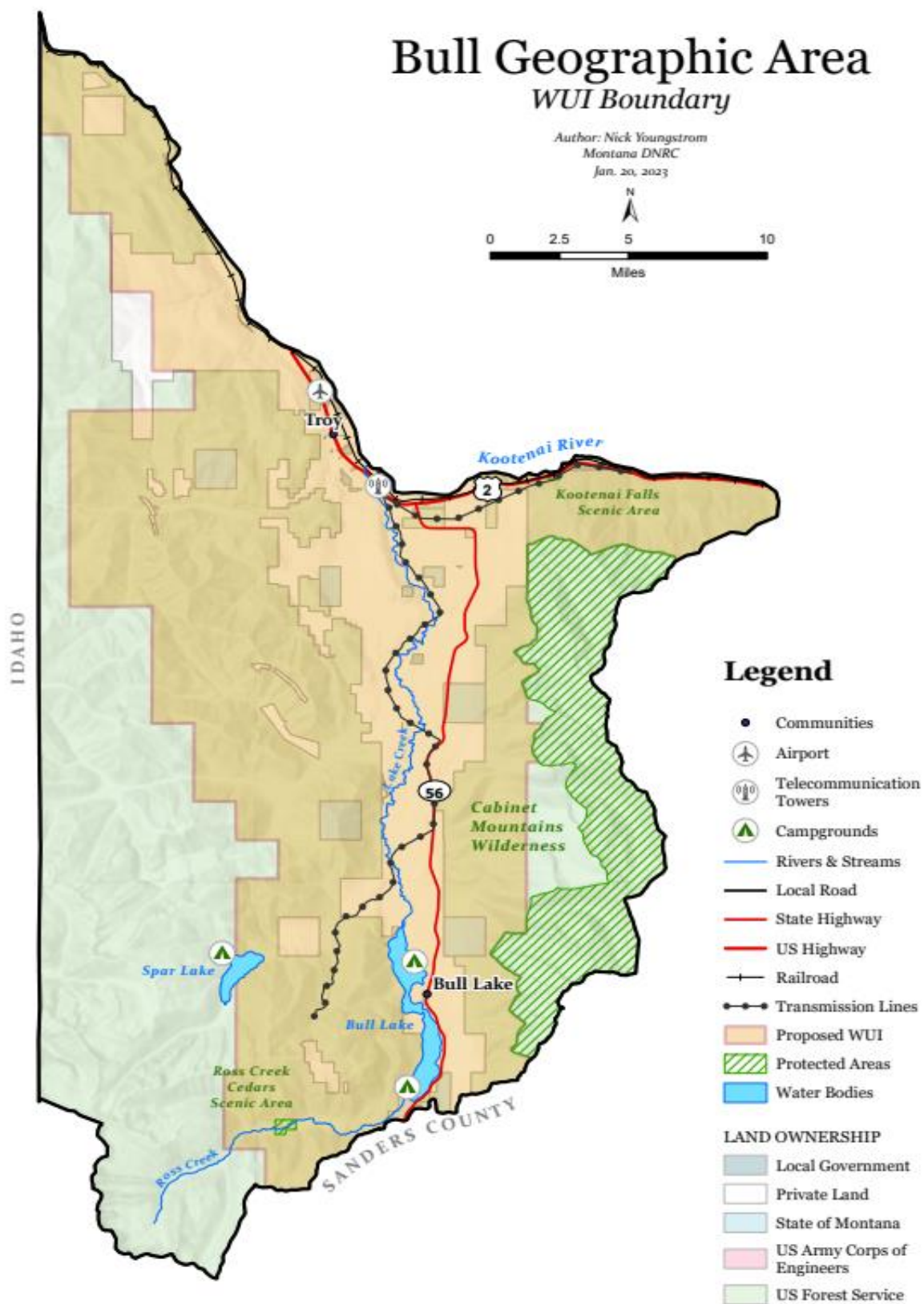
2000 Grambauer Face (794 acres)  
2000 Taylor Peak (1,311 acres)  
2006 Ross Junior (585 acres)  
2015 Sawtooth (2,680 acres)  
2021 Burnt Peak (5,000 acres)

#### **Bull GA Fire Organizations with Jurisdictional Responsibility**

U.S. Forest Service	Troy Volunteer Fire Department
Troy Rural Fire District	Bull Lake Fire District



Map 7: Bull Geographic Area (GA) with Ownership



Map 8: Bull Geographic Area (GA) with Proposed WUI

## **Bull GA**

### **MWRA - HVRA Model - Risk to Property and Infrastructure – Map 9**

The mapping of Highly Valued Resources or Assets (HVRA) from the MWRA analysis displayed the concentrations of highly valued resources, described as homes, businesses, and infrastructure including powerlines, railroads, and communication sites, along the Kootenai River from just east of Troy stretching west to the Idaho border.

The modeling showed the City of Troy and Fairview Heights Subdivision, along with Itsaview Subdivision had extreme risk to properties. The area from Troy west to the Idaho border displayed most properties were at very high-risk including Kootenai Vista Subdivision.

Concentrations of homes and infrastructure continued south up Iron Creek and along Lake Creek and the Bull Lake Road (Hwy 56) past Bull Lake and to the county line. Modeling showed the areas around Schoolhouse, Savage and Milnor lakes, and Lake and Iron creeks north of Lime Butte and Copper Mountain to be at very high-risk from wildfire.

Further south along the Bull Lake Road, the model showed continued risk of being high or very high. Angel Island and the concentrations of small lots along the shores of Bull Lake, including Bull Lake Estates, the model displayed very high-risk with small pockets of extreme risk.

### **MWRA – Flame Length Model – Map 10**

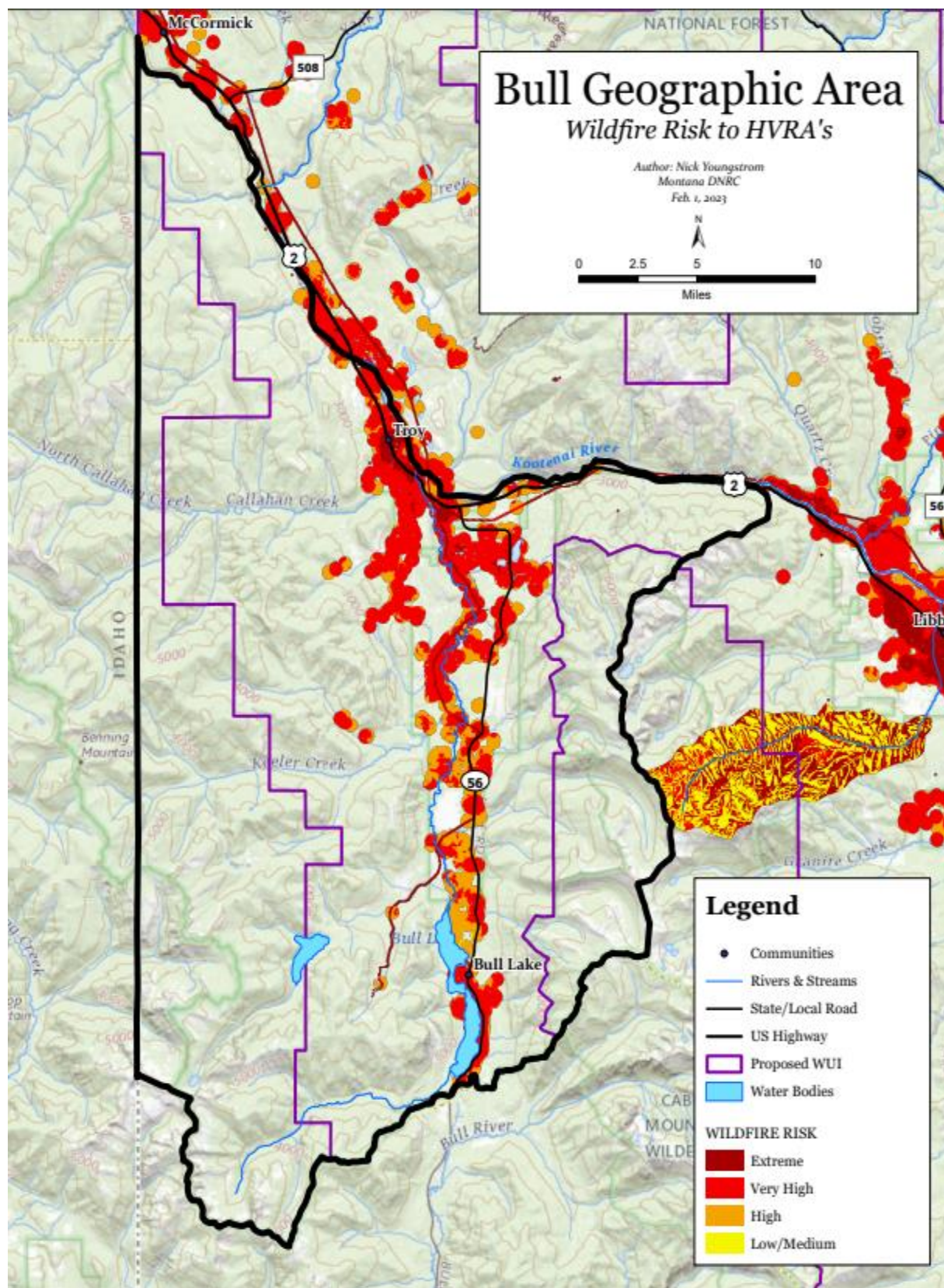
The Flame Length modeling displays generally low to moderate flame lengths from 0 to 8 feet for river, creek, and valley bottoms. Flame lengths increase substantially with slope, and on the steep slopes of the Cabinet Mountains that flank both sides of the Bull Lake Valley and west of Troy in the Callahan Creek drainage, flame lengths are modeled between 8 and 40 feet. Where recent wildfires occurred in the GA (Burnt Peak 2021), the model displays low flame lengths (0-4 feet) in the areas where mixed severity fire occurred.

### **MFAP – Priority Areas for Treatment Model - Map 11**

The MFAP modeling of the Bull GA shows nearly the entire southern portion of the Kootenai River corridor in the WUI and south into the Iron Creek and Lake Creek drainages to Bull Lake and the county line as Priority Areas for Treatment to abate fire risk, or forest health issues. Areas not identified in the MFAP modeling included Mount Vernon and much of the west shore of Bull Lake, the marshy lands north of Bull Lake where Lake Creek begins, Grouse Mountain in the North Fork of Keeler Creek drainage, and areas of private timber lands that have recently been harvested or thinned in the Ruby/Star Creek drainages.

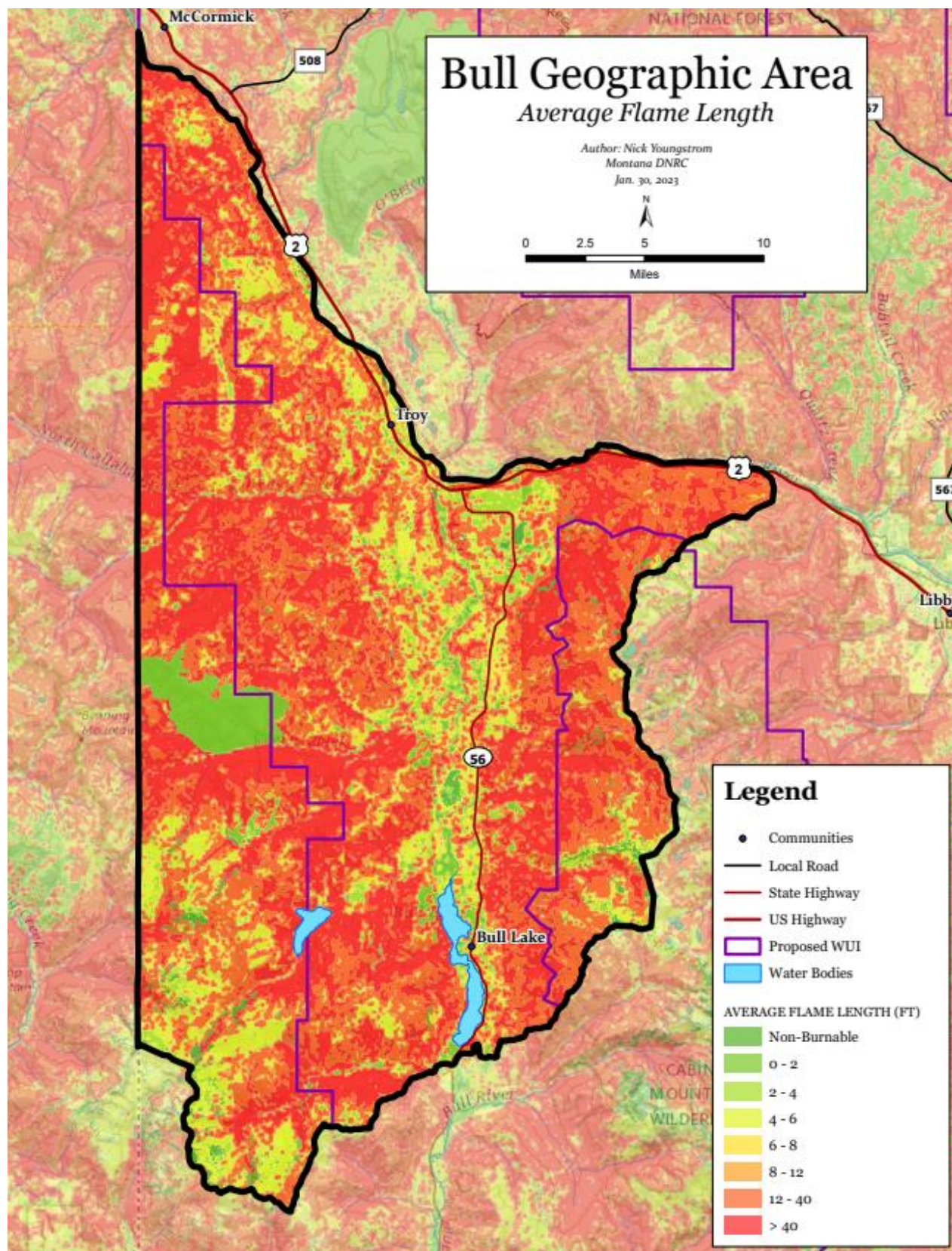
During the verification process of the models, by local fire professionals, it was decided that Mount Vernon and all of the west shore of Bull Lake should be included, along with Grouse Mountain in the North Fork of the Keeler Creek drainage. Also identified as an area for inclusion was the west side of Preacher Mountain near Troy.





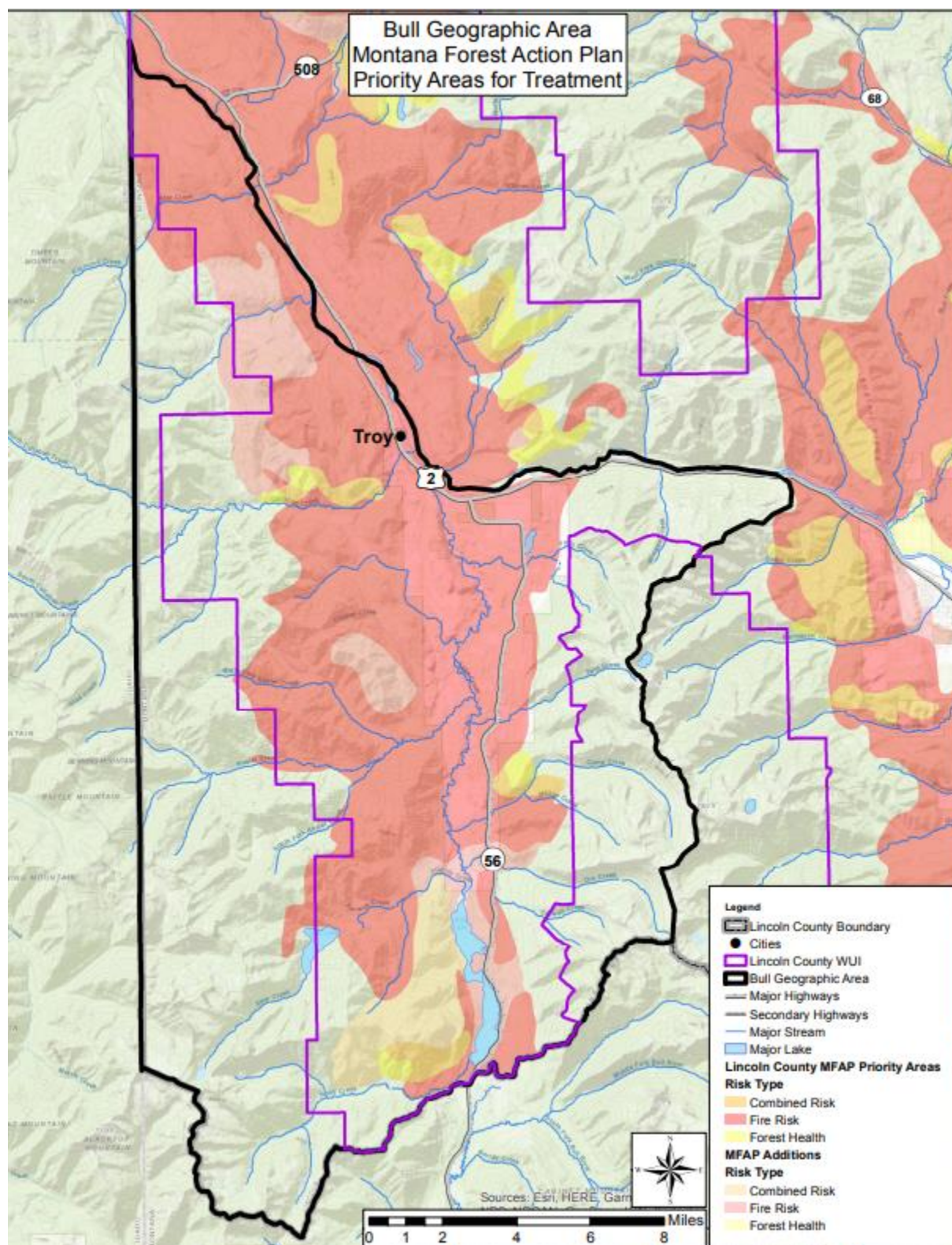
**Map 9: Bull GA Risk to Highly Valued Resources of Assets (HVRA) Model**





Map 10: Bull GA Average Flame Length Model





**Map 11: Bull GA Priority Areas for Treatment per MFAP and Fire Organizations**

## Summary

Most homes are in the river bottom around Troy, or in the creek and valley bottoms south of Troy along with businesses and infrastructure where fire starts are primarily from human activities according to Forest Service data. Many of the same properties are adjacent to or in the forests surrounding the area. These forests have high fuel loads, insect and disease problems, and often both, as modeled by the MFAP.

Lightning-caused fire starts are prevalent on the mid-slopes and high ridges, especially in the western part of the GA. The steep topography of the Kootenai River gorge and V-shaped Bull Lake valley combined with heavy fuel loading and dense forests create dynamic fire behavior conditions when fires ignite. Whether from lightning or human-caused, extreme fire behavior including high flame lengths and crown fires are likely to occur in this GA. Probabilities of large wildfires are greatly reduced if wildfires can be kept to the valley bottoms, because of greater access for firefighters and more barriers to fire spread.

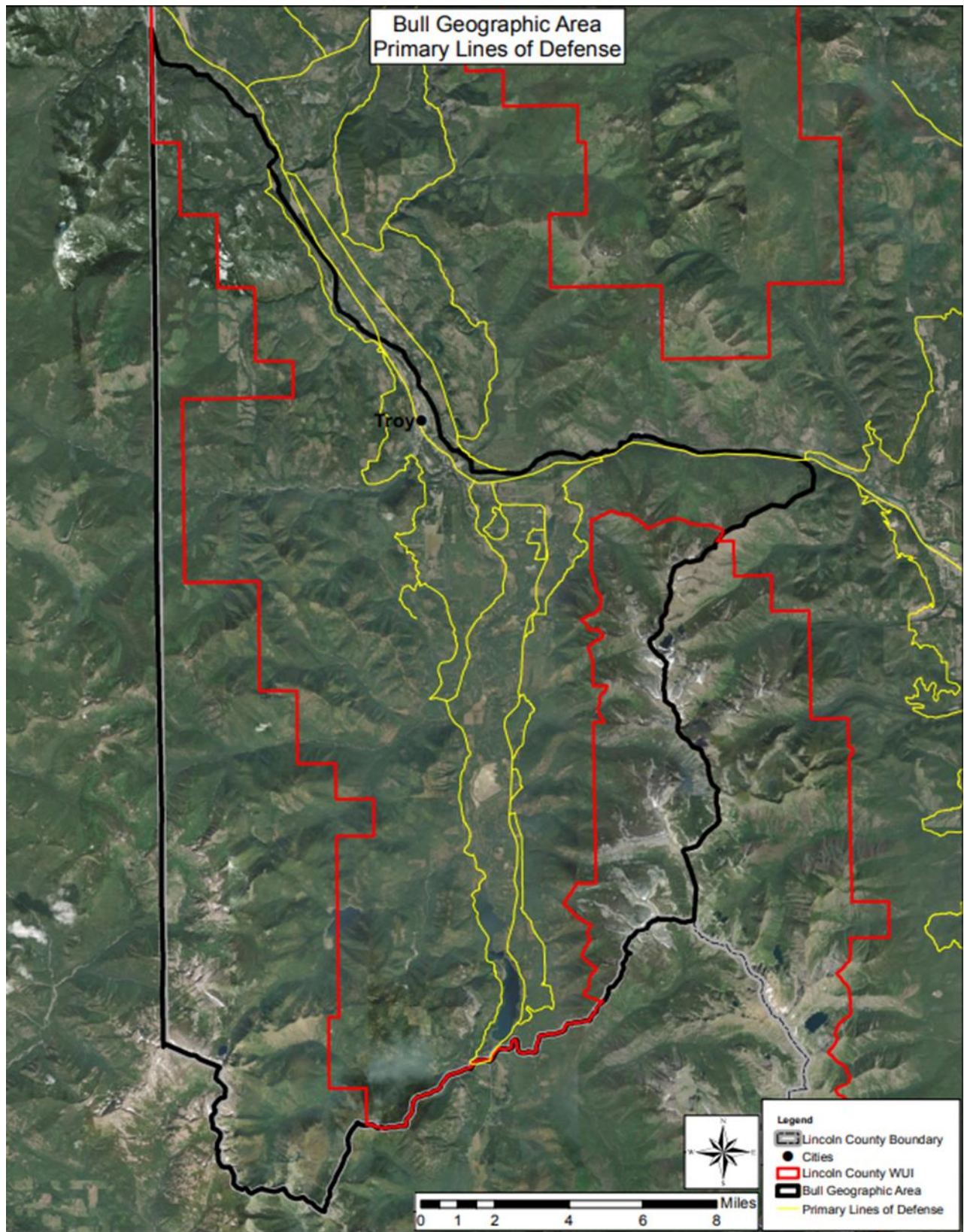
## Important Information for Landowners in the Bull GA

Living in the Bull GA surrounded by forests with close neighbors make protecting your home and family a priority. The highest risk in this area comes from ignition sources on your own property or those of your neighbors. Recreational fires, barbecuing, burning debris piles, welders, using equipment without spark arrestors, etc., all are potential ignition sources. Creating defensible space around your home is an important and effective way to protect your home and family.

Response times to landowner properties for fires and other emergencies in this GA are relatively short compared with other areas of the county. Troy Rural Fire District and the Bull River Fire District provide good coverage of the area. The USFS Three Rivers Ranger District can also respond quickly if needed. Making sure emergency services can find your home and get into your property is a key factor that you can address as a homeowner. Is your house number or address visible to emergency vehicles? Is it visible in the dark? If it is smoky? Is your driveway wide enough for a fire engine to get into your property and turn around? Are there locked gates? Is there a bridge that must be crossed to access your property? If so, make sure that it is properly posted for weight limits. Emergency responders are not going to put themselves in danger to protect your house, so it is your job to make it safer for them.

For more landowner information go to [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)





Map 12: Bull GA Primary Lines of Defense (PLODS)

**Bull GA -Treatment Focus Areas      Map 13**

<b>Bull GA- Priority 1</b>	<b>Location:</b> Callahan/Iron Creek/Iron Grouse/McConnell Mtn - 7,700 acres	
<b>Area Description and Rational:</b> Dense forests on steep slopes with high fuel loads and ladder fuels combined with prevailing southwest winds create potential for wind-driven fires. Human-caused fire are the most common cause of fire ignition as a result of human activity in the lower elevations, though lightning-caused fires on the higher slopes of these narrow valleys are common and down canyon winds also threaten these areas, including the subdivisions of Fairview Heights, Grigg Tracts, Callow Tracts, Dillon View, Ridgeview Estates, Iron Creek Estates, French Creek, Campbell and others, and the City of Troy. Cross-boundary treatments need to occur in this area.		
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber Company, MT DNRC, Lincoln County, Private landowners		
<b>Other Partners:</b> Northern Light Inc., City of Troy, Troy Rural Fire Department, Lincoln County Sheriff's Office		
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, provide home assessments, and provide wildfire educational materials regarding prevention, wildfire readiness, treat in the Home Ignition Zone around homes and driveways.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District – USDA FS Stimson Lumber Company MT DNRC Libby Unit		<b>Implementation Date:</b>

<b>Bull GA- Priority 2</b>	<b>Location:</b> Troy Proper/Preacher Mtn/Ruby Cr/Star Cr – 3,400 acres	
<b>Area Description and Rational:</b> Patchy forest with areas of managed forest intermixed with untreated forested areas with high fuel loads and ladder fuels. Fire starts in this area are a combination of human and lighting-caused. When combined with prevailing southwest winds there is potential for wind-driven fire threats to homes including Valley Tracts, North Troy Subdivisions and the City of Troy. Cross-boundary treatments need to occur in this area.		
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber Company, Private landowners		
<b>Other Partners:</b> Northern Light Inc., City of Troy, Troy Rural Fire Department		
<b>Project Work:</b> Fuel reduction, develop primary lines of defense and create shaded fuel breaks, provide home assessments, and wildfire educational materials regarding prevention, wildfire readiness treat in the Home Ignition Zone around homes and driveways.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District -USDA FS Stimson Lumber Company		<b>Implementation Date:</b>



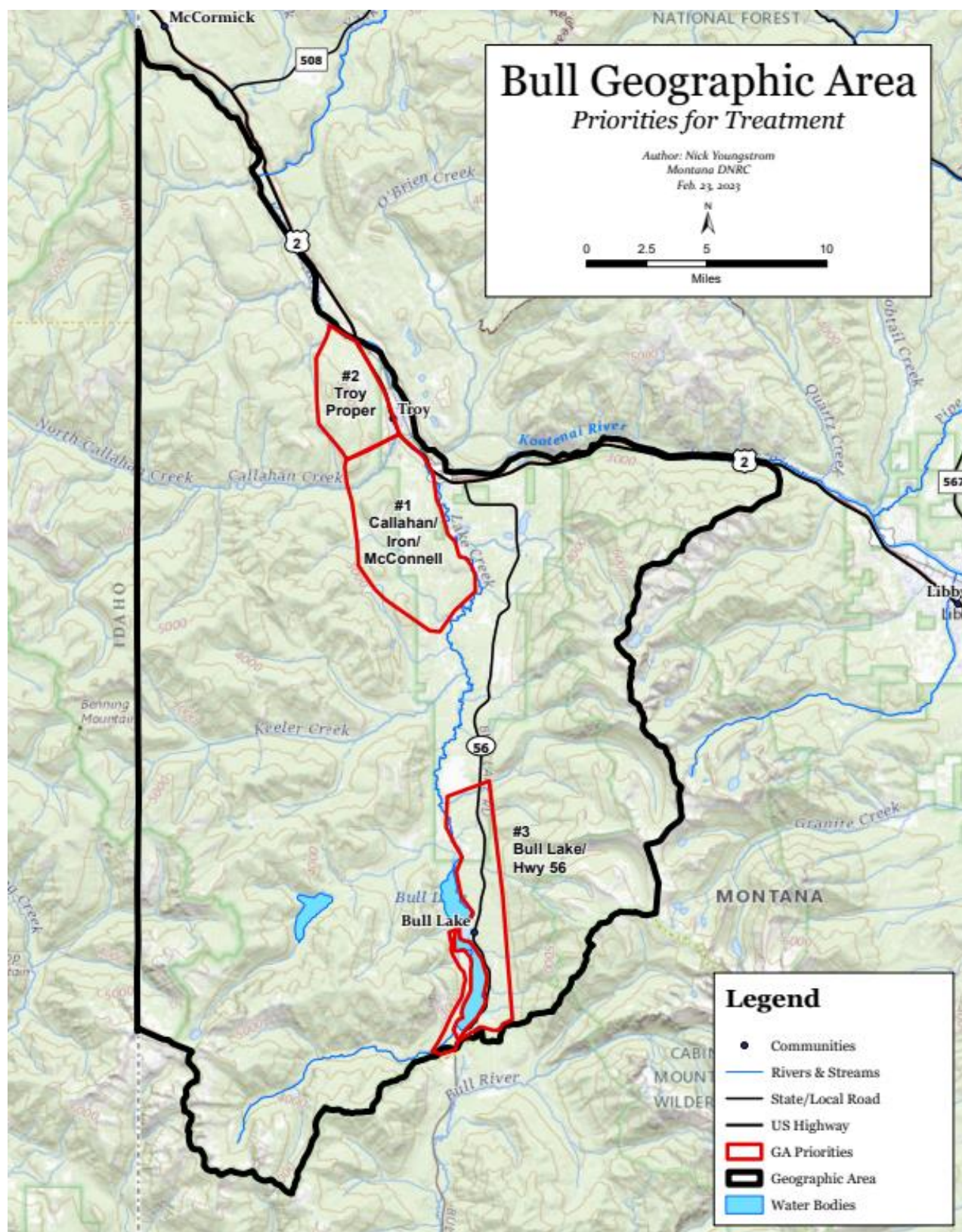
<b>Bull GA-Priority 3</b>	<b>Location:</b> Bull Lake Road from the Troy Mine Road to the Lincoln/Sanders County line – 3,900 acres
<b>Area Description and Rational:</b> This area has high concentrations of forested, small-lot properties along Bull Lake and on Angel Island, and many new subdivisions south of the Troy Mine Road including Whitetail Terrace, Camp Creek, Camp View, Stanley View, Keeler View, Pheasant View Forest, Lake's End, Doonan View, Treasure Acres, Crowell Creek and Bull Lake Estates, among others. Human-caused fire is the biggest threat in Priority 3. Additionally, surrounding dense forests on steep slopes with high fuel loads and ladder fuels combined with prevailing southwest winds create potential for wind-driven fire threats to homes. Cross-boundary treatments need to occur in this area.	
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber Company, American Forest Management, MT DNRC, MT FWP, Lincoln County, Private landowners	
<b>Other Partners:</b> Northern Light Inc., Bull Lake Fire District, Lincoln County Sheriff's Office, Homeowners Associations, Community Associations	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, provide home assessments, and wildfire educational materials regarding prevention, wildfire readiness, treat in the Home Ignition Zone around homes and driveways. Develop an evacuation plan for Bull Lake Estates.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District – USDA FS Stimson Lumber Company American Forest Management MT DNRC Libby Unit	<b>Implementation Date:</b>



Ross Creek Cedars Scenic Area

Photo: Casey Kreider/Daily Inter Lake





Map 13: Bull GA Priority Treatments 1, 2, and 3

## Yaak Geographic Area (GA) - Maps 14 - 20

The Yaak GA is a remote area in the upper northwest part of the county, bordering Idaho and Canada. The mountainous and rolling terrain of the Purcell Mountains supports expansive, diverse forest types ranging from warm, dry, lower elevation pine and fir forests to higher elevation lodgepole and western larch forests with large pockets of spruce, hemlock and cedar scattered throughout. Marshy wetlands and meadows occupy the valley bottoms and is where most private land and community development is located.



Yaak Valley

Photo: Glacier County Montana



South Yaak Fire

Photo: Kootenai N.F.

### Yaak GA Watersheds

Kootenai River  
Pipe Creek

Yaak River

### Yaak GA Communities

Troy (north of the Kootenai River)  
Yaak  
Sylvanite

McCormick  
West Kootenai

### Yaak GA Infrastructure

Homes, businesses, school, and places of worship  
Fire and ambulance stations  
US Hwy 2, MT Hwy 508, County Routes 72, 92, 8025, Forest Route 68, 228  
Telecommunication towers and radio repeaters - multiple sites  
Turner Mountain Ski Area  
Recreational facilities – multiple sites  
High voltage transmission lines and substations  
Fire detection lookouts

### Yaak GA Unique Assets at Risk

Northwest Peak Scenic Area

### **Yaak GA Community Values at Risk**

US Hwy 2 corridor, MT Hwy 508 corridor, Forest Route 68 corridor, Forest Route 228 – access for residents, tourists, commercial transportation, and emergency services

### **Yaak GA Land Ownership**

- MT-DNRC: There are scattered timberland parcels of state lands north of the City of Troy and the community of West Kootenai.
- Private land: The most common use for the area around Troy is small lots and subdivisions. Outside of Troy, there are larger private landowners along the Yaak Highway (MT-508) and the communities of McCormick, Sylvanite, Yaak, and West Kootenai.
- Stimson Lumber Company: Stimson Lumber Company has lands used primarily for commercial timber production around Troy and Pipe Creek drainage.
- USDA Forest Service: The Forest Service is the largest landowner in this area with lands adjacent to private land around Troy, Yaak Highway corridor, and the communities of McCormick, Sylvanite, West Kootenai, and Yaak.

### **Yaak GA Fire Probability and Response**

The valley floor has the highest potential for human-caused fires while fires outside of the valley floor are likely to be lightning-caused. Response time around Troy and communities of McCormick, West Kootenai, and Yaak is typically within 30 minutes while areas outside of these communities are typically longer and limited by access and terrain.

### **Yaak GA Factors Influencing Fire Behavior**

Strong west-southwest winds push fires to the east. Because of heavy fuels and closed canopies, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all of the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

### **Yaak GA Most Recent Large Fire**

2015 Teepee (1,018 acres)  
 2017 Caribou (24,752 acres)  
 2018 Davis (6,619 acres)  
 2018 Gold Hill (6,605 acres)  
 2021 South Yaak (12,376 acres)

### **Yaak GA Fire Organizations with Jurisdictional Responsibility**

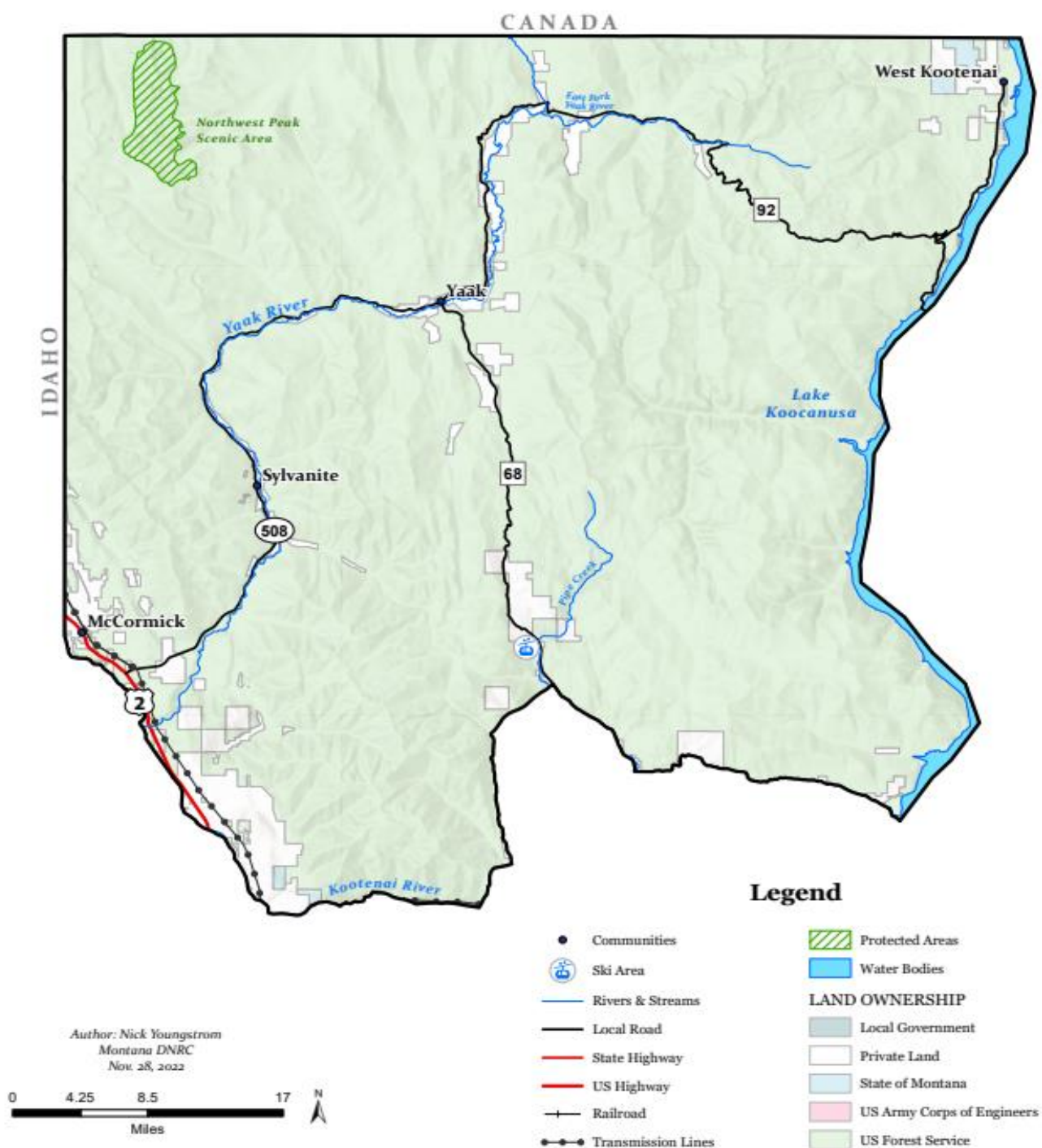
U.S. Forest Service  
 Troy Rural Fire District  
 McCormick FSA

Troy Volunteer Fire Department  
 Upper Yaak FSA  
 West Kootenai FPC



# Lincoln County

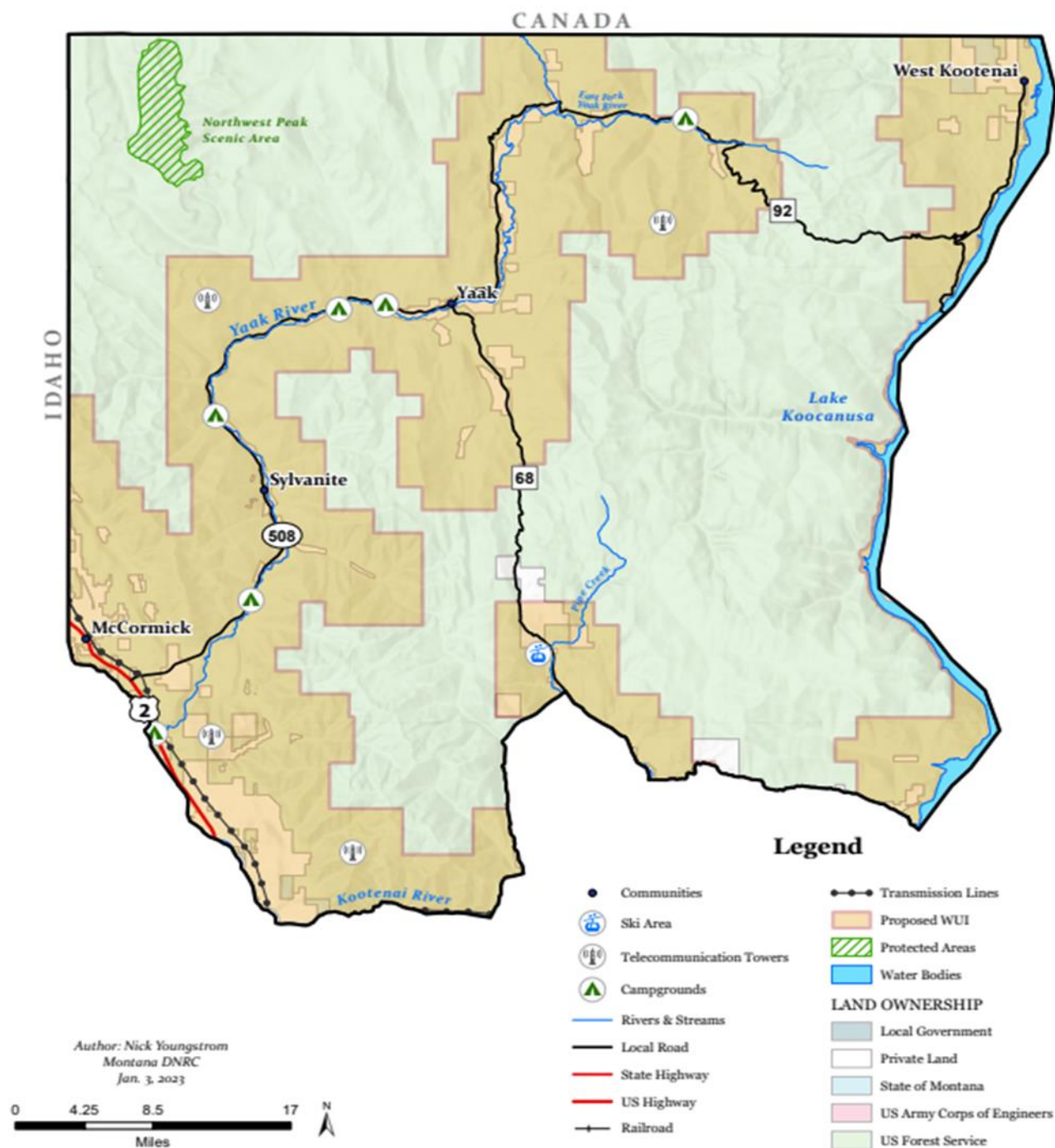
## Yaak Geographic Area



**Map 14: Yaak Geographic Area (GA) with Ownership**

# Yaak Geographic Area

## WUI Boundary



Map 15: Yaak Geographic Area (GA) with Proposed WUI



## **Yaak GA**

### **MWRA – HVRA Model – Risk to Property and Infrastructure – Map 16**

The modeling of HVRA from the MWRA analysis showed most of the highly valued resources in the Yaak GA are concentrated in the areas of Kootenai River Road across the river from Troy, McCormick and the West Kootenai with smaller concentrations in the narrow corridor of the Yaak River and the Yaak River Valley, with still smaller concentrations scattered in O'Brien and Pine Creeks, Rocky Draw, and Seventeen Mile areas.

The model showed only small areas just north of Yaak at Yaak Meadows Subdivision and a few small areas in the West Kootenai posed extreme risk to properties. Most of the highly valued resources in this GA, displayed as very-high risk category including properties and infrastructure along Kootenai River Road, McCormick, Rocky Draw, Pine Creek, Seventeen Mile, the Yaak community, Yaak Acres Subdivision, North Fork of the Yaak, and West Kootenai.

### **MWRA – Flame Length Model – Map 17**

The Flame Length model displays generally low to moderate flame lengths from 0 to 8 feet in the vicinity of highly valued resources near river, creek, and valley bottoms except for the Rocky Draw area where flames lengths increase to 12 to 40 feet.

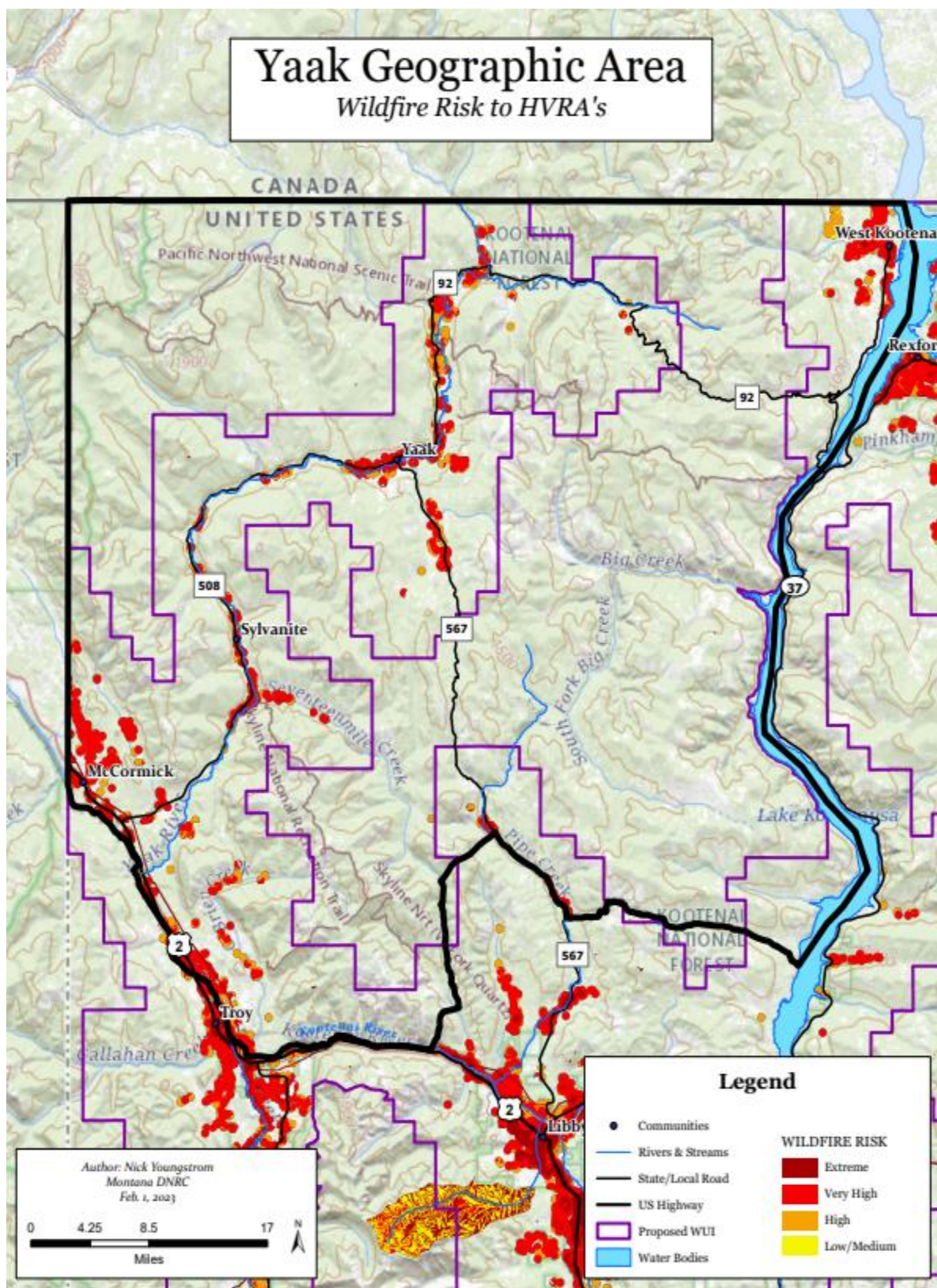
In the narrow canyon of the Yaak River above Pine Creek, including the areas of Cedar Meadows Subdivision, Seventeen Mile Road and Sylvanite, flame lengths increase substantially from 12 to over 40 feet as slopes increase and rise sharply from the river bottom. The Yaak Valley being wider and having meadows and fens with lower fuel loading display at 0 to 8 feet flame lengths, as do the grasslands of the West Kootenai.

However, most of the Yaak GA displays flame lengths of 12 to more than 40 feet indicating that this GA can expect extreme fire behavior should a wildfire occur. Where recent mixed severity wildfires occurred in the GA, including South Yaak (2021), Davis (2018), Gold Hill (2018) and the Caribou Fire (2017), the model displays low flame lengths (0-4 feet) a result of fuels being consumed during the fires.

### **MFAP – Priority Areas for Treatment Model - Map 18**

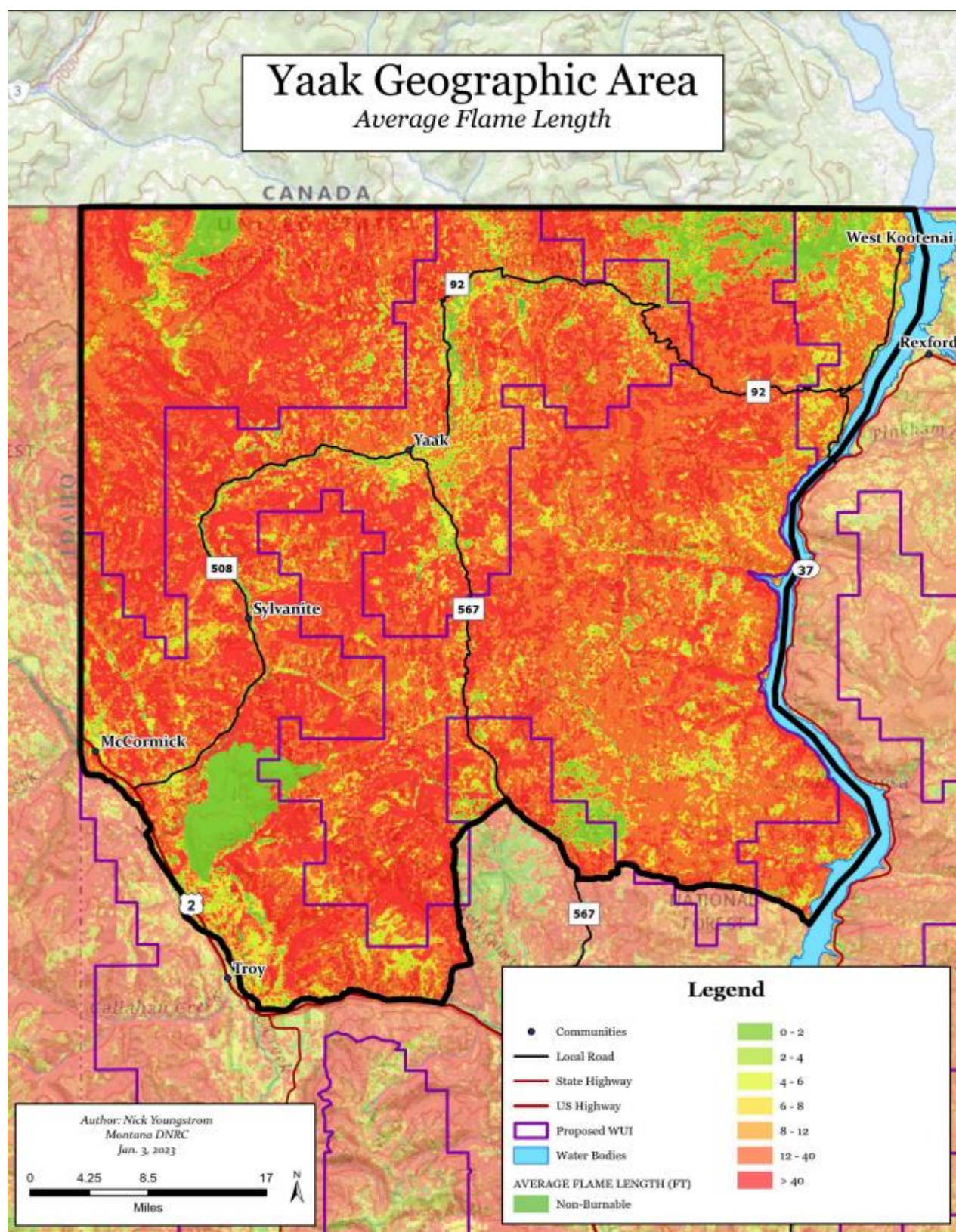
The MFAP modeling of the Yaak GA shows a large area north of the Kootenai River corridor into the O'Brien Creek drainage to the state line, including the community of McCormick as Priority Areas for Treatment to abate for fire risk. Additional areas identified in the MFAP were the lower Yaak corridor and up to Pete Creek, including Seventeen Mile as Priority Areas for Treatment for Fire Risk, Forest Health Risk or both.

A large area around Lucky Point/Clark Mountain and Hensley Hill was added during the local wildfire risk assessment process as a result of discussions regarding protection of the highly valued resources in the WUI around the community of Yaak and evacuation routes for the area. Also included as a result of those discussions were areas near the North Fork of the Yaak River, Lake Okaga, and areas of Basin Creek.

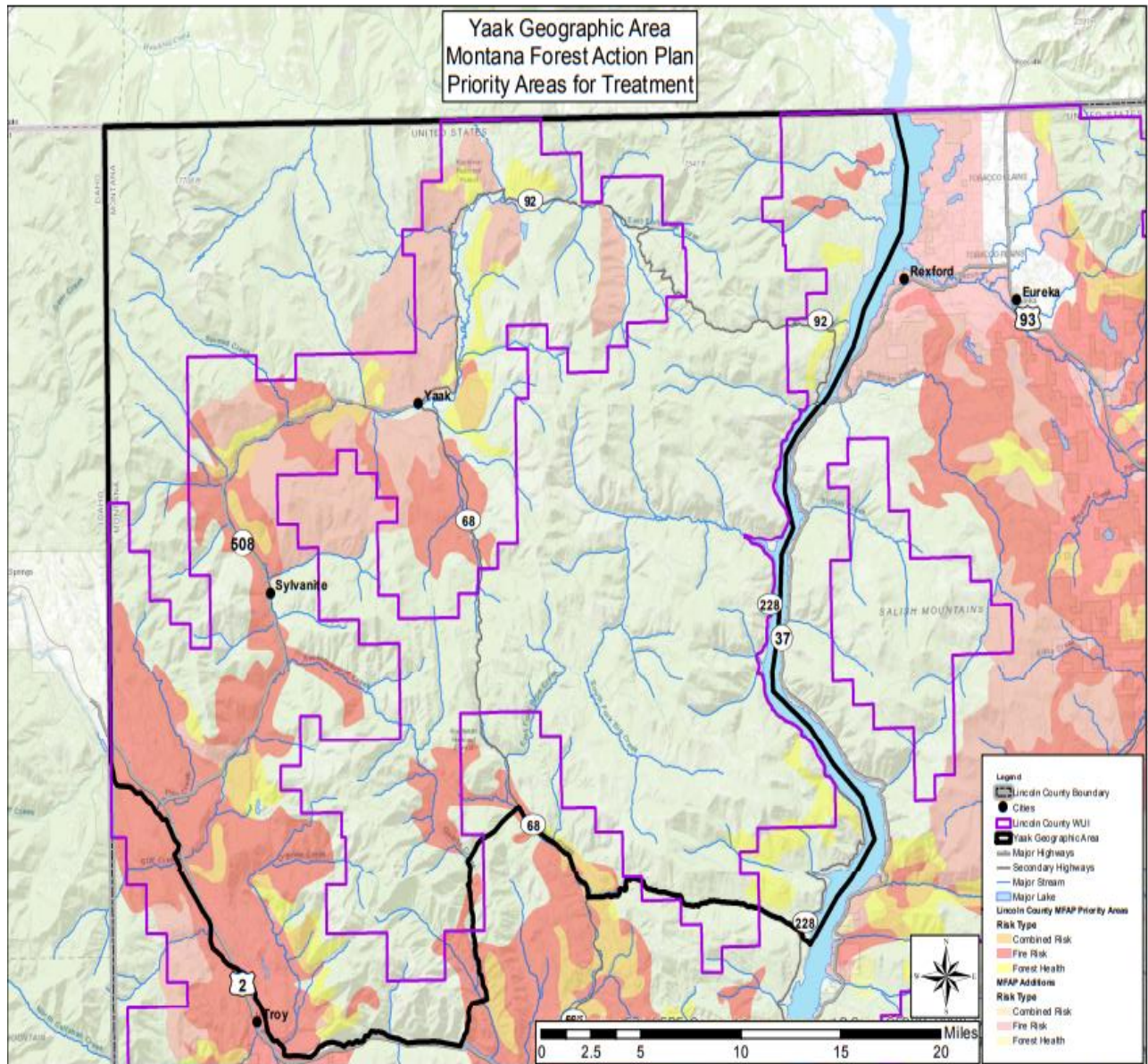


Map 16: Yaak GA Risk to Highly Valued Resources of Assets (HVRA) Model









**Map 18: Yaak GA Priority Areas for Treatment per MFAP and Fire Organizations**

### Summary

Most homes and infrastructure are in the river corridor or valley bottoms in the Yaak GA. In subdivisions where there are many lots with a high density of homes and people, the threat of fire is primarily from human activities including activities in recreation areas. However, lightning-caused fire starts are common in the area and with many properties surrounded by forests with high fuel loads, insect and disease problems, or both. As a result, the threat to properties is high throughout the GA. The steep topography of the Yaak River corridor coupled with heavy fuel loads and dense forests can create conditions for extreme fire behavior and ember showers. Whether lightning or human-caused ignition, extreme fire behavior including high flame lengths and crown fires are likely to occur in this GA.

### Important Information for Landowners in the Yaak GA

Except for the area just north of Troy across the Kootenai River, McCormick, the Upper Yaak, and the West Kootenai community, response times to landowner properties for fires and other emergencies in this GA are longer than for most other areas of the county. Troy Rural Fire District, McCormick FSA, Upper Yaak FSA and the West Kootenai FPC provide quick response to their immediate areas, but longer distances and mountain roads can slow response to other areas of the GA. Response times from the USFS Three River Ranger District, Libby Ranger District, and the Rexford-Fortine Ranger District can be slow for the same reasons.

Living in the remote areas of the Yaak GA surrounded by dense forests with high fire risk and forest health issues, compounded by long response times in some areas of the GA, landowners need to invest money and energy into managing their properties to reduce wildfire risk to their homes. Creating defensible space around your home and making sure that your egress is open and cleared of fuels will buy time to get help to control fire on your property or to get your family out to safety. Multiple forms of egress are a good plan, as are shaded fuel breaks along all access routes to your property.

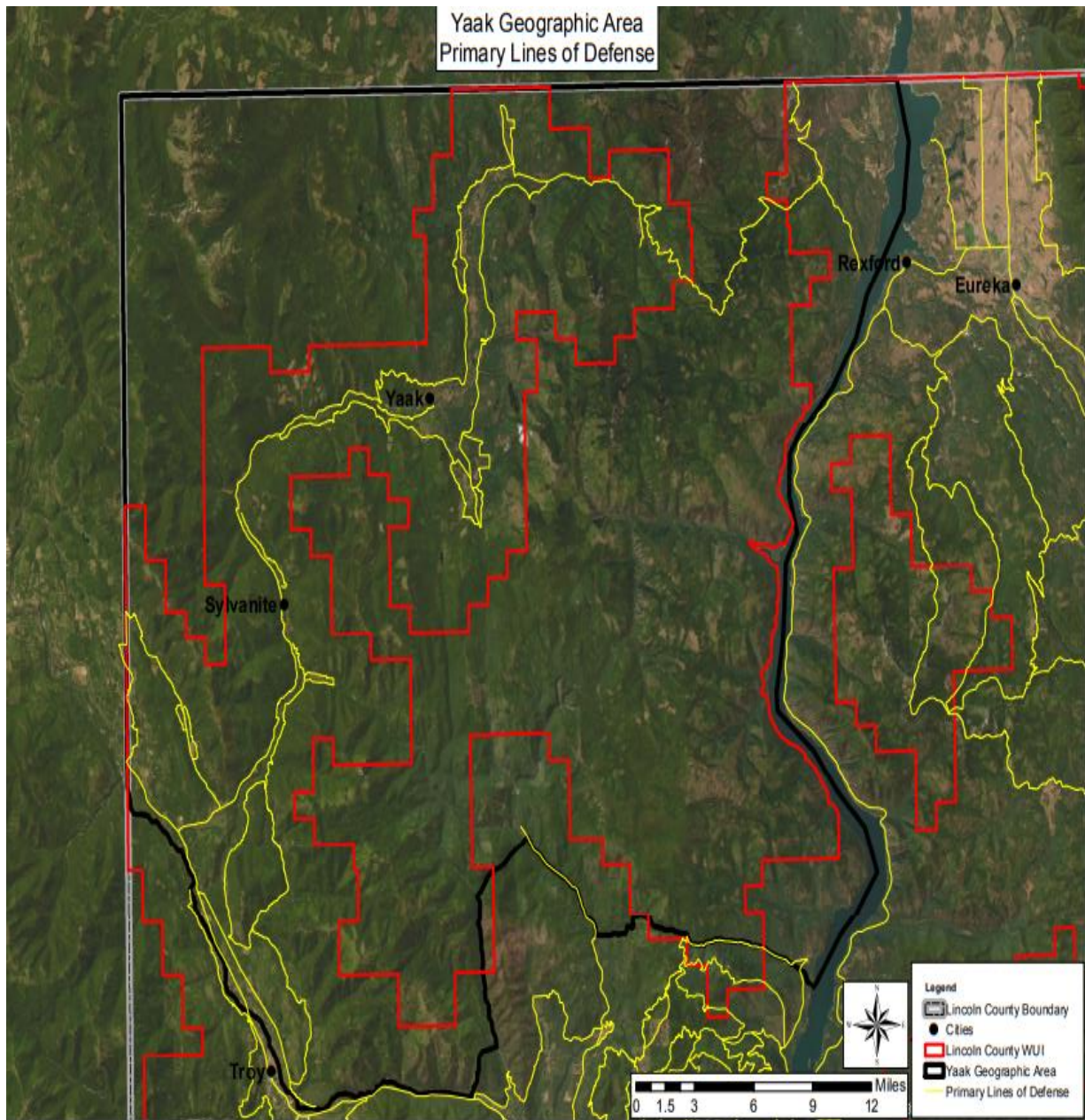
Making sure that a fire engine can find your home and get into your property is another key factor that you can address as a homeowner. Is your house number or address posted and visible to emergency vehicles? Is the address up to date? Is it reflective and visible in the dark? Or if it is smoky? Is your driveway wide enough for a fire engine to get into your property and turn around? Are there locked gates? Is there a bridge that must be crossed to access your property? If so, make sure that it is properly posted for weight limits. Emergency responders are not going to put themselves in danger to protect your property, so it is your job to make it safer for them to enter your property.

For more landowner information go to [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)



Yaak Schoolhouse circa 1920





**Map 19: Yaak GA Primary Lines of Defense (PLODS)**

## Yaak GA -Treatment Focus Areas

## Map 20

<b>Yaak GA- Priority 1</b>	<b>Location:</b> Pine Creek, Curley Creek, Rocky Draw, Old Hwy 2, Stateline - 15,000 acres	
<b>Area Description and Rational:</b> With over 200 residences, many located in the forest with single-access roads, these communities are surrounded by dense forests with high fuel loads and ladder fuels. Human occupation by settlers for the past 100+ years has led to years of fire suppression contributing to high fuel loads. Human-caused fires are the most common cause of fire ignition as a result of human activity, though lightning-caused fire on expansive National Forest lands to the west in Idaho are also a threat. Prevailing west winds create potential for wind-driven fires threatening homes in these areas, including the subdivisions of Whitetail Acres, Munyan, Lime Creek, Harrell's, Curley Creek, Kootenai Bench, State Line Manor and others. Cross-boundary treatments need to occur in this area.		
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber Company, Private landowners		
<b>Other Partners:</b> Northern Lights Inc., McCormick FSA, McCormick FireWise Community, Lincoln County Sheriff's Office		
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District – USDA FS Stimson Lumber Company		<b>Implementation Date:</b>

<b>Yaak GA- Priority 2</b>	<b>Location:</b> Yaak Proper, Hensley Hill, Hensley Face, south to Meadow Creek, and north to mile marker 33 and the Community Hall - 2,900 acres	
<b>Area Description and Rational:</b> Homes and businesses are located in the narrow corridor along the Yaak Hwy from Meadow Creek to Pete Creek and further to the north in the Yaak River Valley up to the Community Center at mile marker 33. Human-caused fires occur, but most are lightning-caused. The narrow valley with dense forests on steep slopes with high fuel loads and ladder fuels combined with prevailing west winds create potential for wind-driven, crown fires and embers threatening homes in these areas, including the subdivisions Wilderness River Estates, Cool Creek, Pete Creek View, Gold Dust, Yaak River Estates, Hensley Hills, Yaak Tracts, Airbase Flats, Yaak Meadows, and others.		
<b>Cross-boundary Partners:</b> Forest Service, Private landowners		
<b>Other Partners:</b> Northern Lights Inc., Upper Yaak FSA, Lincoln County Sheriff's Office		
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District – USDA FS		<b>Implementation Date:</b>

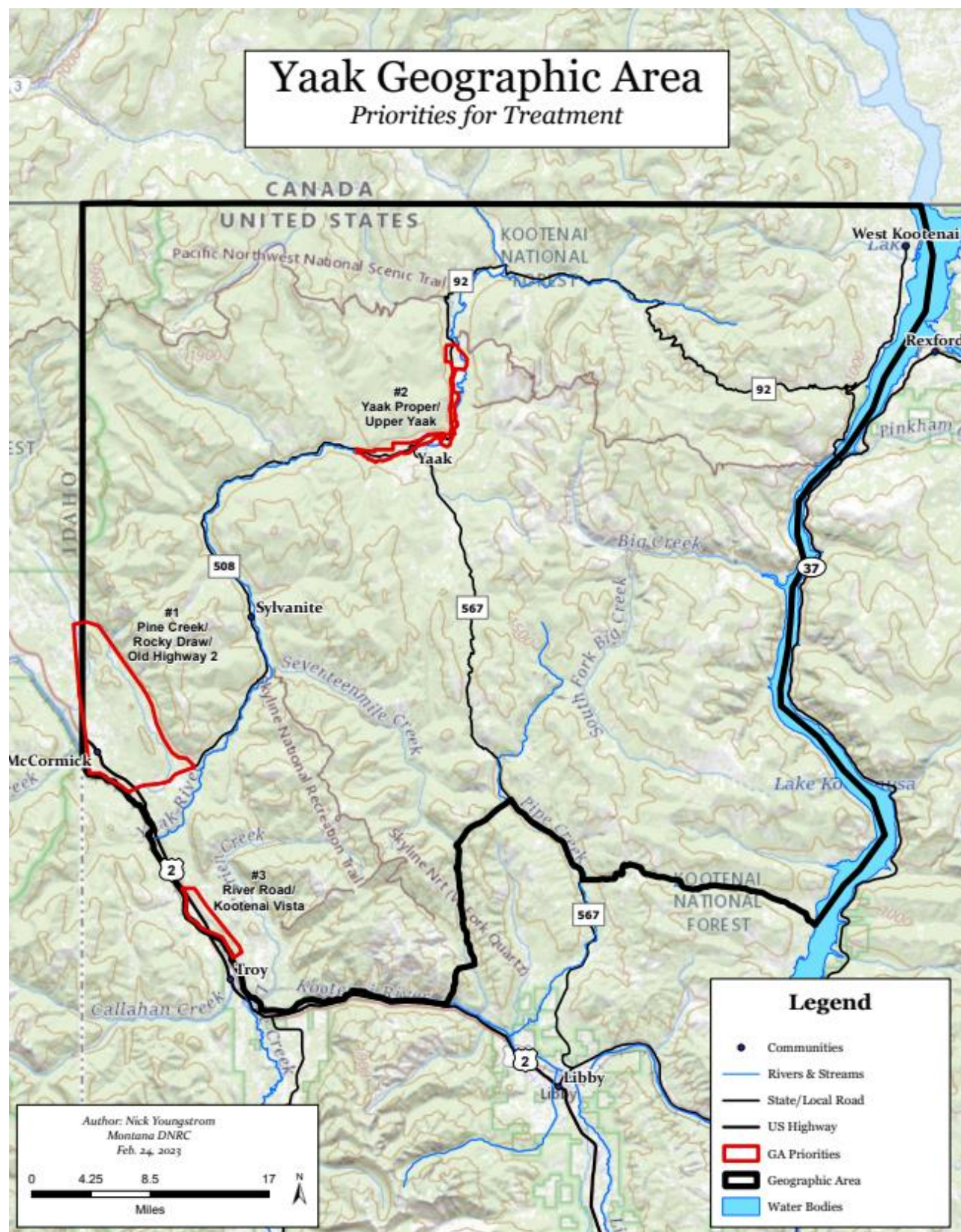
<b>Yaak GA-Priority 3</b>	<b>Location:</b> O'Brien Creek, Kootenai River Road, Kootenai Vista -1,700 acres
<b>Area Description and Rational:</b> This area has a high concentration of forested, small-lot properties along US Hwy 2 and Kootenai River Road. Numerous human activities contribute to human-caused fires, being the primary source of fire in this area. The drier southwest facing, steep slopes and dense forests with high fuel loads and ladder fuels combine with prevailing west and southwest winds to create potential for fire threats to homes, including in the Kootenai Vista subdivision, Riverbend Homes, Kootenai Valley Estates, Sunset Estates, Alvord Lake Estates and others. Cross-boundary treatments need to occur in this area.	
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber Company, Lincoln County, Private landowners	
<b>Other Partners:</b> Northern Lights Inc., Troy Rural Fire District, Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Three River Ranger District – USDA FS Stimson Lumber Company	<b>Implementation Date:</b>



Upper Ford Ranger Station built in 1926

Photo: USFS

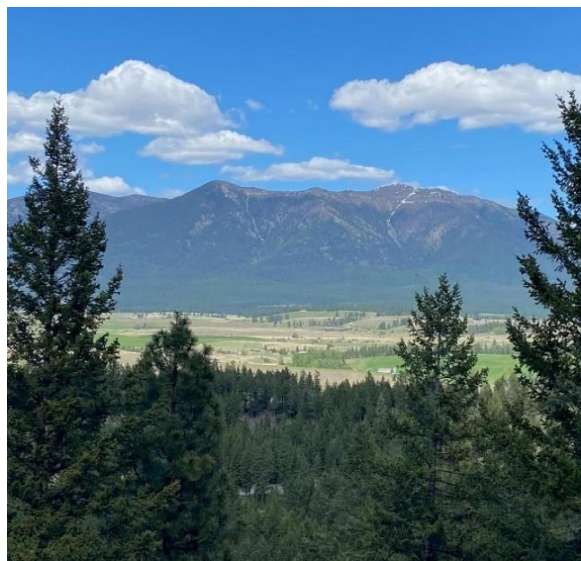




**Map 20: Yaak GA Priority Treatment Areas 1, 2, and 3**

## Tobacco Geographic Area (GA) - Maps 21-27

The Tobacco GA contains a broad valley bound by the Kootenai River to the west and the Whitefish and Galton Ranges to the east and extends to the Canadian border. Numerous kettle lakes are scattered amongst the grasslands of the valley floor. The rolling foothills and rocky bluffs support dry forest types of ponderosa pine and Douglas-fir with groves of aspen and cottonwood. In the higher elevations of the mountains, the cooler, moister conditions favor western larch, spruce and sub-alpine fir. The communities in this GA are located in the valley bottoms, but private lands extend far up into the foothills and into the mountains.



Tobacco Valley and Gibraltar Ridge



Gibraltar Ridge Fire

Photo: Greg Lindstrom

### Tobacco GA Watersheds

Kootenai River  
Stillwater River

Tobacco River

### Tobacco GA Communities

Rexford  
Fortine  
Stryker

Eureka  
Trego

### Tobacco GA Infrastructure

Homes, businesses, schools and places of worship  
Clinics and other health care facilities  
Banks  
Fire and ambulance stations  
US Hwy 93, State Hwy 37  
International airport  
Telecommunication towers and radio repeaters - multiple sites  
Water and sewer facilities  
MT FWP Murray Springs Trout Hatchery



Railroad – passenger and freight  
 North Portal BNFS Flathead Tunnel  
 US Border Crossing Station – Port of Roosville  
 Recreational facilities – multiple sites  
 High voltage transmission lines and substations  
 Fire detection lookouts

### **Tobacco GA Unique Assets at Risk**

Ten Lakes Scenic Area

### **Tobacco GA Community Values at Risk**

US Hwy 93 corridor and MT State Hwy 37 corridor – Access for residents, tourists, commercial transportation, and emergency services. US Hwy 93 is a primary route for travel to and from Canada through the Port of Roosville.

### **Tobacco GA Land Ownership**

- MT-DNRC: There are scattered timberland parcels of state lands as well as a portion of the Stillwater State Forest within the Tobacco GA.
- Private land: The most common use for the area around Eureka, Fortine, Rexford, Stryker, and Trego is small lots and subdivisions with commercial businesses along main roads. Outside of these towns, there are larger private landowners in the rural areas.
- American Forest Management: There is a small portion of ownership around Edna Creek and the Town of Eureka.
- US Army Corps of Engineers: There is a small portion of ownership around the Murray Springs Fish Hatchery.
- USDA Forest Service: The Forest Service is the largest landowner in this area with lands adjacent to private land around Eureka, Fortine, Rexford, Stryker, and Trego.

### **Tobacco GA Fire Probability and Response**

The valley floor has the highest potential for human-caused fires while fires outside of the valley floor are likely to be lightning-caused. Response time in the valley floor is typically within 30 minutes while areas outside of the valley floor are typically longer and limited by access and terrain.

### **Tobacco GA Factors Influencing Fire Behavior**

Strong west-southwest winds push fires to the east towards the Tobacco Valley and Canadian border north of Highway 93. Lower elevation fuels consist of grasses and shrubs with higher rates of spread that are wind and slope driven. Mid-elevation fuels consist of grasses, shrubs, and timber with low to mixed severity fire behavior depending upon fuel characteristics and severity of fire conditions. Because of heavy fuels and closed canopies in higher elevation with steep terrain, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

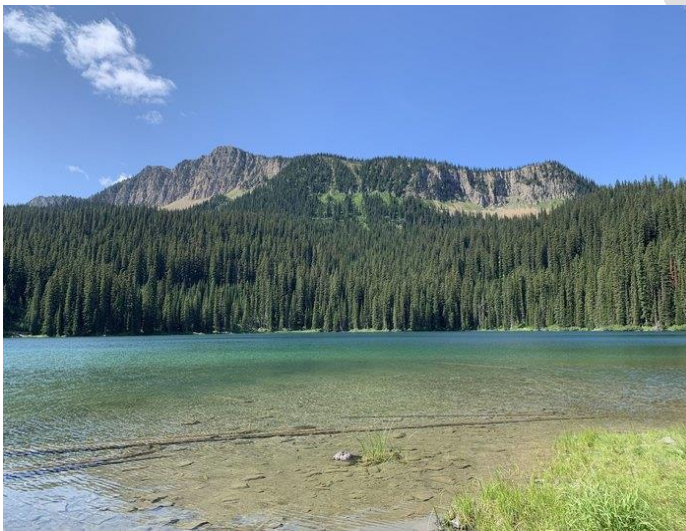
**Tobacco GA Most Recent Large Fire**

2000 Stone Hill (11,115 Acres)  
2015 Marston (7,000 Acres)  
2017 Gibraltar Ridge (12,938 Acres)  
2017 Weasel (3,856 Acres)  
2018 Tenmile Sterling Complex (3 fires totaling 2,099 Acres)

**Tobacco GA Fire Organizations with Jurisdictional Responsibility**

U.S. Forest Service  
Eureka Volunteer Fire Department  
Trego-Fortine-Stryker FSA

MT-DNRC  
Eureka FSA



Ten Lakes Scenic Area

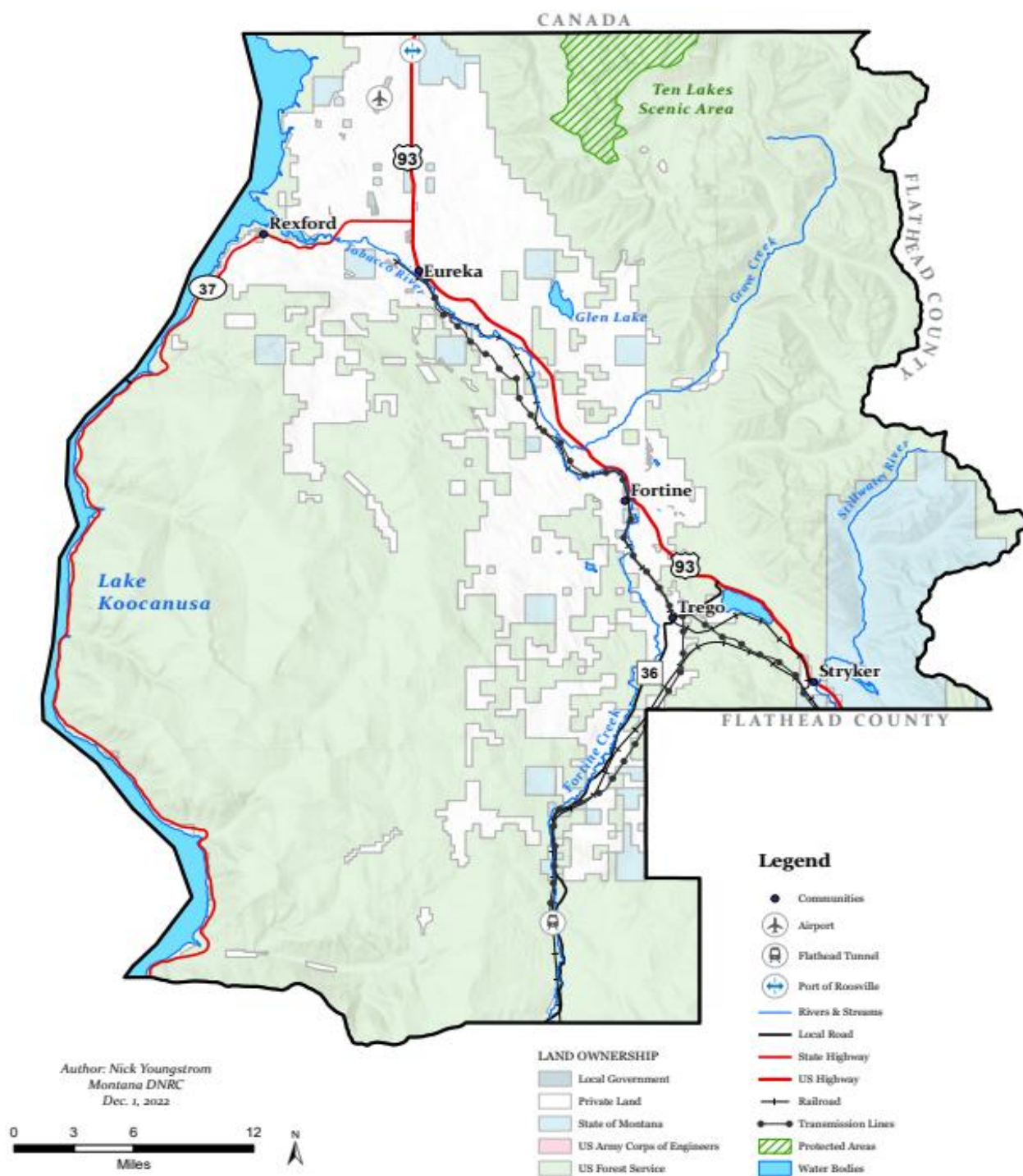
Photo: Marianne Evanuis



2015 Marston Fire near Fortine

# Lincoln County

## Tobacco Geographic Area



**Map 21: Tobacco Geographic Area (GA) with Ownership**





## **Tobacco GA**

### **MWRA - HVRA Model - Risk to Property and Infrastructure – Map 23**

HVRA modeling from the MWRA analysis showed most of the highly valued resources in the Tobacco GA are concentrated along US Hwy 93 from Fortine to Eureka and the Canadian border. To a lesser extent those resources are also located to the south along MT Hwy 37 to just south of Rexford, Forest Route 36 to Trego and Fortine Creek, and into Pinkham Creek (Forest Route 856). But there are also numerous homes scattered along the foothills and into the drainages and mountains north and south of US Hwy 93.

The MWRA model displayed areas of extreme risk to the towns of Eureka, Rexford, Fortine, and Trego, along Tobacco Road, the Carpenter and Glen Lake areas, Mariners Haven, Pine Bay, Lakeview Estates, Barnaby Lake and Crystal Lakes subdivisions, and many locations in the foothills of the Galton and Whitefish Ranges. Properties and infrastructure in the Pinkham, Meadow, Edna, and Fortine Creek areas south of US Hwy 93 and near Rexford display as very high risk, along with other areas including much of the area around Douglas Hill and Sophie Lake and into the foothills north of Eureka.

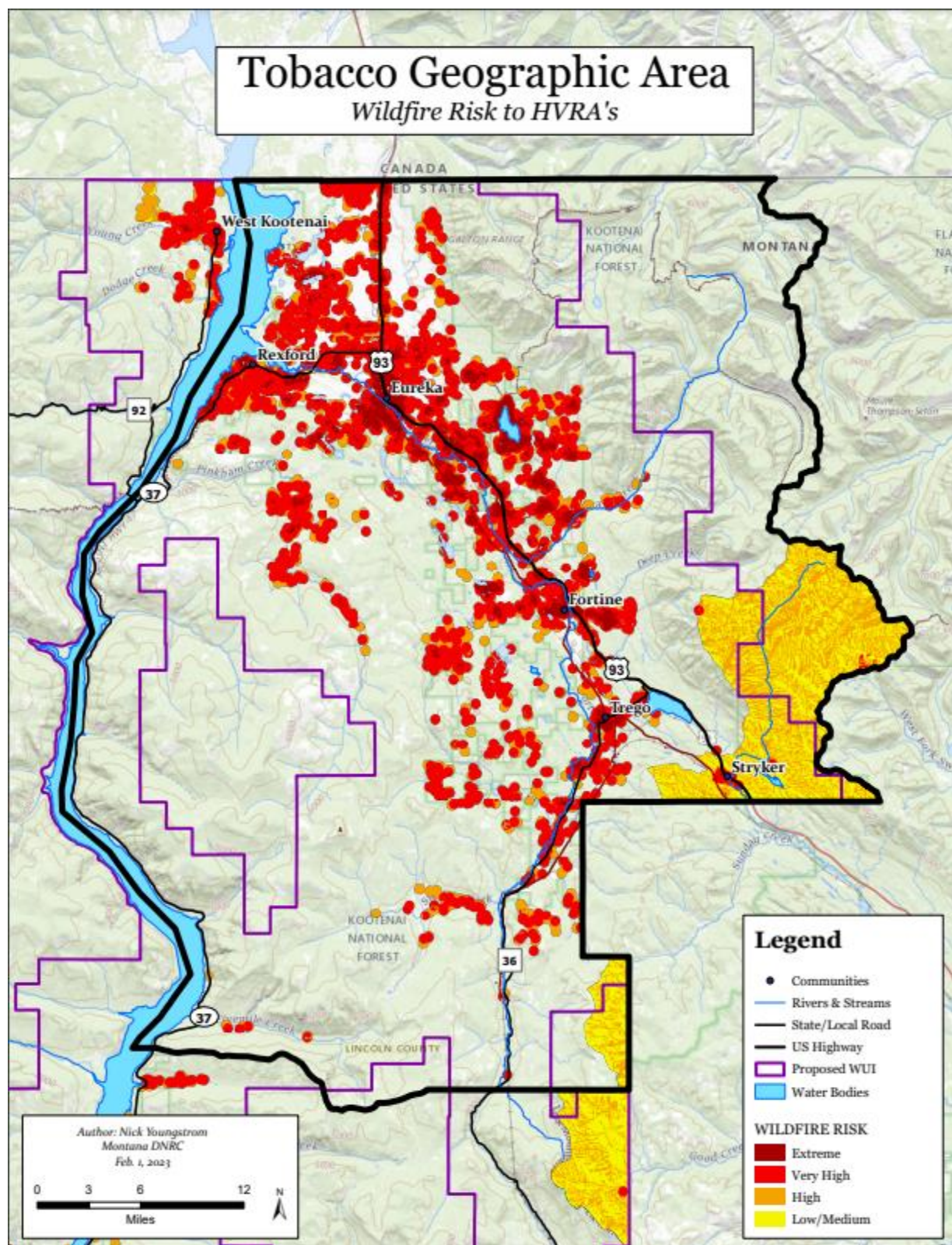
### **MWRA – Flame Length Model – Map 24**

The Flame Length modeling displays generally low to moderate flame lengths from 0 to 8 feet across the Tobacco Plains until the grasslands meet forestlands at the Tobacco River and Sinclair Creek. Then the model displays a flame length increase up to 12 to 40 feet. Flame lengths of 40 feet or more are displayed in the higher elevations and steep slopes of the Galton and Whitefish Ranges and along the steep, rocky slopes above MT Hwy 37 along the Koocanusa Reservoir. Where recent, mixed severity wildfires burned, including the Ten Mile Sterling Complex (2018), Gibraltar Ridge (2017), and the NE Kootenai Complex (2015), the model displays low flame lengths (0-4 feet).

### **MFAP – Priority Areas for Treatment Model - Map 25**

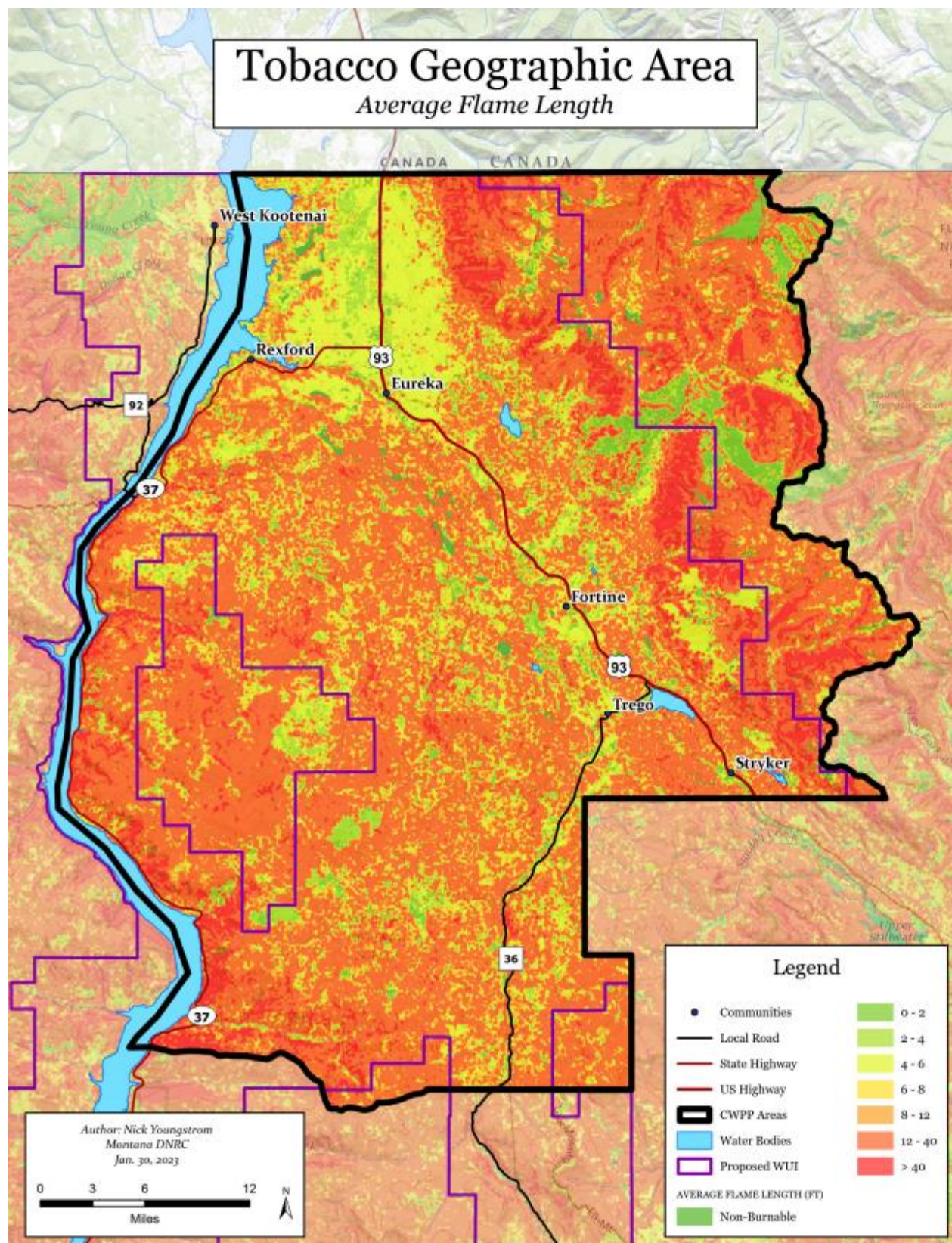
The MFAP model of the Tobacco GA shows extensive areas along US Hwy 93 and Forest Route 36 as Priority Areas for Treatment. A large area in the foothills of the Galton and Whitefish Ranges, including the Glen Lake area, is shown as Priority Areas for Treatment to abate fire risk and some overlapping forest health issues. But the largest area showing a need for treatment is south of US Hwy 93 and along Fortine Creek, including the watersheds of Pinkham, Meadow, Edna, Lake, Stewart, and Jim Creeks. Here the MFAP model shows substantial acreage in those areas for Priority Areas for Treatment to address fire risk primarily.

Discussions during the modeling validation process with local fire professionals resulted in substantial additional acres being added as Priority Areas for Treatment south of US Hwy 93 to include Rexford and lands further into the drainages of Pinkham, Edna, Beaver, and Lake Creeks. Additional acres were added between Airport Road and Lake Koocanusa, in the Douglas Hill area.



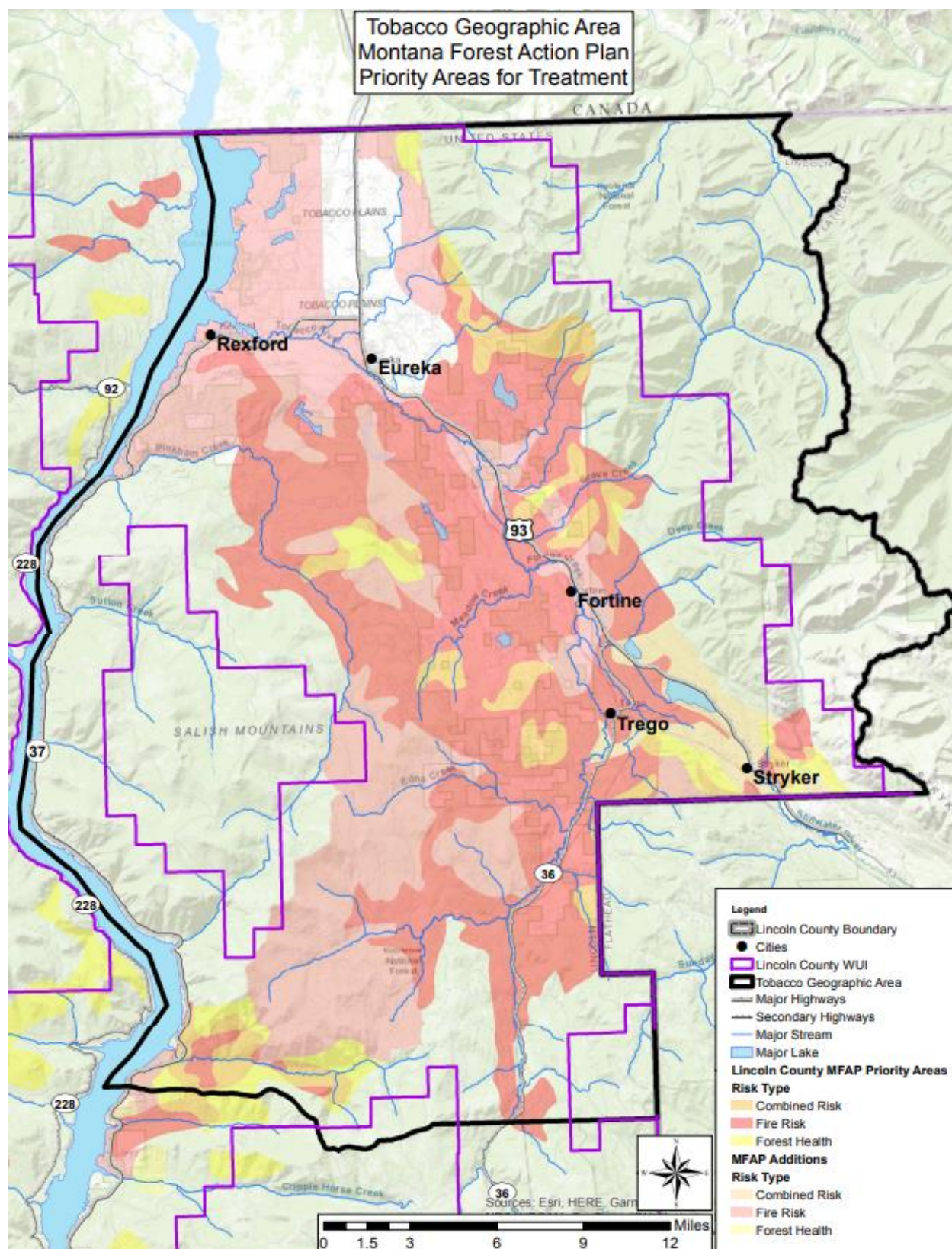
**MAP 23: Tobacco GA Risk to Highly Valued Resources of Assets (HVRA) Model**





**Map 24: Tobacco GA Average Flame Length Model**





**Map 25: Tobacco GA Areas for Treatment per MFAP and Fire Organizations**



## Summary

Unlike other GAs where highly valued resources are concentrated in the river, creek, and valley bottoms or along highways and roads, in the Tobacco GA homes are found scattered across foothills, in the Mountains, and often deep into the forest. Access to many homes and properties have marginal road conditions and some are impassible to fire engines. Many areas can only be accessed by a single road, and driveways often lack addressing information. These factors present a challenge for fire protection agencies.

Overwhelmingly, fire starts are human-caused in this GA, though lightning-caused starts are the primary source of ignition on the high ridges of the Whitefish and Galton Ranges to the northeast and the Salish Mountains to the southwest.

Although the flame length model for the Tobacco GA doesn't reflect the extreme flame lengths shown in other GAs, the MFAP model matched with the HVRA model displays the need for treatments across boundaries in this GA.

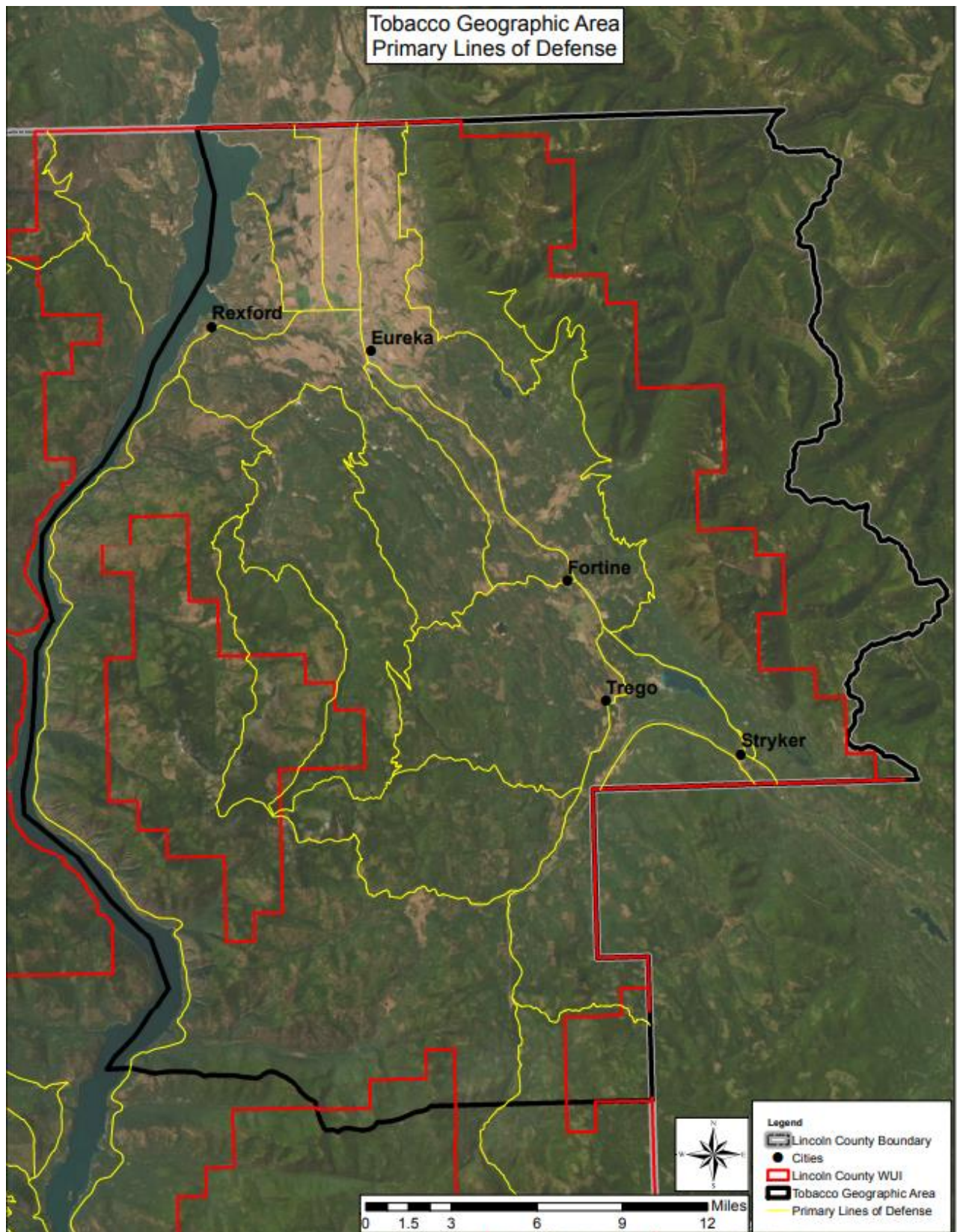
## Important Information for Landowners in the Tobacco GA

Response times to landowner properties for fires and other emergencies to remote areas in this GA are some of the longest in the county, particularly in the Salish Mountains south of the Tobacco Valley. The Eureka FSA and the Trego-Fortine-Stryker FSA have quick response times to properties in the valleys and foothills where roads are good and homes are accessible, but where roads are narrow, winding, and/or in poor condition, response times can be long. Response to wildfires from the USFS Rexford-Fortine Ranger District, Libby Ranger District and the DNRC can be slow for the same reasons.

If you live surrounded by dense forests with high fire risk and forest health issues, and/or in the remote areas of Tobacco GA where response times are long, landowners need to invest additional time and energy into managing their properties to prepare for wildfire and reduce wildfire risk. Creating defensible space around your home and making sure that your egress is open and clear of fuels can help responders control fire on your property and/or get your family out and to safety. Multiple forms of egress are a good plan, as are shaded fuel breaks along all access routes to your property.

Making sure that a fire engine can find your home and get into your property is another important factor that you can address as a homeowner. Is your house number or address posted and visible to emergency vehicles? Is the address up to date? Is it reflective and visible in the dark? Or if it is smoky? Is your driveway wide enough for a fire engine to get into your property and turn around? Are there locked gates? Is there a bridge that must be crossed to access your property? If so, make sure that it is properly posted for weight limits. Emergency responders are not going to put themselves in danger to protect your property, so it is your job to make it safer for them to enter your property.

For more landowner information go to [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)



Map 26: Tobacco GA Primary Lines of Defense (PLODS)

## Tobacco GA -Treatment Focus Areas

## Map 27

<b>Tobacco GA-Priority 1</b>	<b>Location:</b> South of the Town of Eureka, Tobacco Road (Old Hwy corridor, south of the Tobacco River), Fortine, Barnaby Lake - 8,400 acres	
<b>Area Description and Rational:</b> The area is part valley floor and part foothills with concentrations of properties, both large and small. Many of the larger properties have dense forests with heavy fuels. Christmas tree plantations from the 1950's and '60's in the area have been left to grow, adding to high tree densities and bushy conditions. Wind-driven crown fires are a concern. The area includes the Town of Fortine, and the subdivisions of Tobacco Valley View, Eureka Hills, Gibraltar View, Lost Rock, River Ranch Estates, Starlight Meadows, Barnaby Lake and Barnaby Heights, among others. This area a corridor for the railroad and a major low voltage transmission line. Most fire starts in this area are human-caused. Tobacco Road (Old Hwy 2) is a major evacuation route.		
<b>Cross-boundary Partners:</b> Forest Service, Montana DNRC, Private landowners		
<b>Other Partners:</b> Eureka FSA, Trego-Fortine-Stryker FSA, Lincoln Electric, Lincoln County Sheriff's Office, HOAs and POAs.		
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Rexford-Fortine Ranger District – USDA FS MT DNRC Libby Unit		<b>Implementation Date:</b>

<b>Tobacco GA-Priority 2</b>	<b>Location:</b> Sinclair Creek, Glen Lake, Grave Creek, north of US Hwy 93 - 10,700 acres	
<b>Area Description and Rational:</b> The area is mostly valley floor and some foothill terrain with concentrations of properties, both large and small. Many of the larger properties have dense forests with heavy fuels. Subdivisions include Woodcrest, Coffee, St. Clair Homesites, Emerald Overlook, all Glen Lake subdivisions, Southern Exposure, Stonegate, Aspen Glen, Nesbitt, Krinklehorn View and others. Overwhelmingly, fire starts in this area are human-caused, although lightning-caused fire start on the high ridges of the Galton and Whitefish Ranges and can be, a threat to properties in this area.		
<b>Cross-boundary Partners:</b> Forest Service, Montana DNRC, Private landowners		
<b>Other Partners:</b> Eureka FSA, Trego-Fortine-Stryker FSA, Lincoln Electric, Lincoln County Sheriff's Office, HOAs and POAs		
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Rexford-Fortine Ranger District – USDA FS MT DNRC Libby Unit		<b>Implementation Date:</b>

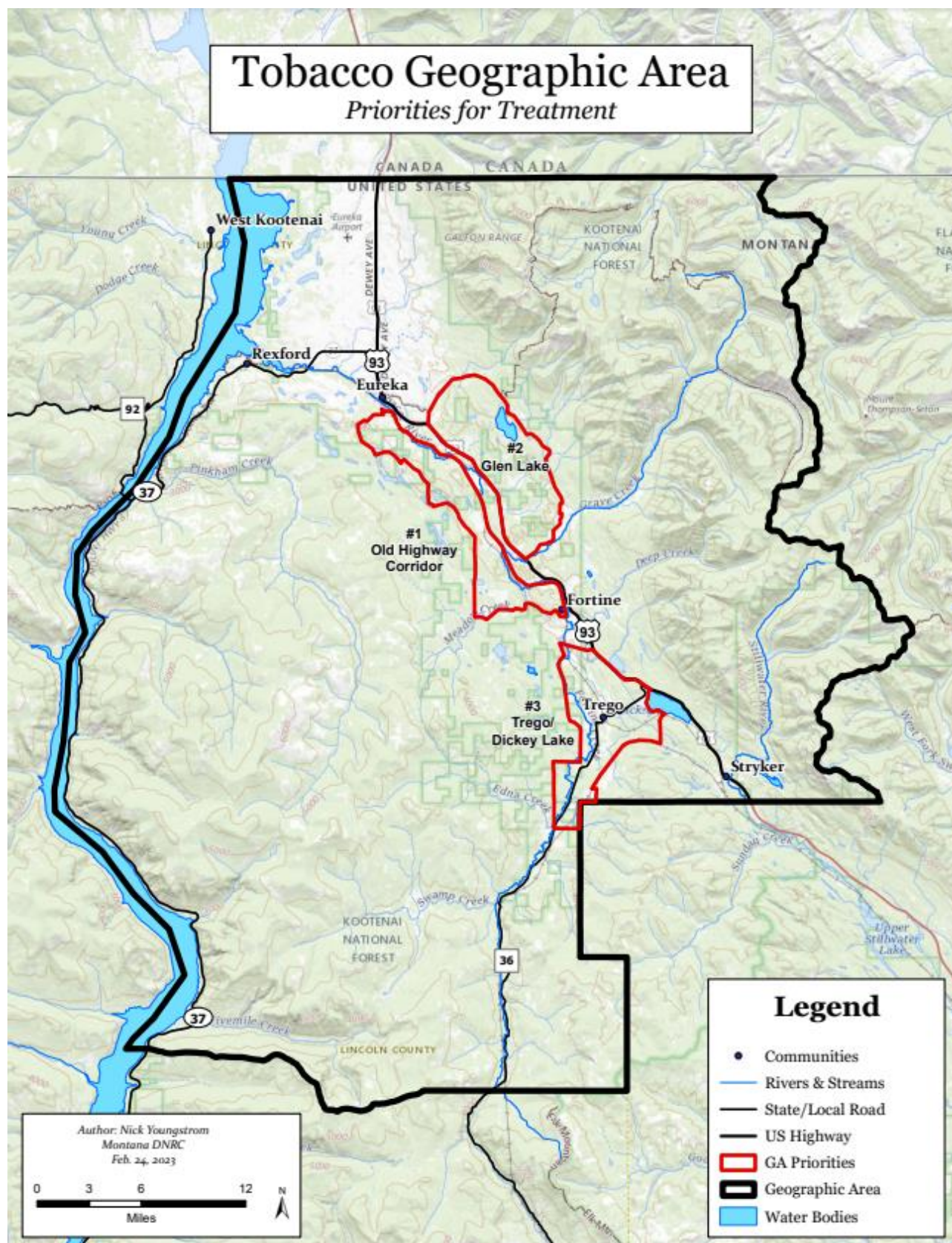


<b>Tobacco GA - Priority 3</b>	<b>Location:</b> South of US Hwy 93, Ant Flats Road, Trego, Dickey Lake (west end), Rattlebone, Brimstone Ranch, Edna Creek, Meadow Creek, - 9,100 acres
<b>Area Description and Rational:</b> The area is part valley floor and part foothills with concentrations of properties, both large and small. Many of the larger properties have dense forests with heavy fuels. This area includes the Town of Trego, Dickey Lake Lots, Dickey Lake Lagoon, Dickey Lake Campground, Parkway Meadows, Alder Springs, and other small subdivisions. This area a corridor for the railroad and a major low voltage transmission line. Most fire starts in this area are human-caused.	
<b>Cross-boundary Partners:</b> Forest Service, Private landowners	
<b>Other Partners:</b> Trego-Fortine-Stryker FSA, Lincoln Electric, Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, provide wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan, and identify safety zones.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Rexford-Fortine Ranger District -USDA FS	<b>Implementation Date:</b>



Downtown Eureka looking south toward the Old Highway corridor.





## Fisher Geographic Area (GA) - Maps 28 - 34

Lacking the extreme elevational changes found in the rest of the county, the Fisher GA has comparatively gentler terrain and parts of the GA are the driest areas in the county. The Fisher GA supports forests primarily composed of ponderosa pine, Douglas-fir, lodgepole pine and western larch, though areas of grand fir and spruce are present. Several large lakes and streams can be found in the southern part of the GA. Much of this area was harvested heavily in the past and replanted by private timber companies. Most land along the Fisher River remains in private industrial ownership, though large portions along Hwy 2, the Thompson Chain of Lakes, and the McGinnis Meadows area were sold for real estate development.



Fisher River

Photo: Maggie Craig



Thompson Chain of Lakes

Photo: Daily Inter Lake

### Fisher GA Watersheds

- Kootenai River
- Pleasant Valley

- Fisher River
- Wolf Creek

### Fisher GA Communities

- Thompson Chain of Lakes
- Warland/Koocanusa Resort and Marina

### Fisher GA Infrastructure

- Homes and businesses
- Fire and ambulance stations
- US Hwy 2, MT Hwy 37
- Libby Dam
- High voltage transmission lines and substations
- Railroad – passenger and freight
- South Portal BNSF Flathead Tunnel
- Telecommunication tower and radio repeaters
- Recreational facilities – multiple sites
- Koocanusa Resort and Marina



### **Fisher GA Unique Assets at Risk**

Lost Trail National Wildlife Refuge  
Thompson Chain of Lakes

### **Fisher GA Community Values at Risk**

US Hwy 2 corridor and MT Hwy 37 corridor - Access for residents, tourists, commercial transportation, and emergency services

### **Fisher GA Land Ownership**

- MT-Fish Wildlife and Parks: MT Fish Wildlife and Parks manages lands along the Highway 2 corridor in the Thompson Chain of Lakes area.
- Private land: Private land inholdings along the Highway 2 corridor, Thompson Chain of Lakes, McGinnis Creek, 5-Mile Creek, Warland Creek, Wolf Creek Road, Pleasant Valley and Island Lake.
- Green Diamond Resource Company: Green Diamond Resource Company has extensive timberland holdings north of Hwy 2 in the Fisher GA.
- Southern Pine Plantation of Montana: American Forest Management administers Southern Pine Plantation of Montana lands south and east of Libby used primarily for commercial timber production.
- Stimson Lumber Company: Stimson Lumber Company manages lands along the western border of the Fisher GA with lands used primarily for commercial timber production.
- US Army Corps of Engineers: US Army Corps of Engineers manages lands around Libby Dam.
- US Fish and Wildlife Service: US Fish and Wildlife Service manages lands within the Lost Trail Wildlife Refuge.
- USDA Forest Service: The Forest Service manages lands primarily north of the Wolf Creek Road, a large island around Tamarack Creek, and scattered sections throughout the remainder of the Fisher GA.

### **Fisher GA Fire Probability and Response**

The Highway 2 corridor and Fisher River drainage have the highest potential for human-caused fires while areas outside of the valley floor are likely to be lightning-caused. Response time in the valley floor is typically within 60 minutes while areas outside of the valley floor are typically longer and limited by access and terrain.

### **Fisher GA Factors Influencing Fire Behavior**

Strong west-southwest winds push fires to the east. Lower elevation fuels consist of grasses and shrubs with higher rates of spread that are wind and slope driven. Mid-elevation fuels consist of grasses, shrubs, and timber with low to mixed severity fire behavior depending upon fuel characteristics and severity of fire conditions. Because of heavy fuels and closed canopies in higher elevation terrain, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

**Fisher GA Most Recent Large Fire**

1994 Little Wolf (14,728 Acres)  
2000 Elk Mountain (1,026 Acres)  
2007 Brush Creek (29,921 Acres)  
2017 Tamarack (407 Acres)

**Fisher GA Fire Organizations with Jurisdictional Responsibility**

U.S. Forest Service                      MT-DNRC  
Fisher River Valley Fire and Rescue FSA

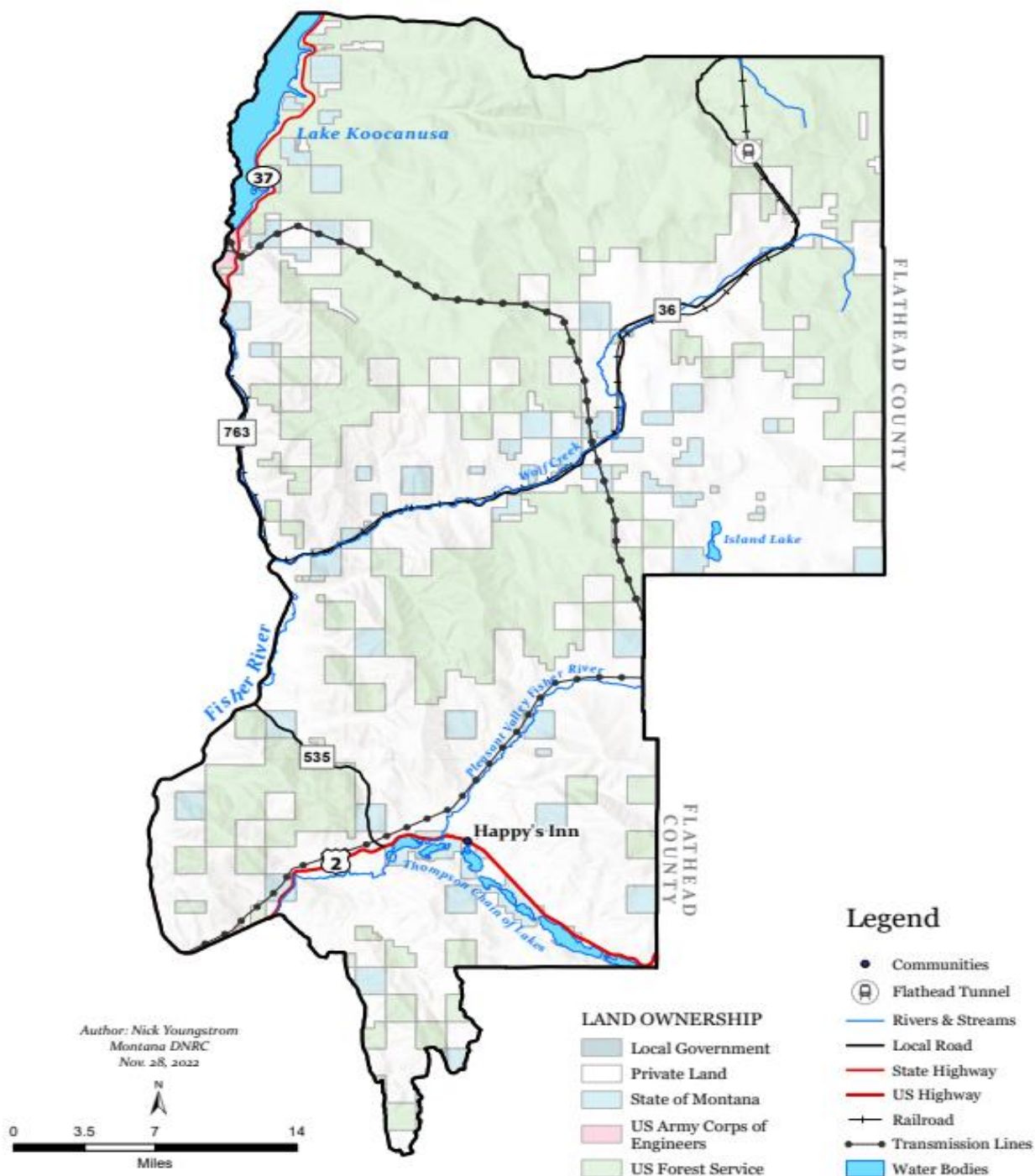


DNRC engine pumping from a Port-A-Tank with a hose lay setup

Photo: DNRC

# Lincoln County

## Fisher Geographic Area

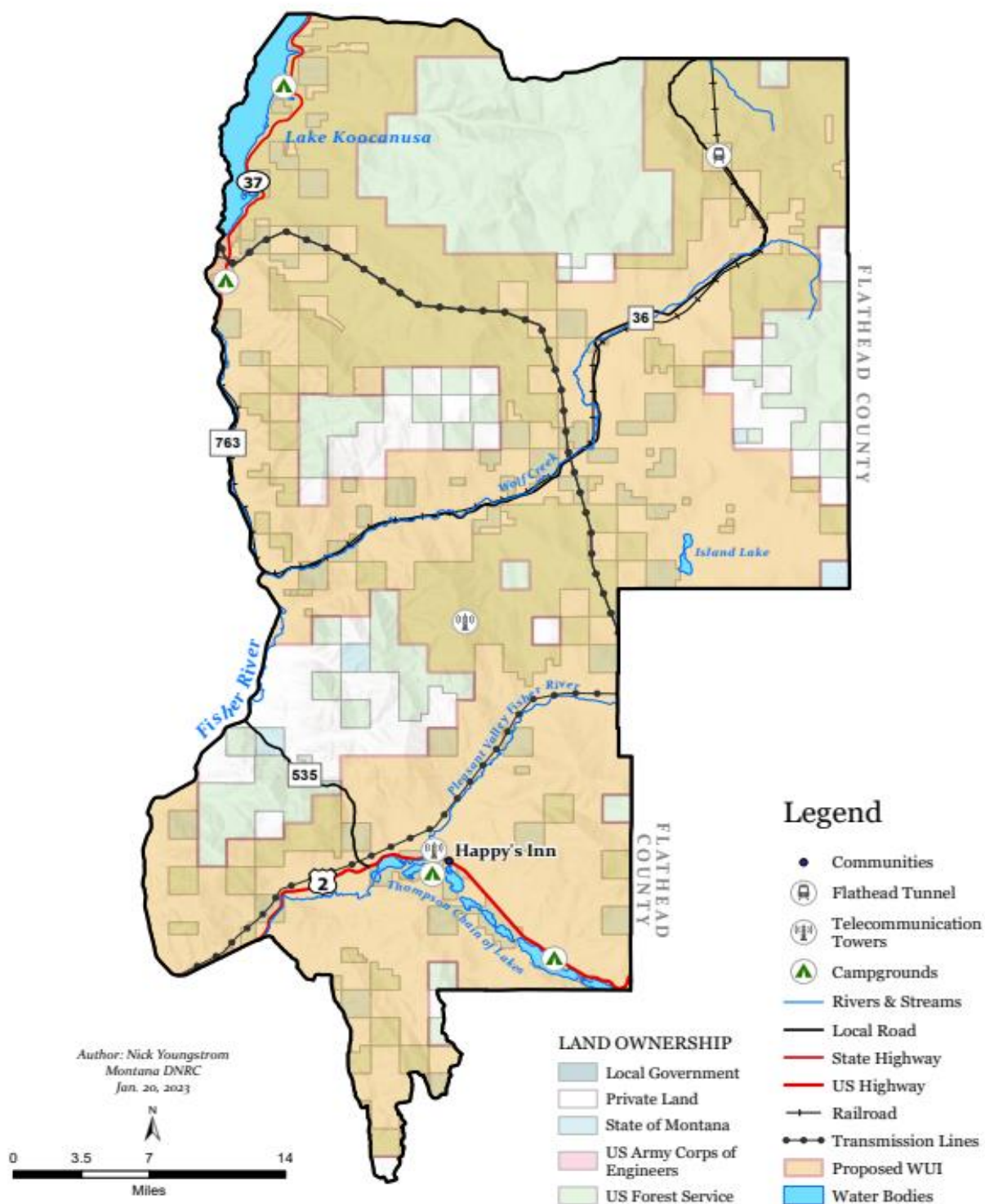


**Map 28: Fisher Geographic Area (GA) with Ownership**



# Fisher Geographic Area

## WUI Boundary



**Map 29: Fisher Geographic Area (GA) with Proposed WUI**

## Fisher GA

### MWRA - HVRA Modeling - Risk to Property and Infrastructure – Map 30

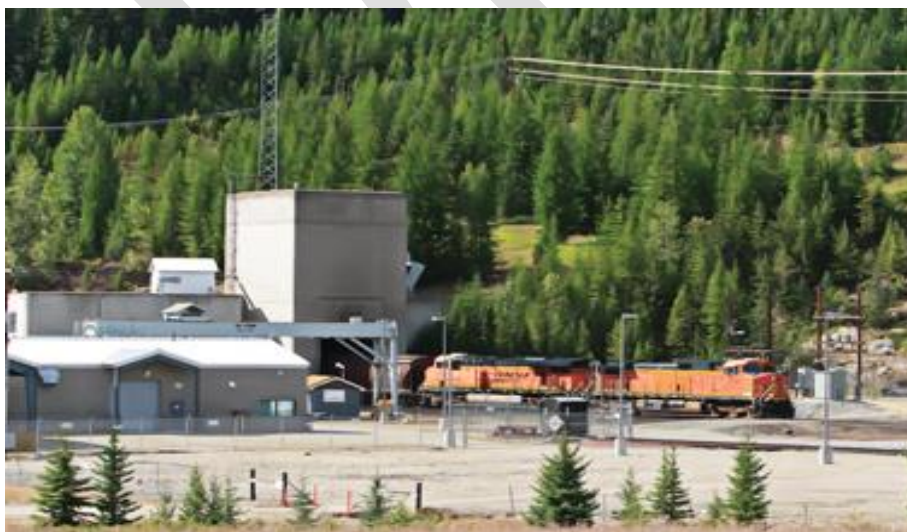
The mapping of HVRA from the MWRA analysis for the Fisher GA displayed few concentrations of highly valued resources, described as homes, businesses, and infrastructure including powerlines, railroads and communication sites. For most of this area, there is currently little development. The largest concentration is along US Hwy 2 near Elk Creek, Happy's Inn, and the Thompson Chain of Lakes where the risk to highly valued resources is very high. Other areas of HVRA are in the Warland Creek drainage, around Koocanusa Resort and Marina and scattered sites in Dunn Creek, along Wolf Creek, and around Island Lake where risk varies from high to very high. Only the area adjacent to Happy's Inn and the west end of Crystal Lake displayed as extreme in the model.

### MWRA – Flame Length Modeling – Map 31

The Flame Length modeling displays generally low to moderate flame lengths from 0 to 8 feet in the river and creek bottoms, many of the east and south facing open slopes, and most areas around the Chain of Lakes and Island Lake. Industrial forestlands that were harvested in recent years also display shorter flame lengths. Where slopes increase and at higher elevations, many on west facing slopes, flame lengths increased to 12 to 40 feet. Areas south of Crystal, Horseshoe, Loon and Upper and Lower Thompson Lakes and the area west of Island Lake display 12-to-40-foot flame lengths. Both Dunn Creek and Warland Creek drainages displayed substantial areas with flame length greater than 40 feet. Where recent, mixed severity wildfires burned, including Tamarack (2017), Ariana (2011), and Brush Creek (2007), the model displays low flame lengths (0-4 feet).

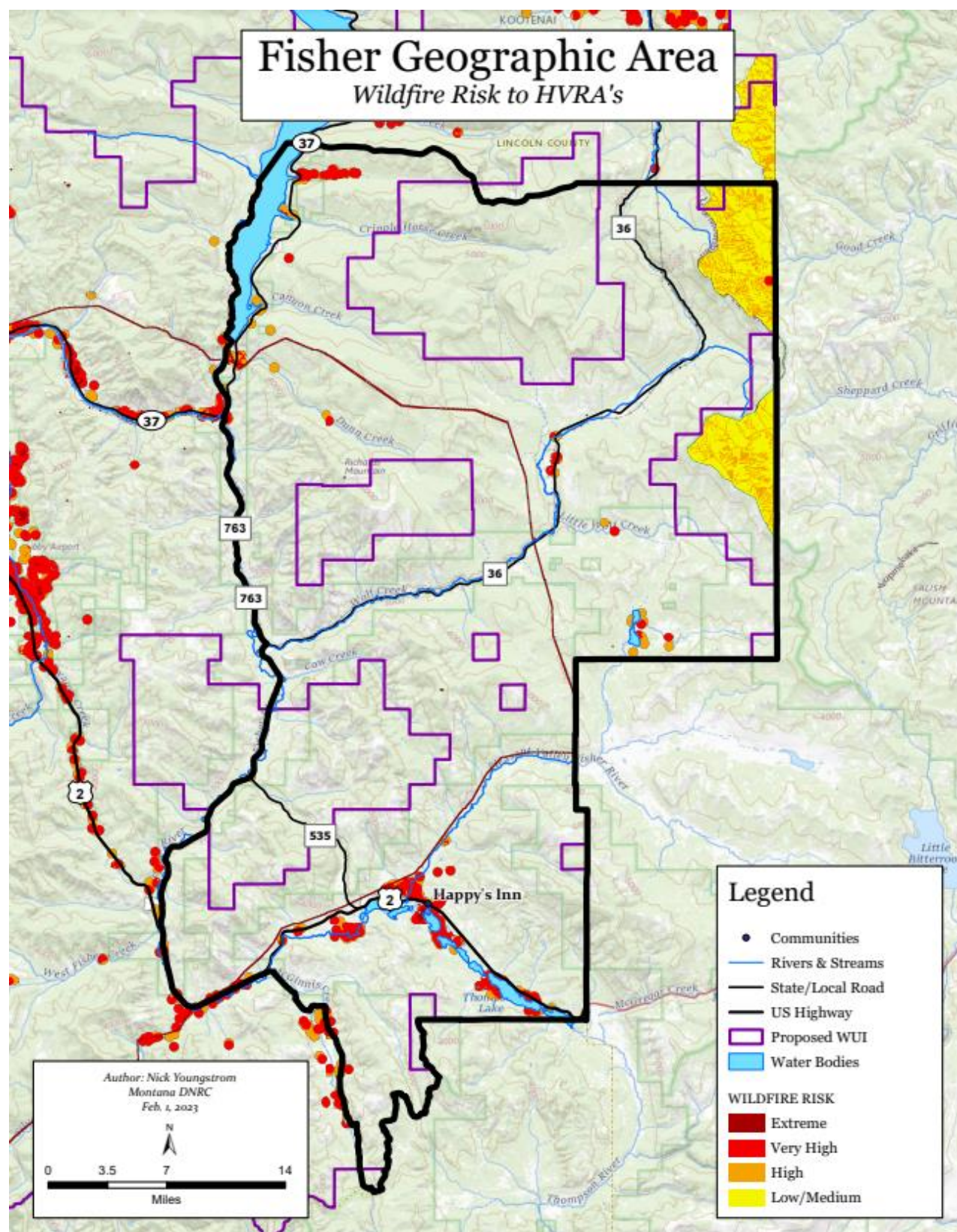
### MFAP – Priority Areas for Treatment Modeling - Map 32

The MFAP modeling of the Fisher GA shows only small areas of fire risk and forest health issues. This is one of the few areas where the county's fire agencies felt the MFAP model for Priority Areas for Treatment did not accurately represent the conditions on the ground. Through ensuing discussions, the entire area of the Thompson Chain of Lakes beginning at Elk Creek to the Flathead County line was identified as a fire risk and added to the Priority Areas for Treatment map.



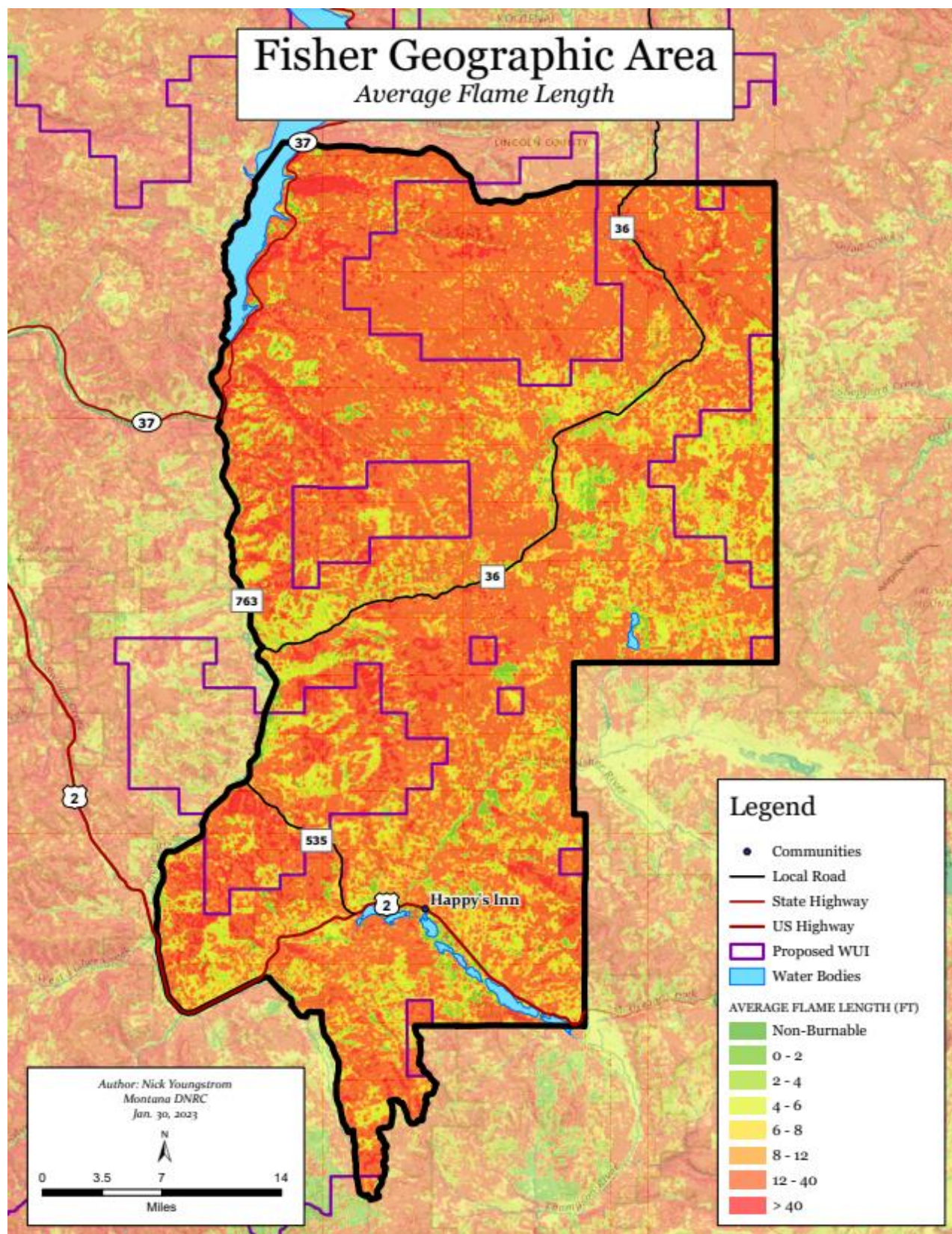
The north portal of the 7-mile Flathead Tunnel and high voltage transmission lines. The north portal is in the Tobacco GA and the south portal is in the Fisher GA.





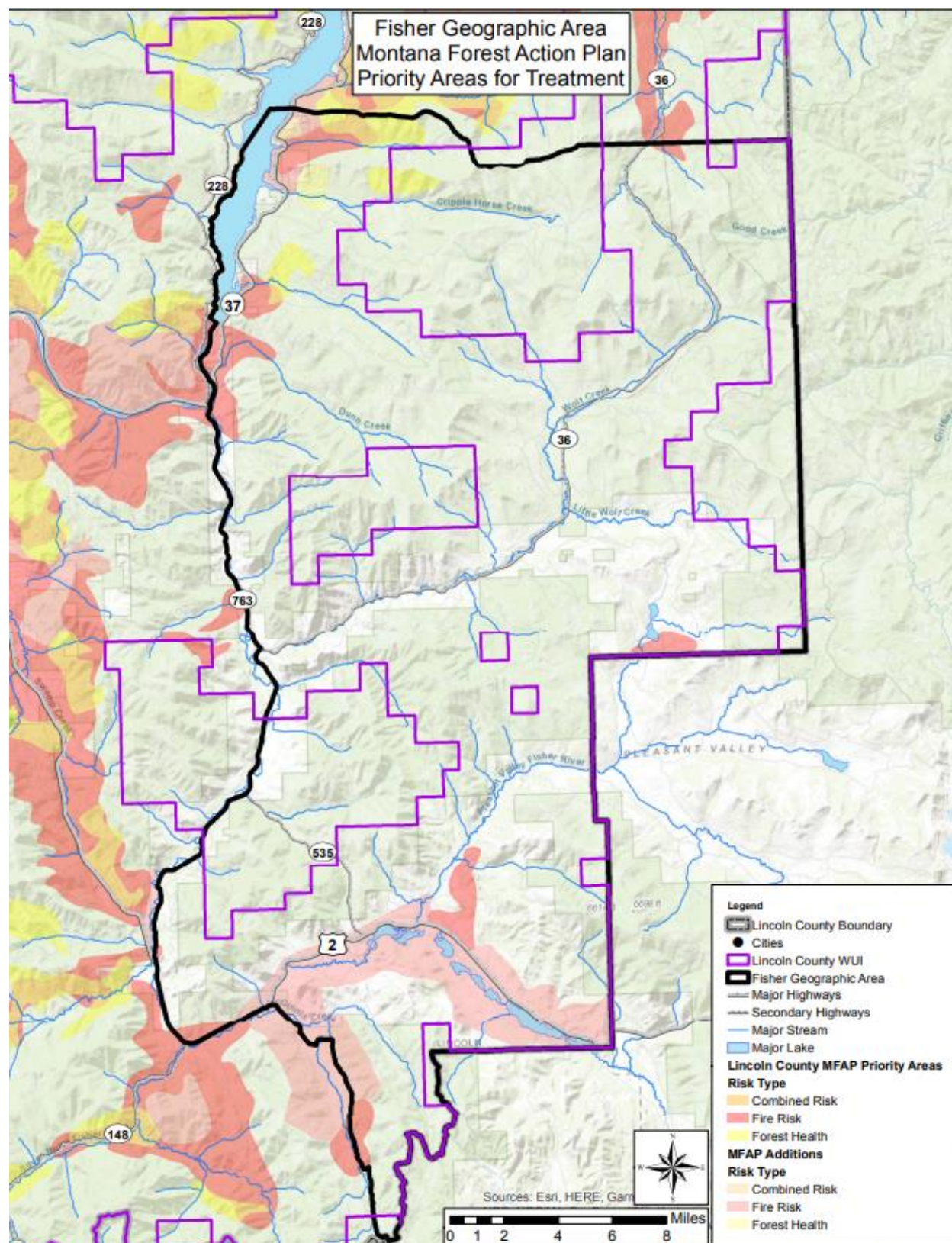
**Map 30: Fisher GA Risk to Highly Valued Resources of Assets (HVRA) Model**





**Map 31: Fisher GA Average Flame Length Model**





**Map 32: Fisher GA Areas for Treatment per MFAP and Fire Organizations**

## Summary

Not heavily populated, most residences, businesses, and infrastructure in the Fisher GA are located along US Hwy 2, around the Chain of Lakes and along MT Hwy 37 near the Libby Dam, Koocanusa Marina and in the Warland Creek drainage. These same areas are where most recreational sites are found, including numerous campgrounds. The high density of homes, cabins and campsites result in many human activities that have the potential to start fires, although lightning-caused fires in the area are common. Due to the close proximity of properties surrounded by trees and high fuel loads, fire risk to properties in these areas is high.

## Important Information for Landowners in the Fisher GA

The highest fire risk in this area comes from ignition sources on your own property or those of your neighbors. Recreational fires, barbecuing, smoking, fireworks, burning debris piles, use of welders or other equipment without spark arrestors, etc., all are potential ignition sources.

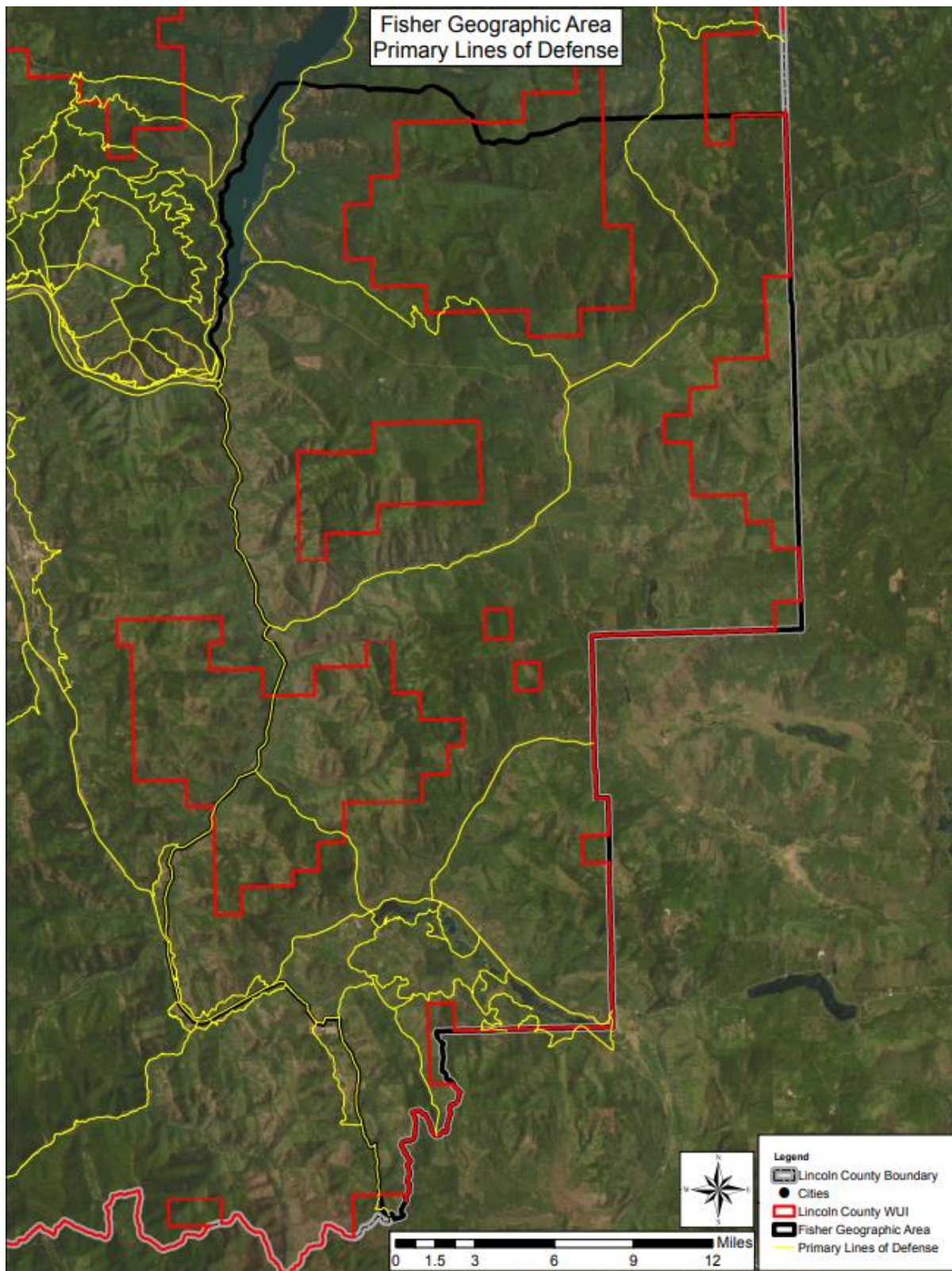
Response times to landowner's properties for fires and other emergencies in this GA are variable. The Fisher River Valley Fire and Rescue FSA can respond quickly to events in the Chain of Lakes area, but response time to Island Lake would be much longer as would the response from the DNRC Libby Unit. Response times along MT Hwy 37 and the Koocanusa Reservoir are fairly rapid from the DNRC Libby Unit on the Fisher and from the Libby Ranger District, but there is no rural fire service in that area.

Making sure that a fire engine can find your home and get into your property is an important factor that you can address as a homeowner. Is your house number or address visible to emergency vehicles? Is it visible in the dark? If it is smoky? Is your driveway wide enough for a fire engine to get into your property and turn around? Are there locked gates? Is there a bridge that must be crossed to access your property? If so, make sure that it is properly posted for weight limits. Emergency responders are not going to put themselves in danger to protect your house, so it is your job to make it safer for them.

Conditions are often windy around the Chain of Lakes and Lake Koocanusa in the summertime and fires can move quickly. Even with quick response by fire agencies, fires can move quickly to adjacent properties and result in extensive damage. Pay attention to the fire and weather conditions, and how your activities can be affected by them.

For more landowner information go to [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)





**Map 33: Fisher GA Primary Lines of Defense (PLODS)**

**Fisher GA -Treatment Focus Areas      Map 34**

<b>Fisher GA- Priority 1</b>	<b>Location:</b> Thompson Chain of Lakes, Happy's Inn - 6,700 acres	
<b>Area Description and Rational:</b> This area has high concentrations of forested, small-lot properties in close proximity to each other mostly along the US Hwy 2 side of the lakes. Most of the surrounding forest has been managed in the past by private timber companies. The area has approximately 285 full-time residents and that number is growing as new subdivisions are developed. Threat of fire is primarily human-caused. The area has several developed and undeveloped campsites and use is high. Subdivisions in the area are Parkside at Fisher River, Pines at Fisher River, Montana Lakes, Two Lakes, Bootjack Lake Tracts, Midway, North Crystal Lake, West Crystal Lake, Crystal Lake Shore Lots, Upper Thompson Lake Shore Lots, Thompson Rainbow Estates, Rainbow Acres, DBMS Hideaway, Meadow Mountain Homes, Northland Dev. at Thompson Lakes. Meadow Peak is a large subdivision in development.		
<b>Cross-boundary Partners:</b> Montana DNRC, Montana FWP, Green Diamond Resource Company, Southern Pine Plantation Montana, Private landowners		
<b>Other Partners:</b> Fisher River FSA, Chain of Lakes Homeowners Association, Flathead Electric, Lincoln County Sheriff's Office		
<b>Project Work</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, and wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Montana DNRC		<b>Implementation Date:</b>

<b>Fisher GA- Priority 2</b>	<b>Location:</b> McGinnis Meadows to Elk Creek – 10,200 acres	
<b>Area Description and Rational:</b> Much of the area was previously owned by private timber companies and has been harvested, then sold for real estate development. The forests are now regenerating. Dense stands of young trees are mixed with older, unmanaged stands on Forest Service land. Lightning is the primary cause of fires. Access is limited to the meadows with a single road serving the area. Subdivisions in the area are McGinnis Creek Flats, and McGinnis Hills.		
<b>Cross-boundary Partners:</b> Montana DNRC, Forest Service, Green Diamond Resource Company, Southern Pine Plantation Montana, Private landowners		
<b>Other Partners:</b> Fisher River FSA, Flathead Electric, Lincoln County Sheriff's Office		
<b>Project Work</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide home assessments, and wildfire educational materials regarding prevention, wildfire readiness and information on how to reduce structure ignitability, develop an evacuation plan and identify safety zones.		
<b>Project Coordinators:</b> Lincoln County FireSafe Council Montana DNRC Libby Ranger District - USFS		<b>Implementation Date:</b>



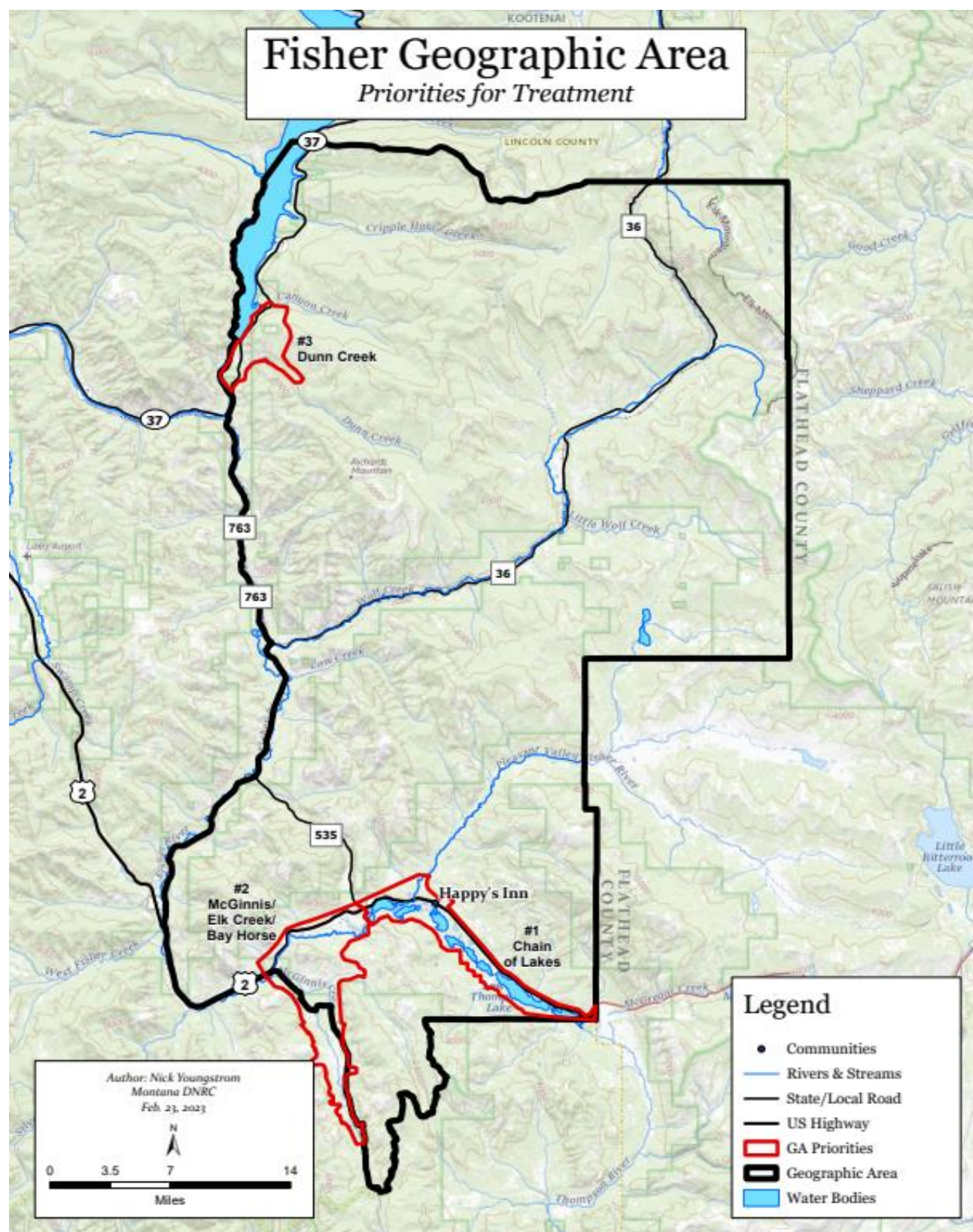
<b>Fisher GA - Priority 3</b>	<b>Location:</b> Dunn Creek, Libby Dam - 3,200 acres
<b>Area Description and Rational:</b> The area has only a few homes up in Dunn Creek, but has critical infrastructure including Libby Dam, the powerhouse, BPA high voltage powerlines. Forests here are more open on steep west- and south-facing slopes, but forest health issues are developing and causing mortality. Several recreation sites are nearby. Lightning is the primary cause of fires.	
<b>Cross-boundary Partners:</b> Forest Service, Montana DNRC, Stimson Lumber, Army Corp of Engineers, Private landowners	
<b>Other Partners:</b> Montana Dept of Transportation, Bonneville Power Administration, Flathead Electric, Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Libby Ranger District - USFS Montana DNRC	<b>Implementation Date:</b>



Koocanusa R.V. Park and Campground

Photo: Koocanusa Resort and Marina





Map 34: Fisher GA Priority Treatment Areas 1, 2, and 3

## Cabinet Geographic Area (GA) - Maps 35-41

The Cabinet GA is defined by a U-shaped valley and the Kootenai River corridor, and is bounded on the west by the high, rugged mountains of the Cabinet Mountain Wilderness and the gentler terrain to the east where it meets the Fisher River. The forests of this area range from lower elevation ponderosa pine and Douglas-fir to mid-elevation western larch, lodge pole and grand fir to high elevation sub-alpine fir and spruce. Most of the private lands can be found along the Kootenai River and the numerous creek and valley bottoms. Industrial timberlands are located mainly along the Fisher River drainage to the east and scattered sections north of Libby.



Cabinet Mountains above Libby and the Kootenai River

Photo: Bud Journey

### Cabinet GA Watersheds

Kootenai River  
Flower Creek  
Fisher River

Libby Creek  
Pipe Creek

### Cabinet GA Communities

Libby

### Cabinet GA Infrastructure

Homes, businesses, schools, and places of worship  
Hospitals and other health care facilities  
Banks  
County and State government facilities  
County landfill  
Fire and ambulance stations  
US Hwy 2, State Hwy 37  
Airport – general aviation  
Railroad – passenger and freight

Telecommunication towers and Radio repeaters - multiple sites  
 Municipal watershed and reservoir  
 Water and sewer facilities  
 Recreational facilities – multiple sites  
 High voltage transmission lines and substations  
 Fire detection lookouts

#### **Cabinet GA Unique Assets at Risk**

Cabinet Mountain Wilderness

#### **Cabinet GA Community Values at Risk**

W.R. Grace and Company Vermiculite mine site (OU3)  
 Flower Creek Municipal Watershed: Provides water for the City of Libby.  
 US Hwy 2 corridor and MT Hwy 37 corridor – Access for residents, tourists, commercial transportation, and emergency services.

#### **Cabinet GA Land Ownership**

- Green Diamond Resource Company: American Forest Management administers Green Diamond Resource Company lands adjacent to and south of Libby used primarily for commercial timber production.
- MT-DNRC: There are scattered timberland parcels of state lands in the Cabinet Geographic Area.
- Private land: The most common use for the area around the city of Libby is small lots and subdivisions with commercial businesses along main roads. Outside the city of Libby, there are larger private landowners in the rural areas.
- WR Grace and Company: WR Grace and Company is a large private landowner with lands north of Highway 37 near Em Kayan Village.
- Southern Pine Plantation of Montana: American Forest Management administers Southern Pine Plantation of Montana lands south of Libby used primarily for commercial timber production.
- Stimson Lumber Company: Stimson Lumber Company is the largest private landowner in this area with lands used primarily for commercial timber production.
- US Army Corps of Engineers: US Army Corps of Engineers manages lands around Libby Dam.
- USDA Forest Service: The Forest Service is the largest landowner in this area with lands adjacent to private land around the city of Libby and along the Highway 2 and 37 corridors.

#### **Cabinet GA Fire Probability and Response**

The valley floor has the highest potential for human-caused fires while areas outside of the valley floor are primarily lightning-caused fires. Response time in the valley floor is typically within 30 minutes while areas outside of the valley floor are typically longer and limited by access and terrain.

#### **Cabinet GA Factors Influencing Fire Behavior**

Strong west-southwest winds push fires to the east towards the valley floor. Lower elevation fuels consist of grasses and shrubs with higher rates of spread that are wind and slope driven.



Mid-elevation fuels consist of grasses, shrubs, and timber with low to mixed severity fire behavior depending upon fuel characteristics and severity of fire conditions. Because of heavy fuels and closed canopies in higher elevation terrain, torching and spotting commonly hastens fire spread with trees being consumed in flames quickly from the base and smaller fires starting ahead of the main fire. In these fuel types, fires primarily kill most or all the trees in the stand (stand replacement) under severe conditions and are of mixed severity in less volatile conditions.

#### **Cabinet GA Most Recent Large Fire**

1994 Scenery Face (3,382 Acres)  
 1998 Dome (3,340 Acres)  
 2015 Klatawa (4,681 Acres)  
 2017 Moose Peak (13,887 Acres)  
 2017 West Fork (20,032 Acres)

#### **Cabinet GA Fire Organizations with Jurisdictional Responsibility**

U.S. Forest Service	MT-DNRC
Libby Volunteer Fire Department	Lincoln County Rural Fire District
Fisher River Valley Fire and Rescue FSA	

#### **City of Libby Municipal Watershed**

The City of Libby's municipal watershed in the Flower Creek drainage serves 2,800 residents. An \$11 million replacement dam was constructed in 2016 forming a large surface reservoir. Due to ground water contamination from past industrial processes in the city, the watershed provides the only existing, safe water source for Libby.

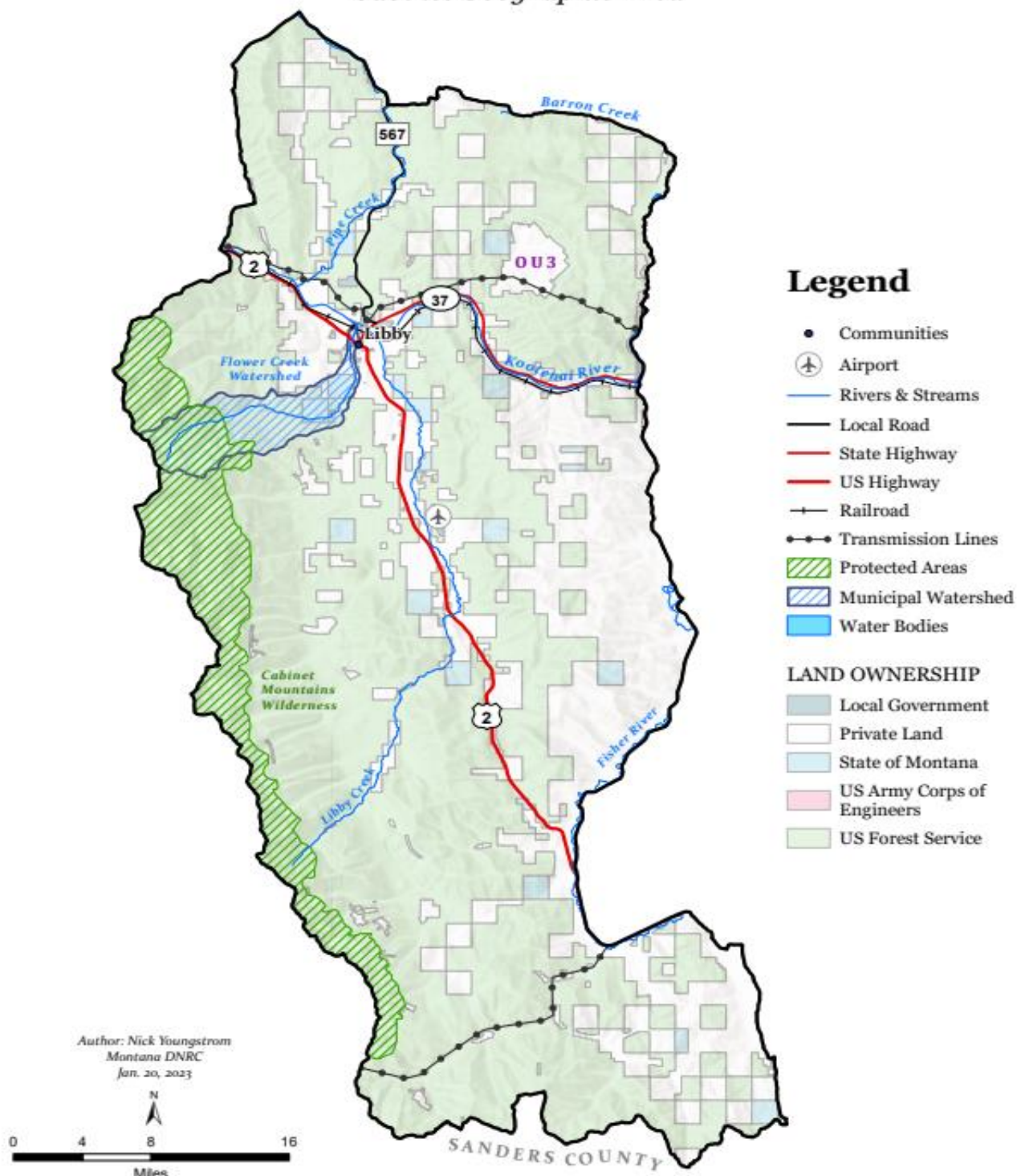
#### **Operable Unit 3 (OU3)**

Operable Unit 3 (OU3) is the designation given by the Environmental Protection Agency (EPA) to the W.R. Grace vermiculite mine during the Libby Asbestos Superfund cleanup. OU3 is located seven miles north of Libby, and encompasses the mine, tailings piles, and the area directly adjacent to the defunct mine. The area has varying levels of Libby amphibole (LA) asbestos contamination associated with the mining and processing of vermiculite over decades of operations. This area was also the repository for asbestos contaminated soil removed during the EPA clean-up. The material was hauled to the mine site and buried, where it remains.

The LA asbestos found in OU3 creates unique public health concerns for both firefighters and the public. Undisturbed, LA has minimal impacts to human health, but if the fibers become airborne, they present a serious health hazard. Inhaled LA fibers can cause asbestos related disease and other diseases. Wildfires can release LA fibers from forest fuels, tree bark, and duff causing fibers to become airborne. In addition, asbestos is resistant to fire, resulting in a higher concentration of LA in the ash on the forest floor during and after wildfires increasing the risk of exposure to firefighters during firefighting and mop-up activities. Wildfires can increase the potential for LA to be transported out of OU3 during or after a fire by smoke, wind, and surface water runoff, depending on fire activity and weather conditions, increasing the risk of exposure. These factors have prompted Lincoln County to identify wildfire in OU3 as a significant hazard.

# Lincoln County

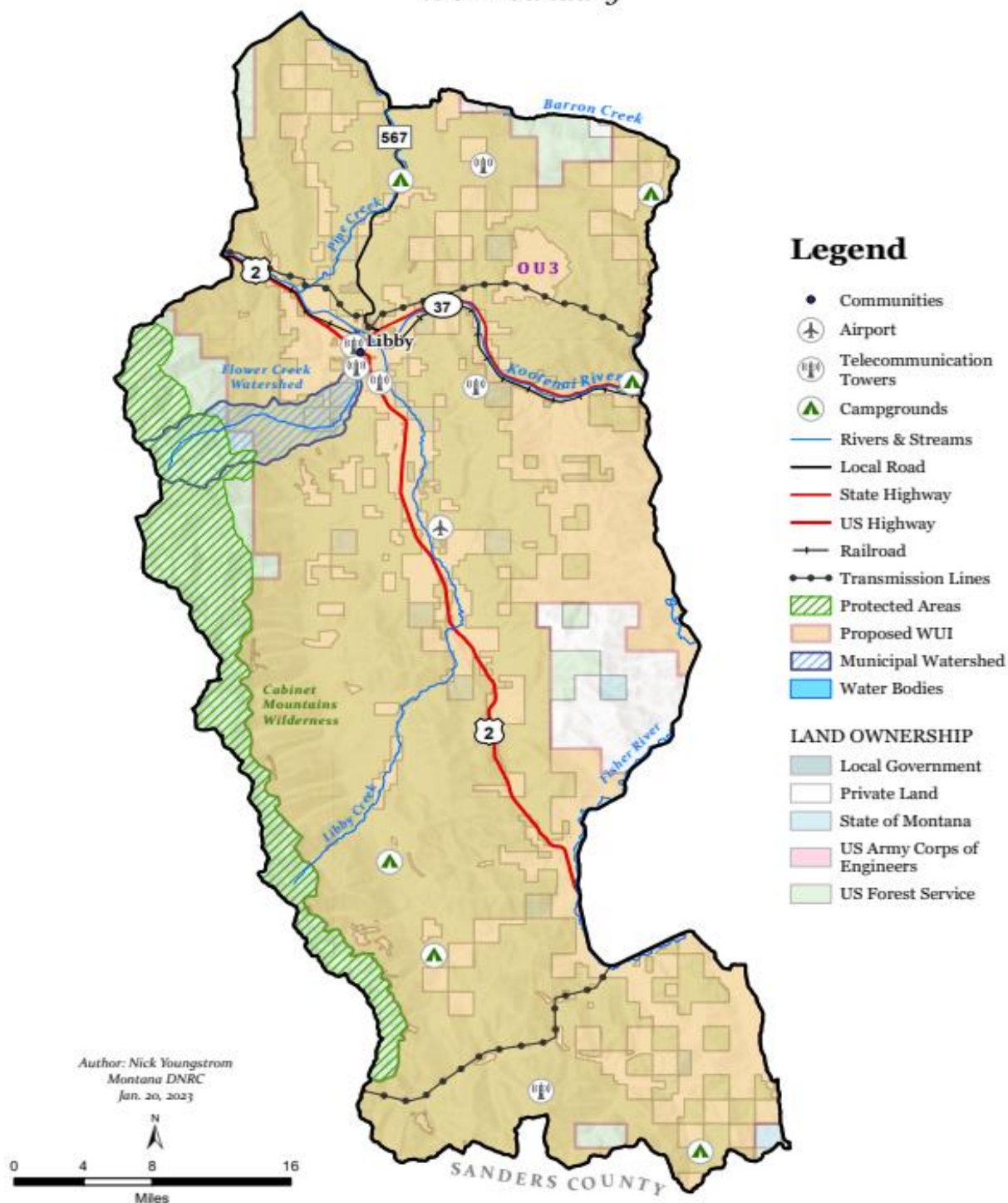
## Cabinet Geographic Area



Map 35: Cabinet Geographic Area (GA) with Ownership

# Cabinet Geographic Area

## WUI Boundary



Map 36: Cabinet Geographic Area (GA) with Proposed WUI



## **Cabinet GA**

### **MWRA - HVRA Model - Risk to Property and Infrastructure – Map 37**

The MWRA analysis of HVRA displayed the concentrations of highly valued resources, described as homes, businesses, and infrastructure including powerlines, railroads, and communication sites, along the Kootenai River both east and west, and south through the Kootenai Valley.

The model showed the City of Libby and the many small subdivisions west of Libby are at extreme risk from wildfire. The area south of Libby along US Hwy 2 and Farm to Market Road also displayed as having extreme risk, as did areas north of Libby and up Pipe Creek. Nearly all areas of concentrated development in the Cabinet GA display at very high risk. Even small, scattered developments in this GA have a very high risk to property and infrastructure. The Flower Creek watershed, Libby's only municipal source of drinking water, show risk at various levels due to recent forest treatments in portions of the watershed.

### **MWRA – Flame Length Model – Map 38**

The Flame Length model displays generally low to moderate flame lengths from 0 to 8 feet for river, creek, and valley bottoms near Libby. Flame lengths increase substantially with slope, and this is displayed in the modeling on the slopes surrounding the Kootenai River Valley where flame lengths increase from 8 to 40 feet.

West of Libby where the foothills of the Cabinet Mountains begin and then quickly rise in elevation, the model displays greater than 40-foot flame lengths starting in the US Hwy 2 corridor. This area includes the Parmenter and Cedar Creek drainages.

North of Libby and in the Pipe Creek drainage, flame length increases to 8 and 40 feet near Sheldon Flats and continue along the Pipe Creek Road to the GA boundary at Blue Creek, and back along the Bobtail Cutoff Road.

East along MT Hwy 37 and the Haul Road on the steep slopes above the Kootenai River, the flame length model displays values of 8 to 40 feet, including the area around the W.R. Grace mine and OU3. Southeast of the Kootenai Valley, flame lengths display at 8 to 40 feet. These flame lengths continue south along Hwy 2 to the East Fisher Road.

Southwest of Libby in the Granite and Libby Creek drainages, and on the steep, higher elevation slopes of the Cabinet Mountains, flame lengths are modeled at greater than 40 feet. The foothills in the Granite Creek area display 8-to-40-foot flame lengths.

Where recent mixed severity wildfires burned, including the West Fork (2017), Moose Peak (2017), and the Goat Rock Complex (2015), the model displays low flame lengths (0-4 feet).

### **MFAP – Priority Areas for Treatment Model - Map 39**

The MFAP modeling of the Cabinet GA shows an extensive area north of the Kootenai River as Priority Areas for Treatment to reduce fire risk, improve forest health, or both. The area is highly populated and extends from Quartz Creek to Rainy Creek and includes the drainages of Bobtail and Pipe Creeks up to the GA boundary at Blue Creek. The area includes many subdivisions, including Big Horn Terrace, Rawlings Tracts, Ponderosa Heights, and Em Kayan Village.

West and south of Libby along US Hwy 2 and across the entire east face of the Cabinet Mountains to West Fisher Creek, the MFAP model displayed that area as Priority Areas for Treatment primarily for wildfire risk. The modeling showed the need for treatments on both sides of US Hwy 2 south of Libby to Elk Creek where it meets the Fisher GA boundary.

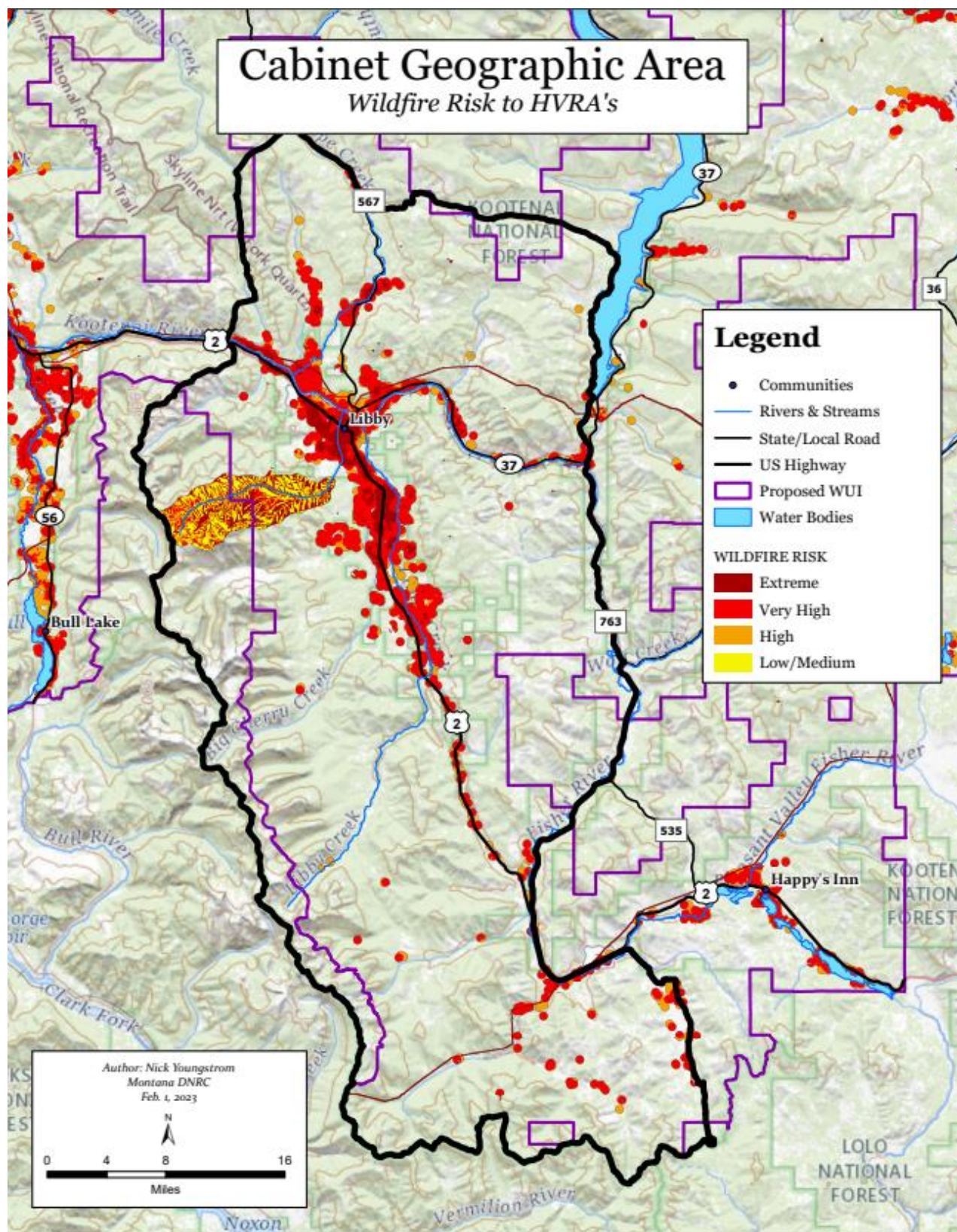
Much of the area around the W.R. Grace asbestos mine and OU3 was not identified as a Priority Area for Treatment in the MFAP model because it didn't fit the parameters, but the fire agencies reviewing the maps identified the unique threat a fire in OU3 could have on residents and added it to the Priority Areas for Treatment. A wildfire in the vicinity of OU3 could cause asbestos fibers to become airborne and be carried into Libby or other areas where people live.



Specially trained crew equipped to fight fire near OU3

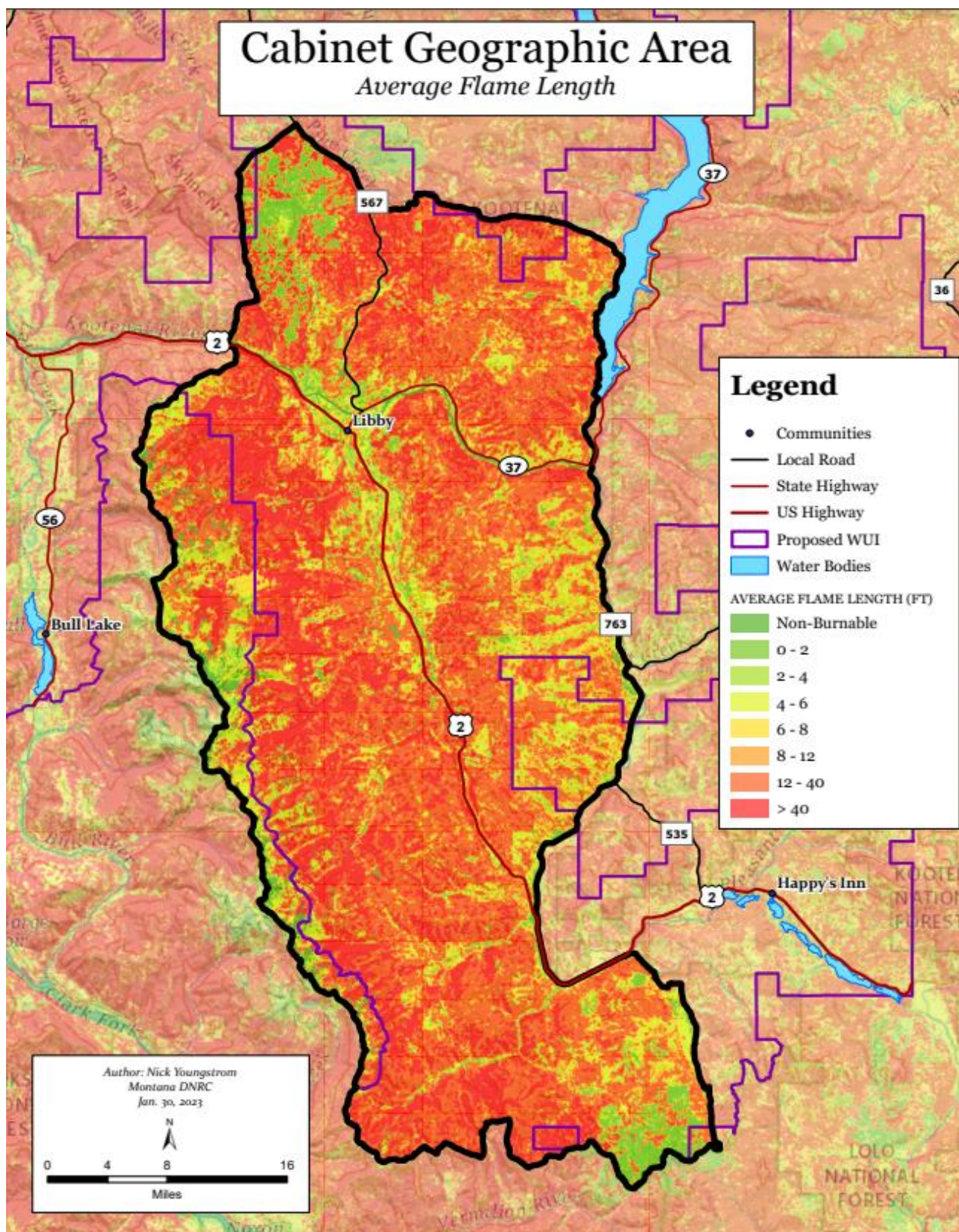
Photo: Nolan Buckingham



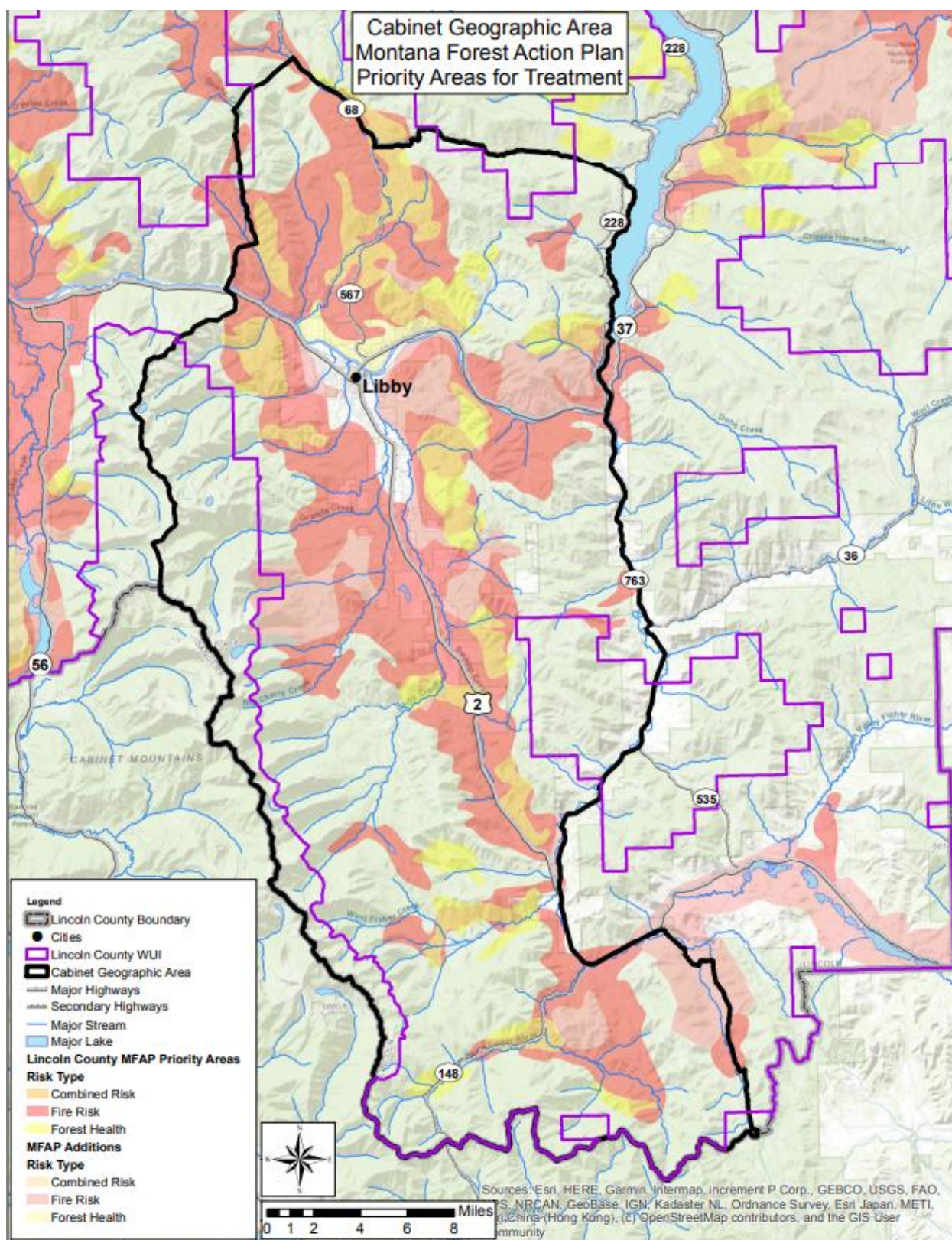


**Map 37: Cabinet GA Risk to Highly Valued Resources of Assets (HVRA) Model**









## Summary

Most homes are in the river bottom, or in creek and valley bottoms in and around the Libby area along with businesses and infrastructure. Fire starts in these areas are primarily from human activities. Many properties are adjacent to or in the forests surrounding the greater Libby area, where fuel loads are high and/or insect and disease problems exist as modeled by the MFAP.

Lightning-caused fire starts are prevalent on mid-elevation to high ridges and peaks, especially in the western part of the GA in the Cabinet Mountain Wilderness and to the east around Swede and McMillian Mountains according to Forest Service data. Heavy fuel loading and dense forests combined with steep slopes create conditions that increase the risk of wildfire if ignition occurs regardless of the source. Prevailing west winds can push fire and smoke from the Cabinet Mountains into the areas around Libby, creating a substantial threat to the community. However, summer winds are more variable and at times the Kootenai Valley gets winds from all directions. If wildfires can be kept to the valley bottoms chance of spread is greatly reduced because of greater access for firefighters and firefighting equipment, more barriers to fire spread, and potentially less active fire behavior.

## Important Information for Landowners in the Cabinet GA

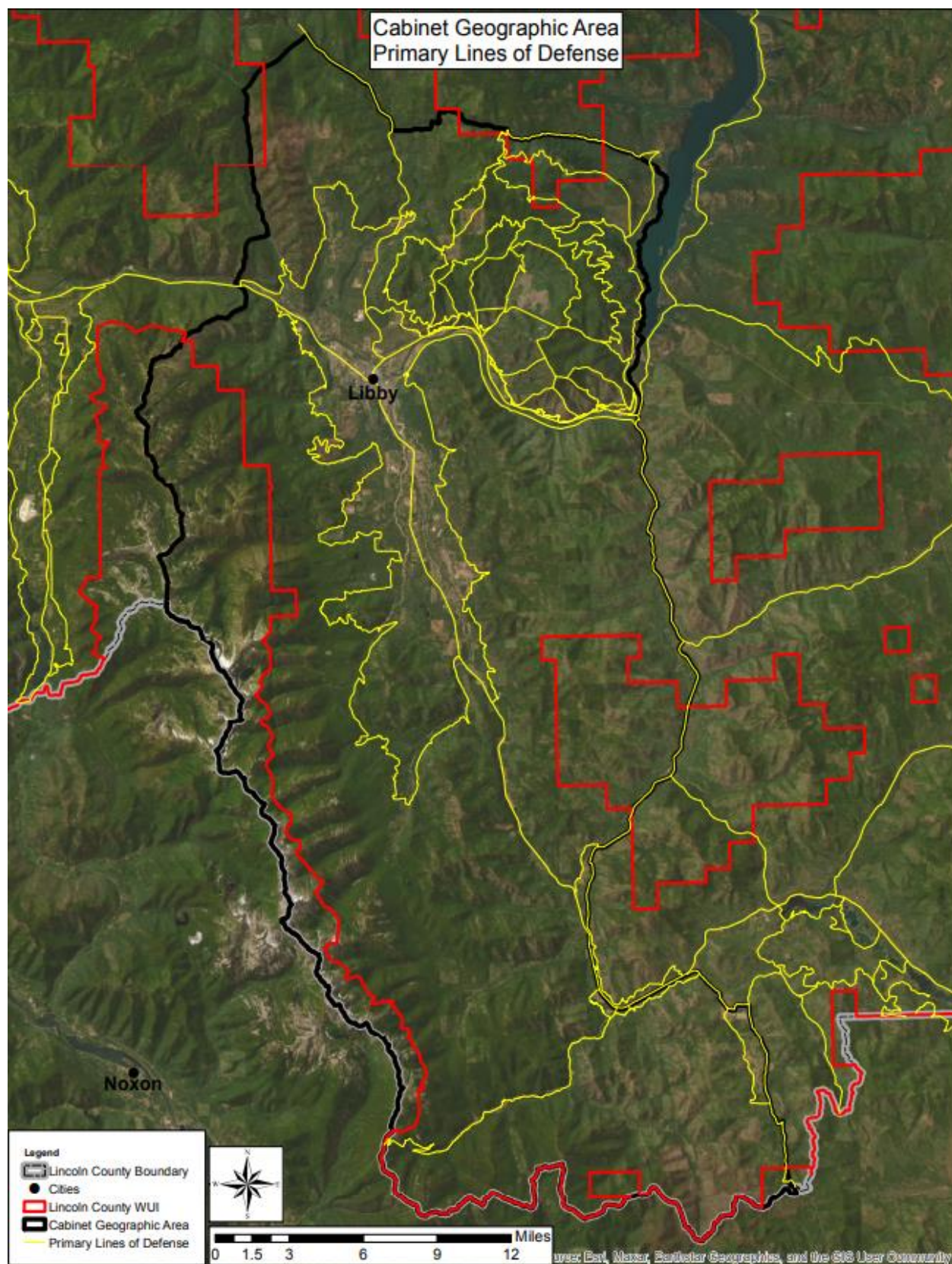
In the Cabinet GA landowners are surrounded by forests and often, close neighbors, making protection of your home and family a priority. Your highest risk in this area comes from ignition sources on your own property or those of your neighbors. Recreational fires, barbequing, smoking, burning debris piles, welding, using equipment without spark arrestors, etc., all are potential ignition sources. Creating defensible space around your home is important and an effective way to protect your home and family.

Response times to landowner properties for fires and other emergencies around Libby are relatively short compared with other areas of the county. The Libby Volunteer Fire Department, the Lincoln County Rural Fire District, and the Fisher River FSA provide good coverage of the area. USFS Libby Ranger District fire crews can also respond quickly if needed. In the northwest portion of the GA, the DNRC and the Libby Ranger District can respond quickly to fires along MT Hwy 37. However, in the Silver Butte, West Fisher and McGinnis Meadow areas, response times are longer for USFS and DNRC resources.

Making sure that a fire engine can find your home and get into your property is a key factor that you can address as a homeowner. Is your house number or address visible to emergency vehicles? Is it visible in the dark? If it is smoky? Is your driveway wide enough for a fire engine to get into your property and turn around? Are there locked gates? Is there a bridge that must be crossed to access your property? If so, make sure that it is properly posted for weight limits. Emergency responders are not going to put themselves in danger to protect your house, so it is your job to make it safer for them.

For more landowner information go to [www.fireadaptedkootenai.org](http://www.fireadaptedkootenai.org)





**Map 40: Cabinet GA Primary Lines of Defense (PLODS)**

## Cabinet GA -Treatment Focus Areas

## Map 41

<b>Cabinet GA- Priority 1</b>	<b>Location:</b> Parmenter Face- west and above Libby, foothills of the Cabinet Mountains, lower section of Cedar Creek, Parmenter Creek and Flower Creek drainages.
<b>Area Description and Rational:</b> This area west and south of Libby are part of the foothills of the Cabinet Mountain Wilderness Area. Human-caused fire starts are the primary cause of wildfires in this area. Most private timber lands have been harvested and are regenerating, though some were sold for real estate development. Other ownerships are heavily forested and have high fuel loads and ladder fuels creating conditions for crown fires and ember showers that west winds could drive into the many small subdivisions west of Libby. The Flower Creek drainage serves as the municipal watershed for the City of Libby and could be threatened by wildfire. Subdivisions in this area include Panoramic View, Parmenter Heights, Rouse Tracts, Olbeksens, and multiple subdivisions in the Mahoney Acres area.	
<b>Cross-boundary Partners:</b> Forest Service, Montana DNRC, Stimson Lumber, Lincoln County, City of Libby, Private landowners	
<b>Other Partners:</b> Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide educational materials and information on prevention, how to reduce structure ignitability, develop an evacuation plan and identify safety zones.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Libby Ranger District -USFS Montana DNRC	<b>Implementation Date:</b>

<b>Cabinet GA- Priority 2</b>	<b>Location:</b> Granite Creek – south of Libby from Granite Creek bridge and west of US Hwy 2 at the foothills of the Cabinet Mountains to Libby Creek Road Creek.
<b>Area Description and Rational:</b> This area south of Libby forms the foothills of the Cabinet Mountain Wilderness Area. Lightning is the primary cause of fire. This area is heavily forested with high fuel loads and ladder fuels creating conditions for crown fires and ember showers that threaten private properties in the area. Subdivisions in this area are Woodland Heights, Cabinet Mountain Views, Riddel Highlands, Granite Creek, Terrace View, Pine Ridge, Tall Pines, Mt. Snowy Vista, Baker-Bowe, Cline, Sunset Ranch and other.	
<b>Cross-boundary Partners:</b> Forest Service, Montana DNRC, Private landowners	
<b>Other Partners:</b> Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide educational materials and information on prevention, how to reduce structure ignitability, develop an evacuation plan and identify safety zones.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Libby Ranger District -USFS	<b>Implementation Date:</b>



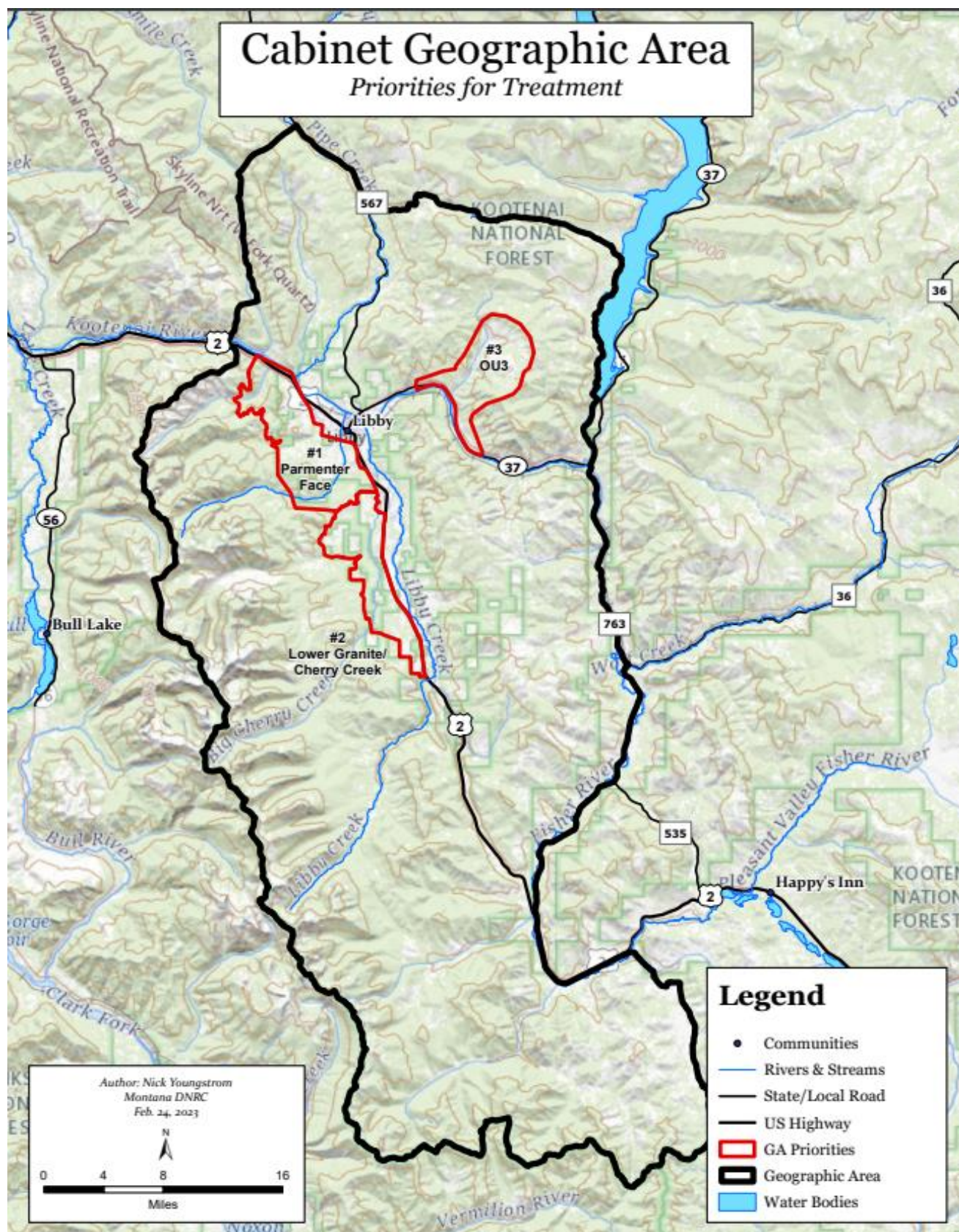
<b>Cabinet GA - Priority 3</b>	<b>Location:</b> River's Edge Trailer Park, W.R. Grace Vermiculite Mine, Rainy Creek drainage, Operable Unit 3 (OU3) Libby Asbestos Superfund Site, Em Kayan Village
<b>Area Description and Rational:</b> Steep slopes with high fuel loads in and around OU3 and the W.R. Grace Vermiculite mine pose a threat to homes in the area from wildfire, but also a much more widespread threat to residents in the vicinity of Libby from wildfire smoke that could contain Libby amphibole asbestos fibers from burning forests in this area. Additionally, this area is a corridor for the high voltage transmission line to Libby. Lightning is the primary cause of fire in this area.	
<b>Cross-boundary Partners:</b> Forest Service, Stimson Lumber, Lincoln County, Private landowners	
<b>Other Partners:</b> Em Kayan FireWise Community, W.R. Grace, Lincoln County Sheriff's Office	
<b>Project Work:</b> Fuel reduction, establish and develop primary lines of defense, create shaded fuel breaks, treat in the Home Ignition Zone around homes and driveways, improve addressing and access to private land, provide educational materials and information on prevention, how to reduce structure ignitability, develop an evacuation plan and identify safety zones.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council Kootenai National Forest -USFS Stimson Lumber W.R. Grace	<b>Implementation Date:</b>



Highway 37 Fire near OU3 in 2019

Photo: USFS





**Map 41: Cabinet GA Priority Treatment Areas 1, 2, and 3**

## Strategies for Treating Priority Focus Areas

While each GA has its own unique characteristics, the wildfire risk analysis for the CWPP shows that all GAs have similar high fuel loads and wildfire mitigation treatment needs in Lincoln County. Treatments across ownership boundaries will be important in order to achieve wildfire risk reduction and mitigation in the WUI.

In the past ten years since the National Cohesive Wildland Fire Management Strategy (2014) was developed, identifying the three primary national goals of 1) restore and maintain landscapes, 2) creating fire-adapted communities, and 3) safe, effective, efficient wildfire response, the need for cross-boundary treatments has been recognized. Fuel loads and wildfire mitigation treatments are needed regardless of ownership, making cross-boundary treatments necessary to address these conditions and needs if wildfire risk reduction and mitigation is to be achieved in the WUI.

The following authorities, agreements, grants and tools provide for and encourage fuel reduction treatments and other wildfire mitigation activities in the WUI and will be used to accomplish the priority treatment focus areas.

- Healthy Forests Restoration Act (HFRA 2003, amended 2018)
  - Allows for countries to define WUI as part of their CWPP.
  - HFRA Environmental Impacts Statements (EIS) and Environmental Assessments (EA)
    - Under HFRA, EIS and EAs for WUI projects have reduced requirements.
  - Allows use of both Insect and Disease Categorical Exclusion (CE), Section 603; and Wildfire Resilience CE, Section 605.
    - Statutory CEs are granted automatic NEPA compliance if they meet the statutory CE's requirements and are not subject to additional regulatory processes.
  - Good Neighbor Authority (GNA)
    - GNA allows the FS to authorize states, counties, and federally recognized Indian tribes to conduct certain projects on federal lands.
- Infrastructure Investment and Jobs Act (2021) aka Bipartisan Infrastructure Law (BIL)
  - Allows use of new CE for establishment of fuelbreaks.
  - Allows for significant funding and workforce development for the USFS.
- Memorandum Of Understanding (MOU, 2020)
  - Between Montana Department of Natural Resources and Conservation, USDA Natural Resources Conservation Service, Lincoln County, Montana, and USDA Forest Service, Kootenai National Forest to ***work cooperatively to reduce hazardous fuels, restore fire-adapted forests, improve public safety, and protect all lands from wildfire across jurisdictional boundaries within Lincoln County.***
- Lincoln County has been granted Cooperating Agency status by Kootenai National Forest
  - The status allows the county to participate in the development of FS projects.
- Joint Chiefs Landscape Restoration Project Grant-Libby area- FY2022 \$1,283,544
  - A cross-boundary effort connecting fuel reduction activities over 263,026 acres near Libby. Areas for treatment include OU3, Libby's municipal watershed, private and federal land.

- Kootenai Complex Project -forest-wide -Initial Landscape Investment -\$19.3 million over 10 yrs
  - Provides additional funding to the FS for fuels and forest health treatments to protect communities from wildfire, also to fund competitive grants to private landowners.
- Kootenai Forest to Rivers - county-wide - private land fuel reduction - \$430,000, expires 2023
- Rabbit Tracts Partnership -Troy- Montana Forest Action Plan grant- \$430,901, expires 2023
- Island Lake – Montana Forest Action Plan grant -\$483,000, 2023-2025
  - Funding for fuel reduction on private and state lands
- Hazardous Fuels WUI grant – Farm-to-Market- private lands fuel reduction- \$262,500, 2022-24
- Fire Adapted Kootenai and Fire Adapted Montana Learning Network websites
  - Provides information to landowners including current wildfire information, how to request a home inspection, information on home ignition zone and defensible space, cost-share grant funding opportunities, debris burning and permitting, and other information.

## Implementing Treatments

Implementing fuel reduction in the WUI and the priority focus areas, and accomplishing other CWPP goals will be addressed in the following ways.

1. When USDA Forest Service or State lands occur within or adjacent to the priority focus areas in the WUI, or when agency projects are planned in the WUI, the agencies will look for opportunities to treat across ownership boundaries. The DNRC has developed a “roadmap” for the Lincoln County CWPP with input from the KNF, DNRC, NRCS and county to help facilitate this work. The roadmap identifies future federal, state, and county projects that may be capitalized on to accomplish additional cross-boundary work in the WUI. These projects may include fuel mitigation, shaded fuelbreak development, development or maintenance of PLODs, and other wildfire mitigation work.

The FireSafe Council will lead efforts to accomplish cross-boundary work in the priority focus areas and the WUI using the roadmap concept and making project recommendations to the agencies. When a project area is approved, the agency having authority will assign a project implementation lead who will coordinate development of the project, including identifying the project team, appropriate authorities and level of analysis required, funding sources, project scope, layout and implementation and any other needs.

- Good Neighbor Authority (GNA) provides a tool to accomplish fuel reduction on federal lands, especially in or near priority focus areas where there may be smaller or isolated FS parcels near private land or in other areas that don’t fall under larger FS projects. Under GNA, the work can be implemented by the state and, possibly in the future, the county. Opportunities to use GNA in the priority focus areas will be discussed and identified by collaboration with agencies and other interested parties. The statewide Good Neighbor Authority Agreement authorizes the DNRC to assist the KNF to manage up to 10,000 acres a year for 10 years within the Lincoln County WUI.
- Where industrial forest lands occur within or adjacent to the priority focus areas in the WUI, or when industrial forest projects are planned in the WUI, the FireSafe Council will lead efforts to



identify and promote any cross-boundary wildfire risk reduction or mitigation opportunities associated with the project.

- Lincoln County will work to promote and provide cost-share funding opportunities to private landowners when federal, state and industrial private lands are treated in the WUI or planned near their properties to facilitate work across the private/public land boundary.

## Monitoring and Evaluation

Priority Focus Area treatment implementation will be monitored by the project lead agency. Progress reports for the selected CWPP priority treatment areas will be reviewed monthly at FireSafe meetings with partner input. ArcGIS will be used for mapping treatments for compatibility between agencies. A standardized monitoring and evaluation template will be developed specifically for CWPP priority projects to assist the FireSafe membership in tracking progress and evaluate if objectives are being met.

## Other Goals and Efforts under this CWPP

<b>Goal:</b> Make burn permits available online county-wide.	<b>Location:</b> Lincoln County
<b>Rational:</b> Online burn permitting provides convenience to the public and allows agencies to coordinate and monitor burning across the county.	
<b>Partners:</b> KNF, DNRC, NRCS, Lincoln County, NIC Montana	
<b>Project Work:</b> Expand the NIC Montana online burn permitting process beyond the Libby Air Pollution Control District around Libby to include burning across the county.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council	Accomplishment Date:

<b>Goal:</b> Train and certify personnel from rural fire districts, fire service areas, and companies to conduct home and HIZ inspections and encourage improvements	<b>Location:</b> Lincoln County
<b>Rational:</b> Provide home inspection training and certification to rural fire districts, service areas, and companies with the intent of those organizations doing home inspections with certified individuals within rural fire organizations, recognizing these organizations know their neighbors and neighborhoods.	
<b>Partners:</b> FireSafe Council, Lincoln County, DNRC, Troy RFD, Bull Lake FD, McCormick FSA, Upper Yaak FSA, West Kootenai FPC, Trego-Fortine-Stryker FSA, Eureka FSA, Libby RFD, Fire Wardens	
<b>Project Work:</b> Provide training to fire departments to conduct home and HIZ inspections including education on fuel reduction, construction materials, addressing, egress, creating shaded fuel breaks, and other treatments in the HIZ, other structures and driveways.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council, Montana DNRC, Lincoln County	Accomplishment Date:

<b>Goal:</b> Provide debris burning education and enforcement	<b>Location:</b> Lincoln County
<b>Rational:</b> As the number one cause of human caused fires in Lincoln County, illegal and improper debris burning needs to be addressed.	
<b>Partners:</b> FireSafe Council, DNRC, KNF, Lincoln County Sheriff's Office, Air Quality, Fire Wardens, rural fire departments	
<b>Project Work:</b> Utilizing the FireSafe trailer, the FAK website, and outreach methods including newspapers, radio spots, FaceBook, posters, etc., message about the importance of legal and proper burning in Lincoln County.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council	Accomplishment Date:

<b>Goal:</b> Review the International WUI code, including Chapter 4, for possible inclusion into Lincoln County Subdivision Regulations to reduce structural ignitability.	<b>Location:</b> Lincoln County
<b>Rational:</b> As the WUI expands, developers and purchasers will be required to take on more responsibility for fire and wildfire protection in the WUI, including additional requirements in order to secure homeowners insurance.	
<b>Partners:</b> FireSafe Council, Lincoln County Planning Department and Planning Board	
<b>Project Work:</b> Review the most current version of the International Wildland Urban Interface Code (IWUIC) for codes that are practical for inclusion to the subdivision regulations in order to provide the best wildfire protection possible and help insure insurance coverage at a reasonable cost for homeowners in the WUI.	
<b>Project Coordinators:</b> Lincoln County FireSafe Council	Accomplishment Date:

<b>Goal:</b> Identify and map existing water sources for firefighting. Also identify water supply needs for county-wide development.	<b>Location:</b> Lincoln County
<b>Rational:</b> Provide water source information, including location mapping and source type, to firefighting personnel involved in interagency and mutual aid firefighting.	
<b>Partners:</b> Rural Fire departments and districts, FSAs, and FPC, DNRC, USFS and other interagency and mutual aid partners.	
<b>Project Work:</b> Using GPS, locate and map water sources and record source type and other pertinent information to aid firefighting efforts. Also identify areas without sufficient water supplies.	
<b>Project Coordinators:</b> Lincoln County Fire Cooperative	Accomplishment Date:

## Important Information for Landowners

Protection of your home and property from wildfire is your responsibility. There is no guarantee that help will come to save you, your family, or your home during a wildfire. Likewise, having an expensive house or a large amount of land doesn't give you priority for fire protection during a wildfire.

If a fire starts on your property as a result of your actions and the fire requires the response of a fire protection agency, you may be charged for their response. If a fire starts on your property as a result of your actions and the fire moves on to neighboring properties or agency lands, you could be found liable for any damage caused by the fire to those properties.

The message here is **PREPAREDNESS, PROTECTION and PREVENTION**. Take steps to prepare for wildfire and protect your family and home. Plan for a wildfire impacting your property, and plan for an evacuation now. You won't have time to plan when a wildfire is bearing down on your home.

Below are a few important steps you can take to **PREPARE** and **PROTECT** your home.

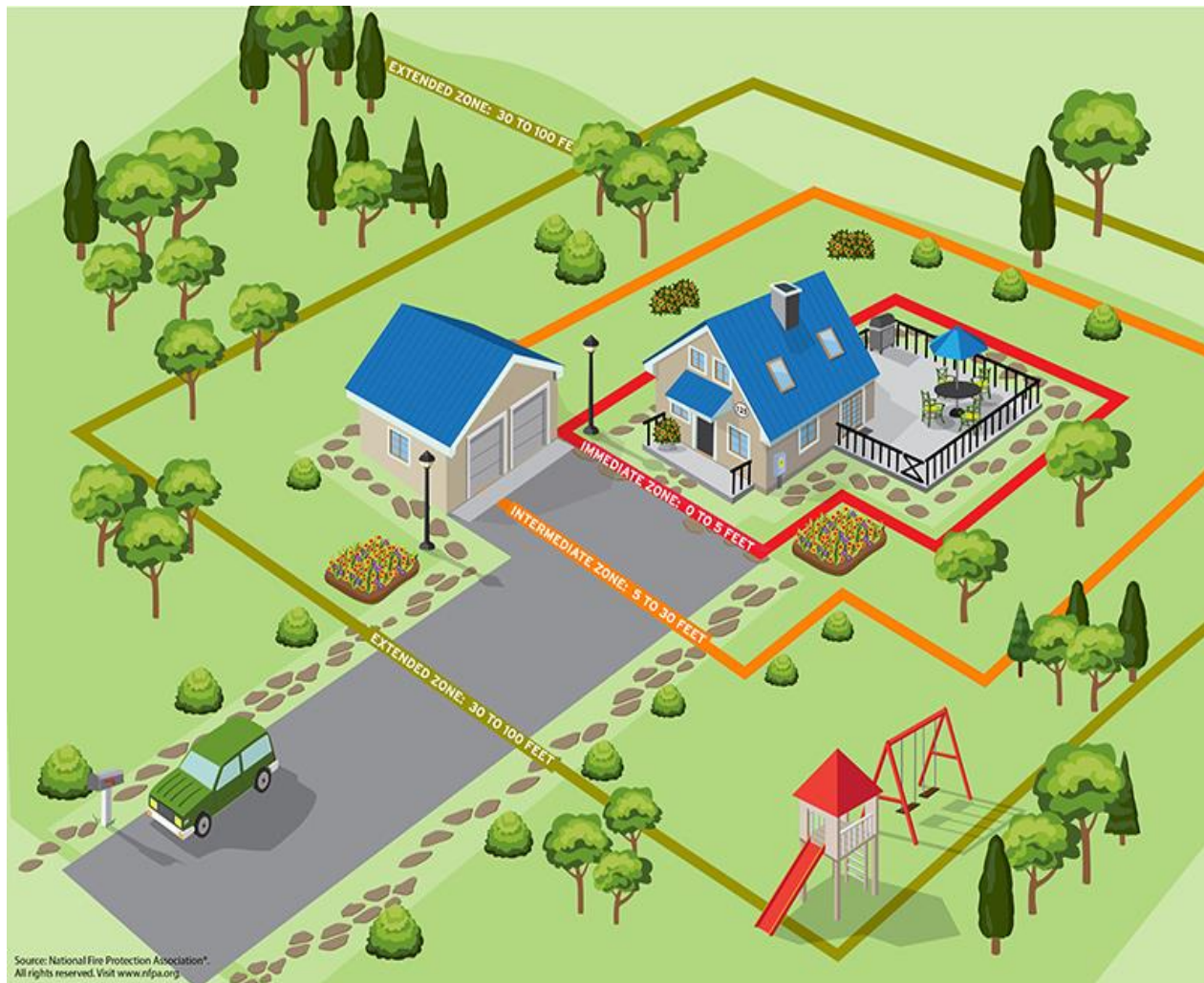
- **Home Inspections** - Home inspections by trained fire personnel are free to homeowners. You just need to request the service. That can be done on the Fire Adapted Kootenai website listed below. A home inspection will help you identify potential issues that can be addressed by you or by a contractor that will reduce the risk of fire to your home.
- **Home Ignition Zone (HIZ)** – Part of the home inspection, the Home Ignition Zone (HIZ) is an area 100-200 feet from the foundation and includes vegetation, the home itself, and other structures or attachments like decks, furniture, fences, and outbuildings. Home hardening, which is reducing flammable materials in and around the home is an important component of the HIZ.

The majority of homes lost to wildfire are first ignited by embers and small flames. By reducing the susceptibility of the area immediately around the home and the home itself, the chances of a home surviving an ember storm or small spot fire are greatly increased. Work in the Home Ignition Zone is also called creating defensible space. There are three primary zones – Immediate, Intermediate and Extended as shown in Figure 1 on page 100. Each zone has specific actions that you can take to protect your home and property.

More information about the HIZ and actions you can take to create defensible space around your home can be found at <https://www.fireadaptedkootenai.org/landowner-information>

- **Addressing** - If fire protection agencies can't find you, you are on your own. Lincoln County Resolution 2020-22 requires that each residence and commercial structure have a unique, locatable physical address. The address number must be legibly and visibly posted in accordance with the resolution's policy. Failure to display a residential address is a violation and punishable by law. For more information on addressing go to: <https://lincolncountymt.us/gis/>  
The Lincoln County Resolution 2020-22 can be found at:  
[https://lincolncountymt.us/wp-content/uploads/2016/05/2020-22\\_Road\\_Signage\\_Addressing.pdf](https://lincolncountymt.us/wp-content/uploads/2016/05/2020-22_Road_Signage_Addressing.pdf)





**Figure 1: The Home Ignition Zone or HIZ**

- **International Wildland-Urban Interface Code (IWUIC)**

The State of Montana Department of Labor and Industry adopted the 2021 International Wildland Urban Interface Code (IWUIC), effective 6/11/2022, though not in its entirety. Certain wording, sections and chapters were omitted, including Chapter 4 – Wildland-Urban Interface Area Requirements. Much of this section, however, is addressed by the International Fire Codes or addressed locally through subdivision regulations.

The department also adopted the following wording in the rule, “The governmental body or some other official state or local agency shall declare the wildland-urban interface areas within the jurisdiction. Such declaration or designation shall be based on findings of fact, or some other process already completed such as mapping, boundary designations, or other informative processes such as wildland fire plans.”

The updated 2023 CWPP with parcel-based WUI mapping and county-wide fire risk analysis may be used to develop additional construction and fuel treatments requirements for subdivisions and other new development in the WUI if the county adopts the International Building Code or the International Residential Code and elect to enforce the International Wildland-Urban Interface Code. With increasing premiums for home insurance for homes located in the WUI, such requirements could potentially help keep the price of insurance affordable for homeowners.

And, of course, the best way to reduce wildfire risk and protect your home is through prevention. More than half of all wildfires in Montana are human-caused. The percentage varies each year, but human-caused starts are the primary ignition source every year, and the primary source of fires in Lincoln County are debris fires that get away. There are so many ways that people start fires, but some of the obvious ones are— unattended or unextinguished campfires, cigarettes, fireworks, playing with matches. Then there are the ones people don't give much thought to. Often people don't think about driving onto long, dry grass and weeds with a hot exhaust, or closing the lid on their barbeque after using it to prevent the wind from scattering embers. Part of prevention is thinking about what could happen. Another part of prevention is being prepared. Having a bucket with water and shovel to put a campfire out properly is an example of when being prepared is prevention. Having the garden hose hooked up to water and ready when lighting off fireworks is prevention.

Additional Information on Preparedness, Protection and Prevention can be found in Appendix D, Resources.



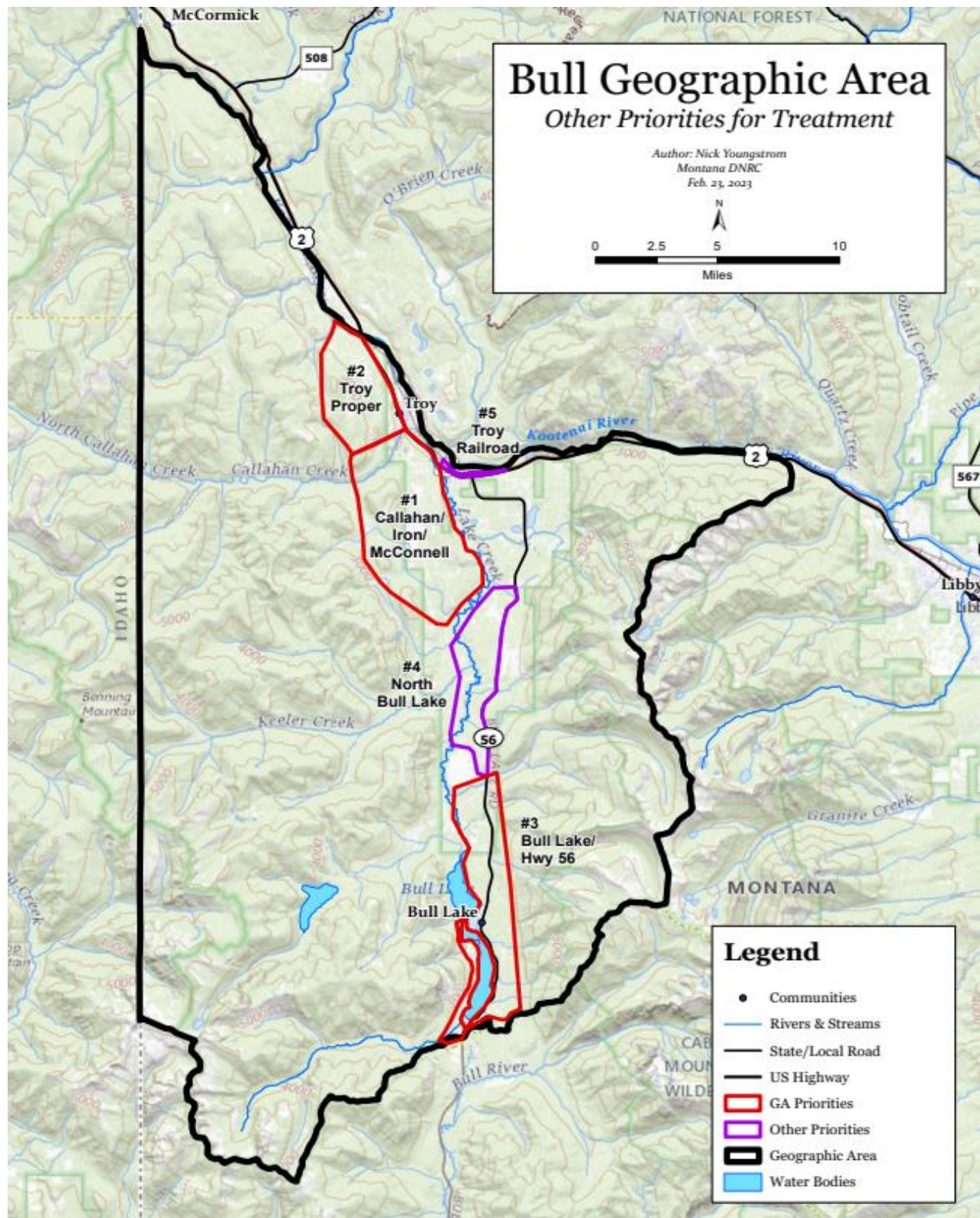
Evacuee and fire crew crossing paths near Essex, MT

Photo: Aaric Bryan/Daily Inter Lake

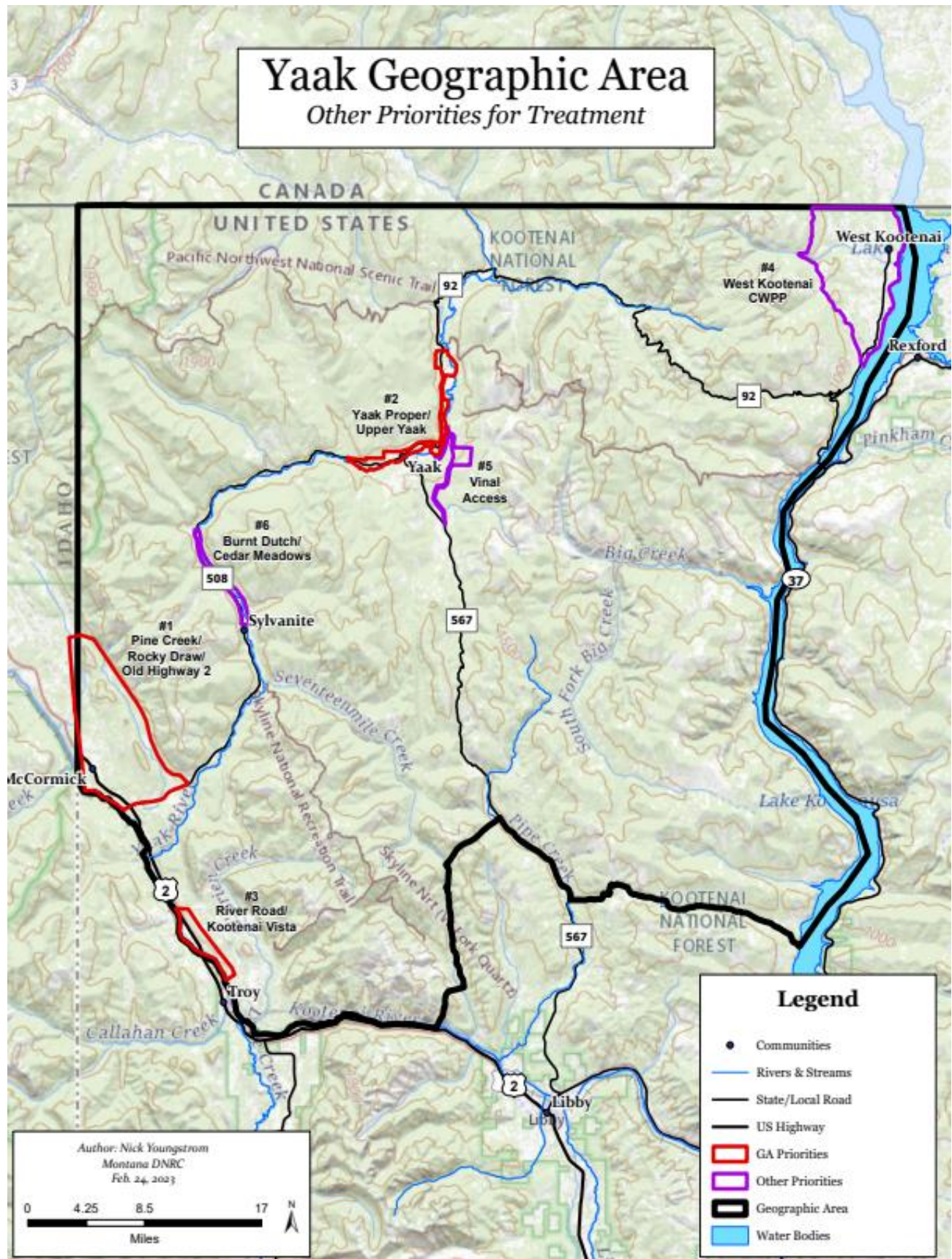


## Appendices

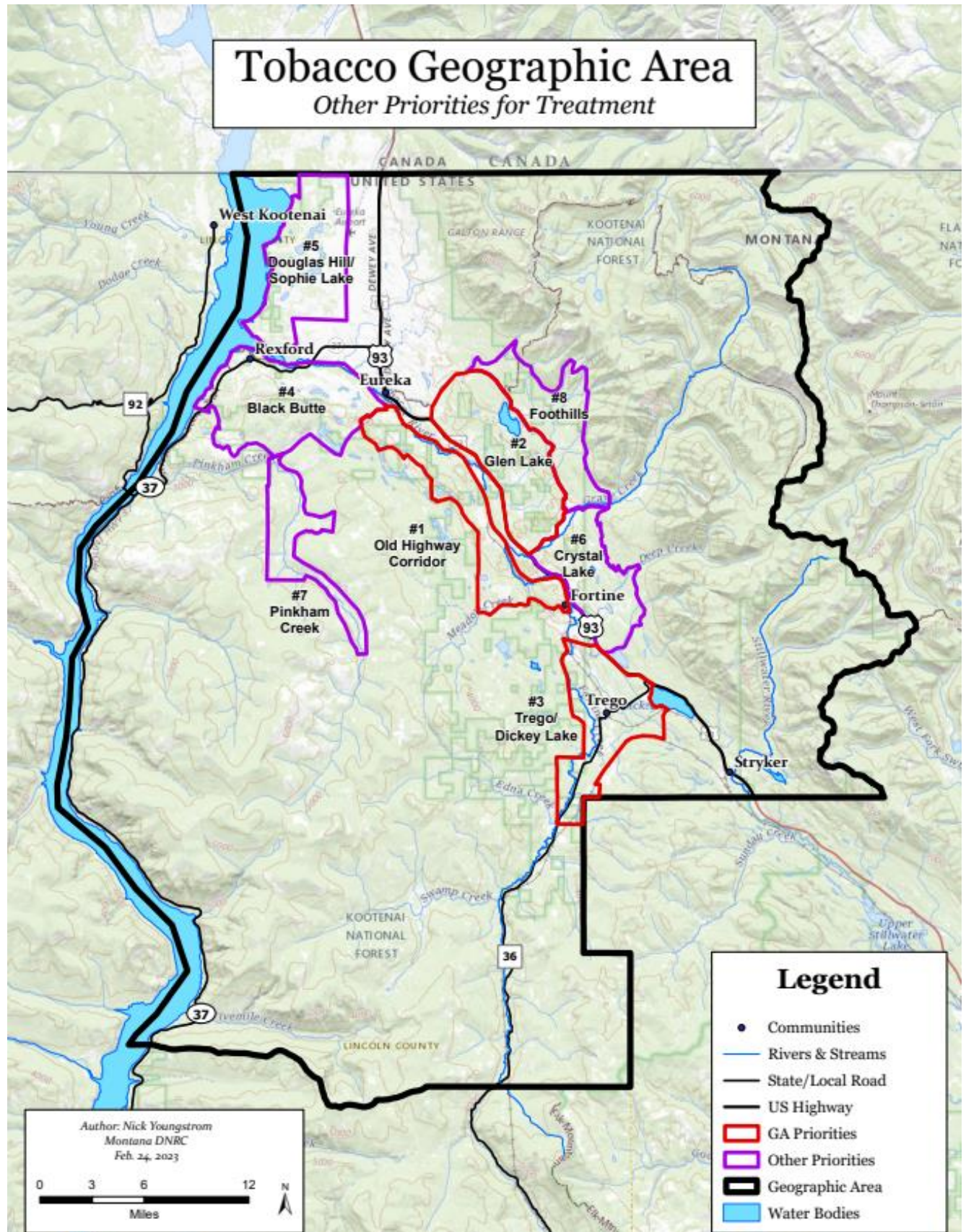
### Appendix A – All Areas Identified as Priority Treatments by GA – Maps



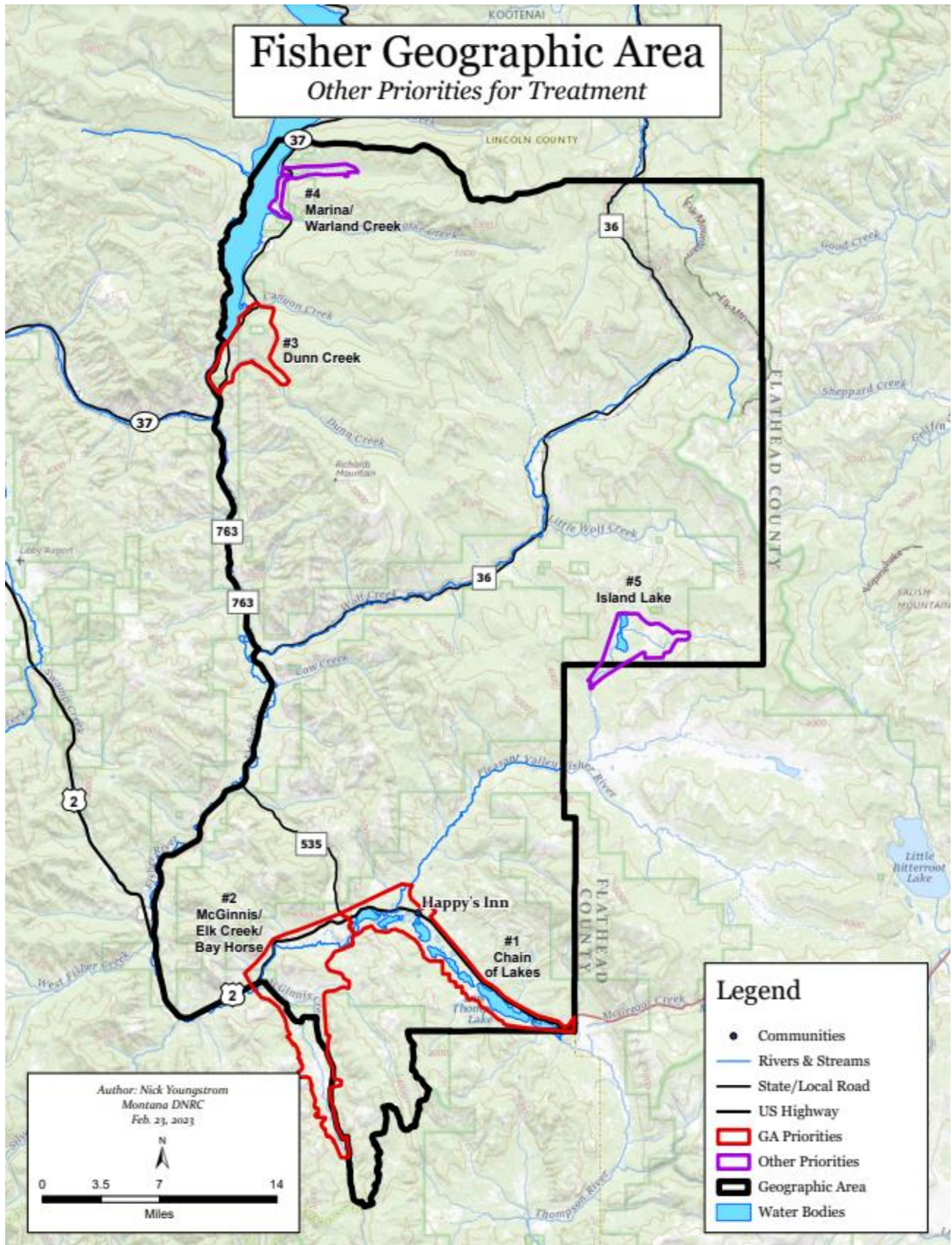




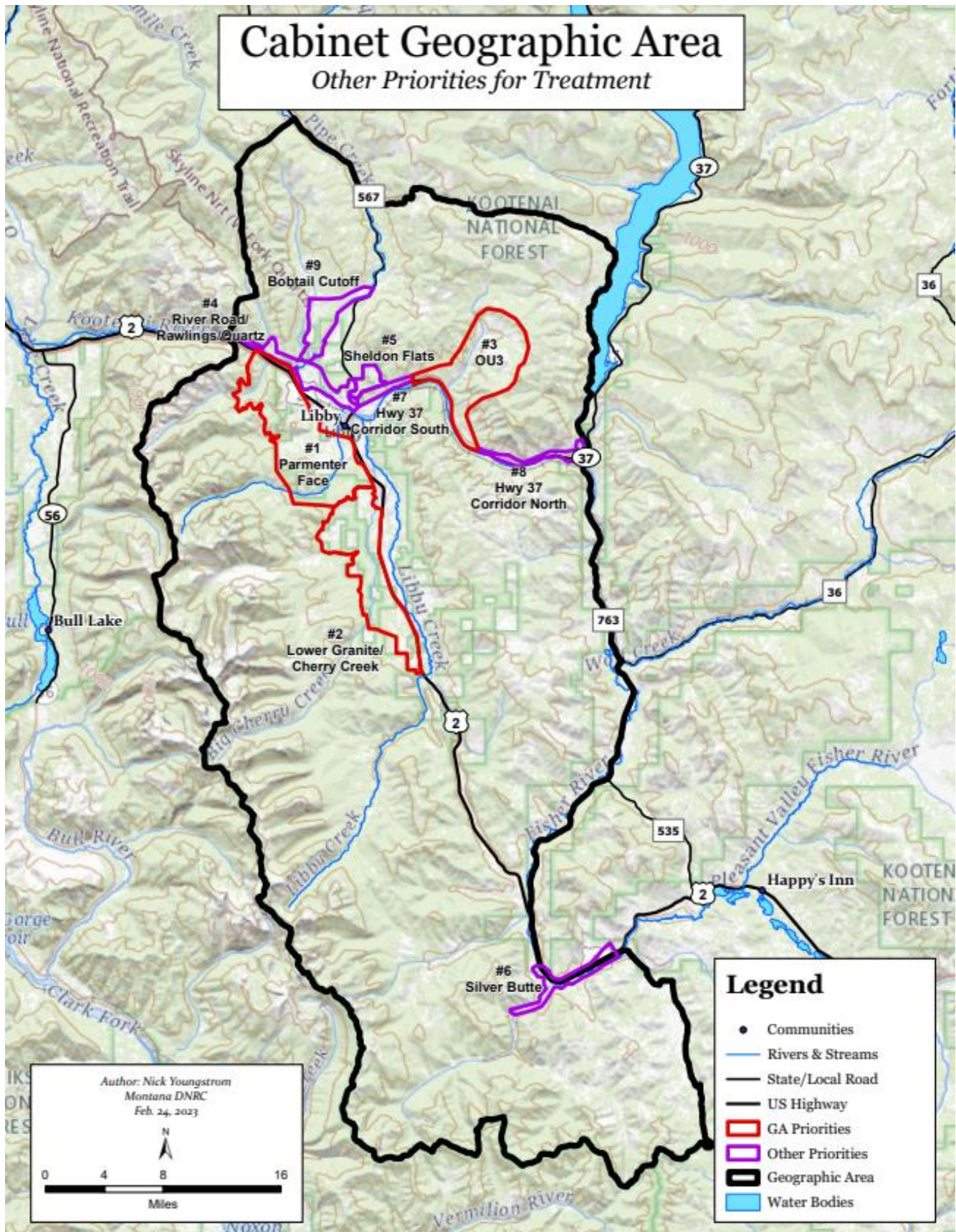












## Appendix B – Risk Analysis Participants

### Bull GA - Meeting -October 28, 2021

Clyde Miller	Bull Lake Fire Department Fire Chief
Jerry Bennett	Lincoln County Commissioner – District 2
Jim Ward	Bull Lake Fire Department Assistant Fire Chief
Steve Lauer	Libby Fire Department Fire Chief
Thomas Lane	Lincoln County Emergency Management Agency
D.J. Welch	Troy Fire Department Fire Chief
Beau Macy	USFS – Three River District FMO
Jacob Jeresek	USFS – Kootenai Deputy Fire Staff Officer
Jennifer Nelson	Lincoln County Forester

### Yaak GA – Meeting – November 16, 2021

Steve Lauer	Libby Fire Department Fire Chief
Trevor Pelling	McCormick Rural Fire Department Fire Chief
Beau Macy	USFS – Three River District FMO
Craig Johnson	Upper Yaak Fire Service Area Fire Chief
Jerry Bennett	Lincoln County Commissioner – District 2
Mark Peck	Lincoln County Port Authority
Logan Sandman	DNRC – Libby Unit FMO
Jennifer Nelson	Lincoln County Forester
Jacob Jeresek	USFS – Kootenai Deputy Fire Staff Officer

### Tobacco GA – Meeting – November 23, 2021

Christine Burke	NRCS Field Forester
Brian Ressel	NRCS District Conservationist
R.J. McDole	USFS – Rexford-Fortine District FMO
Ron Komac	USFS – Rexford-Fortine District NEPA Coord.
Isaiah Williams	Trego-Fortine-Stryker Rural Fire Department
Logan Sandman	DNRC – Libby Unit FMO
Harmony Burow	USFS – Rexford-Fortine District AFMO- Fuels
LeeAnn Schermerhorn	Mayor – Town of Eureka
Raymond Flanagan	USFS – Rexford-Fortine District AFMO - Fire
Ron Hvizdak	Eureka Fire Department
Seth Carbonari	USFS – Rexford-Fortine District Ranger
Thomas Lane	Lincoln County Emergency Management Agency
Jennifer Nelson	Lincoln County Forester
Jacob Jeresek	USFS – Kootenai Deputy Fire Staff Officer

**Fisher GA - Meeting – December 2, 2021**

Marcel Getz	DNRC- Libby Unit Fire Adapted Kootenai Coord.
Logan Sandman	DNRC- Libby Unit FMO
Steve Lauer	Libby Fire Department Fire Chief
Doug Turman	DNRC- Libby Unit Manager
Jeff Stevenson	USFS – Libby District FMO
Mike Munroe	Fisher River Fire Service Area
David Friedman	American Forest Management
Brent Teske	Lincoln County Commissioner – District 1
Jerry Bennett	Lincoln County Commissioner – District 2
Dave Bennetts	MT Fish, Wildlife and Parks
Thomas Lane	Lincoln County Emergency Management Agency
Nate Gassmann	USFS – Libby District Ranger
Mark Peck	Lincoln County Port Authority
Jennifer Nelson	Lincoln County Forester
Jacob Jeresek	USFS – Kootenai Deputy Fire Staff Officer

**Cabinet GA – Meeting January 13, 2022**

Marcel Getz	DNRC - Libby Unit
Brent Cooper	USFS – Libby District AFMO
Jeff Stevenson	USFS – Libby District FMO
Steve Lauer	Libby Fire Department Fire Chief
Brian Hobday	Green Diamond Resource Company
Brent Teske	Lincoln County Commissioner – District 1
Peggy Williams	Mayor – City of Libby
Thomas Lane	Lincoln County Emergency Management Agency
Jerry Bennett	Lincoln County Commissioner – District 2
Christine Burke	NRCS Field Forester
Brian Ressel	NRCS District Conservationist
Jennifer Nelson	Lincoln County Forester



## Appendix C

### Wildland Fire Smoke Ready Community Information and Smoke/Air Quality Mitigations

These resources have mitigation and protection ideas that can be promoted in the community, especially to those in at-risk demographics for smoke: the very young, older people, pregnant women, people of lower socioeconomic status (SES), and those with pre-existing conditions such as asthma, COPD, or cardiac concerns.

1. Understand vulnerable demographics:

CDC website for health attributes of the population of a community:

<https://ephtracking.cdc.gov/DataExplorer/?query=be78a8b5-3382-4f43-8038-6212be88ba3a&G5=9999>

Wildfire Risk to Communities Portal includes proportion of older people and presence of mobile homes, which are easily filled with smoke and often lower SES.

<https://wildfirerisk.org/> - explore, 'populations' tab

2. Inform community members of wildland fire smoke risks and how to prepare:

[Smoke-Ready Toolbox](#), US EPA Office of Research and Development

[Smoke-Ready Info](#), Interagency Wildland Fire Air Quality Response Program

3. Provide guidance on clean home and clean room, air filtration options, medical consultation and pre-purchase of medications to limit personal risk.

(Same links as above)

4. Utilize mitigation strategies during wildland fire incidents to minimize smoke risk to individuals vulnerable to smoke.

Know the current air quality:

<https://fire.airnow.gov/>

<http://todaysair.mtdeq.us/>

Document roles for partners in addressing smoke risks:

*Example: Health department will take lead on issuing air quality alerts*

## Appendix D

### Resources

#### Local Fire Information

[InciWeb](#)

[Kootenai Interagency Dispatch Center](#)

[Kootenai National Forest Facebook](#)

[Montana DNRC Fire Information](#)

[Montana DNRC Interactive Wildland Fire Map](#)

[Montana Wildland Fire Information](#)

#### Air Quality

[AirNow](#)

[Lincoln County Air Quality](#)

[Montana DEQ Air Monitoring](#)

#### Wildfire Preparedness

[Fire Adapted Kootenai](#)

[Fire Preparedness](#)

[Wildfire Education](#)

[Firewise USA](#)

[Ignition Resistant Construction Guide](#)

[Living With Fire](#)

[Fire Insurance](#)

#### Evacuation Preparation

[Evacuation Planning](#)

#### Debris Burning Information

[Lincoln County Health Department Burn Restrictions and Permits](#)

[Burning Information and Permitting](#)

#### Addressing

[Lincoln County Addressing](#)

#### Land Management

[Montana DNRC](#)

[Montana Logging Association](#)

[Montana State University Extension](#)

#### Legislation

[Healthy Forests Restoration Act \(HFRA\)](#)

#### Organizations

[Montana Department of Natural Resources and  
Conservation \(DNRC\)](#)

[USDA Forest Service \(USFS\)](#)

[Kootenai National Forest](#)

[Lincoln County](#)

[Lincoln County FireSafe Council](#)

[Fire Adapted Kootenai](#)

[Fire Adapted Montana](#)

[Kootenai Forest Stakeholder Coalition](#)

#### Analysis and Interactive Document Sites

[Montana Wildfire Risk Assessment Report](#)

[Montana Forest Action Plan](#)

[USDA Wildfire Risk to Communities](#)