

A Profile of Wildfire Risk

Selected Geographies: Ravalli County, MT

Comparison Geographies:

United States

Produced by Headwaters Economics'

Economic Profile System (EPS)

https://headwaterseconomics.org/eps

June 3, 2025

Ravalli County, MT

About this report

This report presents data about wildfire risk, socioeconomic vulnerability, and land use to help communities understand their relative wildfire risk profile. It was created through a partnership between Headwaters Economics and the U.S. Forest Service through the Community Planning Assistance for Wildfire program using data from Wildfire Risk to Communities.



https://wildfirerisk.org

Wildfire Risk to Communities is a free, easy-to-use website with interactive maps, charts, and data to help communities in the United States understand, explore, and reduce wildfire risk. Wildfire Risk to Communities is a project of the USDA Forest Service, under the direction of Congress, in partnership with Rocky Mountain Research Station's Missoula Fire Sciences Laboratory, Pyrologix, and Headwaters Economics.



https://cpaw.headwaterseconomics.org

Community Planning Assistance for Wildfire (CPAW) works with communities to reduce wildfire risks through improved land use planning. CPAW provides communities with technical land use planning recommendations, hazard assessments, custom research, and training.

Project partners



https://headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Its mission is to improve community development and land management decisions.

Headwaters Economics provides original and effective research to help people and organizations develop solutions to some of the most urgent and important issues that communities face.



https://www.fs.usda.gov/

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres.

The Forest Service's mission is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

Ravalli County, MT

Table of Contents

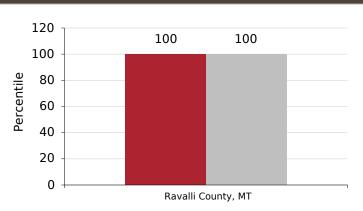
Wildfire Risk and Exposure	
Relative Wildfire Risk	4
Wildfire Exposure	6
Wildfire Susceptibility	
Population Change	8
Race & Ethnicity	10
Potentially Vulnerable Populations	12
Housing Characteristics	14
Land Ownership	
Land Ownership	16
Data Sources & Methods	18
Endnotes	19

Relative Wildfire Risk

	Ravalli County, MT
Statewide Percentile Rank	
Risk to Homes	100
Wildfire Likelihood	100
Nationwide Percentile Rank	
Risk to Homes	99
Wildfire Likelihood	99

Relative Risk (0-100) Within State

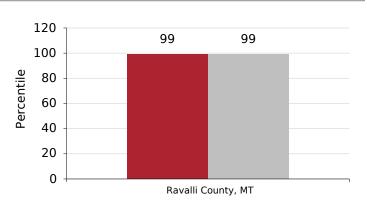
- Populated areas in Ravalli County, MT have, on average, greater risk than 100% of counties in the state.
- Populated areas in Ravalli County, MT have, on average, greater wildfire likelihood than 100% of counties in the state.



■ Risk to Homes ■ Wildfire Likelihood

Relative Risk (0-100) Within Nation

- Populated areas in Ravalli County, MT have, on average, greater risk than 99% of counties in the nation.
- Populated areas in Ravalli County, MT have, on average, greater wildfire likelihood than 99% of counties in the nation.



■ Risk to Homes ■ Wildfire Likelihood

Data Sources: USDA Forest Service, Wildfire Risk to Communities. 2024. Washington, D.C., wildfirerisk.org.

Ravalli County, MT

Relative Wildfire Risk

What do we measure on this page?

Risk to Homes integrates wildfire likelihood (the probability of wildfire occurring) and wildfire intensity (the energy released by a wildfire) with expected consequences to homes if a fire occurs.

Wildfire Likelihood is the annual probability of a wildfire occurring in a specific location. At the community level, wildfire likelihood is averaged where housing units occur.

Both measures—Risk to Homes and Wildfire Likelihood—are shown as a percentile (or rank). If the place you selected is a community or county, the percentile is relative to all other communities or counties in the state (statewide rank) and the nation (nationwide rank). If the place you selected is a tribal area, the percentile is relative to all other tribal areas and counties. If the place you selected is a state, the percentile is relative to all other states.

Why is it important?

The Risk to Homes data pose the hypothetical question: "What would be the relative risk to a house if one existed here?" It asks that question whether a home actually exists at that location or not. This allows us to compare the wildfire risk in places where homes already exist to places where new construction may be proposed.

The Risk to Homes data integrate wildfire likelihood and wildfire intensity from simulation modeling. These two risk components represent wildfire hazard. To translate this into terms specific to the effect of fire on homes, this report uses a generalized concept of susceptibility for all homes as derived from *Wildfire Risk to Communities*.¹ In other words, it is assumed all homes that encounter wildfire will be damaged, and the degree of damage is directly related to wildfire intensity. The report does not account for homes that may have been mitigated.

In reality, an individual home's ability to survive wildfire is driven primarily by local conditions (known as the "home ignition zone"), including the construction materials and the vegetation in the immediate area. The only way to truly assess home susceptibility is through individual home assessments. Communities can reduce their risk to homes by reducing wildfire likelihood, wildfire intensity, exposure, and susceptibility. For example, fuel treatments may reduce wildfire likelihood or intensity, exposure may be reduced through land use planning tools, and susceptibility may be reduced by mitigating the home ignition zone, home hardening, and land use planning tools.

Wildfire Likelihood is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather, topography, and ignitions are varied based on patterns derived from observations in recent decades. Wildfire Likelihood is not predictive and does not reflect any currently forecasted weather or fire danger conditions.

Wildfire likelihood is simply a probability that any specific location may experience wildfire in any given year. It does not say anything about the wildfire intensity if it occurs. Wildfire likelihood is difficult to modify but can be reduced through fuel treatment projects and ignition-prevention efforts.

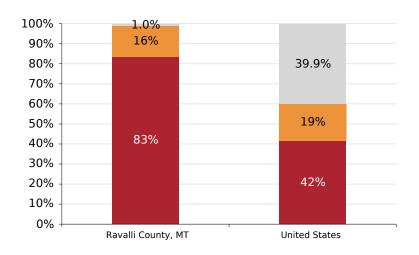
Ravalli County, MT

Wildfire Exposure

	Ravalli County, MT	United States
Buildings Exposed		
Buildings directly exposed	31,345	60,824,884
Buildings indirectly exposed	5,845	27,108,412
Buildings minimally exposed	383	58,490,985
Percent of Total		
Buildings directly exposed	83.4%	41.5%
Buildings indirectly exposed	15.6%	18.5%
Buildings minimally exposed	1.0%	39.9%

Exposure of Buildings to Wildfire

- 83% of buildings in Ravalli County, MT are exposed to wildfire from direct sources, such as adjacent flammable vegetation.
- 19% of buildings in the U.S. are exposed to wildfire from indirect sources, such as embers or building-to-building ignition.



■ Buildings directly exposed ■ Buildings indirectly exposed ■ Buildings minimally exposed

Ravalli County, MT

Wildfire Exposure

What do we measure on this page?

Wildfire Exposure is the spatial coincidence of wildfire likelihood (the probability of wildfire occurring) and wildfire intensity (the energy released by a wildfire) with communities.

Buildings that are minimally exposed are not likely to be subjected to wildfire. Buildings that are indirectly exposed may be subjected to wildfire from indirect sources such as embers and home-to-home ignition. Buildings that are directly exposed may be subjected to wildfire from adjacent flammable wildland vegetation, as well as from indirect sources.

Buildings include homes and other structures, such as commercial buildings.

Why is it important?

Effective wildfire risk reduction activities will vary depending on the type of exposure.

Where buildings are exposed to wildfire directly or indirectly, activities should include making structures ignition resistant, reducing places for embers to land and ignite.

Where buildings are directly exposed to wildfire, effective risk reduction activities will also reduce ways for vegetation to carry fire to homes, such as reducing hazardous fuels and creating defensible spaces to help anchor wildfire response activities.

At the community scale, land use planning strategies can help reduce wildfire exposure.

Ravalli County, MT

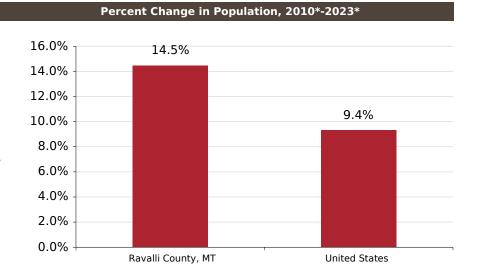
Population Change

	Ravalli County, MT	United States
Population (2023*)	45,807	332,387,540
Population (2010*)	40,013	303,965,272
Population Change (2010*-2023*)	5,794	28,422,268
Population Pct. Change (2010*-2023*)	14.5%	9.4%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small. **Medium Reliability**: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution. **Low Reliability**: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

From 2010* to 2023*, Ravalli County, MT had the smallest estimated absolute change in population (5,794).

 From 2010* to 2023*, Ravalli County, MT had the largest estimated relative change in population (14.5%), and United States had the smallest (9.4%).



Data Sources: U.S. Department of Commerce. 2024. Census Bureau, American Community Survey Office, Washington, D.C.

 $^{* \ \}mathsf{ACS} \ 5 \text{-year estimates used. 2023 represents average characteristics from 2019-2023; 2010 represents 2006-2010.}$

Ravalli County, MT

Population Change

What do we measure on this page?

This page describes the total population and change in total population.^{2, 3}

Data in this report comes from the U.S. Census Bureau's American Community Survey (ACS).⁴ The ACS is conducted nationwide every year by the U.S. Census Bureau to collect demographic, social, economic, and housing information. For more information about ACS data and accuracy, see the Data Sources & Methods section at the end of this report.

Why is it important?

Population growth is generally an indication of a healthy economy. No growth or long-term decline generally occur when an area is struggling. However, as population grows, more and more people are building homes on fire-prone lands.

Since 2010, 34% of single-family homes are located in the wildland-urban interface (WUI). The WUI is the fastest-growing type of land use in the conterminous United States, increasing by 145% from 1990 to 2015. Today nearly half of the U.S. population lives in the WUI.⁵

Another consequence of population growth is the possibility of more fire ignitions. Almost all wildfires (97%) in the WUI are caused by people. Human-caused wildfires are responsible for 92% of the wildfires that threaten structures, which is 30 times more than lightning-caused wildfires.⁶

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed. The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

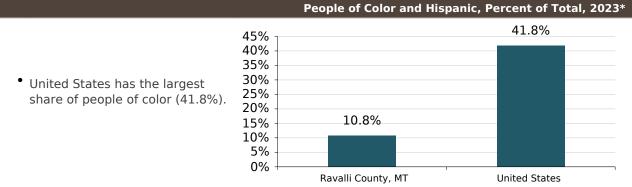
Ravalli County, MT

Race & Ethnicity

Race and Ethnicity, 2023*	Ravalli County, MT	United States
Total Population	45,807	332,387,540
White alone	41,531	210,875,446
Black or African American alone	·163	41,070,890
American Indian and Alaska Native alone	· 251	2,924,996
Asian alone	· 252	19,352,659
Native Hawaii & Other Pacific Is. alone	["] 7	629,292
Some other race alone	·381	21,940,536
Two or more races	3,222	35,593,721
Hispanic or Latino (of any race)	1,820	63,131,589
Not Hispanic or Latino	43,987	269,255,951
Not Hispanic & White alone	40,873	193,338,267
People of Color and Hispanic* Percent of Total	4,934	139,049,273
White alone	90.7%	63.4%
Black or African American alone	0.4%	12.4%
American Indian and Alaska Native alone	0.5%	0.9%
Asian alone	0.6%	5.8%
Native Hawaii & Other Pacific Is. alone	0.0%	0.2%
Some other race alone	·0.8%	6.6%
Two or more races	7.0%	10.7%
Hispanic or Latino (of any race)	4.0%	19.0%
Not Hispanic or Latino	96.0%	81.0%
Not Hispanic & White alone	89.2%	58.2%
People of Color and Hispanic*	10.8%	41.8%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small. **Medium Reliability**: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution. **Low Reliability**: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

 $^{^{}st}$ Reliability estimates not yet available.



^{*} ACS 5-year estimates used. The 2023 estimate is based on data collected between 2019 and 2023.

Data sources: U.S. Department of Commerce. 2024. Census Bureau, American Community Survey Office, Washington, D.C.

Ravalli County, MT

Race & Ethnicity

What do we measure on this page?

This section reports the size of populations by racial and ethnic groups as reported by the U.S. Census Bureau's American Community Survey (ACS) five-year estimates. The U.S. Census Bureau defines race and ethnicity independently:

Race: Respondents can self-identify as "White," "Black or African American," "American Indian and Alaska Native, " "Asian," and "Native Hawaiian or Other Pacific Islander."

Some Other Race: This includes all other responses not included above. Respondents providing write-in entries—such as multiracial, mixed, interracial, or a Hispanic/Latino group (for example, Mexican, Puerto Rican, or Cuban)—in the "Some other race" write-in space are included in this category.

Two or More Races: This includes people who either checked two or more race response check boxes, provided multiple write-in responses, or submitted some combination of check boxes and write-in responses.

Ethnicity: Respondents identify themselves as either Hispanic or Latino, or Not Hispanic or Latino. The terms Hispanic and Latino are generally used to denote people living in the United States with cultural ties to Latin America or other Spanish speaking countries. Individuals self-identifying as having a Hispanic, Latino, or Spanish heritage can do so by selecting from categories listed on the Census questionnaire: "Mexican, Mexican American, or Chicano," "Puerto Rican," "Cuban," or "other Spanish, Hispanic, or Latino." People who identify as being of Spanish, Hispanic, or Latino culture can be of any race or combination of races.

People of Color and Hispanic: This is defined as a person whose race is not White or a person who is Hispanic or Latino (or both). Thus the "Total People of Color & Hispanic Population" is calculated by subtracting those who identify as both "Not Hispanic or Latino" and "White alone" from "Total Population."

Why is this important?

Race and ethnicity are strongly correlated with disparities in health¹⁶ and vulnerability to natural hazards and with access to aid and resources, including wildfires.¹⁷ Black, Native American, Hispanic, and other people of color may be more vulnerable to disasters due in part to cultural and institutional barriers.¹⁸ Race and wealth are linked with health conditions like asthma that can be exacerbated by wildfire smoke and environmental stress, and with access to aid and resources after a wildfire event.¹⁹ People living on Indian reservations in remote, rural areas that have higher wildfire hazard potential combined with higher rates of poverty, disabilities, and mobile home housing are particularly vulnerable to wildfire disasters.

While these data help identify the racial and ethnic makeup of a population, further outreach and analysis is required to understand values, beliefs, and attitudes of groups, and determine potential impacts of management decisions on local populations.

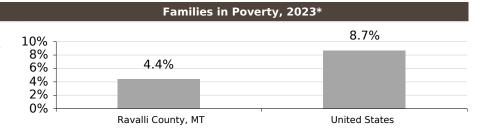
Ravalli County, MT

Potentially Vulnerable Populations

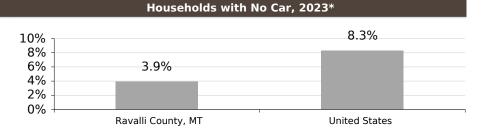
Populations, 2023*	Ravalli County, MT	United States
Families in poverty	·569	7,176,933
Households with no car	· 738	10,602,826
Mobile Homes	1,540	6,559,377
People under 5	1,962	18,939,899
People over 65	12,124	55,970,047
People with disabilities	8,379	42,703,063
People with language barriers	¨ 52	13,134,090
Percent of Total**		
Families in poverty	4.4%	8.7%
Households with no car	3.9%	8.3%
Mobile Homes	8.2%	5.1%
People under 5	4.3%	5.7%
People over 65	26.5%	16.8%
People with disabilities	18.4%	13.0%
People with language barriers	0.1%	4.2%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small. **Medium Reliability**: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution. **Low Reliability**: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

 From 2010* to 2023*, United States had the largest share of families in poverty (9%).



 From 2010* to 2023*, United States had the largest share of households with no car (8%).



^{**} Each measure on this page comes from a different subset of the overall population. For example, "poverty status" is not determined for all families. "Households with no car" is determined only for occupied households. "People with disabilities" includes only those people in civilian, noninstitutionalized settings. "Language barriers" is determined only for people five years or older.

^{*} ACS 5-year estimates used. 2023 represents average characteristics from 2019-2023; 2010 represents 2006-2010.

Ravalli County, MT

Potentially Vulnerable Populations

What do we measure on this page?

This page describes household types that are associated with increased hardship. Data in this report come from the U.S. Census Bureau's American Community Survey (ACS).⁷ For more information about ACS, see the Data Sources & Methods section.

Why is it important?

People's susceptibility to wildfire is based on their ability to prepare for, respond to, and recover from a wildfire.⁸ Vulnerable populations are more likely to be disproportionately affected by wildfire disasters because they lack resources, experience cultural and institutional barriers, have limited mobility, and/or have compromised physical health.

Low income is one of the strongest predictors for compromised health and ability to recover from disruptions. Wildfires disproportionately affect low-income residents because of factors such as inadequate housing, social exclusion, diminished ability to evacuate or relocate, and more acute emotional stress. People with low incomes are also more likely to be overlooked during emergency response following disasters and are less likely to have adequate property insurance, so they bear a greater burden from property damage following wildfires. Due to a lack of financial resources and time, families experiencing poverty may be less likely to take proactive measures to mitigate wildfire hazard in advance of an event.

Older populations are more likely to have pre-existing medical conditions or compromised mobility, which can reduce their ability to respond to wildfire. Older adults are more susceptible to air pollution and particulates associated with wildfire smoke.¹²

Children's developing bodies make them particularly sensitive to health problems and environmental stresses. ⁹ Children have faster breathing rates, putting them at greater risk to respiratory problems from wildfire smoke. Because children don't have fully developed immune systems, they are more sensitive than adults to infectious diseases that can occur when water supplies are breached and sanitation systems are compromised after a disaster. ¹²

During emergencies, people who do not have a car are less likely to evacuate or have access to emergency response centers. Access to a car is also linked with higher wages and more financial stability. 14

Populations with disabilities are subject to health complications that make wildfire more consequential because disasters often result in limited access to medical care. ¹² Compromised mobility and medical conditions can reduce their ability to respond to natural disasters.

Language and cultural barriers can make it more difficult to follow directions or interact with agencies before, during, or after a wildfire disaster. ¹³

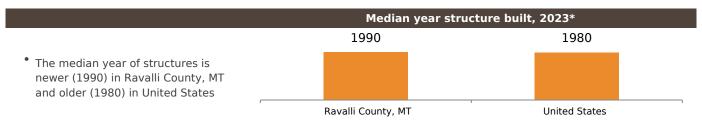
Mobile and manufactured homes house an estimated 2.7 million U.S. households and create both physical and economic risk. Mobile and manufactured homes are more likely to be damaged during disasters. Fires spread faster in mobile and manufactured homes, threatening both the structure and the occupants. Most mobile and manufactured homeowners do not own the land where their residence sits, giving them less agency to mitigate threats to their property such as creating defensible space. Research has found mobile and manufactured homeowners experience barriers to accessing aid after disasters.¹⁵

Ravalli County, MT

Housing Characteristics

	Ravalli County, MT	United States
Total Housing Units, 2023*	21,098	142,332,876
Occupied	18,779	127,482,865
Vacant	2,319	14,850,011
For rent	["] 239	2,605,688
Rented, not occupied	" 48	527,495
For sale only	"110	850,724
Sold, not occupied	"114	603,208
Seasonal, recreational, occasional	·1,038	4,855,213
For migrant workers	"0	31,200
Other vacant	· 770	5,376,483
Year Built		
Built 2010 or later	2,220	14,381,018
Built 2000 to 2009	3,739	19,324,640
Built 1990 to 1999	4,494	18,211,985
Built 1980 to 1989	2,169	18,543,944
Built 1970 to 1979	3,976	20,484,570
Built 1940 to 1969	2,309	34,468,807
Median year structure built^	1990	1980
Percent of Total		
Occupancy		
Occupied	89.0%	89.6%
Vacant	11.0%	10.4%
For rent	" 1.1 %	1.8%
Rented, not occupied	" 0.2 %	0.4%
For sale only	"0.5 %	0.6%
Sold, not occupied	"0.5%	0.4%
Seasonal, recreational, occasional	·4.9%	3.4%
For migrant workers	" 0.0 %	0.0%
Other vacant	3.6%	3.8%
Year Built		
Built 2010 or later	10.5%	10.1%
Built 2000 to 2009	17.7%	13.6%
Built 1990 to 1999	21.3%	12.8%
Built 1980 to 1989	10.3%	13.0%
Built 1970 to 1979	18.8%	14.4%
Built 1940 to 1969	10.9%	24.2%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small. **Medium Reliability**: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution. **Low Reliability**: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.



^{*} ACS 5-year estimates used. 2023 represents average characteristics from 2019-2023.

Data Sources: U.S. Department of Commerce. 2024. Census Bureau, American Community Survey Office, Washington, D.C.

Ravalli County, MT

Housing Characteristics

What do we measure on this page?

This page describes whether housing is occupied or vacant, for rent or seasonally occupied, and the year built.

Rent: The number of homes for rent was defined as occupied housing units that were for rent, vacant housing units that were for rent, and vacant units rented but not occupied at the time of interview.

Seasonal, Recreational, or Occasional Use: Refers to vacant units used or intended for use only in certain seasons or for weekends or other occasional use throughout the year.

For Migrant Workers: Refers to housing units intended for occupancy by migratory workers employed in farm work during the crop season.

Why is it important?

Efforts to reduce wildfire risk to homes center around the home ignition zone, an area 100-200 feet from the foundation. It includes vegetation, the home itself, and other structures or attachments like decks, furniture, fences, and outbuildings.

A majority of homes lost to wildfire are first ignited by embers. By reducing the susceptibility of the area immediately around the home and the home itself—the home ignition zone—the chances of a home surviving an ember storm or small spot-fire are greatly increased.

Housing characteristics are relevant to reducing the risk from wildfires in several ways. The year the home was built may convey information about the housing stock that was built before and after the passage of land use planning regulations to reduce exposure to homes (for example, a building code requiring the use of wildfire-resistant building materials). It may also be possible that newer homes incorporate improved building standards and materials that reduce susceptibility to wildfires.

The prevalence of rental properties, seasonal homes and recreational homes, vacant homes, and homes used for migrant workers may complicate landowner education efforts that are aimed at reducing risk in the home ignition zone. The presence of many non-owner-occupied homes may also make it difficult for community leaders to reach homeowners whose support is needed for the passage of land use planning tools, such as landscape ordinances or building codes, that reduce the risk from wildfires.

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed. The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

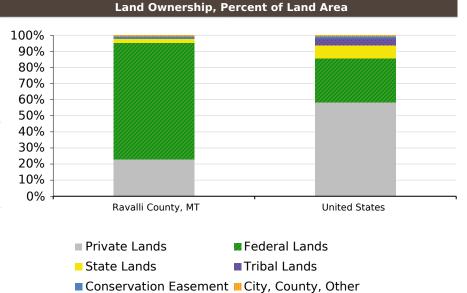
Ravalli County, MT

Land Ownership

	Ravalli County, MT	United States
Total Acres*	1,531,098	2,255,912,699
Private Lands	362,084	1,339,427,106
Conservation Easement	33,952	31,813,835
Federal Lands	1,130,165	622,042,308
Forest Service	1,126,556	192,007,324
BLM	0	241,746,365
National Park Service	0	76,520,318
USFWS	2,566	84,456,688
Military	0	20,174,195
Other Federal	1,043	7,137,418
State Lands	38,810	181,586,342
State Trust Lands*	29,295	47,981,215
Other State	9,515	133,605,127
Tribal Lands	0	101,033,432
City, County, Other	39	11,823,511
Percent of Total		
Private Lands	23.6%	59.4%
Conservation Easement	2.2%	1.4%
Federal Lands	73.8%	27.6%
Forest Service	73.6%	8.5%
BLM	0.0%	10.7%
National Park Service	0.0%	3.4%
USFWS	0.2%	3.7%
Military	0.0%	0.9%
Other Federal	0.1%	0.3%
State Lands	2.5%	8.0%
State Trust Lands*	1.9%	2.1%
Other State	0.6%	5.9%
Tribal Lands	0.0%	4.5%
City, County, Other	0.0%	0.5%

*Does not include most water.

- Ravalli County, MT has the largest share of federal public lands (73.8%), and United States has the smallest (27.6%).
- United States has the largest share of state public lands (8%), and Ravalli County, MT has the smallest (2.5%).
- United States has the largest share of private lands (59.4%), and Ravalli County, MT has the smallest (23.6%).



Data Sources: U.S. Geological Survey, Gap Analysis Program. 2022. Protected Areas Database of the United States (PADUS) version 3.0

Ravalli County, MT

Land Ownership

What do we measure on this page?

This page describes the share of the selected location that is private and the share that is managed by various public agencies.

The data presented in this report were calculated using Geographic Information System (GIS) tools. Two primary GIS datasets were used: U.S. Census Bureau's TIGER/Line County Boundaries²⁰ and U.S. Geological Survey's Protected Areas Database (PADUS).^{21, 22}

Although every attempt was made to use the best available GIS land ownership dataset, the data sometimes have errors or become outdated. Please report any inaccuracies to eps@headwaterseconomics.org.

Why is it important?

Wildfires can occur on any lands—including private, state, tribal and federal lands—and fires also can spread across multiple land ownerships. Because of this, wildland firefighting is by necessity most often a multi-agency effort. Efforts to reduce the likelihood (probability) of a fire and the intensity of a fire (related to fuels and topography) can have important consequences on homeowner and firefighter safety and on the vulnerability of the built environment, especially homes.

Wildfires do not respect property boundaries and burn across a mosaic of land ownerships. Efforts to reduce the likelihood and intensity of wildfires can have important implications for neighboring lands and properties. For example, fuel treatments on U.S. Forest Service lands can lower the intensity of a wildfire and therefore reduce the risk to homes on nearby private lands.²³ At the same time, communities can reduce the susceptibility of homes to wildfire through land use planning and by focusing mitigation efforts on the "home ignition zone" to reduce a home's vulnerability to embers.²⁴ Fire-adapted communities can live with the inevitability of wildfires. By being fire-adapted, communities make it more likely that managers of nearby lands—whether state, federal, or tribal—can use fires for their ecological role, allowing some to burn or setting controlled burns to reduce fuels.

Ravalli County, MT

Data Sources & Methods

This report uses statistics from public government sources and from the Wildfire Risk to Communities website. All data used can be verified with the original sources:

Wildfire Risk to communities. 2024. USDA Forest Service, Wildfire Risk to Communities. 2024. Washington, D.C., wildfirerisk.org.

U.S. Geological Survey, Gap Analysis Program. 2012.
Protected Areas Database of the United States (PADUS) version 1.3
https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/protected-areas

U.S.Department of Commerce. 2023 Census Bureau, American Community Survey Office, Washington, D.C. https://www.census.gov/programs-surveys/acs

Ravalli County, MT

Endnotes

- 1 See Wildfire Risk to Communities website: https://wildfirerisk.org/understand-risk/. Also see Scott JH, Gilbertson-Day JW, Moran C, Dillon GK, Short KC, and Vogler KC. 2020. Wildfire Risk to Communities: Spatial datasets of landscape-wide wildfire risk components for the United States. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2020-0016.
- 2 A useful resource on rural population change is the U.S. Department of Agriculture's Economic Research Service web page: https://www.ers.usda.gov/topics/rural-economy-population/population-migration/.
- 3 William H. Frey's website provides links to publications, issues, media stories, data tools and resources on migration, population redistribution, and demography of both rural and urban populations in the U.S.: http://frey-demographer.org/.
- 4 For a description of the U.S. Census Bureau's ACS methodology and data accuracy, see https://www.census.gov/programs-surveys/acs/methodology.html.
- 5 Martinuzzi S, Stewart SI, Helmers DP, Mockrin MH, Hammer RB, and Radeloff VC. 2015. The 2010 wildland-urban interface of the conterminous United States. Research Map NRS-8. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 124p. https://www.nrs.fs.fed.us/pubs/48642. Also Radeloff VC, et al. 2017. Rapid growth of the U.S. wildland-urban interface raises wildfire risk. PNAS 115(13): 3314-3319. www.pnas.org/cgi/doi/10.1073/pnas.1718850115. Mietkiewicz N, Balch J, Schoennagel T, Leyk S, Denis L, and Bradley B. 2020. In the line of fire: Consequences of human-ignited wildfires to homes in the U.S. (1992-2015). Fire. Available online: https://www.mdpi.com/2571-6255/3/3/50.
- 6 Balch J, Bradley B, Abatzoglou J, Nagy C, Fusco E, and Mahood A. 2017. Human-started wildfires expand the fire niche across the US. *PNAS*. Available online: http://www.pnas.org/content/114/11/2946. Also Mietkiewicz N, Balch J, Schoennagel T, Leyk S, Denis L, and Bradley B. 2020. In the line of fire: Consequences of human-ignited wildfires to homes in the U.S. (1992-2015). *Fire*. Available online: https://www.mdpi.com/2571-6255/3/3/50
- 7 https://www.census.gov/programs-surveys/acs
- 8 Collins TW and Bolin B. 2008. Situating hazard vulnerability: People's negotiations with wildfire environments in the U.S. Southwest. *Environmental Management* 44: 441-455.
- 9 County of Los Angeles Public Health. 2013. Health Atlas for the City of Los Angeles. Los Angeles, CA. https://wattscommunitystudio.files.wordpress.com/2013/06/healthatlas.pdf
- 10 Fothergill A and Peek LA. 2004. Poverty and disasters in the United States: A review of recent sociological findings. *Natural Hazards* 32(1): 89-110.

Ravalli County, MT

Endnotes

- 11 Wilkinson RG and Marmot MG. 2003. Social determinants of health: The solid facts. World Health Organization. http://www.euro.who.int/ data/assets/pdf file/0005/98438/e81384.pdf.
- 12 Balbus JM and Malina C. 2009. Identifying vulnerable subpopulations for climate change health effects in the United States. *Journal of Occupational and Environmental Medicine* 51(1): 33-37.
- 13 Cooley H, Moore E, Heberger M, and Allen L. 2012. *Social Vulnerability to Climate Change in California*. California Energy Commission Pub. # CEC-500-2012-013.
- 14 Raphael S and Rice L. 2002. Car ownership, employment, and earnings. *Journal of Urban Economics* 52(1): 109-130.
- 15 Rumbach A, Sullivan E, Makarewicz C. 2019. Mobile Home Parks and Disasters: Understanding Risk to the Third Housing Type in the United States, see https://ascelibrary.org/doi/10.1061/%28ASCE%29NH.1527-6996.0000357
- 16 Carratala S, Maxwell C. 2020. Health disparities by race and ethnicity. Center for American Progress, see https://www.americanprogress.org/article/health-disparities-race-ethnicity/
- 17 Davies I, Haugo RD, Robertson JC, Levin PS. 2018. The unequal vulnerability of communities of color to wildfire. PLOS ONE 13(11): e0205825, see https://doi.org/10.1371/journal.pone.0205825
- 18 Fothergill A, Maestas EGM, Derouen Darlington J. 1999. Race, Ethnicity, and Disasters in the United States: A review of the literature. Disasters 23: 156-173, see https://doi.org/10.1111/1467-7717.00111
- 19 Anderson S, Plantinga AJ, Wibbenmeyer M. 2020. Inequality in agency responsiveness: Evidence from salient wildfire events. Resources for the Future, see https://www.rff.org/publications/working-papers/inequality-agency-responsiveness-evidence-salient-wildfire-events/

Ravalli County, MT

Endnotes (cont.)

- 20 U.S. Census Bureau TIGER/Line Boundaries are available at https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html.
- 21 The U.S. Geological Survey Protected Areas Database (PADUS) is available at https://gapanalysis.usgs.gov/padus/.
- 22 If accurate measurements of water surface area are needed, the U.S. Geological Survey's national hydrography dataset can be used: https://nhd.usgs.gov/.
- 23 https://wildfirerisk.org/understand-risk/
- 24 https://wildfirerisk.org/reduce-risk/home-ignition-zone/