

# Future-proofing the outdoor recreation economy

Unique needs and solutions for disaster resilience in recreation communities



# Future-proofing the outdoor recreation economy

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## About Headwaters Economics

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions. <https://headwaterseconomics.org/>

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# Table of Contents

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- 1. Introduction..... 3**
- 2. The magnitude of the problem ..... 3**
  - Recreation-dependent communities have nearly twice the wildfire and flood risk.....4
  - Some states are particularly vulnerable .....5
  - Local government capacity limitations make investing in solutions difficult .....5
- 3. Improving outdoor recreation communities’ hazard resilience..... 6**
  - Solutions for communities.....6
  - State and Federal Solutions .....7
- 4. Conclusion..... 8**
- Appendix A. Methods, data sources, & definitions ..... 9**
  - Recreation-dependent .....9
  - Wildfire risk .....9
  - Flood risk.....9
  - Rural capacity.....9
- Endnotes ..... 10**

# 1. Introduction

Communities with outdoor recreation economies are rich in natural assets like mountains and rivers, but their proximity to these resources also puts them on the front lines of natural hazards like wildfire and flooding. As natural disasters become more frequent and severe, these communities' needs become more acute.

This vulnerability to natural disasters is compounded by economic exposure. When a natural disaster affects essential public infrastructure like roads or drinking water systems, communities are unable to serve residents or visitors, perhaps for months or even years. When fewer visitors come, local businesses lose millions in revenue.<sup>1, 2, 3</sup> When revenue declines, those local businesses are often forced to lay off employees. The COVID pandemic illustrates recreation-dependent communities' vulnerability to significant disruptions in tourism. At the beginning of the pandemic, unemployment rose by 11 percentage points in recreation-dependent communities, compared to 8 percentage points in non-recreation-dependent communities.<sup>4</sup> Fewer visitors reduce local tax revenue, which reduces communities' ability to fund essential public services.<sup>5</sup> The effects on business revenue, employment, and tax revenue often are felt regionally when visitors cancel trips due to smoke<sup>6</sup> or negative perceptions of an area from media coverage.<sup>7</sup>

Natural disasters also can compound many of the social stresses facing recreation-dependent communities, particularly related to housing. Severe disasters can reduce an already tight housing supply<sup>8</sup> and increase the cost to insure remaining housing.<sup>9</sup> Without sufficient housing for employees, rebounding from a natural disaster becomes even more difficult.<sup>10</sup>

To help recreation-dependent communities better understand the threat posed by natural disaster risks, Headwaters Economics examined wildfire and flood risk data, federal economic data, and rural capacity scores that show how adept different communities might be when it comes to implementing resilience projects. The analysis demonstrates that there is a wide-ranging need for local, state and federal policies that can help outdoor recreation communities prepare for more frequent and severe natural hazards.

The purpose of this report is to highlight:

- The magnitude of risks from wildfire and flooding in outdoor recreation counties across the United States;
- The unique challenges these communities face in mitigating and responding to these risks; and
- Local, state, and federal policy solutions that can improve the resilience of outdoor recreation communities in the face of more frequent and severe natural hazards.

## 2. The magnitude of the problem

Compared to communities that do not depend on outdoor recreation, recreation-dependent communities are at greater risk from both wildfire and flooding. The following sections describe the extent of wildfire and flooding risk. For complete definitions, methods, and data sources, see Appendix A.

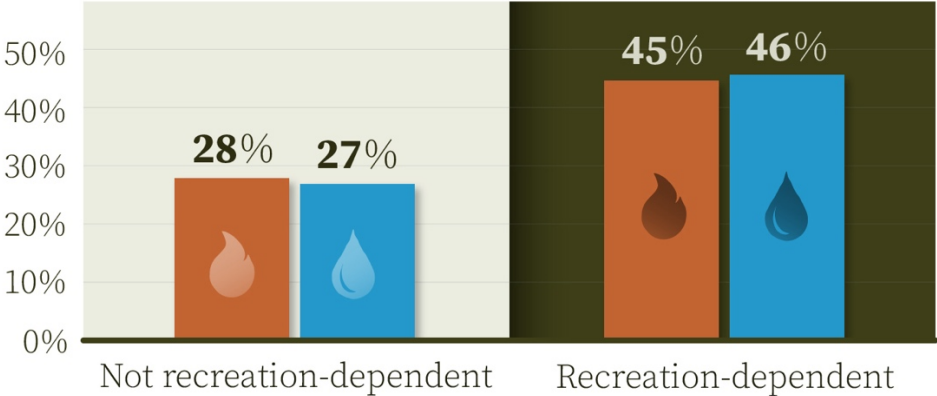
# Recreation-dependent communities have nearly twice the wildfire and flood risk

Nearly half of all outdoor recreation communities are at high risk for wildfire or flooding, as summarized in Figure 1. Forty-five percent of recreation-dependent counties have high or very high wildfire risk compared to 28% of non-recreation-dependent counties. Forty-six percent of recreation-dependent counties have high or very high flooding risk compared to 27% of non-recreation-dependent counties.

Figure 1. Wildfire and flooding risk between recreation-dependent and non-recreation dependent counties.

## Recreation counties have higher risk of natural hazards

Share of counties with high risk from wildfire and flooding



Data sources: USDA Economic Research Service, County Typology Codes; USDA Forest Service, Wildfire Risk to Communities; First Street Foundation, Risk Factor.  HEADWATERS ECONOMICS

## Some states are particularly vulnerable

In 16 states nearly all the recreation-dependent counties—and therefore their outdoor recreation economies—are at high risk of wildfire, flooding, or both, summarized in Table 1. While not all the contributions to statewide GDP come from recreation-dependent counties, they do contribute a large share.

Table 1. States with multiple recreation-dependent counties where at least 80% of recreation counties have high wildfire or flooding risk, and the annual contribution of outdoor recreation to state GDP.

## Outdoor recreation economies most threatened by natural hazards

State	Recreation-dependent counties				Outdoor rec's annual contribution to state GDP
	% of all counties	(count)	w/high wildfire risk	w/high flooding risk	
California	34%	20	100%	25%	\$ 81.5B
Colorado	39%	25	80%	32%	\$ 17.2B
Florida	27%	18	94%	83%	\$ 57.8B
Hawaii	100%	5	100%	80%	\$ 6.9B
Idaho	25%	11	82%	82%	\$ 4.0B
Montana	34%	19	100%	79%	\$ 3.4B
North Carolina	22%	22	59%	91%	\$ 16.2B
New Hampshire	40%	4	0%	100%	\$ 3.9B
New Mexico	18%	6	100%	17%	\$ 3.2B
Nevada	24%	4	100%	0%	\$ 8.1B
Oklahoma	4%	3	100%	33%	\$ 5.5B
South Carolina	7%	3	67%	100%	\$ 8.6B
Texas	6%	16	94%	31%	\$ 55.8B
Utah	45%	13	85%	23%	\$ 9.5B
Vermont	64%	9	0%	89%	\$ 2.1B
Wyoming	17%	4	100%	25%	\$ 2.2B

Data sources: USDA Economic Research Service, County Typology Codes; USDA Forest Service, Wildfire Risk to Communities; First Street Foundation, Risk Factor; HeadwatersEconomics, Rural Capacity Index; Bureau of Economic Analysis, Outdoor Recreation Satellite Account.



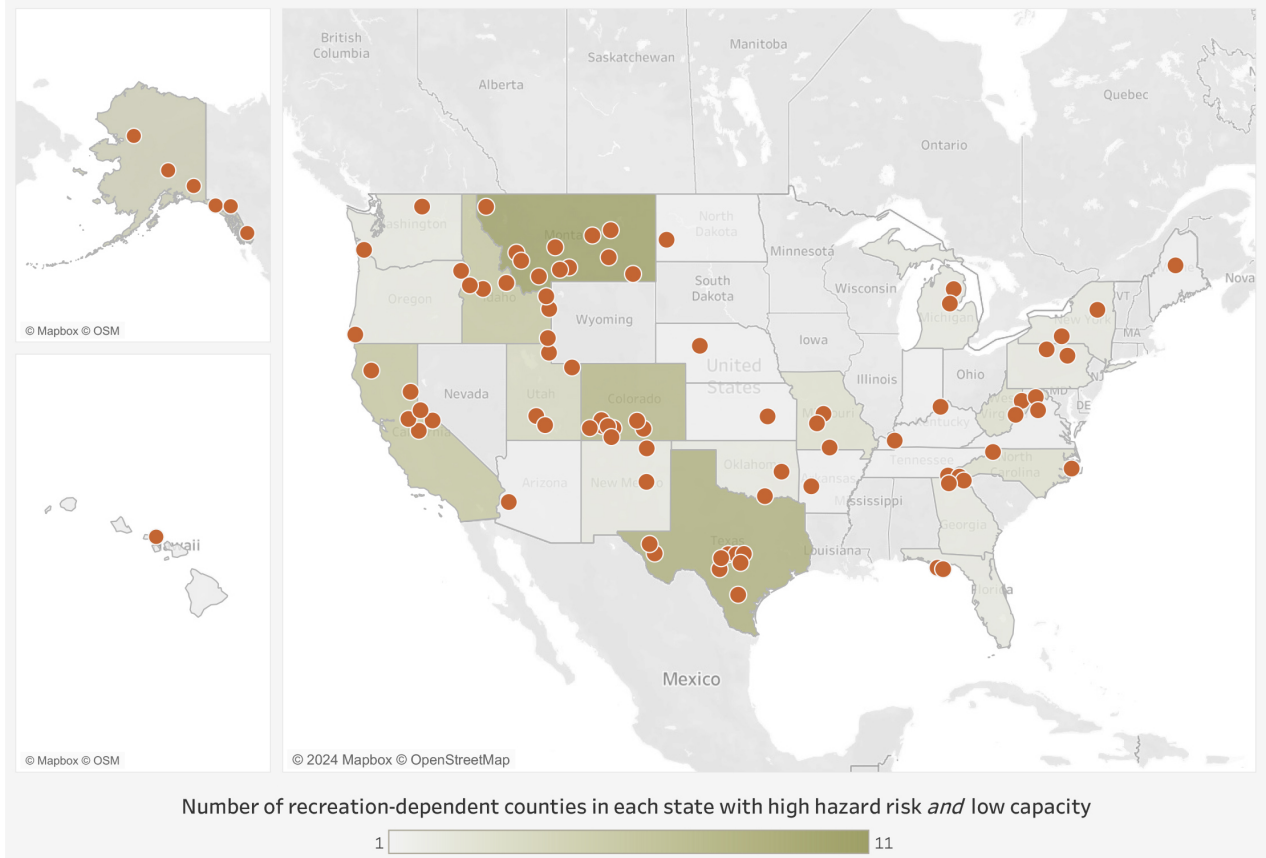
## Local government capacity limitations make investing in solutions difficult

Communities that aspire to become more resilient to natural hazards must make significant investments in updating infrastructure, emergency planning and response systems, and community planning and zoning. While federal, state, and philanthropic grants are available, many communities do not have the capacity—in terms of staffing, resources, and expertise—to apply for those grants, fulfill complex reporting requirements, and design,

build, and maintain infrastructure projects over the long term. Figure 2 shows the recreation-dependent counties in the United States that have low capacity and a high risk of wildfire, flooding, or both.

Figure 2. Recreation-dependent counties with high disaster risk and low capacity.

### Recreation communities with low-capacity need disaster resilience resources



Data sources: USDA Economic Research Service, County Typology Codes; USDA Forest Service, Wildfire Risk to Communities; First Street Foundation, Risk Factor; Headwaters Economics, Rural Capacity Index. **HEADWATERS ECONOMICS**

## 3. Improving outdoor recreation communities’ hazard resilience

Places that depend on outdoor recreation urgently need to improve their hazard resilience. This will require concerted efforts at local, state, and federal levels.

### Solutions for communities

Communities can make progress in three primary areas. First, communities can explicitly incorporate natural hazard resilience into their community development and economic development plans. Second, communities can involve tourism-related businesses and organizations and adjust their emergency planning and response plans to meet the unique needs of outdoor recreation towns, which have a large share of visitors and part-time residents. Third, recreation-dependent communities may be able to access unique funding sources due to their tourism economy. The following table summarizes some policy solutions being deployed in communities across the country.

Table 2. Local policy solutions to improve disaster resilience in outdoor recreation-dependent places.

Policy solution	Example
<b>Incorporate natural hazard resilience into community development and economic development planning</b>	
Implement zoning, building codes, and design standards for hazard resilience in buildings, infrastructure, and trails and trailheads.	<ul style="list-style-type: none"> <li>• Ashland, Oregon<sup>11</sup></li> <li>• Flagstaff, Arizona<sup>12</sup></li> <li>• Weber River in Ogden, Utah<sup>13</sup></li> </ul>
Use parks and trails to improve flood storage, create fire breaks, improve firefighting access.	<ul style="list-style-type: none"> <li>• Liberty Green Park, Pittsburgh<sup>14</sup></li> <li>• Boulder Creek Trail, Boulder, Colorado</li> <li>• Fango Trail, Draper, Utah</li> </ul>
Manage watersheds to support recreation and mitigate fire and flooding risk.	<ul style="list-style-type: none"> <li>• Whitefish, Montana<sup>15, 16</sup></li> <li>• Envision Chaffee County, Colorado<sup>17</sup></li> </ul>
Create and market shoulder-season recreation opportunities when flooding or fire risk is lowest.	<ul style="list-style-type: none"> <li>• Whistler, British Columbia<sup>18</sup></li> <li>• Ashland, Oregon<sup>19</sup></li> </ul>
<b>Involve destination management organizations (DMOs), tourism-related businesses, and outdoor recreation advocates in disaster planning and response to address needs of visitors and part-time residents</b>	
Build relationships with community foundations, municipal government, community organizations active in disasters (COADs), and state agencies prior to disasters.	
Educate visitors and part-time residents about disaster risks <i>prior to</i> disasters.	<ul style="list-style-type: none"> <li>• Big Sky, Montana<sup>20</sup></li> <li>• Travel Southern Oregon<sup>21</sup></li> <li>• Visit Bend<sup>22</sup></li> </ul>
Develop communication plans specific to visitors and part-time residents <i>during</i> disasters.	<ul style="list-style-type: none"> <li>• Wireless Emergency Alerts<sup>23</sup></li> <li>• Private software providers<sup>24</sup></li> </ul>
<b>Develop tourism-related funding sources to fund hazard mitigation and preparedness<sup>25</sup></b>	
Use a portion of lodging tax or local option sales tax revenue to fund disaster resilience.	<ul style="list-style-type: none"> <li>• Taos, New Mexico<sup>26</sup></li> <li>• Hawaii<sup>27</sup></li> </ul>
Levy fees, targeted sales taxes, or higher property tax rates on non-primary residences like second homes or vacation rentals.	<ul style="list-style-type: none"> <li>• Utah Homestead Exemption<sup>28</sup></li> <li>• Grand County, Colorado Open Lands, Rivers, and Trails Fund<sup>29</sup></li> </ul>
Create voluntary donation programs to add a small amount to restaurant bills, hotel stays, etc.	<ul style="list-style-type: none"> <li>• Trailhead QR codes for donations<sup>30</sup></li> <li>• Trailforks “Trail Karma” program<sup>31</sup></li> </ul>

Bundling hazard resilience projects with outdoor recreation projects can create more community support and open more funding opportunities than projects that include just one category of benefits. New parks, trails, and river access are concrete and certain to improve quality of life, and therefore easier to support than hard-to-imagine disasters that a community may not have experienced.

Projects with multiple types of benefits also are eligible for multiple funding sources. In Ogden, Utah, for example, a large river restoration project that protected the community’s sewer line created a community park and whitewater feature, removed invasive species, and restored wetland and riparian habitat. Funding for this project came from a wide variety of sources that might not have been possible if the project had a narrower scope of benefits, including The City of Ogden, Trout Unlimited, the U.S. Fish and Wildlife Service, Utah’s Office of Outdoor Recreation, the Federal Emergency Management Agency, Utah’s Division of Water Quality, the National Park Service Rivers, Trails and Conservation Assistance Program, and private foundations.

## State and Federal Solutions

While much hazard resilience work must occur at the municipal or county level, more must be done at the state and federal level to support these communities. For example, state and federal grant-making for outdoor



recreation-related projects can give extra points for projects that incorporate hazard mitigation or require all projects to address climate resilience. State programs can be more agile and flexible than federal programs and may provide bridge funding for more complex projects. For example, the Harris County Flood Control District in Texas, funded by federal, state, and local funds, established a trust fund to accelerate buyouts of high-risk properties which would otherwise have taken many years to complete.<sup>32</sup> This kind of program would support rural and under-resourced communities, as well as outdoor recreation communities.

At the federal level, policy changes should ensure that rural and low-capacity communities with a dependency on outdoor recreation are not excluded from resilience efforts. Many of these communities host visitor populations that are much larger than their year-round population, making it a struggle to build infrastructure at the scale their community requires. They often face challenges obtaining federal support, as many competitive grant programs like the Federal Emergency Management Agency's Building Resilient Infrastructure and Communities (BRIC) and U.S. Department of Transportation's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) programs require benefit-cost analyses that are weighted toward places with larger populations.<sup>33</sup>

Other requirements to protect resources, like Clean Water Act compliance, only apply to communities above a threshold population. For example, the Municipal Separate Storm Water Sewer System (MS4) is a set of engineering best practices designed to prevent excessive runoff and water quality degradation. This program only applies to communities with more than 10,000 year-round residents, leaving smaller communities that have large seasonal populations without sufficient stormwater management, increasing the likelihood of flooding within towns and deteriorated water quality. Federal allowances for these tourism-dependent communities, paired with state technical and financial assistance, could support these communities' unique needs.

State, federal, and philanthropic partners that provide financial support to communities for outdoor recreation or natural hazard resilience also must recognize that many places do not have the staffing, local expertise, or financial resources to compete for or administer complex grants. Using resources like the Rural Capacity Index to target these communities with financial support, technical assistance, and capacity-building for implementation can help to reduce the barriers these places face.

## 4. Conclusion

The economic impacts of natural disasters in recreation-dependent communities—through reduced visitor numbers, business revenue losses, unemployment, reduced housing supply, and diminished tax revenue—can reverberate for years and significantly strain local communities. Moreover, the physical and economic exposure of these areas is further exacerbated by limited capacity to secure necessary resources for disaster preparedness, response, and recovery.

To address these challenges, it is critical to implement policies to enhance the resilience of recreation-dependent communities. This includes incorporating hazard resilience into community and economic development planning, improving disaster response strategies for visitor-heavy populations, and creating innovative funding mechanisms tailored to these areas. State and federal policies must also be adapted to ensure that these communities receive adequate support to rebuild and recover to the scale their visitor populations demand.

With the risks of wildfire and floods on the rise, the need for improved disaster resilience in recreation-dependent communities is urgent. The need for improved disaster resilience in recreation-dependent communities is urgent. While these areas offer invaluable natural assets and contribute significantly to local and statewide economies, without concerted efforts to mitigate hazards and strengthen resilience, their long-term viability will be at risk. Collaboration across local, state, and federal levels, as well as with philanthropic and private-sector partners, will be essential in fostering the resilience of these communities in the face of increasing climate-related threats. By taking proactive steps now, these communities can not only better protect their residents and visitors but also secure the continued vitality of their recreation-based economies for the future.

## Appendix A. Methods, data sources, & definitions

This analysis was conducted for all 50 states at the county level. Each component and data source included in the analysis is further described below. We calculated means to compare the average risks of flooding and wildfire between outdoor recreation counties and non-recreation counties. We evaluated the statistical significance of any differences using Welch’s t-test, suitable for cases with unequal variances. This test evaluates whether there are statistically significant differences in the average risk between two recreation-dependent and non-recreation-dependent counties.

### Recreation-dependent

Recreation-dependent counties are identified using the 2017 county typologies created by the U.S. Department of Agriculture’s Economic Research Service. A county is classified as recreation-dependent if it has a relatively high share of employment and income from tourism-related industries and a high share of housing that is second homes. We use the “overlapping” classification, which means that a county can be classified as dependent on recreation and other industries, like manufacturing or government. There are 425 counties classified as recreation-dependent in the United States.

Source: Recreation Counties: USDA Economic Research Service. (2017). Recreation Counties. <https://www.ers.usda.gov/data-products/county-typology-codes/descriptions-and-maps/#recreation>

### Wildfire risk

Counties with a high wildfire risk are in the 70<sup>th</sup> percentile or higher of Risk to Homes compared to all other counties in the nation in the USDA Forest Service dataset, *Wildfire Risk to Communities*. Risk to Homes measures the relative consequence of wildfire to structures everywhere on the landscape, whether a home exists there or not. This allows for consideration of wildfire risk in places with homes and places where new construction is proposed.

Source: Wildfire Risk: USDA Forest Service. (2024) Wildfire Risk to Communities. <https://wildfirerisk.org>

### Flood risk

Counties with a high risk of flooding are in the 70<sup>th</sup> percentile or higher for Flood Risk based on the First Street Foundation’s *Risk Factor* data. This measures the share of homes in the county predicted to have one inch of water reaching the building footprint of a home at least once within the next 30 years. The risk considers all major types of flooding, including high-intensity rainfall, overflowing rivers and streams, high tides, and coastal storm surges.

Source: Flood Risk: First Street Foundation. (2023). Flood Factor. [https://firststreet.org/?utm\\_source=floodfactor&from=riskfactor.com](https://firststreet.org/?utm_source=floodfactor&from=riskfactor.com)

### Rural capacity

Counties with low capacity are in the 33<sup>rd</sup> percentile or lower for the Rural Capacity Index, developed by Headwaters Economics. The Index identifies communities where investments in staffing and expertise are needed to support infrastructure and climate resilience projects.

Source: Rural Capacity Index: Headwaters Economics. (2024). Rural Capacity Index. <https://headwaterseconomics.org/equity/rural-capacity-map/>

## Endnotes

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