



4.15 Wildfire

Description

A wildfire is an uncontrolled fire that burns in a natural area of combustible vegetation such as a forest, grassland, or prairie, and typically occurs in rural areas. Non-wilderness fires are uncontrolled burning in residential or commercial development that are out of the scope of this plan. However, it is important to note that non-wilderness fires often accidentally cause wildfires. They can happen at any time or place, and more than half of the wildfires recorded have been started due to human activity. While wildfires can be caused by human activity or a natural phenomenon such as lightning, it is often the weather conditions that determine how much a wildfire grows.

Location

According to the State of Ohio Hazard Mitigation Plan (SOHMP), Clinton County is in Region 2 and falls outside the Ohio Department of Natural Resources (ODNR) Division of Forestry's Forest Fire Protection Area (**Figure 4.15.1**). All but eight counties in Region 2 fall outside the ODNR Division of Forestry wildfire protection area. Region 2 is home to the most developed metropolitan areas and has the highest population density. Due to the urban areas, grasslands and woodlands are not as abundant, reducing the potential for large scale wildfires.

Extent

Several factors can contribute to the escalation of risk for wildfires, including the prevalence of forests and agricultural lands and their proximity to homes, residences, and structures, as well as the distance between fire and emergency management services. In these cases, the presence of fire near structures causes fire departments to shift focus away from fire suppression and toward structure protection.

According to the SOHMP, 99.9 percent of wildfires in Ohio are caused by human action or accident. As such, many wildfires in Ohio burn in proximity to homes and structures. From 2018 to 2022, the main causes of wildfires in Ohio included debris burning, incendiary (arson), equipment, smoking, campfires, children (playing with matches), lightning, and railroad.

History

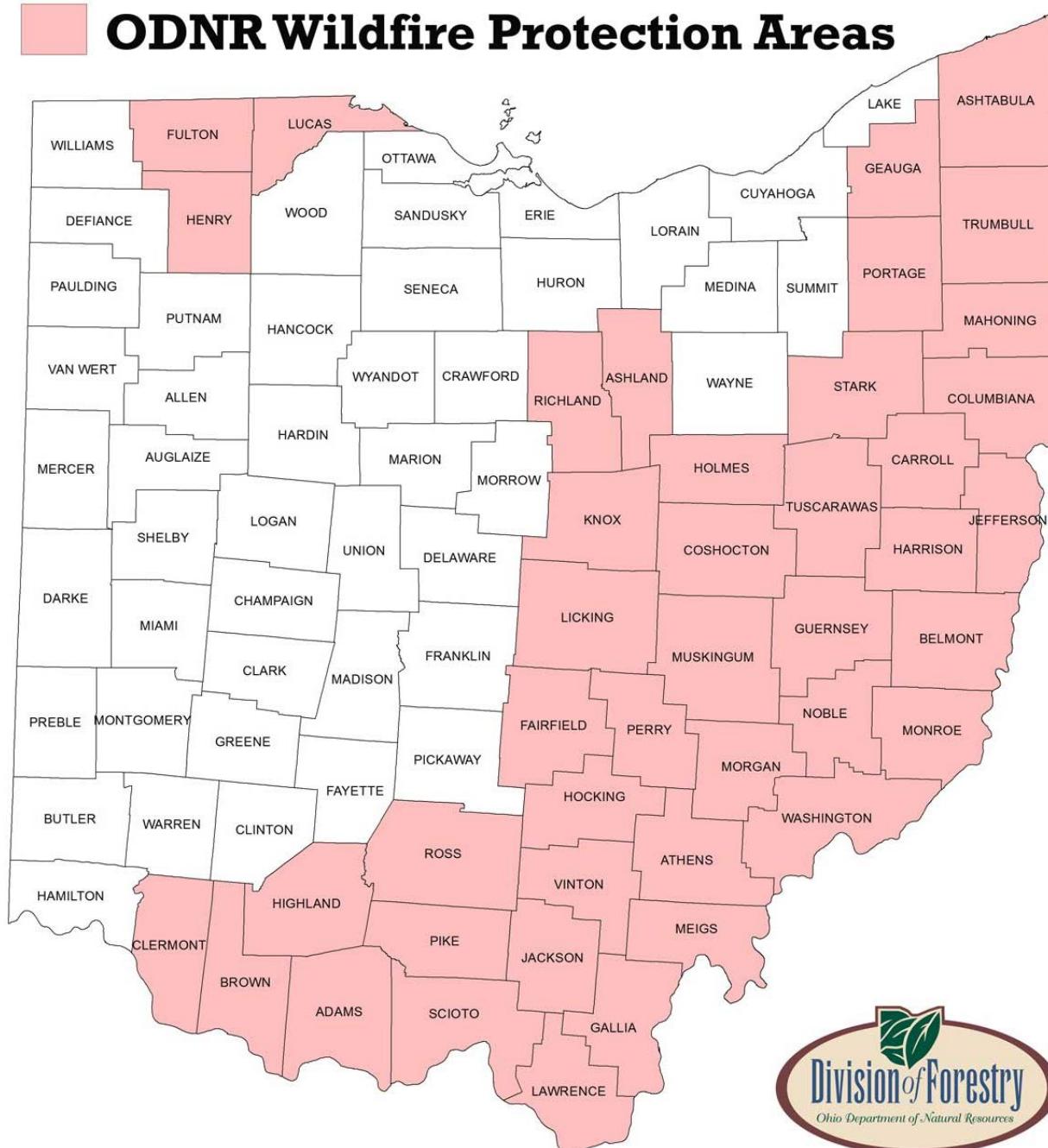
The SOHMP identifies 85 total fire events from 2018 to 2022, with an average of 1.34 acres burned per incident. These events burned a total of 139 acres. There were two structures threatened and one structure destroyed by wildfires. There were no deaths reported, however, there was one injury reported.

Estimating the monetary losses associated with wildfires is difficult because most of these events occur on open land or fields with monetary losses often not being recorded. This lack of data may result in inconsistencies if an analysis was done based on reported monetary loss. As such, acres burned per fire event is a more consistent method of analysis for this hazard.

Probability

According to the State of Ohio Hazard Mitigation Plan, there is a 100 percent probability that a wildfire will occur within any county in any given year. Based on the reported 85 fire events in Clinton County from 2018 to 2022, an average of approximately five fire events is estimated to occur annually in the County. In addition, according to the U.S. EPA, the average total area burned by wildfires has increased since the 1980s, and the record-breaking fires tend to occur during record-breaking warm years.

Figure 4.15.1: Ohio Wildfire Protection Areas



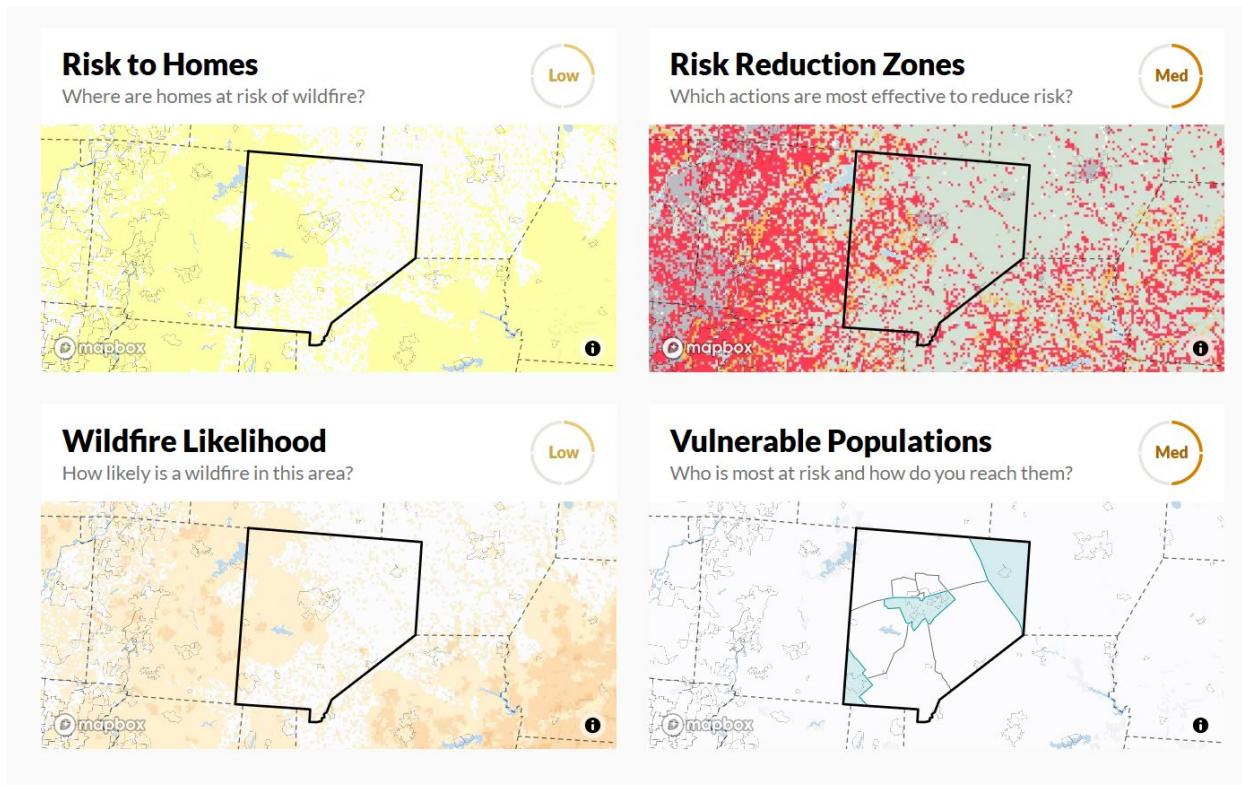
Source: ODNR Ohio Division of Forestry

Vulnerability Assessment

Infrastructure Impact

According to the USDA Forest Service Wildfire Risk to Communities, a free website with interactive maps and charts, Clinton County has a low risk of wildfire damage to homes (Figure 4.15.2).

Figure 4.15.2: Wildfire Risk for Clinton County



Source: USDA Forest Wildfire Risk to Communities

Population Impact

If a wildfire occurs within the County, the entire population could be impacted by the loss of homes, infrastructure, and crops. Large portions of Clinton County are used for agriculture, increasing the risk of economic loss to farms in spring, fall, and during drought. A growth in the number of houses in forested areas is expanding the Wildland Urban Interface (WUI), putting more structures within areas of continuous vegetation and increasing the potential for loss. Furthermore, some residents may be more vulnerable because they tend to experience more difficulty preparing for, responding to, and recovering from wildfire. The Vulnerable Populations map in Figure 4.15.2 identifies areas that have a greater risk (medium) to wildfire. The vulnerable populations are children under the age of five and people who are living below poverty levels.

According to the National Risk Index, calculated by FEMA, Clinton County's risk score for wildfires is 21.1 ("very low") compared to all other U.S. counties, based on its relatively moderate social vulnerability and community resilience, and very low expected annual loss. The index indicates an expected annual loss of \$7,600 due to wildfires with a less than 0.001 percent chance of a wildfire event occurring per year.



Property Damage

There were 85 recorded wildfire events between 2018 and 2022 in Clinton County, burning approximately 139 acres. There were two structures threatened and one structure destroyed. It is assumed that the County has experienced some crop damage because of wildfires, however that data was not available. Occasionally, in the event of a wildfire, fire engines belonging to local fire departments can be damaged while suppressing wildfires, although there are no reports of this in Clinton County. Potential economic losses and damage associated with Clinton County for wildfires are recorded in **Table 4.15.3** below.

The table shows the census tracts from highest total EAL to lowest total EAL from wildfires. EAL rates, calculated by FEMA, identify the total value of loss expected each year for a particular community, in this case the census tracts for Clinton County, and are broken down by expected losses for buildings, population (\$11.6 million for each fatality or 10 injuries), and agriculture per census tract for wildfires.

Table 4.15.3: Structure and Population Vulnerability from Wildfires

Census Tract	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Agriculture)	Expected Annual Loss (Total)
39027964400	\$2,452	\$161	\$1	\$2,614
39027964800	\$1,038	\$95	\$0	\$1,133
39027964501	\$880	\$87	\$0	\$967
39027964700	\$714	\$79	\$0	\$793
39027964502	\$551	\$32	\$0	\$583
39027964900	\$507	\$43	\$0	\$550
39027965000	\$367	\$33	\$0	\$400
39027965100	\$291	\$21	\$0	\$312
39027964300	\$132	\$11	\$0	\$143
39027964600	\$55	\$10	\$0	\$65
Grand Total	\$6,987	\$572	\$1	\$7,560

Source: FEMA National Risk Index

Loss of Life

Clinton County has no recorded wildfire-related loss of life. There is one recorded injury from wildfires, but more information is not available. Injuries caused by wildfires are not widely publicized, so information is limited. With any wildfire event, there is potential for loss of life. Advanced evacuation warnings can reduce the likelihood of death because of wildfires.

Economic Losses

According to the SOHMP, there are 27 state-owned or state-leased community lifelines (critical facilities) with a relatively low hazard risk. These facilities have a total replacement cost of \$12,508,772. There are also four state-owned or state-leased community lifelines with a low hazard risk. These facilities have a total replacement cost of \$941,745. No state-owned or state-leased critical facilities were considered to have a relatively moderate, relatively high, or very high-risk rating to wildfires.



Future Trends

Land Use and Development Trends

Communities should monitor areas that are especially susceptible to wildfires and avoid development in such areas. Slight increase in forested and pasture/hay areas can mean slightly more vulnerability to wildfire. Newer structures are being built in rural and wooded lots, expanding the WUI in the County, resulting in increased vulnerability to the structures and inhabitants. New developments in these areas should implement fire protective measures; however, the County hasn't implemented building codes that specifically address wildfire for either incorporated or unincorporated buildings or homes. Additionally, a rise in oil and gas infrastructure in the County further adds to the number of high-value infrastructure at risk from wildfire.

Figures 1.2.1 and 1.2.2 in Chapter 1 show areas susceptible to drought and heatwaves. New construction should reference the figures and resources outlined in this plan in order to minimize risk of drought and heatwaves, which can increase wildfire spread