3.7: Wildfire Risk Assessment

Hazard Description

A wildfire is any fire that burns uncontrollably in a natural setting (such as grasslands, forests, and brushland). Wildfires can be either man-made or natural. In Mississippi, most fires are man-made, with arson being the most prevalent cause, followed by the burning of debris. Nationwide, nearly 9 out of 10 wildfires are human-caused and many could be prevented with proper care. To reduce the number of human-caused wildfires in Mississippi, burn bans are issued by each County Board of Supervisors and approved by the Mississippi Forestry Commission (MFC). The typical cause of naturally occurring wildfires is lightning.

Prescribed burning, also known as controlled burning, is the deliberate use of fire under specified and controlled conditions. Prescribed burns are used by forest management professionals and individual landowners to accomplish one or more of the following tasks:

- **Fuel reduction:** The reduction of accumulated grass, weeds, pine needles, and hardwood leaves that worsen the effects of wildfires in young stands and hinder the regeneration of older stands.

- **Hardwood control:** Prevents hardwood trees from competing with pines for nutrients and moisture, impeding visibility and access through the stands, and interfering with natural regeneration in land areas that are better suited for growing pines.

- **Site preparation:** Reduces the number of small-diameter hardwoods and exposes mineral soil before harvest cutting.

- **Wildlife habitat improvement:** Prescribed burns in young stands encourage fresh, low vegetation for wildlife, remove heavy brush, and encourage the growth of annual plants.

- **Disease control:** Prescribed burns conducted to reduce fuel before thinning trees may help control disease.

- **Harvest cutting area improvement:** Reducing brush growing low to the ground before harvesting trees increases visibility and expedites the marking and cutting of the selected trees. This form of prescribed burning can lower costs for the landowner and the logging professional.

Wildfires are very common in many places around the world. Fires are particularly prevalent in summer, autumn, and droughts when fallen branches, leaves, grasses, and scrub can dry out and become highly flammable. Some experts believe global warming is increasing the intensity and frequency of droughts in many areas, thus creating more intense and frequent wildfires.

Wildfires tend to be most common and severe during years of drought and occur on days of strong winds. With extensive urbanization of wildlands, these fires often involve the destruction of suburban homes located in the wildland-urban interface, a zone of transition between developed areas and undeveloped wildlands.

On occasion, wildfires cause large-scale damage to private or public property, destroying many homes and causing deaths, particularly when they reach urban fringe communities. Wildfires are extremely dangerous, however, the impacts of wildfires can be minimized through the incorporation of basic best management practices.

It is important to understand what constitutes an urban fire and how they impact mitigation planning for local jurisdictions. Urban fires may be created by electrically-related structural and vehicle fires, incendiary arson, unattended cooking fires, smoking materials, heating devices, fuel systems, sparks, hazardous material spills, and spontaneous combustion.

The adjective class rating presented in **Table 3.7.1** is a method of normalizing rating classes across different fuel models, indices, and station locations. It is based on the primary fuel model cataloged for the station, the fire danger index selected to reflect staffing levels and climatological class breakpoints. This information is provided by local station managers. About 90% use the Burning Index (BI); others use Energy Release Component (ERC). Staffing class breakpoints are set by local managers from historical fire weather climatology.

Table 3.7.1
Adjective Class Rating

Fire Danger Rating and Color Code		Description
Low (L)	Dark Green	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering and burn in irregular fingers. There is little danger of spotting
Moderate (M)	Light Green or Blue	Fires can start from most accidental causes, but except for lightning fires in some areas, the number of accidental starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur but is not persistent. Fires are not likely to become serious and control is relatively easy
High (H)	Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH)	Orange	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high-intensity characteristics, such as long-distance spotting and fire whirlwinds when they burn into heavier fuels
Extreme	Red	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high-intensity burning will usually be faster and occur

(E)		from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens

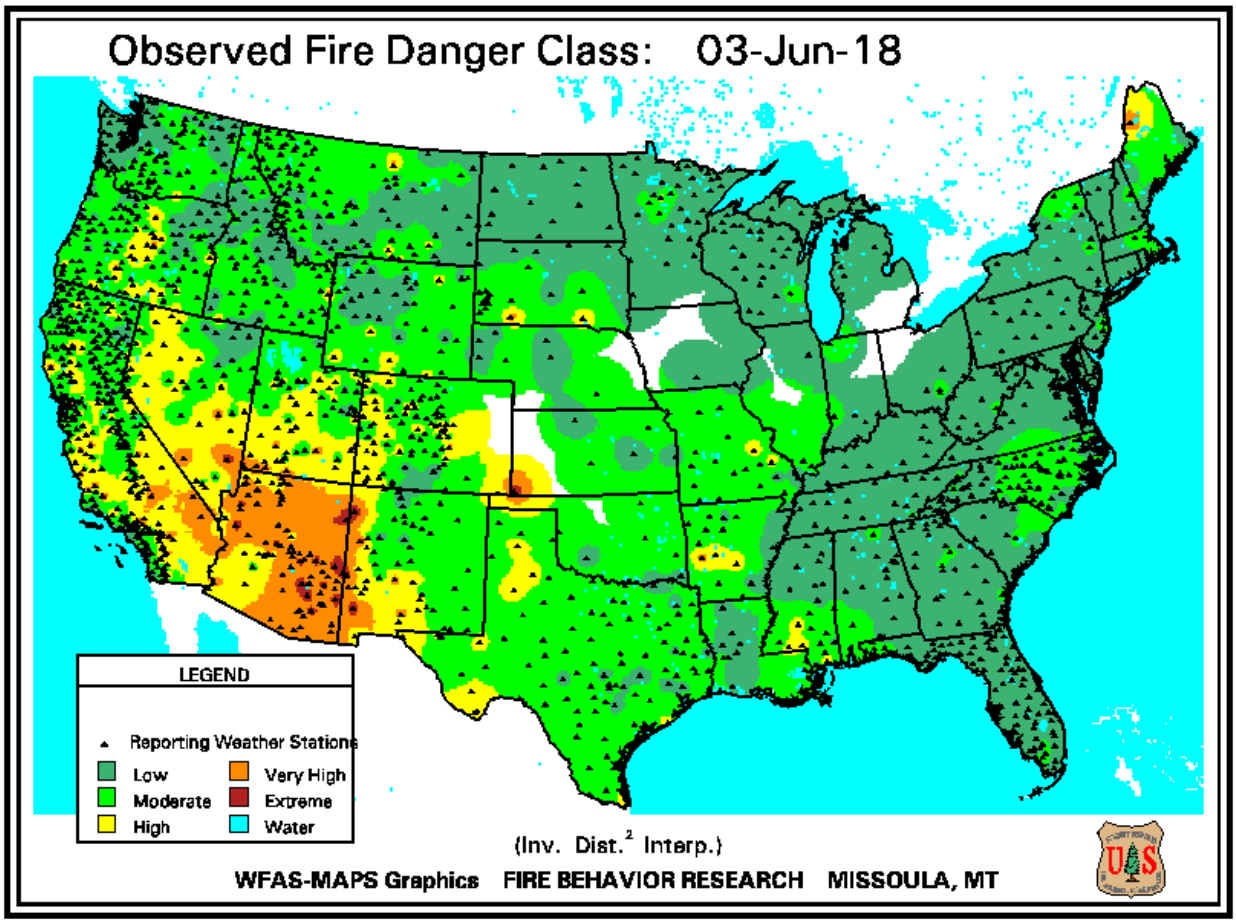
Source USFS WFAS

Fire managers in the south also use the Keetch-Byram Drought Index (KBDI) a mathematical system for relating current and recent weather conditions to potential/expected fire behavior. This system, originally developed for the southeastern United States, is based primarily on recent rainfall patterns and was specifically developed to equate the effects of drought with potential fire activities.

A full discussion on the KBDI is provided in **Section 3.8 – Drought**.

Figure 3.7.1 provides data on observed fire dangers as reported through various weather stations. For the period reflected, a majority of Mississippi is in a low danger class while the southern counties experience a moderate danger class.

Figure 3.7.1
Adjective Class Rating



Hazard Profile

Wildland/Urban Interface

According to the MFC 2022 Annual Report, the MFC responded to and suppressed 1,442 wildfires that burned 40,212 acres. MFC Wildland Firefighters saved 966 structures threatened by wildfire activity while 33 structures were damaged or destroyed. The average wildfire size was 28 acres.

Table 3.7.2
FY21 Wildfires by Cause

Cause	Wildfires	Acres Burned
Debris Burning	676	15,796
Undetermined	346	12,398
Incendiary	304	10,226
Equipment Use	37	543
Lightning	5	101
Smoking	7	90
Campfire	3	11
Railroad	1	4
Total	**1,442**	**40,212**

As the population in rural areas increases, so do the issues facing the Wildland-Urban Interface (WUI). The WUI is the development of residential and commercial areas adjacent to or commingled with vegetative areas. More than half of the homes in Mississippi are part of a WUI. As further development in forested areas occurs this number increases. Wildfires in urban areas threaten human life, structures, and wildland resources. As shown in **Figure 3.7.2**, the WUI is broken into two categories including intermix and interface. Intermix defines housing and commercial development mixed with wildland vegetation. The interface describes housing and commercial development in proximity to wildland vegetation. **Figure 3.7.2** further describes the non-WIU vegetated areas, which are broken out into two categories including no housing and very low housing density. It also demonstrates the non-vegetated or agricultural areas. It is also broken into three groups consisting of low and very low housing density, medium and high housing density, and water. Figure 3.7.3 represents housing density, **Figure 3.7.4** represents Wildland Vegetation Cover and **Figure 3.7.5** shows the land cover in Mississippi.

Figure 3.7.2
Wildland Urban Interface

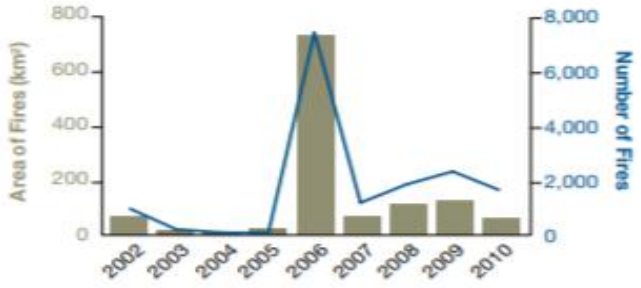
Population and Geography Overview

Census Data	Number	%
Population	2,967,297	
Housing units	1,274,719	
Seasonal use	28,867	2

Land Ownership	Area (km²)	%
Public-Federal	4,293	3
Public-State	3,058	2
Public-Local	0	0
Private	116,172	94

Land Cover	Area (km²)	%
Forest	47,776	39
Shrubland/herbaceous	16,246	13
Planted/cultivated	31,532	26
Developed	7,563	6
Water/wetland	20,195	16
Others	211	0
Total area	123,523	

Wildfire History



WUI in Numbers (see legend)

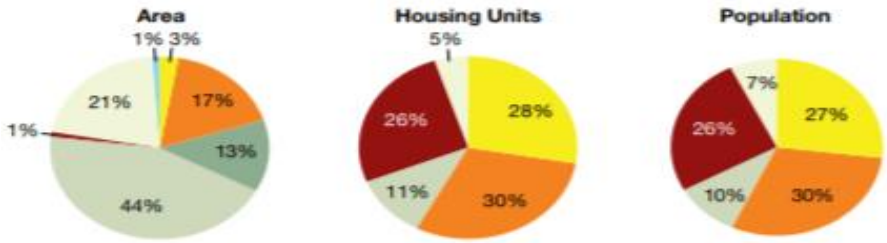


Figure 3.7.4
Wildland Urban Interface

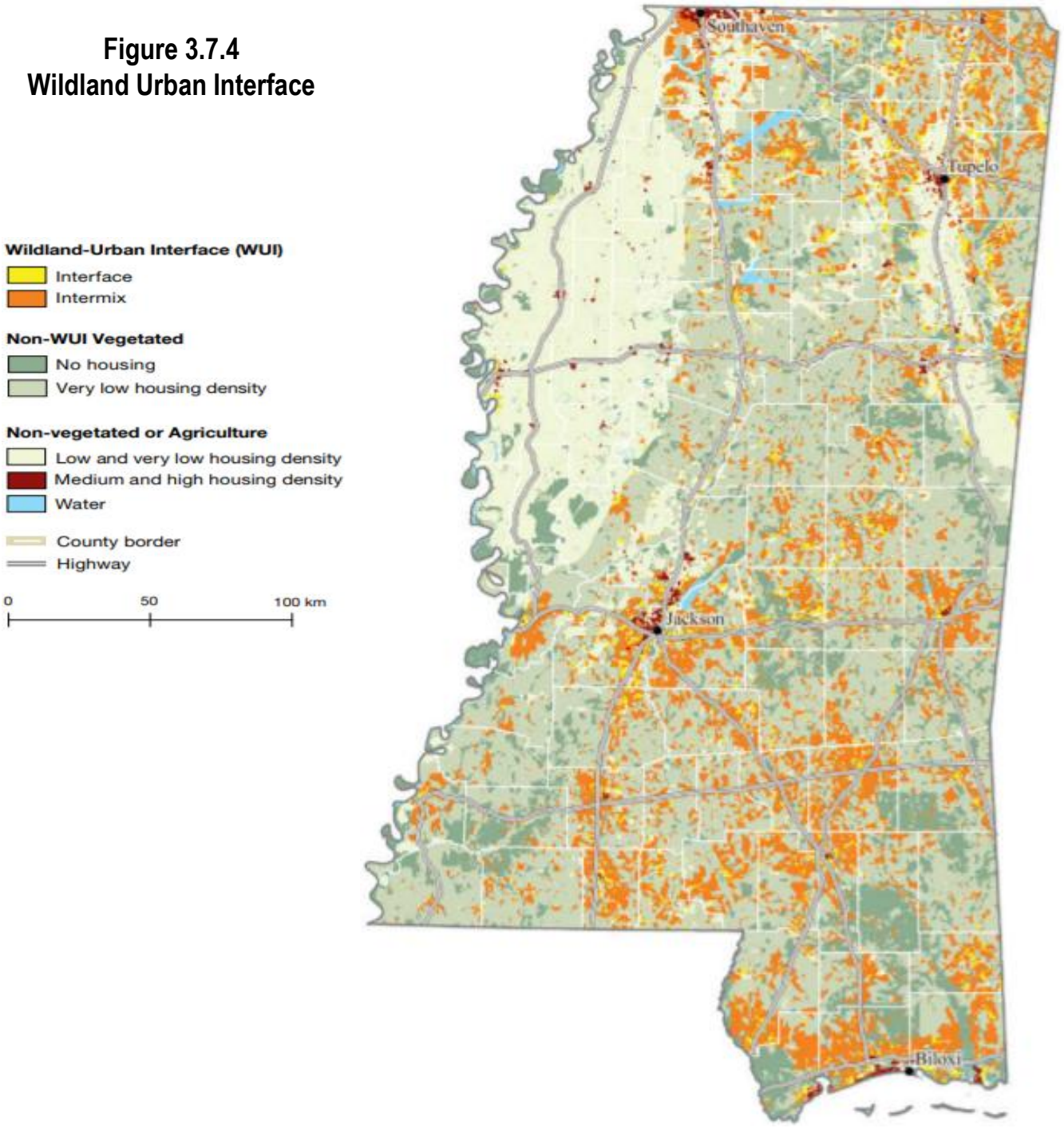


Figure 3.7.3
Wildland Urban Interface

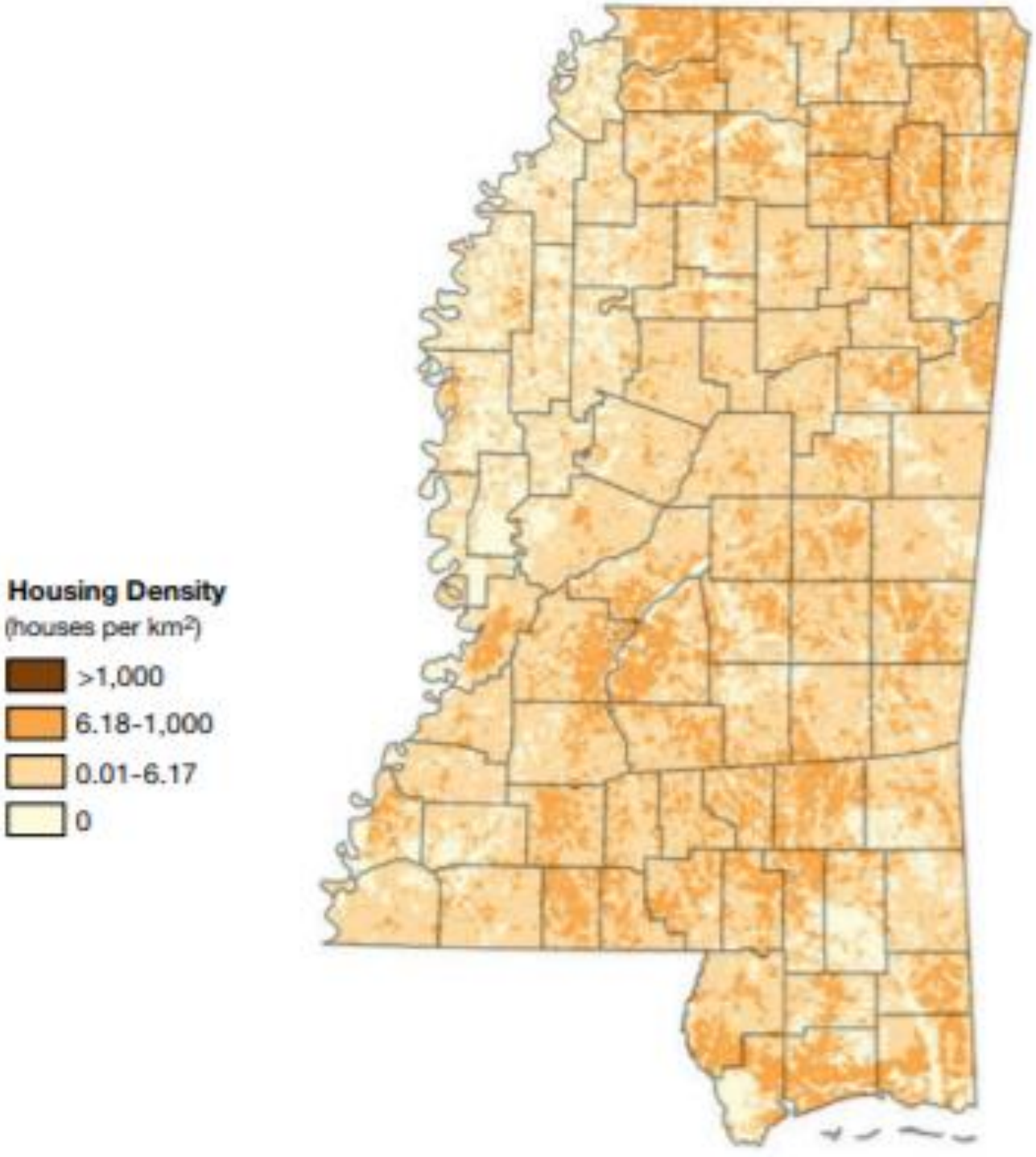
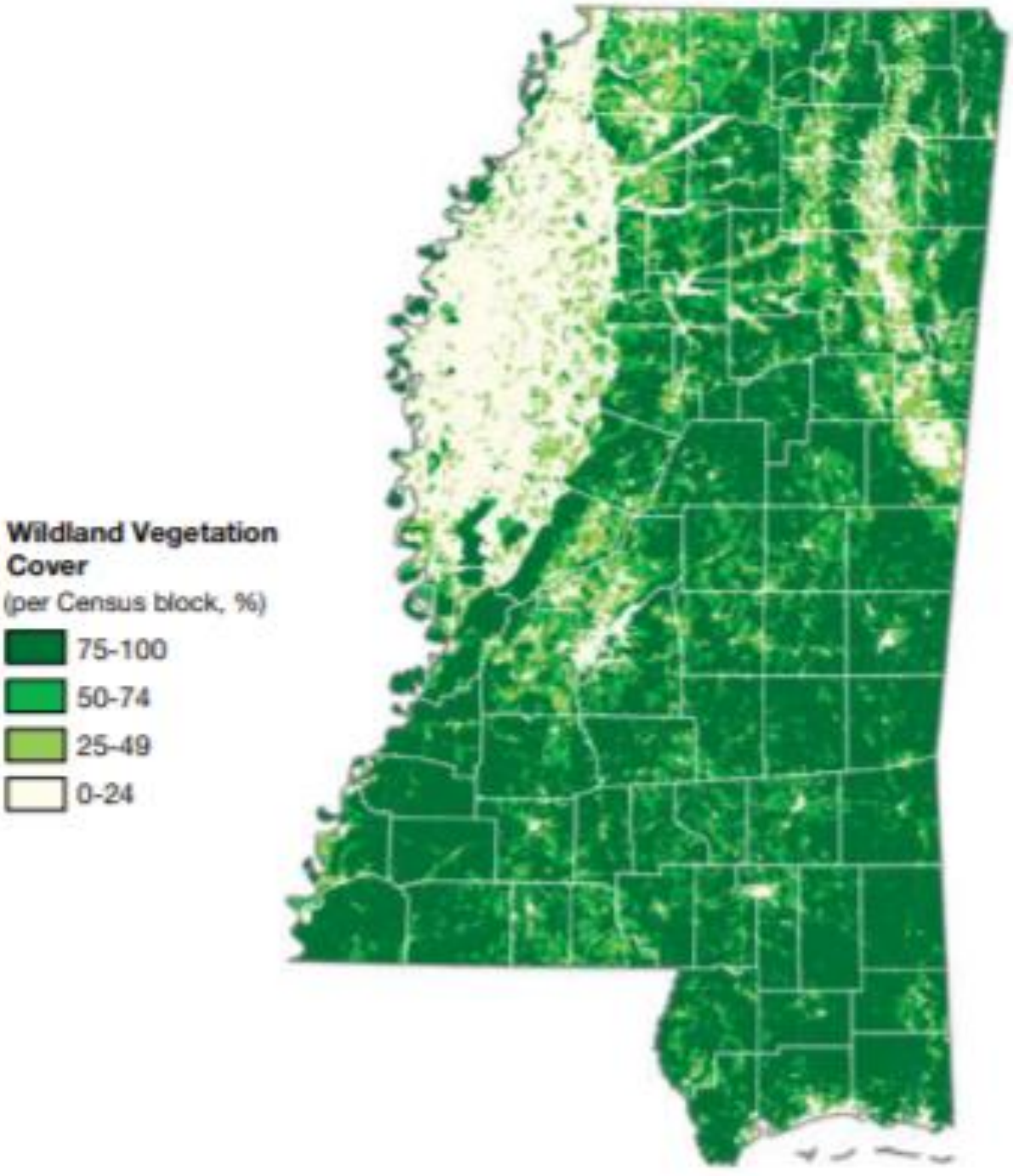
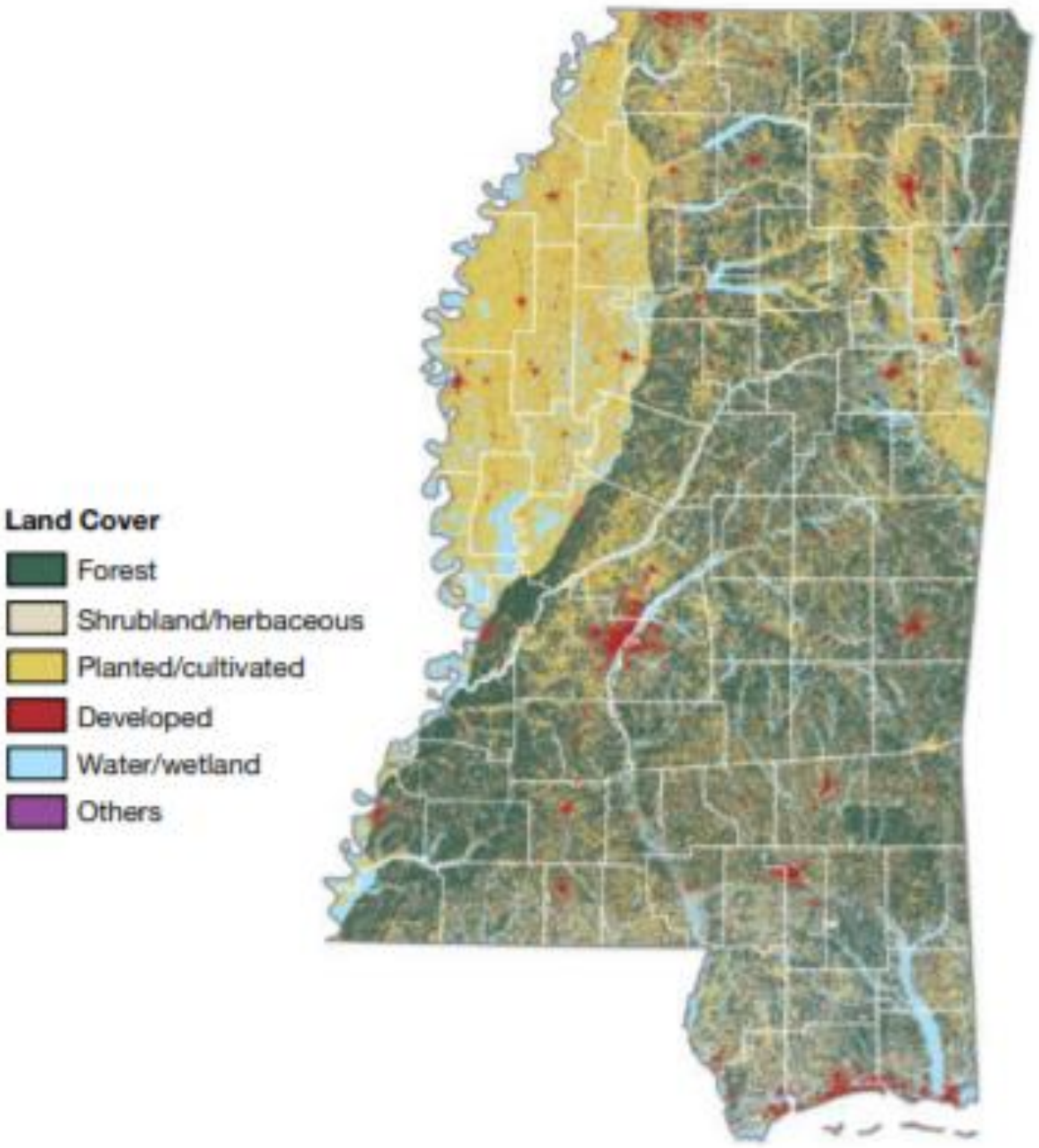


Figure 3.7.5
Wildland Urban Interface




Land Cover
Forest
Shrubland/herbaceous
Planted/cultivated
Developed
Water/wetland
Others

Education and Outreach

Forest Information

The MFC's Forest Information Department provides support to all MFC programs through the development of displays, exhibits, brochures, and other informational material. The department is the point of contact for media relations and is responsible for maintaining the MFC Web site (www.mfc.ms.gov), producing the agency's newsletter, annual report, and MFC News. The Forest Information Department utilizes social media to help carry the MFC message. Accounts were developed on Facebook and YouTube at no cost to the agency. Other social media outlets are being considered and will be activated if MFC determines they can further assist the Commission in providing relevant and timely information to the people of Mississippi.

The website, www.mfc.ms.gov is accessible to the public and employees. During periods of high fire danger, the website is used to provide public service information, including daily fire reports and news releases.

The Commission provides the following weather and fire information on the website:

- The Fire Danger Rating (USDA Forest Service Wildland Fire Assessment System)
- The Current Weather Forecast
- The Fire Danger Rating and Color Code
- The Keetch-Byram Drought Index
- The MFC Daily Fire Situation Report
- A link to the Southern Area Coordination Center (SACC)
- The National Weather Service Enhanced Radar
- The satellite image Loop for the United States
- The NWS Enhanced Radar Image Loop for Lower Mississippi Valley Sector
- The NWS Fire Weather Report

Public Outreach

The MFC's Public Outreach/Conservation Education Department maintains an active outreach program designed to educate citizens about forestry and related issues, as well as the agency's mission and services. Local outreach activities such as civic club presentations, forestry field days, and visits to school groups are conducted across the state to reach individuals at the community level. In FY17, $105,283 was distributed to state and local governments, non-profit groups, and educational institutions through the Urban and Community Forestry Challenge Grant Program. Public Outreach Officers provide customized presentations and displays for schools, community organizations, and events based on the following topics:

• Wildfire Prevention

• Smokey Bear Appearances

• Fire Wise

• Forest Health

- Forest Stewardship
- General MFC Information
- Best Management Practices
- Underserved Landowner Outreach Program
- Urban and Community Forestry

MFC has consulted with over 234 adult and youth programs boasting at least 193,8008 participants. This number does not include the participants from the MS State Fair, MS Wildlife Extravaganza, or the MS Garden and Patio Show.

Consult www.mfc.ms.gov/public-outreach for information on other MFC outreach efforts.

Fire Wise

Fire Wise is an educational program for homeowners and community leaders. This program is for anyone living in, or connected to, the wildland/urban interface. Information is available to assist in the design, construction, landscaping, and maintenance of a home or community to better withstand a wildfire without the aid of firefighting resources on the scene. Firewise literature can be found on the MFC website at www.mfc.ms.gov/firewise.

Fire Wise Workshops are also conducted throughout the state. These one-day workshops are free of charge and bring together citizens, businesses, and community leaders, getting them involved in planning, financing, building, sustaining, and protecting communities in the wildland/urban interface. Participants learn about the reason homes burn, various wildland fuel reduction techniques, and ways to assess the fire danger of their homes. The dates for Fire Wise Workshops can be found on the MFC website. There are currently seventeen communities and VFDs designated as Firewise Sites:

Table 3.7.2
Fire Wise Communities

Community	County	Year
Batesville	Panola	2013
Booneville	Prentis	2015
Yazoo City	Yazoo	2015
Ethel	Atalla	2012
Gloster	Amite	2009
Iuka	Tishomingo	2013
Jacinto Volunteer Fire Department, Jacinto Community	Alcorn	2015
Lake Hillsdale, Lumberton	Pearl River	2009
Noxapater	Winston	2011
Pelahatchie	Rankin	2015
Sardis	Panola	2014

Community	County	Year
Scooba	Kemper	2013
Snow Lake Shores	Benton	2007
Decatur	Newton	2014
Kossuth	Alcorn	2014
Leakesville	Greene	2015
Wiggins	Stone	2015

Underserved Landowner Program

The Underserved Landowner Outreach Program is a joint project between the MFC, Alcorn State University, and the USDA Forest Service. The program offers assistance to underserved landowners in Mississippi and has three primary goals:

- To provide outreach support and technical assistance to underserved landowners
- To encourage young people to seek careers in forestry
- To work with Alcorn State University to develop and/or enhance projects of mutual forestry interest

Urban and Community Forestry Program

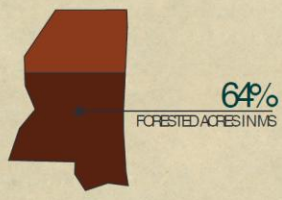
The Urban and Community Forestry Division provides assistance and training to urban areas in the development of community forestry programs. Support is offered for counties and municipalities regarding the development of tree ordinances, hazardous tree inventories, and urban forest management plans. The Urban Forestry Program also provides technical advice to builders regarding tree preservation during construction and provides homeowners with advice regarding insects, diseases, and other urban forestry issues.

The Urban and Community Forestry Challenge Grant Program is a grant through the USDA Forest Service for administration, demonstration projects, and educational programs. The purpose of the Urban and Community Forestry Challenge Grant Program is to aid in the development of long-term, self-sustaining urban and community forestry programs. The goal of the Urban and Community Forestry Challenge Grant Program is to inspire or enhance local or statewide urban and community forestry programs.

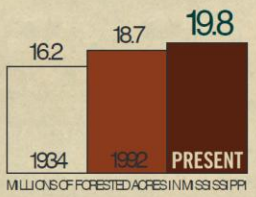
Mississippi Forest Facts

Mississippi Forestry Association, Mississippi Institute for Forest Inventory, and Mississippi State University compiled the following information to help Mississippians gain an understanding of the hazards wildfires pose to lives, homes, other structures, the forestry industry, and the state's economy.

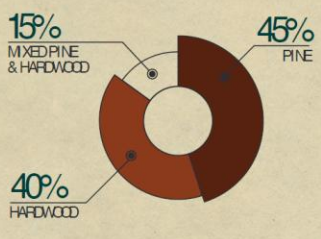
Acreage and Ownership



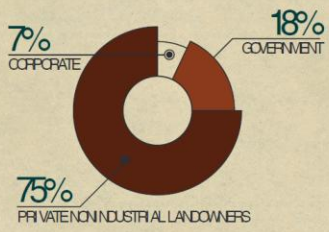
AREA OF COVERAGE



TIMELINE OF GROWTH



FOREST BY COVER TYPE



WHO OWNS MISSISSIPPI'S FORESTS

Employment and Wage Summary

FORESTRY AND FORESTRY-RELATED EMPLOYMENT:

5% ACCOUNTS FOR NEARLY OF ALL JOBS IN MISSISSIPPI

$12.3 BILLION FORESTRY AND FOREST PRODUCT INDUSTRY

ALMOST 70,000 TOTAL JOBS IN MISSISSIPPI

$3.4 BILLION WAGES PAID OUT

Forestry and the Economy

Timber is a very important part of Mississippi's economy.

- The value of timber harvesting in Mississippi has averaged in excess of $1 billion per year over the past 20 years.
- Mississippi forests provide recreational opportunities, encourage tourism, and create environmental benefits such as excellent water quality, cleaner air, improved wildlife habitat, and the storage of atmospheric carbon.
- Promoting sustainable forest management, reforestation after harvest, and keeping forests productive have strategic long-term benefits for Mississippi.

Mssissippi is "First in Forestry"

Thanks to MFA...

- State funded green buildings must equally recognize all forest certification programs.
- Mississippi was the first state in the nation to establish a reforestation tax credit, helping landowners with expenses associated with the stewardship of forest land and encouraging them to replant after harvest. Mississippi Forestry Association and its partners worked with the state legislature to increase the tax credit's lifetime limit from $10,000 to $75,000.
- Mississippi ranks number one in the nation in the number of Certified Tree Farms under the American Tree Farm System.

Mississippi Forest Facts is published by Mississippi Forestry Association, msforestry.net. Statistics were compiled by the Mississippi Forestry Commission and Mississippi State University.

Location

The Mississippi Forestry Commission is divided into four MFC Districts, shown in **Figure 3.7.6**. The MFC tracks wildfires by district and causes (Table 3.7.3). Averaging over 700 fires annually during the last three years, the Southeast District maintains the highest frequency of wildfires in the state. The areas with minimal amounts of historic wildfire events are along the Mississippi River. Except for one district in the northeast section of the state, Mississippi's three southernmost districts continue to experience the highest average number of wildfires. This trend is most apparent following major coastal storms when forest floor litter is greatest.

Figure 3.7.6
Mississippi Forestry Commission
Service Areas and Regions

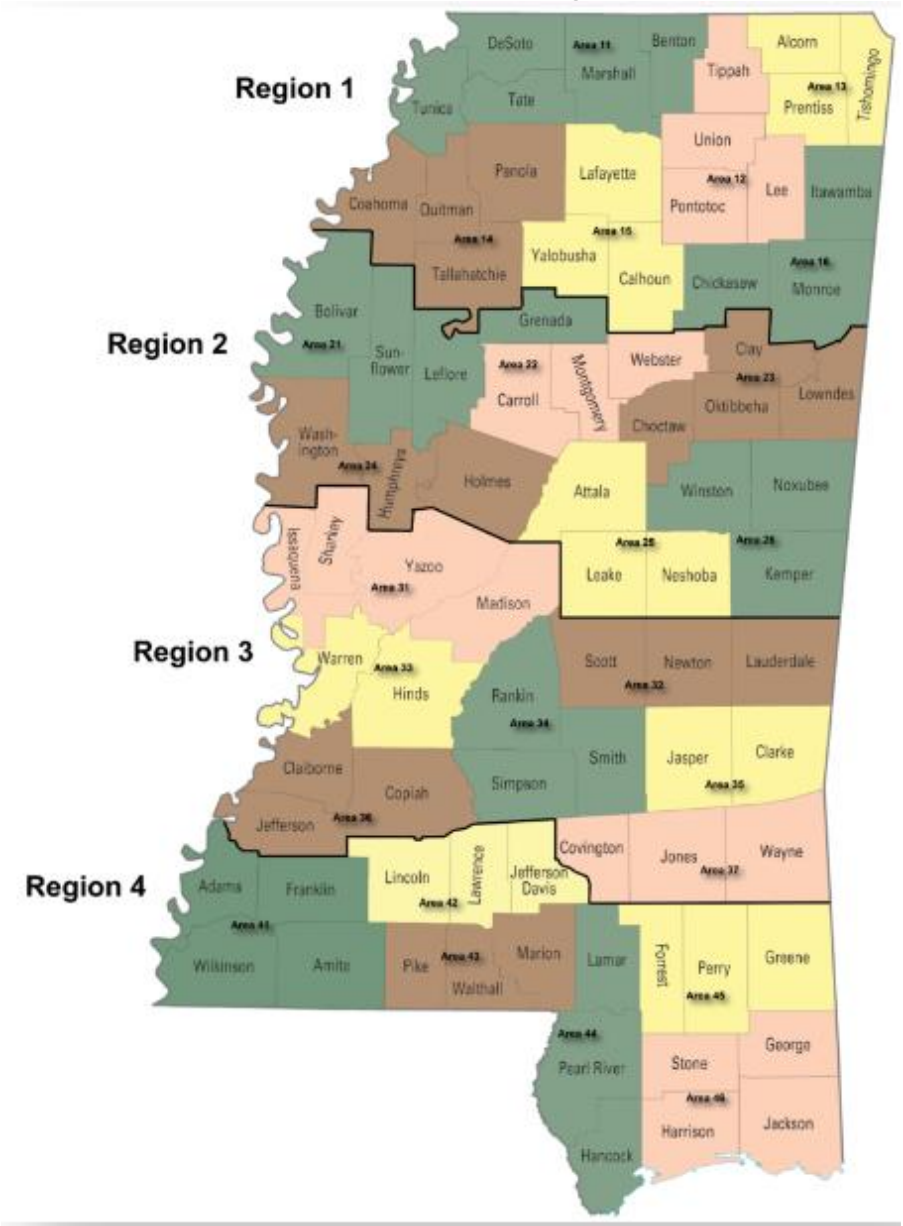


Figure 3.7.7

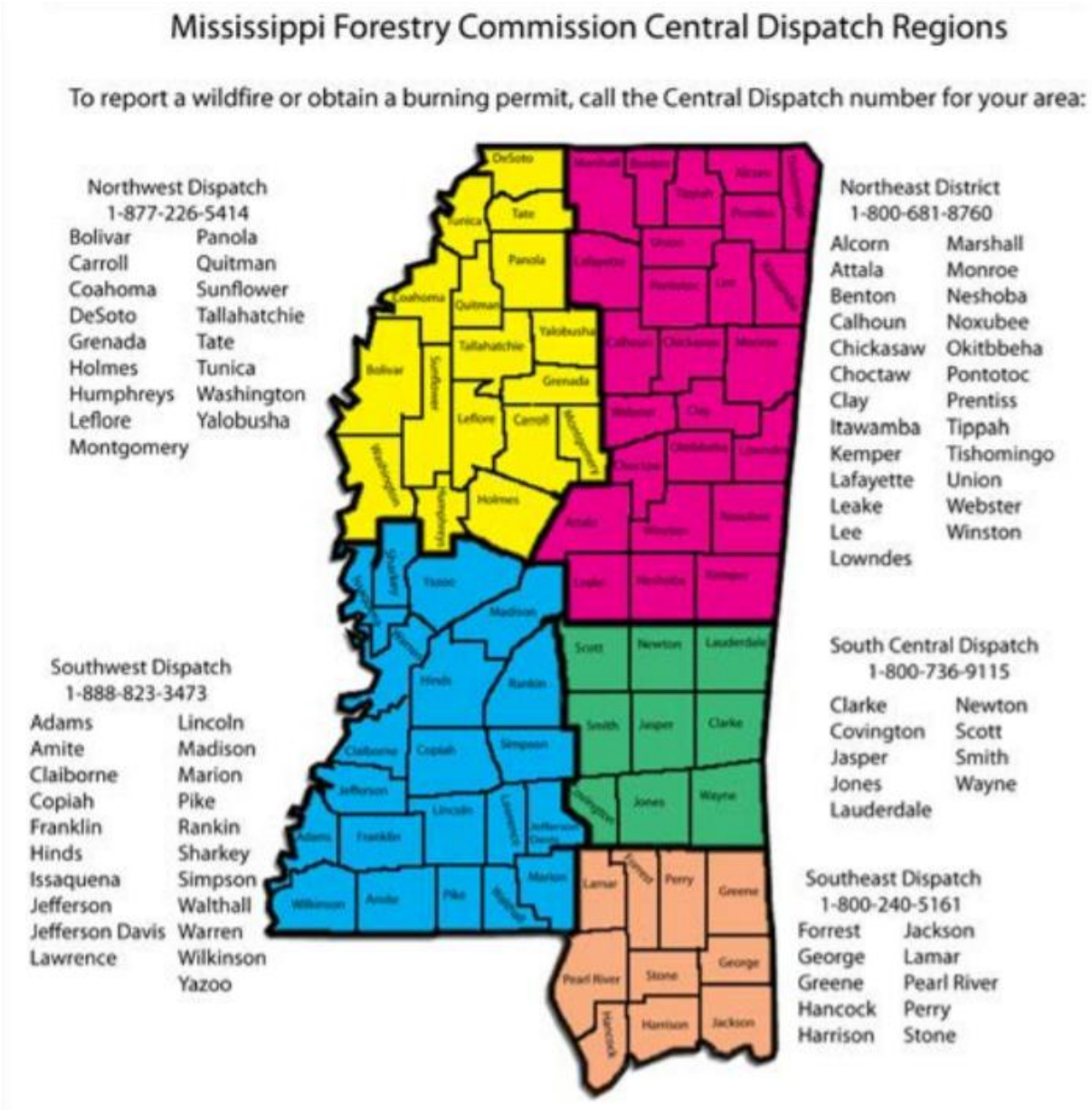

Mississippi Forestry Commission Central Dispatch Regions
To report a wildfire or obtain a burning permit, call the Central Dispatch number for your area:
Northwest Dispatch
1-877-226-5414
Bolivar
Carroll
Coahoma
DeSoto
Grenada
Holmes
Humphreys
Leflore
Montgomery
Panola
Quitman
Sunflower
Tallahatchie
Tate
Tunica
Washington
Yalobusha
Northeast District
1-800-681-8760
Alcorn
Attala
Benton
Calhoun
Chickasaw
Choctaw
Clay
Itawamba
Kemper
Lafayette
Leake
Lee
Lowndes
Marshall
Monroe
Neshoba
Noxubee
Okitbbeha
Pontotoc
Prentiss
Tippah
Tishomingo
Union
Webster
Winston
Southwest Dispatch
1-888-823-3473
Adams
Amite
Claiborne
Copiah
Franklin
Hinds
Issaquena
Jefferson
Jefferson Davis
Lawrence
Lincoln
Madison
Marion
Pike
Rankin
Sharkey
Simpson
Walthall
Warren
Wilkinson
Yazoo
South Central Dispatch
1-800-736-9115
Clarke
Covington
Jasper
Jones
Lauderdale
Newton
Scott
Smith
Wayne
Southeast Dispatch
1-800-240-5161
Forrest
George
Greene
Hancock
Harrison
Jackson
Lamar
Pearl River
Perry
Stone

Figure 3.7.6

Mississippi Forestry Commission Administrative Districts

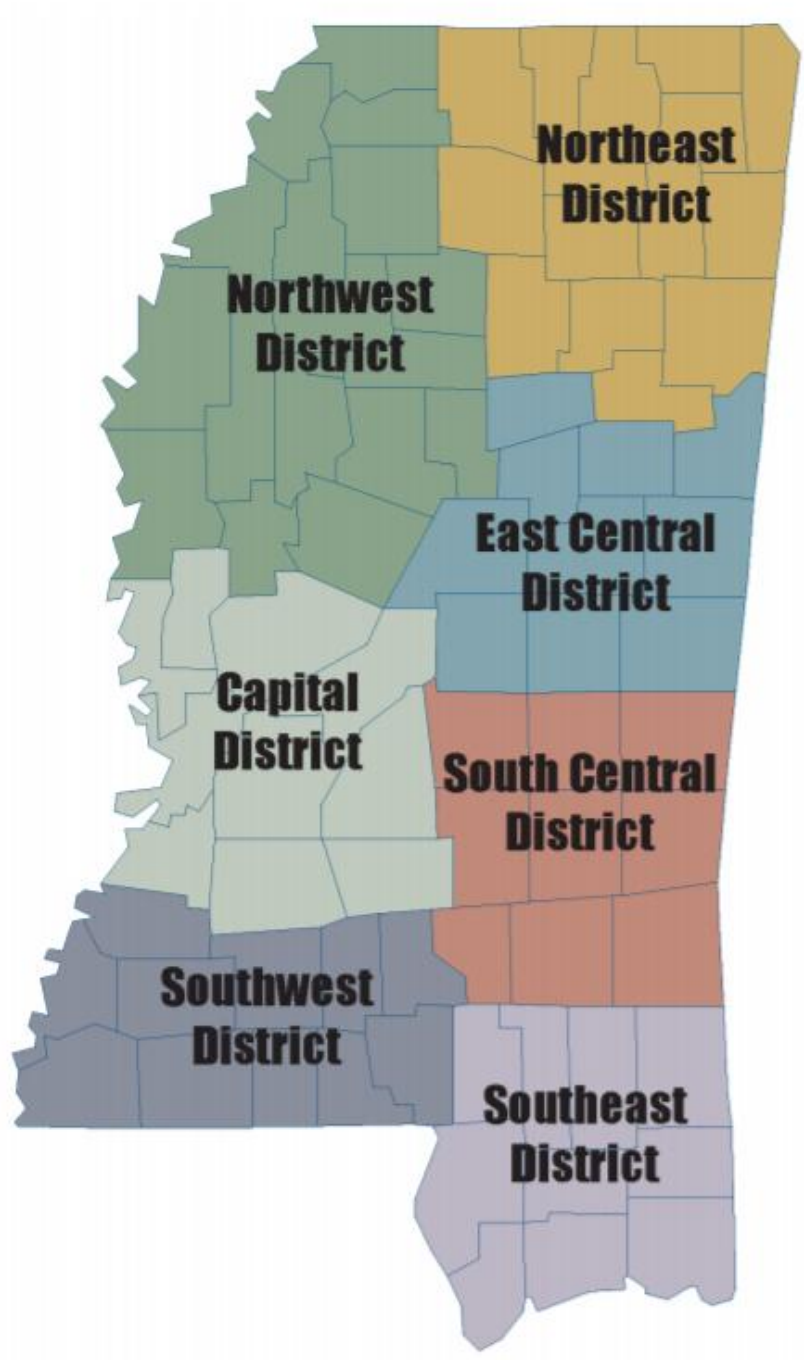


Table 3.7.2
Top 10 States for Wildfires Ranked by Number of Fires

Rank	State	Number of Fires
1	California	9,280
2	Texas	5,576
3	North Carolina	5,151
4	Montana	2,573
5	Florida	2,262
6	Oregon	2,202
7	Georgia	2,139
8	Minnesota	2,065
9	Washington	1,863
10	Arizona	1,773
11	Oklahoma	1,727
12	Missouri	1,531
13	Pennsylvania	1,350
14	Idaho	1,332
15	Utah	1,085
16	Alabama	1,040
17	Wisconsin	1,040
18	Colorado	1,017
19	North Dakota	946
20	**Mississippi**	**922**

Source: National Interagency Fire Center

With 100 state parks, national parks and forests, wildlife management areas, and wildlife refuges in 63 counties, Mississippi is number 20 in the top 20 states for Wildfires in 2021 (Table 3.7.2).

Past Occurrences

Burning debris causes an average of 871 fires each year in Mississippi (2010 - 2022) and is the leading cause of wildfires in the State. The second leading cause of wildfires in Mississippi is arson, averaging about 805 fires a year.

Other man-made causes of wildfires in Mississippi include railroads, children, smoking, and other miscellaneous causes. Individually these elements do not pose a serious threat to Mississippi's natural resources but combined they account for approximately 347 or 14% of fires annually.

As shown in **Table 3.7.3**, lightning strikes make up a small percentage of wildfires in Mississippi. Contributing to an average of 25 wildfires ignited annually, lightning-ignited wildfires are not considered a serious hazard to the state.

Table 3.7.3
Mississippi Wildfire by Cause (2010 – 2022)

Cause of Fire	2022		2021		2020		2019		2018	
	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned
Incendiary/Arson	304	10,266	208	5,477	253	10,182	179	5,340	173	3,651
Debris Burning	676	15,796	329	3,935	279	3,622	191	3,061	353	3,413
Lightning	5	101	3	210	1	10	3	4	1	1
Campfire	3	11	1	1	3	60	2	25	1	32
Smoking	7	90	3	16	10	30	2	2	2	12
Equipment	37	543	12	135	24	135	9	45	22	148
Railroads	1	4	1	4	0	0	3	14	2	11
Children	0	0	3	14	2	113	0	0	2	9
Miscellaneous	0	0	193	5,141	225	7,139	102	1,695	231	3,752
Undetermined	346	12,398	169	4,318	1	35	0	0	9	175
TOTALS	**1,379**	**33,574**	**922**	**19,251**	**798**	**21,326**	**491**	**10,186**	**796**	**11,204**

Cause of Fire	2017		2016		2015		2014	
	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned
Incendiary/Arson	655	12,963	325	11,772	740	10,923	850	14,457
Debris Burning	816	10,180	743	6,747	780	8,276	828	7,788
Lightning	10	92	16	320	8	50	14	1,015
Campfire	10	119	8	17	4	90	3	7
Smoking	19	107	20	170	6	18	17	190
Equipment	72	844	69	1,641	40	544	36	397
Railroads	3	12	5	66	4	13	2	30
Children	7	16	13	45	10	66	22	162
Miscellaneous	658	8,246	717	10,592	119	2,704	156	1,824
Re-ignition	0	0	0	0	45	712	0	0
Undetermined	68	995	0	0	0	0	0	0
TOTALS	**2,318**	**33,574**	**1,916**	**31,370**	**1,756**	**23,396**	**1,928**	**25,870**

Cause of Fire	2013		2012		2011		2010	
	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned	No. of Fires	No. Acres Burned
Incendiary/Arson	680	9,125	758	11,452	1,706	29,240	728	11,005
Debris Burning	584	5,678	773	5,735	1,713	15,230	731	6,612
Lightning	25	478	21	275	47	641	10	147
Campfire	7	16	3	31	9	155	1	3
Smoking	7	39	22	110	37	279	14	34
Equipment	27	222	51	297	115	949	311	254
Railroads	4	102	9	141	8	66	2	3
Children	7	79	12	6	20	241	9	125
Miscellaneous	133	1,828	154	1,366	249	2,710	108	503
Re-ignition	0	0	62	585	238	5,279	38	427
TOTALS	**1,474**	**17,567**	**1,865**	**20,056**	**4,142**	**54,790**	**1,672**	**19,113**

Potential Damages from Wildfires

Agriculture is Mississippi's number one industry, employing roughly 260,000 people, approximately 17% of the state's workforce, either directly or indirectly. Additionally, agriculture contributes $7.4 billion in income to the State's economy. This does not include the $2.7 billion annual economic impact from hunting, fishing, and other natural resource-related enterprises.

Approximately 37,100 farms are active on nearly 10.9 million acres of land in Mississippi. Mississippi also includes 19.7 million acres of forest land; 14,000 miles of streams; and 640,000 acres of ponds and lakes. On average, Mississippi farms cover 264 acres and are spread across every region of the state with the highest concentration of cropland located in the Delta.

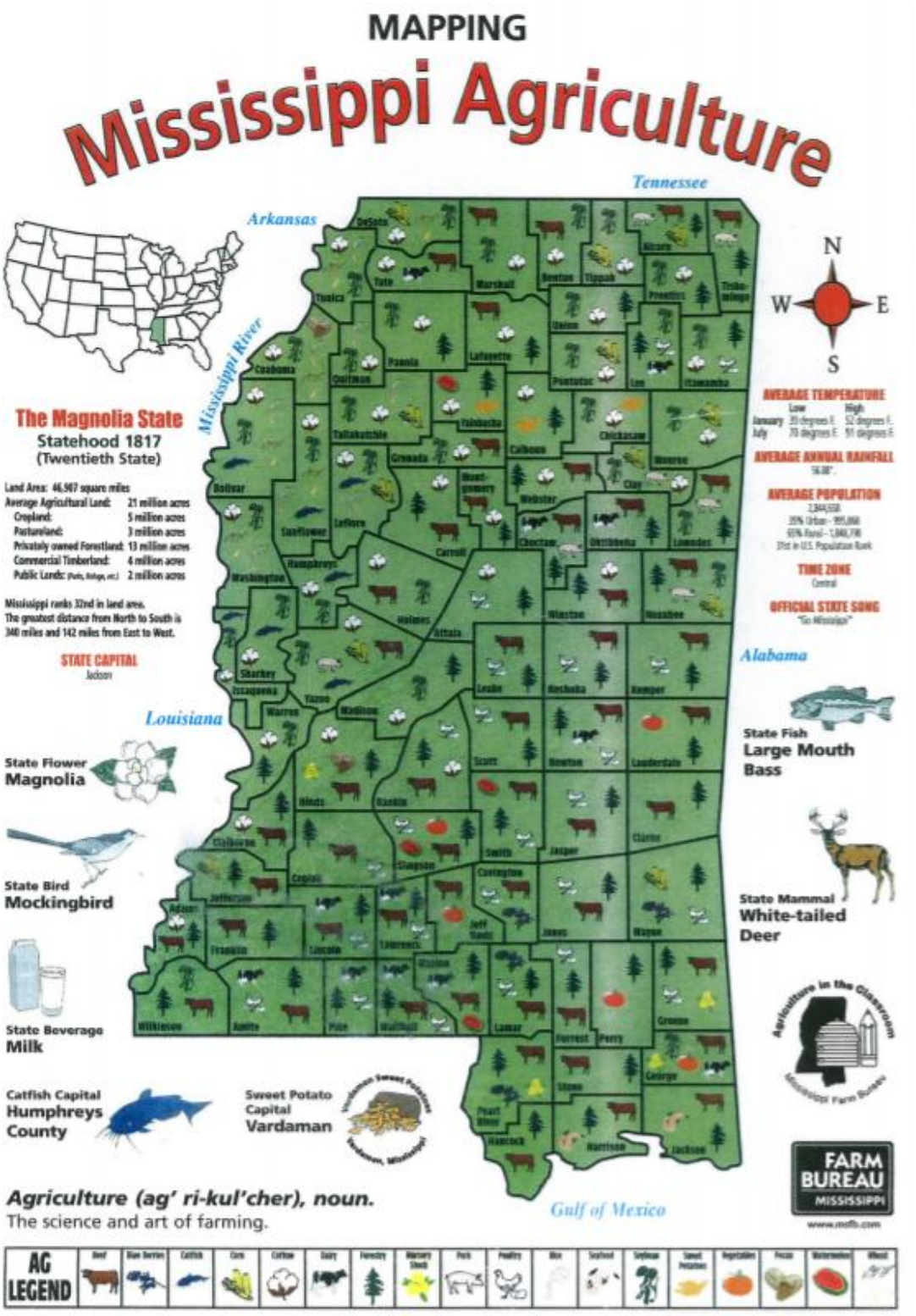
Table 3.7.4 lists Mississippi's top ten crops. As shown by the map **in Figure 3.7.5**, agriculture makes a significant impact in all of Mississippi's 82 counties.

Table 3.7.4
Mississippi's Top Ten Crops

Rank	Agricultural Crop	2017 Revenue	Rank	Agricultural Crop	2017 Revenue
1	Poultry/Eggs	$2.8 billion	6	Cattle & Calves	$285 million
2	Forestry	$1.4 billion	7	Catfish	$181 million
3	Soybeans	$1.1 billion	8	Sweet Potatoes	$123 million
4	Cotton	$562 million	9	Hogs	$117 million
5	Corn	$337 million	10	Hay	$116 million

Source: Mississippi Department of Agriculture and Commerce

Figure 3.7.5
2017 Mississippi Agricultural Map



The best available data to calculate job and wages for direct impact were those based on 2014 data. The 2013 plan indicated that in 2010, the Forest Industry Sector provided over 36,000 jobs and paid $1.6 billion in wages to Mississippi. In 2014, there were increases in all areas except for Miscellaneous Forest Products. The Forestry Industry Sector provided over 40,000 jobs and paid more than $1.9 billion in wages as indicated in Table 3.7.5.

Table 3.7.5
Mississippi Forest Industry's
Direct Impact on Job and Wages

Forest Industry Sector	Wages Paid (in Millions)	Jobs	Wages Paid (in Millions)	Jobs
Miscellaneous Forest Products	$31.29	505	$32.91	449
Logging	$500.39	10,634	$244.35	5,734
Solid Wood Products	$447.63	9,071	$391.06	8,443
Wood Furniture	$622.55	16,178	$654.90	17,882
Pulp and Paper	$313.21	3,770	$309.24	3,623
TOTALS	**$1,915.07**	**40,158**	**$1,632.46**	**36,131**

Probability of Future Events

Fire is a natural part of a healthy ecosystem. However, as development increases, an increase in the number of wildfires is likely. (See **Figure 3.7.2**) Mississippi may be able to decrease future wildfire events through continued education and outreach. Mississippi averaged 700 fires annually in the last three years. Wildfires are changing because of the environment. A changing environment means higher temperatures and drier conditions, creating conditions which are prime for wildfires spreads. Changes in the environment have already increased wildfire risk across the United States, doubling the number of acres burned and increasing the duration of wildfire season by over 3 months. Changing weather patterns can also result in changes in wild direction, blowing wildfires into areas, or allowing them to spread to areas, where they may not have done before. Making well-informed decisions when recreating outdoors can reduce wildfire occurrences in the state. Increasing manpower to fight and deter arson can also lower Mississippi's threat of future wildfires.

Assessing Vulnerability

The state of Mississippi has not added any new County Wildfire Protection Plans since the last plan update. As a result, the analysis of the state's vulnerability that led to the information in this section will remain the same.

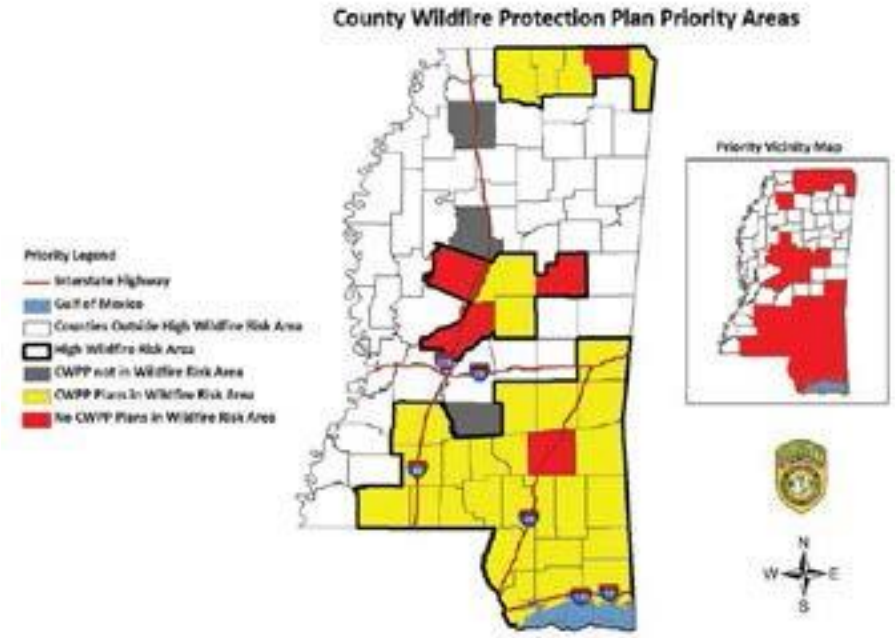
An assessment of Mississippi's vulnerability to wildfires is dependent on the proximity of development to natural wildland areas. The most common means of assessing wildfire threat is to quantify the amount of development in proximity to or within wildland areas. The best available information for assessing the wildfire threat to Mississippi is contained in the Southern Wildfire Risk Assessment (SWRA). Using that data, the state of Mississippi used funding received after Hurricane Katrina to prepare County Wildfire Protection Plans (CWPPs) for the 15 lower counties in Mississippi. Following that initial effort, the state prepared CWPPs for

19 high-occurrence counties, making a total of 34 counties with prevention plans (**Table 3.7.6**). The Mississippi Forestry Commission has a copy of these completed plans. The CWPPs will also be incorporated into the update of local hazard mitigation plans as they are developed. These CWPPs contain valuable initiatives for improved safety and economic security. Counties are encouraged to move toward their implementation. (See **Figure 3.7.6**).

Table 3.7.6
County Wildfire Protection Plans

County	Plan Date	County	Plan Date
Amite	September 2008	Lawrence	September 2009
Attala	September 2008	Leake	July 2008
Benton	September 2009	Lincoln	September 2008
Carroll	September 2008	Marshall	September 2008
Clarke	September 2009	Panola	September 2008
Copiah	September 2009	Pearl River	December 2007
Covington	October 2008	Perry	October 2008
Forrest	October 2008	Pike	September 2009
George	December 2007	Simpson	September 2009
Greene	October 2008	Smith	September 2009
Hancock	October 2008	Stone	December 2007
Harrison	December 2007	Tippah	September 2008
Jackson	December 2007	Tishomingo	September 2008
Jasper	July 2008	Walthall	September 2008
Jefferson Davis and Marion	October 2008	Wayne	October 2008
Lamar	October 2008	Winston	September 2008
Lauderdale	August 2008		
Source: Mississippi Forestry Commission			

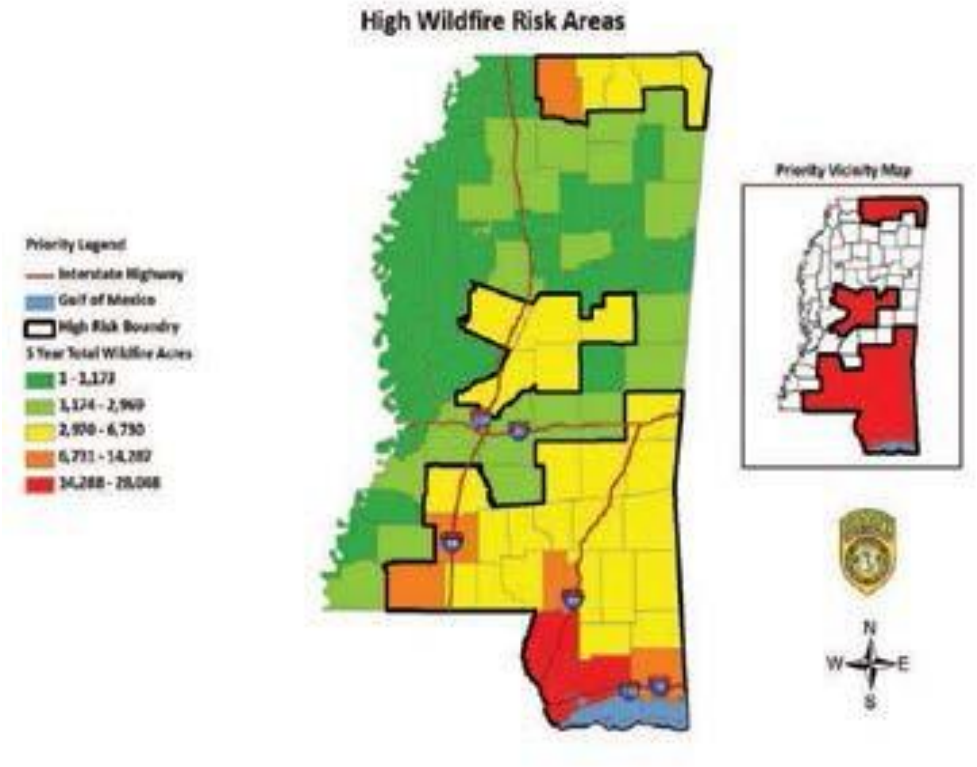
Figure 3.7.6
Forestry Commission 2017



The development of *Mississippi's Statewide Forest Resource Assessment and Forest Resource Strategy Plan* was completed and approved by the U.S. Forest Service in 2010. It was fully implemented in FY2011. To date, this information has not changed. This plan is a comprehensive analysis of forest-related conditions, trends, threats, and opportunities; as well as strategies to address them. Wildfire fuel reduction strategies in the plan include

- Identify at-risk communities and high fire-occurrence areas
- Increase the Number of Certified Prescribed Burn Managers (CPBMs)
- Increase the number of prescribed-burn acres annually in high-risk areas identified in the 34 CWPPs (**Figure 3.7.7**)
- Use current land owner burn assistance programs to reduce fuel loading from invasive species plants
- Continue to provide funding to ensure plans are completed in the remaining counties
- Provide equipment to volunteer fire departments for use in controlling non-forest fires inside and outside the WUI.
- Identify locations of MFC tractor/plow units and volunteer fire departments.

Figure 3.7.7



Local Plan Risk Assessment Summary

Below is a summary of the risk classification identified in the individual local mitigation plans by MEMA Region.

MEMA Region	Low	Medium	High	MEMA Region	Low	Medium	High
1		9		6		9	
2		12		7		9	
3	9	1		8		5	1
4		10	1	9		6	
5		45	1				

Exposure Analysis of Critical Facilities

The state of Mississippi developed a definition for "critical facilities and infrastructure" as discussed in **Section 3.0**. Location data for these facilities were collected from various state agencies to determine which facilities are at risk of various hazards. The critical facility categories deemed most pertinent to wildfire risk are Emergency Operations Centers, Fire Stations, Police Stations, Medical and Power Facilities, and Red Cross shelters and facilities. The following maps have been created to demonstrate this per region.

Figure 3.7.8

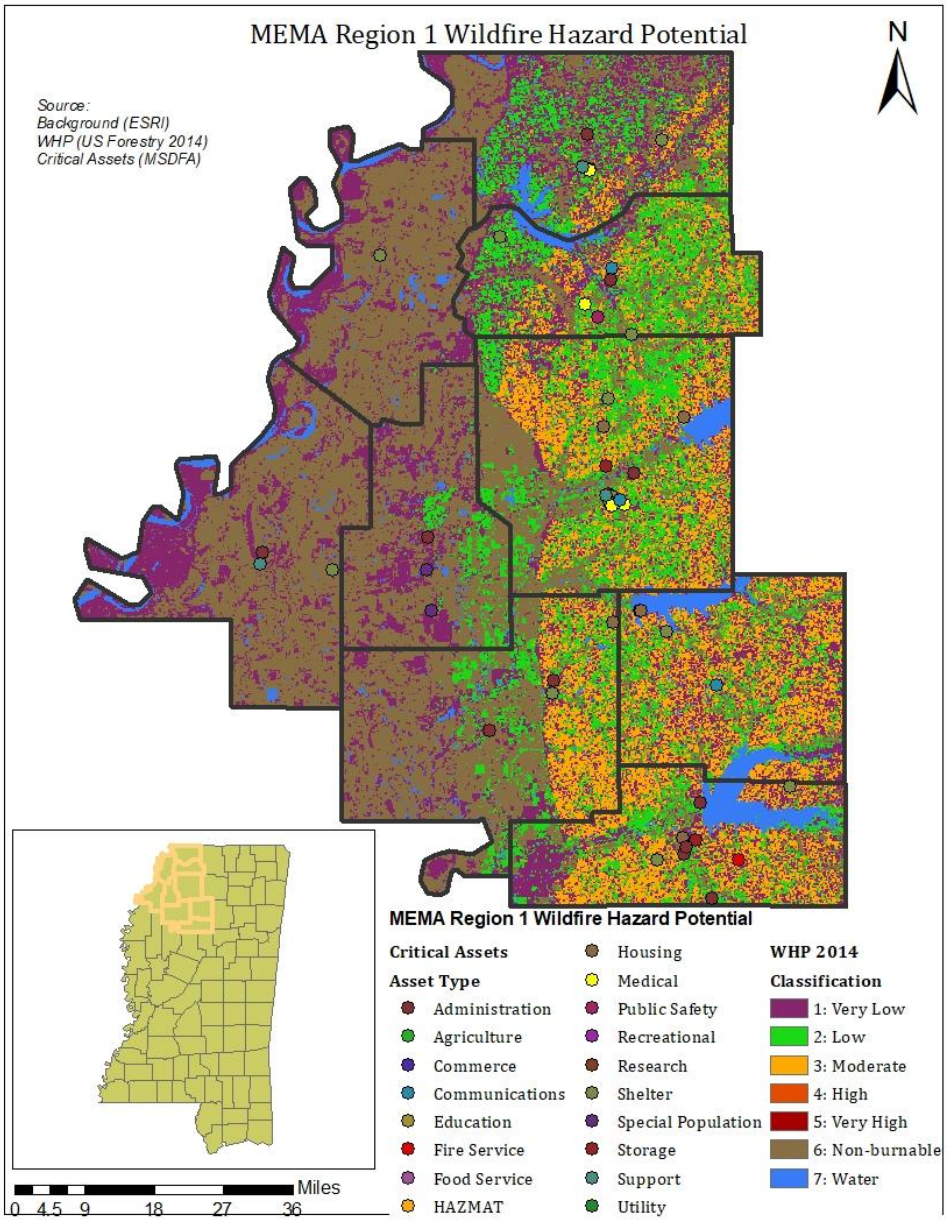

MEMA Region 1 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
MEMA Region 1 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Commerce
Communications
Education
Fire Service
Food Service
HAZMAT
Housing
Medical
Public Safety
Recreational
Research
Shelter
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water
Miles
0 4.5 9 18 27 36

Figure 3.7.9

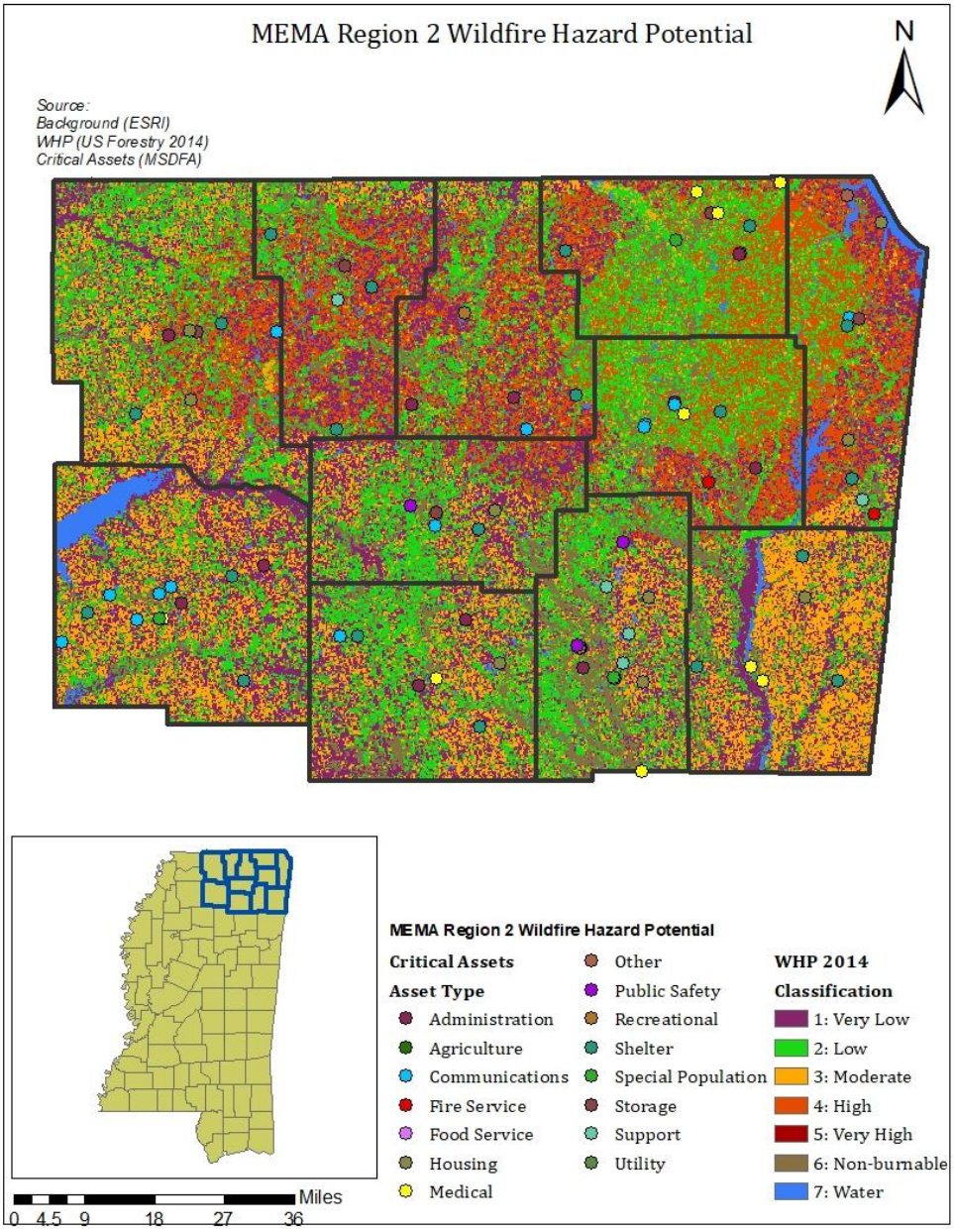

MEMA Region 2 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 4.5 9 18 27 36
MEMA Region 2 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Communications
Fire Service
Food Service
Housing
Medical
Other
Public Safety
Recreational
Shelter
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.10

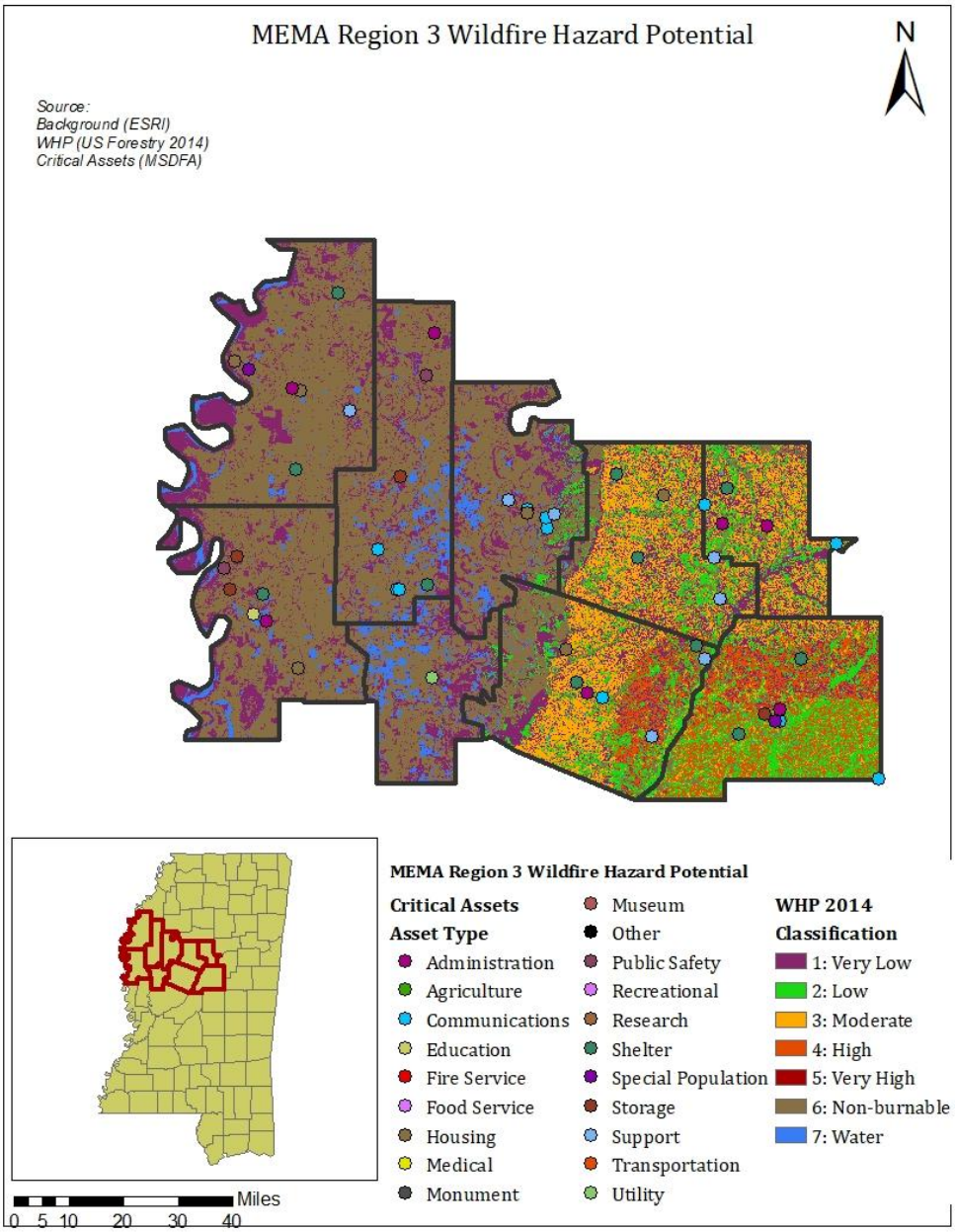

MEMA Region 3 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
MEMA Region 3 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Communications
Education
Fire Service
Food Service
Housing
Medical
Monument
Museum
Other
Public Safety
Recreational
Research
Shelter
Special Population
Storage
Support
Transportation
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water
Miles
0 5 10 20 30 40

Figure 3.7.11

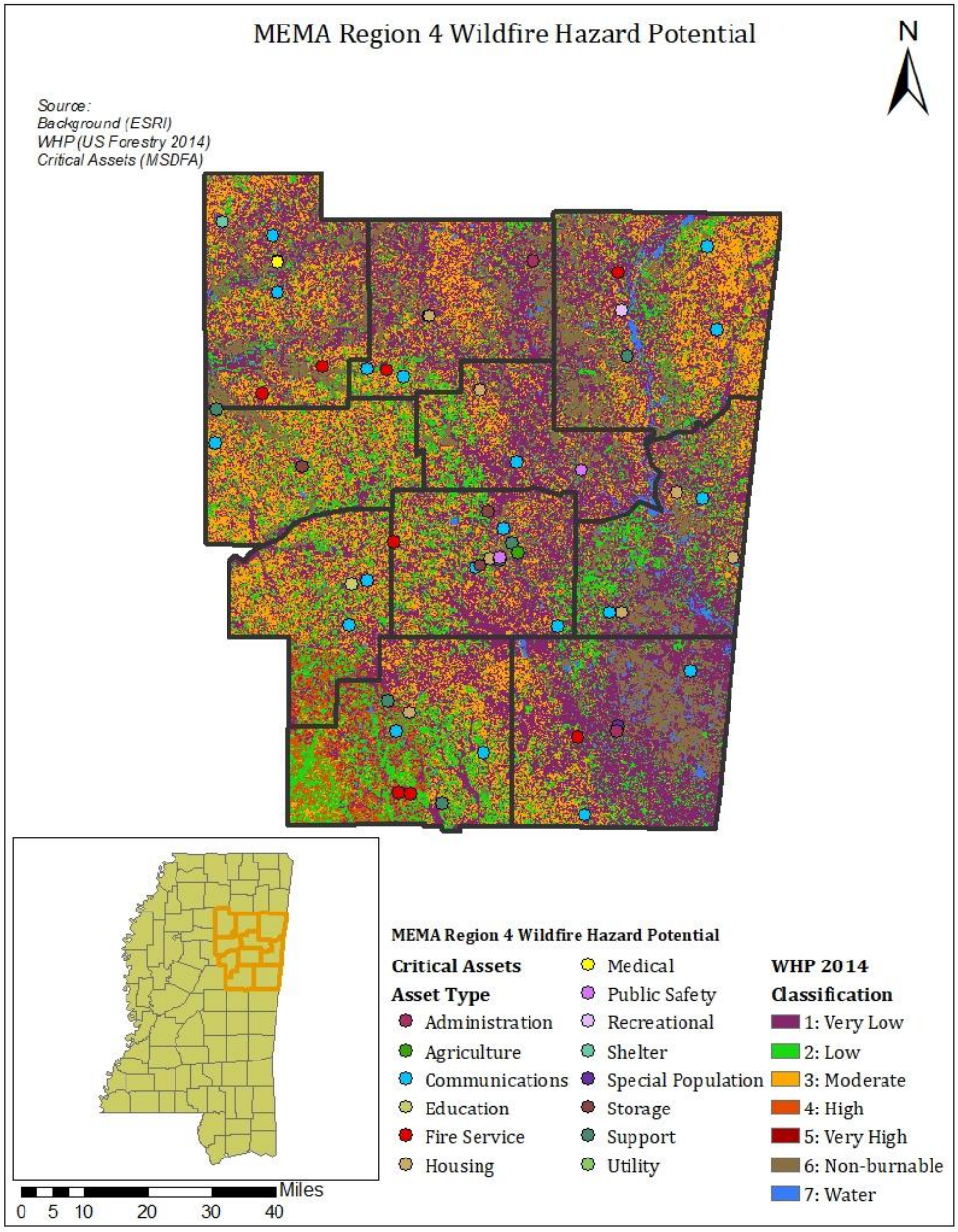

MEMA Region 4 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 5 10 20 30 40
MEMA Region 4 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Communications
Education
Fire Service
Housing
Medical
Public Safety
Recreational
Shelter
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.12

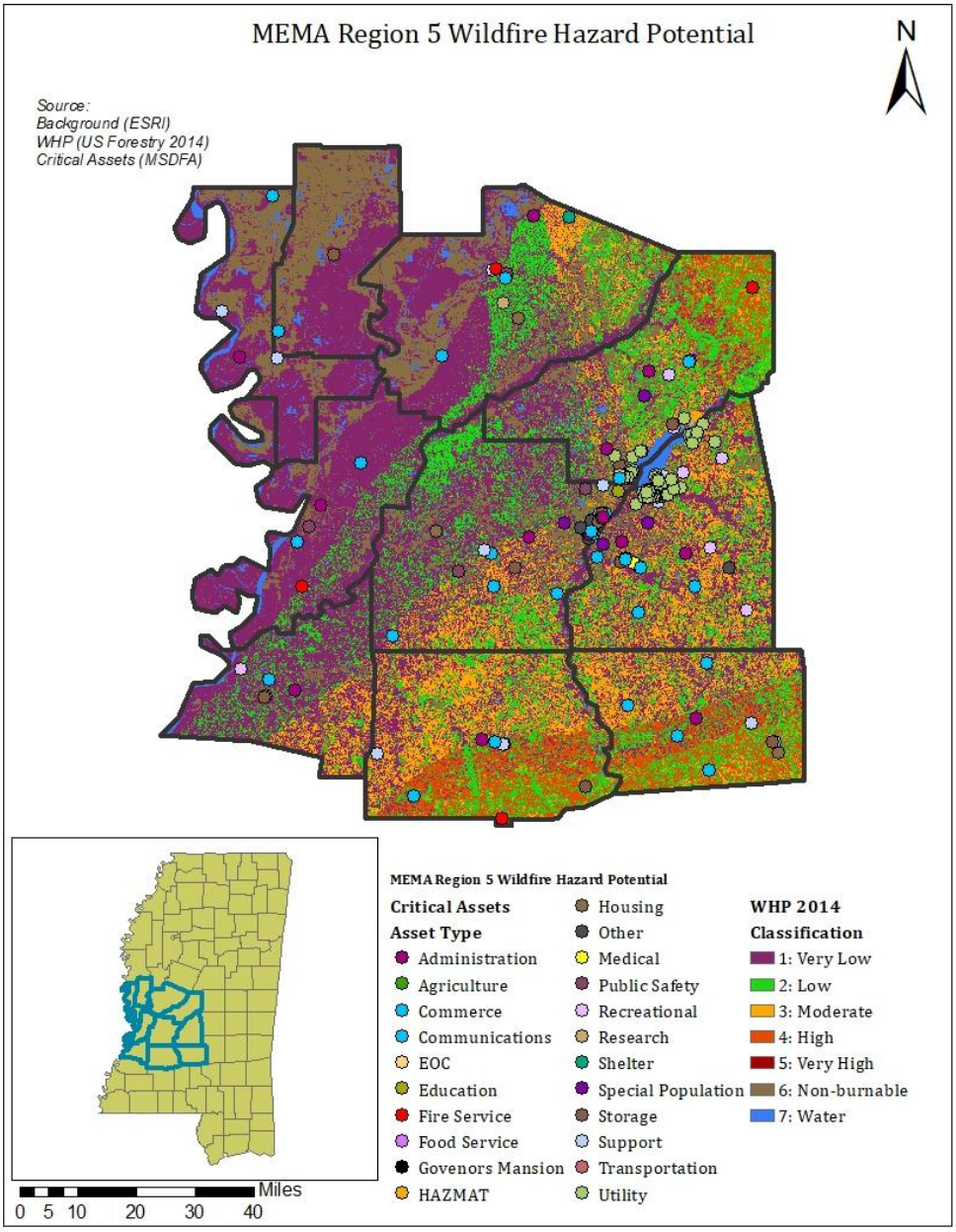

MEMA Region 5 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 5 10 20 30 40
MEMA Region 5 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Commerce
Communications
EOC
Education
Fire Service
Food Service
Govenors Mansion
HAZMAT
Housing
Other
Medical
Public Safety
Recreational
Research
Shelter
Special Population
Storage
Support
Transportation
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.13

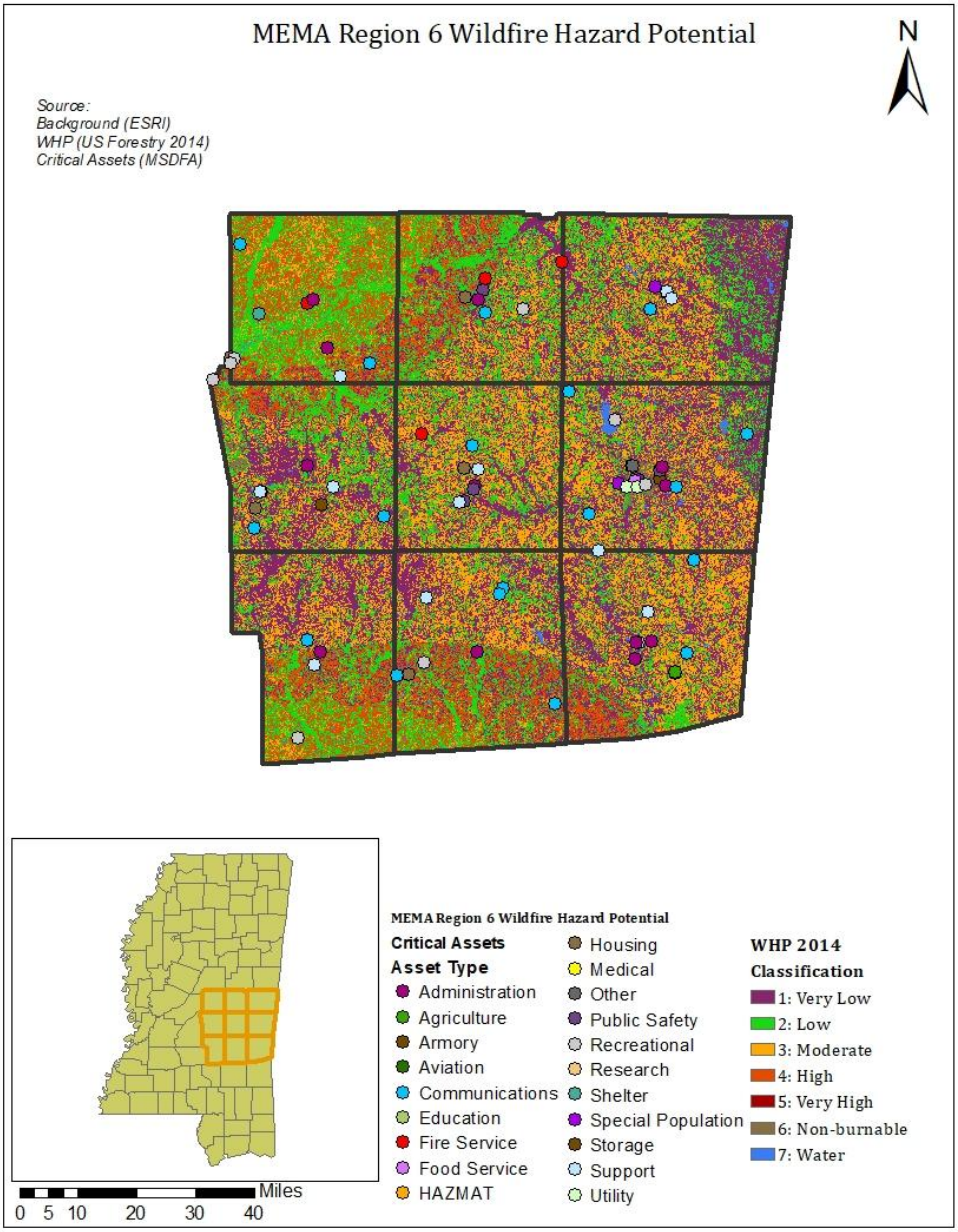

MEMA Region 6 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 5 10 20 30 40
MEMA Region 6 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Armory
Aviation
Communications
Education
Fire Service
Food Service
HAZMAT
Housing
Medical
Other
Public Safety
Recreational
Research
Shelter
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.14

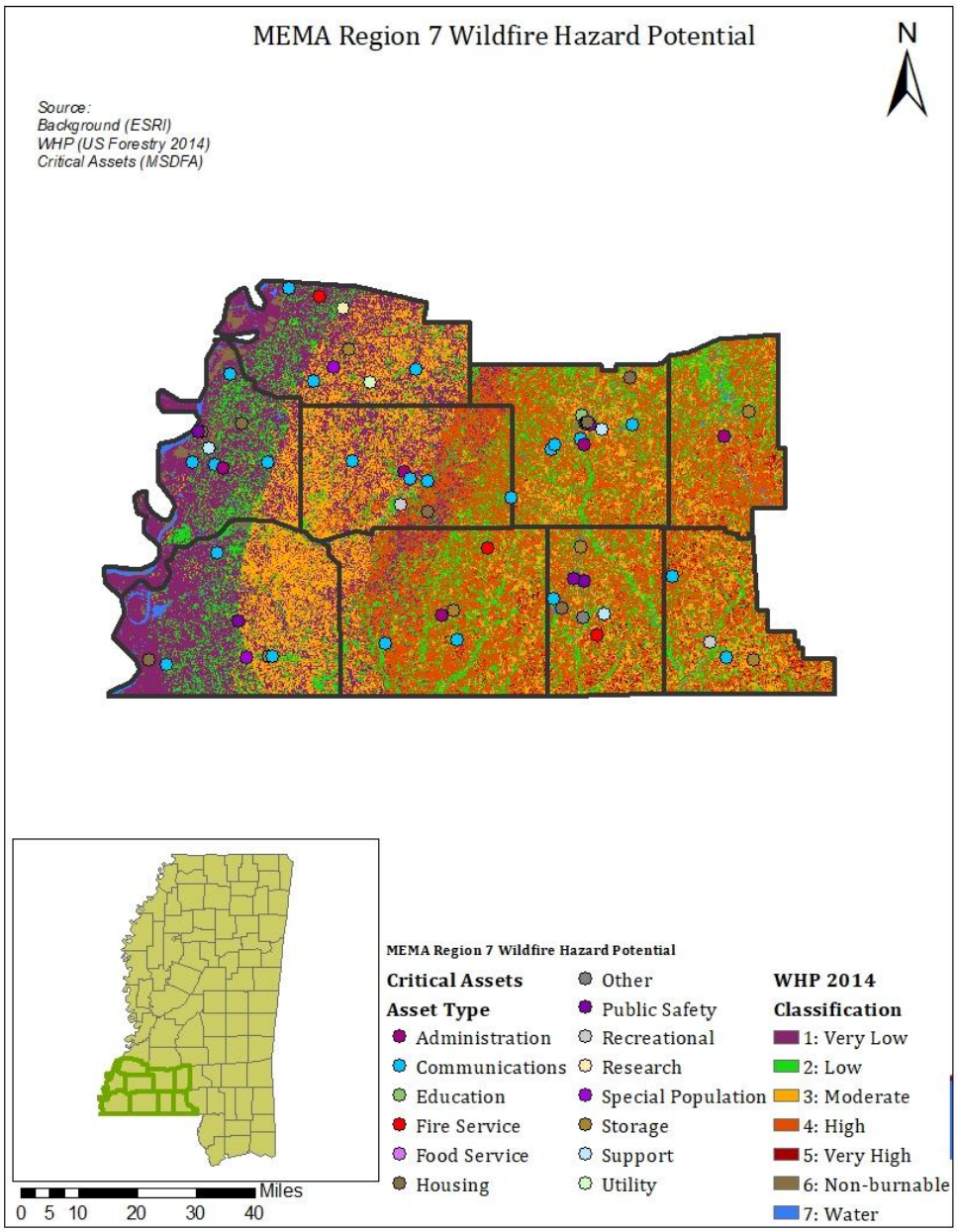

MEMA Region 7 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 5 10 20 30 40
MEMA Region 7 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Communications
Education
Fire Service
Food Service
Housing
Other
Public Safety
Recreational
Research
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.15

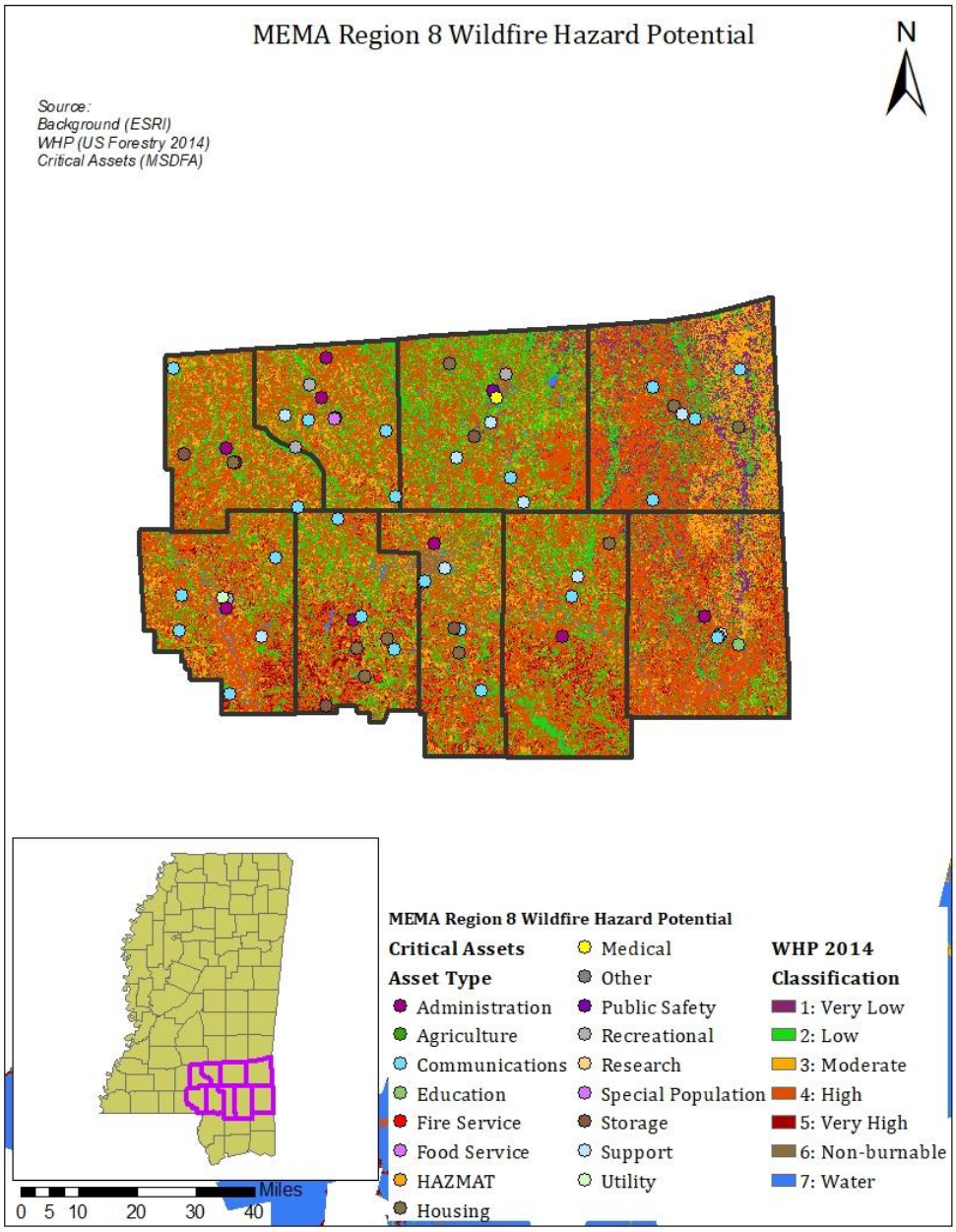
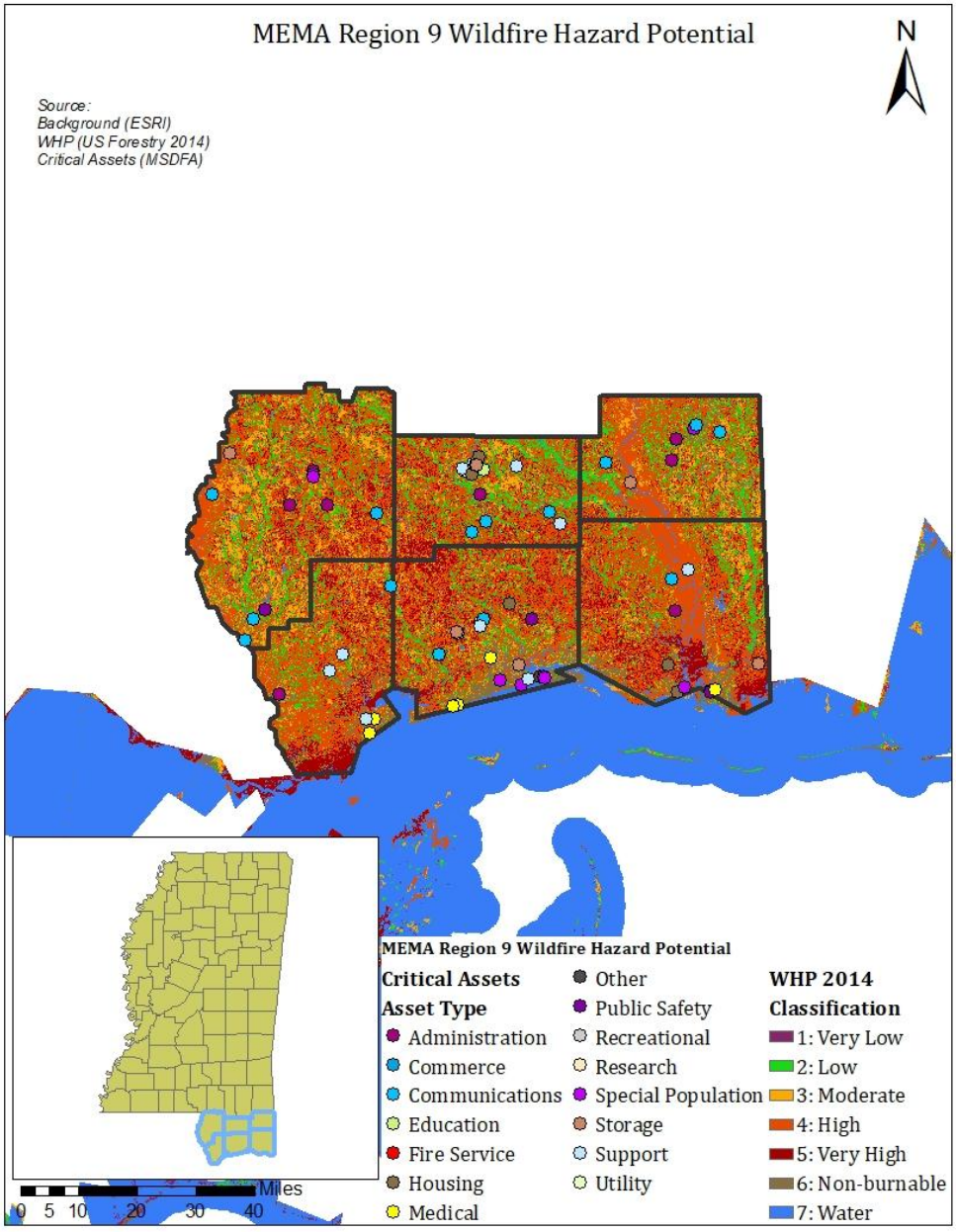

MEMA Region 8 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
Miles
0 5 10 20 30 40
MEMA Region 8 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Agriculture
Communications
Education
Fire Service
Food Service
HAZMAT
Housing
Medical
Other
Public Safety
Recreational
Research
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water

Figure 3.7.16


MEMA Region 9 Wildfire Hazard Potential
N
Source:
Background (ESRI)
WHP (US Forestry 2014)
Critical Assets (MSDFA)
MEMA Region 9 Wildfire Hazard Potential
Critical Assets
Asset Type
Administration
Commerce
Communications
Education
Fire Service
Housing
Medical
Other
Public Safety
Recreational
Research
Special Population
Storage
Support
Utility
WHP 2014
Classification
1: Very Low
2: Low
3: Moderate
4: High
5: Very High
6: Non-burnable
7: Water
Miles
0 5 10 20 30 40