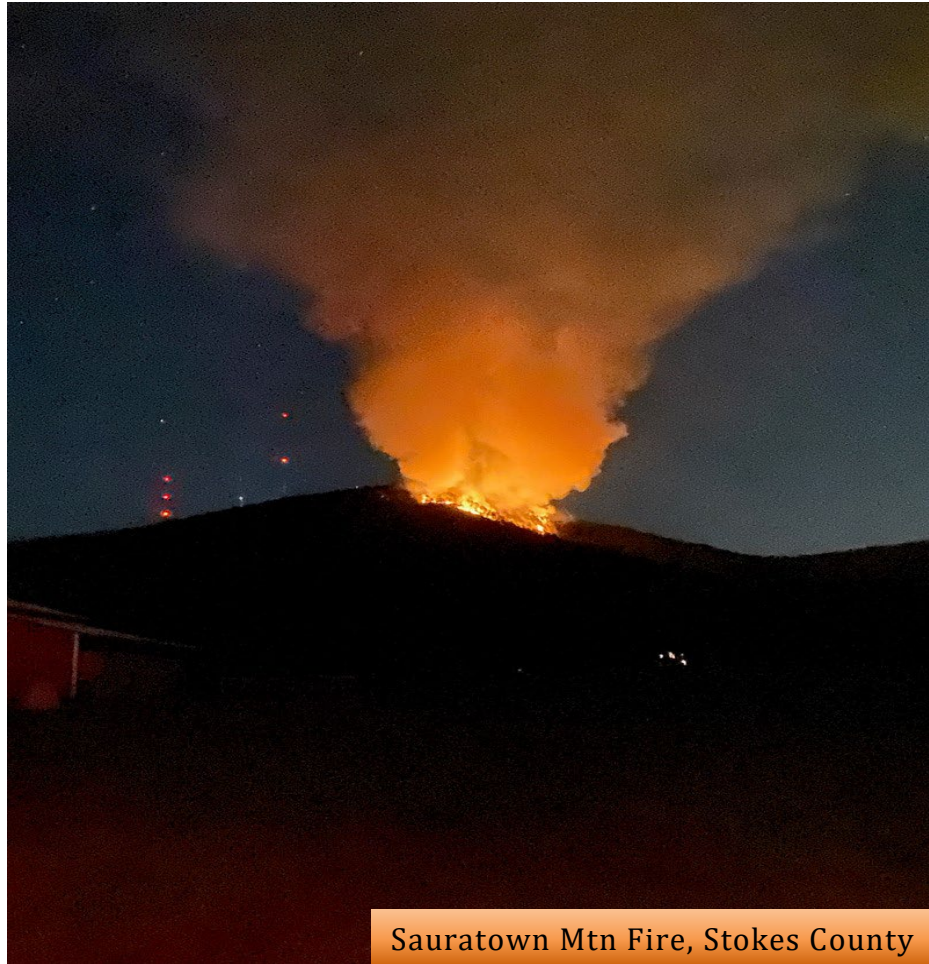




N.C. Department of Agriculture and Consumer Services

N.C. Forest Service



Sauratown Mtn Fire, Stokes County

Annual Legislative Report on Wildfire

Oct. 1, 2024

Steve Troxler, Commissioner
Greg Hicks, Assistant Commissioner
David Lane, State Forester

Pursuant to G.S. 106-911, the North Carolina Forest Service, a division of the North Carolina Department of Agriculture and Consumer Services, respectfully submits this annual report on wildfire in North Carolina for fiscal year 2023-2024.

Contents

Statutory requirement	3
§ 106-911. Annual report on wildfires.....	3
Overview of wildfire control	3
Summary of wildfire data for FY23-24	6
Injuries and fatalities from FY23-24 wildfires.....	7
Effects of weather on wildfire season in North Carolina.....	7
Major wildfire data for FY23-24.....	11
Overtime data.....	14
Fiscal impacts.....	15
Wildfire personnel and equipment.....	17
Hand crews	17
Type 6 Engine.....	18
Wildland fire tractor-plow units	18
Aviation resources	19
Contact information	21

Statutory requirement

§ 106-911. Annual report on wildfires

Beginning Oct. 1, 2012, and no later than Oct. 1 of each year, the Commissioner shall submit a written report on wildfires in North Carolina to the Chairs of the House Appropriations Subcommittee on Natural and Economic Resources and the Senate Appropriations Committee on Natural and Economic Resources, the Joint Legislative Commission on Governmental Operations, and the Fiscal Research Division of the General Assembly. The report shall include the following information for all major or project wildfires during the prior fiscal year:

- (1) The date, location and impacts (property damage and any injuries or deaths) from the wildfire.
- (2) The following data for wildland firefighters and related support personnel involved in fighting the wildfire:
 - a. Total overtime hours worked.
 - b. Total compensation paid for overtime.
 - c. The portion of compensation paid was reimbursed to the state.
- (3) The fiscal impact of the wildfire including total costs, reimbursable costs and costs incurred by the state.

Overview of wildfire control

North Carolina has 18.7 million acres of forestland. Wildfire is one of the greatest threats to this important and valuable natural resource. The N.C. Forest Service (NCFS) is responsible for protecting state and privately owned forestland from forest fires. The NCFS forest fire protection program is managed on a cooperative basis with each of the state's 100 counties. Areas of focus for the fire program include wildfire prevention efforts, pre-suppression activities (including extensive training of personnel and cooperators), aggressive suppression efforts on all wildfires and law enforcement follow up.

The NCFS, local fire departments and communities across the state are working together to prevent, prepare for and lessen the impact of wildfires. Maintaining a well-trained and proficient forest fire control organization is like maintaining a well-trained army. Wildfire training occurs year-round. New personnel are constantly being trained to maintain capabilities while veteran firefighters undergo regular refresher training in suppression tactics, strategy, organization and management.

A study conducted by the U.S. Forest Service (USFS) and the University of Wisconsin-Madison indicated that North Carolina leads the nation in the amount of area (12.8 million acres) classified as wildland urban interface (WUI). The WUI is the area where structures and other human development meet or intermingle with undeveloped wildland, forest or vegetative fuels. While North Carolina has the most WUI acres, it also ranks fourth in most housing units within the WUI. The interface creates significant challenges for fire managers as nearly every wildfire, or its associated smoke, may impact homes, roads, farms or other developments.

<https://silvis.forest.wisc.edu/data/wui-change/>

Table 1 illustrates the need to keep wildfires as small as possible through early detection and rapid response, which are critical to reducing wildfire size, protecting property and minimizing overall loss.

Table 1. Historical wildfire activity in North Carolina (2015-2024).

Fiscal years	Wildfires	Acres	Wildfires more than 100 acres	More than 100 acres burned	Percent of total wildfires	Percent of acreage burned on wildfires more than 100 acres
2015	3,991	9,903	9	2,647	0.2%	26.7%
2016	3,210	18,808	12	11,992	0.4%	63.8%
2017	5,541	79,674	38	69,389	0.7%	87.1%
2018	4,553	13,647	14	5,575	0.3%	40.9%
2019	2,823	6,786	8	1,846	0.3%	27.2%
2020	3,337	7,600	12	2,708	0.4%	35.6%
2021	3,520	9,633	9	3,285	0.3%	34.1%
2022	6,887	26,958	29	11,316	0.4%	42.0%
2023	4,671	69,690	19	59,487	0.4%	85.4%
2024	5,766	28,160	26	18,070	0.5%	64.2%
Total	44,299	270,859	176	186,315	0.4%	68.8%
Average	4,430	27,086	18	18,365	0.4%	67.8%

From the 2015-2024 fiscal years, 270,859 acres of woodlands burned because of North Carolina wildfires. Of these wildfires, 186,315 acres, or 69% of the total area burned, were burned in wildfires larger than 100 acres. However, wildfires more than 100 acres only accounted for 0.4% of the total number of wildfires for this 10-year period.



Poplar Drive Fire, Henderson County

The total number of wildfires per fiscal year is shown in Figure 1 while Figure 2 reflects the total number of acres burned in wildfires per fiscal year from 2015-2024.

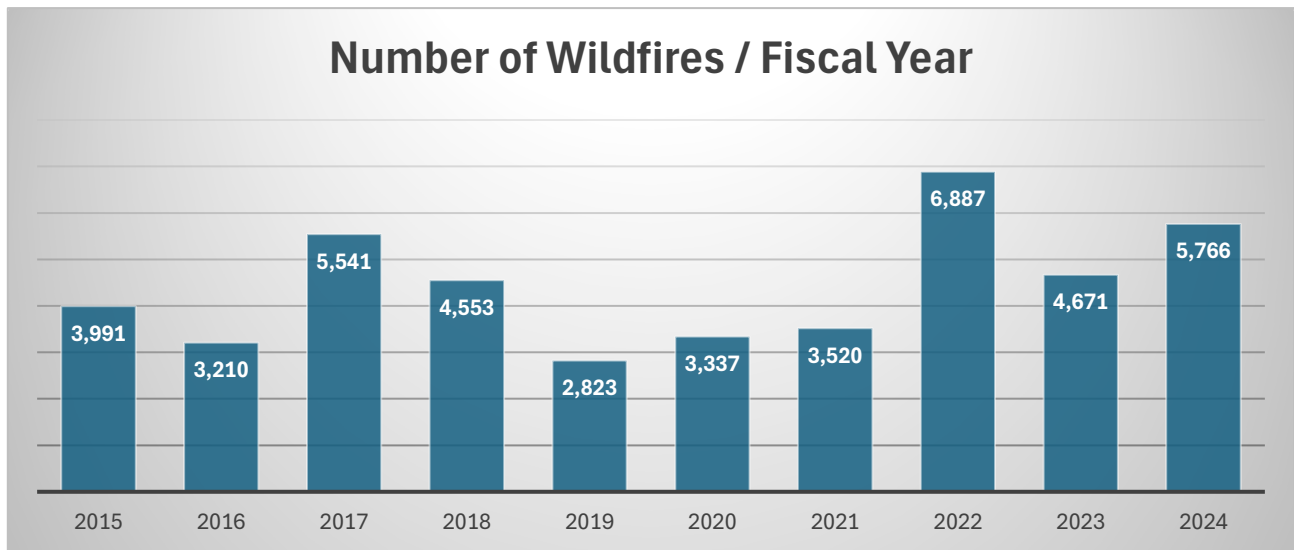


Figure 1. Wildfire activity per fiscal year in North Carolina (2015-2024).

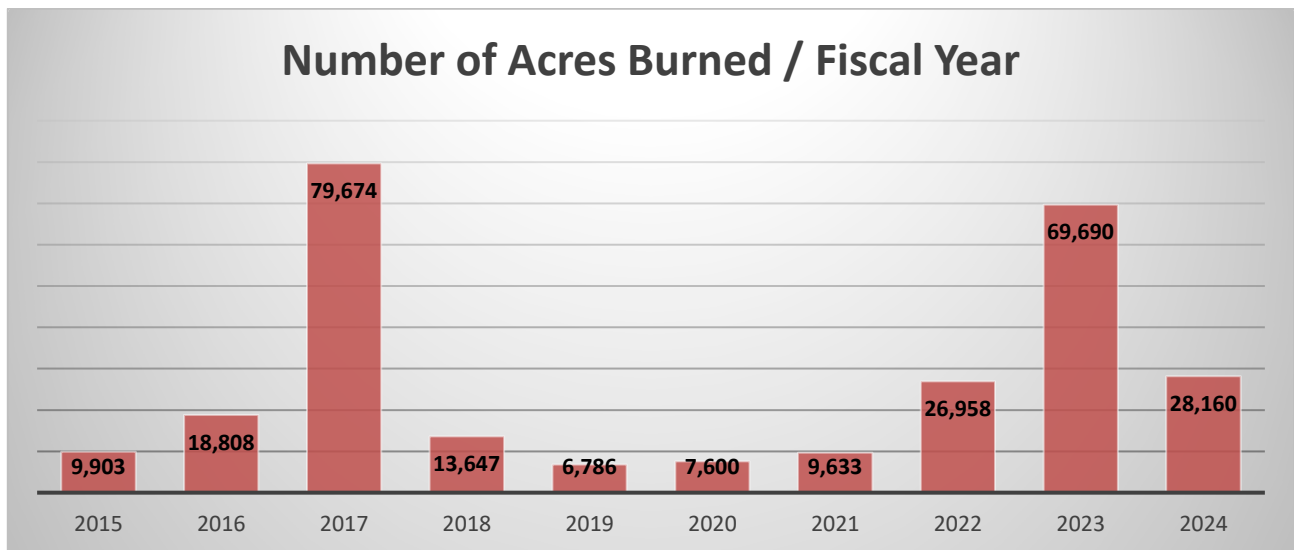


Figure 2. Wildfire acres burned per fiscal year in North Carolina (2015-2024).

Summary of wildfire data for FY23-24

From July 1, 2023, through June 30, 2024, 5,766 wildfires burned 28,160 acres in North Carolina. Excluding wildfires more than 100 acres, the average wildfire size was less than two acres. The largest wildfire during this period was the Collett Ridge Fire in Cherokee and Clay Counties at 5,419 acres. This fire burned on federal, state and private ownerships.

Of these 5,766 wildfires, less than 1% could be directly linked to a natural ignition source such as lightning. That means 99% of the wildfires started in FY23-24 were directly related to human activity. As the population of the state increases, the number of wildfires per year is expected to also increase.

Injuries and fatalities from FY23-24 wildfires

During suppression efforts, 15 injuries and two deaths were reported as a result from wildfires. All civilian injuries (10) were burns from attempts to extinguish the wildfires. The five injuries to firefighters varied from objects in the eye to dislocations to minor burns.

Two civilian deaths were reported at separate wildfire sites. The official cause of death for each is still under investigation by the respective local sheriff's departments.

Effects of weather on wildfire season in North Carolina

Weather plays an important role in determining wildfire activity and severity in North Carolina. Historically, North Carolina has two distinct wildfire seasons that occur in the fall and in the spring. During these time periods, weather and vegetation conditions increase the potential for wildfires.

Figure 3 below provides a visualization of the general trend for wildfires throughout the year. Wildfire occurrence was generally low at the beginning of FY23-24. Typically, vegetation is at full greenness during the summer months, which reduces wildfire danger. Moving into the fall, vegetative fuel becomes more available with the physiological changes in vegetation as moisture content decreases. Wildfire occurrence in North Carolina normally begins to increase in October coinciding with leaf fall.

These changes, combined with continued drought through early fall 2023 resulted in above average number of wildfires in November. To manage the increased number of wildfires, the NCFS requested out-of-state resources to assist with new and existing wildfires. Many of these resources remained in North Carolina through Thanksgiving.

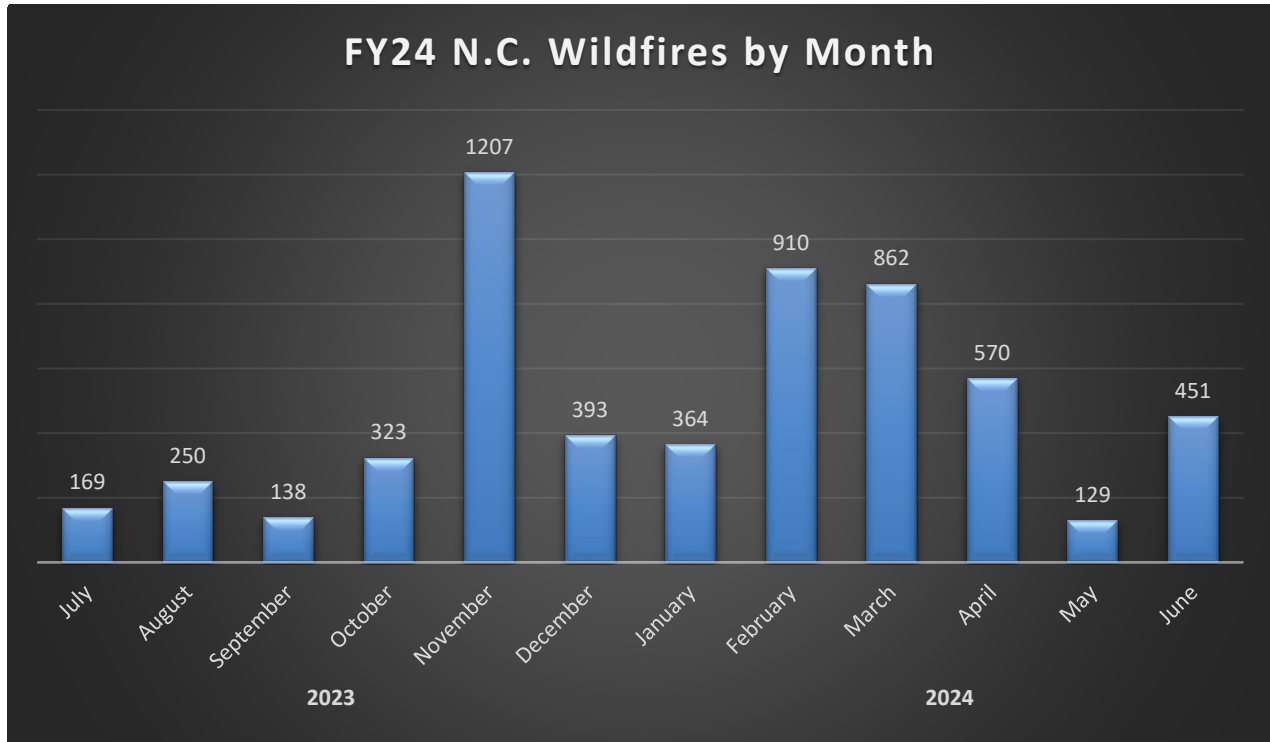


Figure 3. Wildfires in North Carolina by month during FY23-24.

This trend of available vegetation continues to increase throughout winter and into spring. During winter and spring, it's common for North Carolina to have periods of weather with low relative humidity and strong wind events. These weather events, along with receptive vegetation, combine to create high fire danger that correlates to an increase in the number of wildfires during this period.

Wildfire occurrence normally starts to decrease as vegetation starts new growth in late spring. The wild card in these trends is drought. North Carolina can experience severe droughts and wildfire seasons can extend beyond the historical wildfire season when droughts occur. Some of the largest wildfires that have occurred in the state have been during summer as shown in Table 2.

Table 2. Recent examples of large summer wildfires in North Carolina.

Fire name	County	Acres burned	Start date
Evans Road	Hyde/Washington/Tyrell	41,534	6/1/08
Pains Bay	Dare	45,294	5/5/11
Juniper Road	Pender	31,140	6/19/11
Simmons Road	Cumberland/Bladen	5,438	6/20/11
Last Resort	Tyrrell	5,280	3/24/23
Great Lakes Fire	Craven/Jones	32,156	4/20/23
Pulp Road Fire	Brunswick	15,670	6/15/23
Hwy 12	Carteret	3,318	4/8/24

Figures 4 and 5 along with Tables 3-7 outline FY23-24 wildfires occurring by region, including estimated damages and causes.

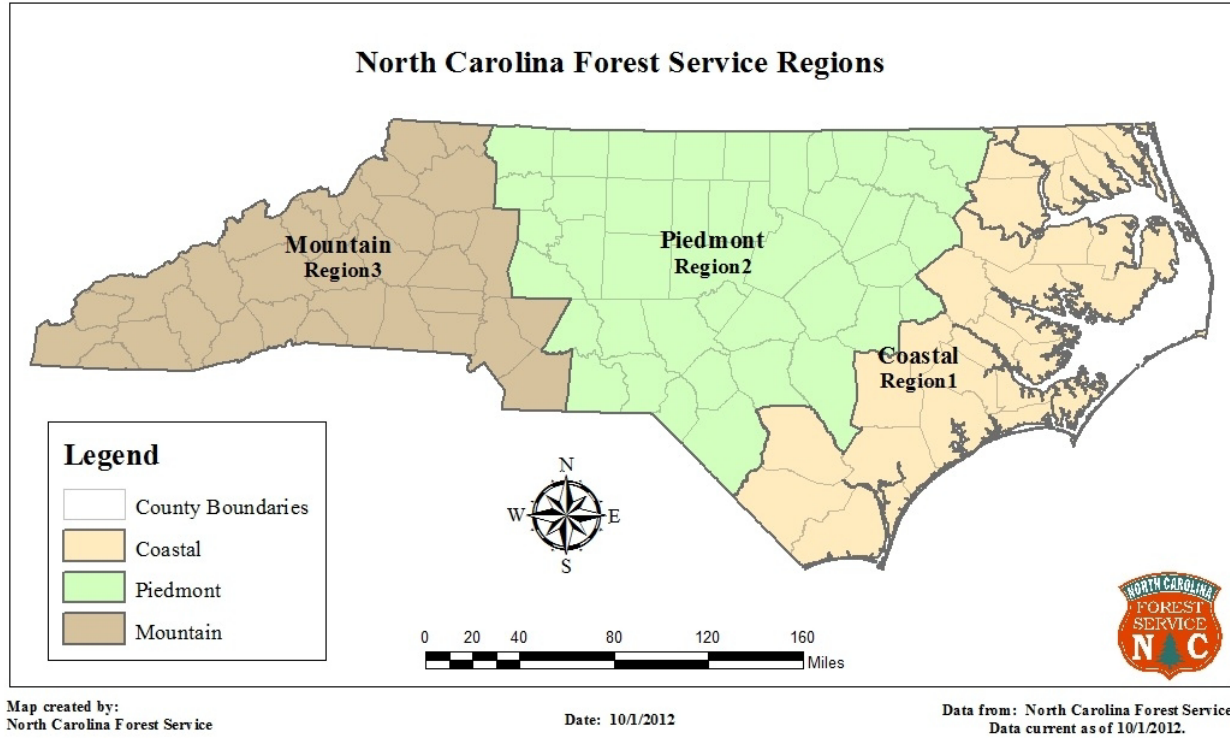


Figure 4. Map of NCFS regions.

Table 3. Wildfires by NCFS region for FY23-24

NCFS region	Number of wildfires	% of wildfires	Wildfire acres
Coastal	828	14%	7,809
Piedmont	3,136	54%	7,919
Mountain	1,802	32%	12,432
Total	5,766	100.00%	28,160

Table 4. Estimated values of property impacted by wildfires in North Carolina during FY23-24.

Homes and structures protected	Est. value of homes and structures protected	Homes and structures damaged or destroyed	Est. value of homes and structures damaged or destroyed	Est. value of other property damaged (timber, livestock, crops, vehicles)
7,917	\$1,817,338,482	528	\$21,107,028	\$1,537,360

Table 5. Causes of wildfires in North Carolina during FY23-24.

Wildfire cause	Number of wildfires	Wildfire acres
Camping	82	1,374
Children	178	169
Debris burning	2,798	6,704
Fireworks	28	25
Incendiary	295	817
Lightning	49	6,615
Machine use	695	1,402
Miscellaneous	777	4,885
Railroad	39	70
Smoking	36	143
Undetermined	789	5,956
Total	5,766	28,160

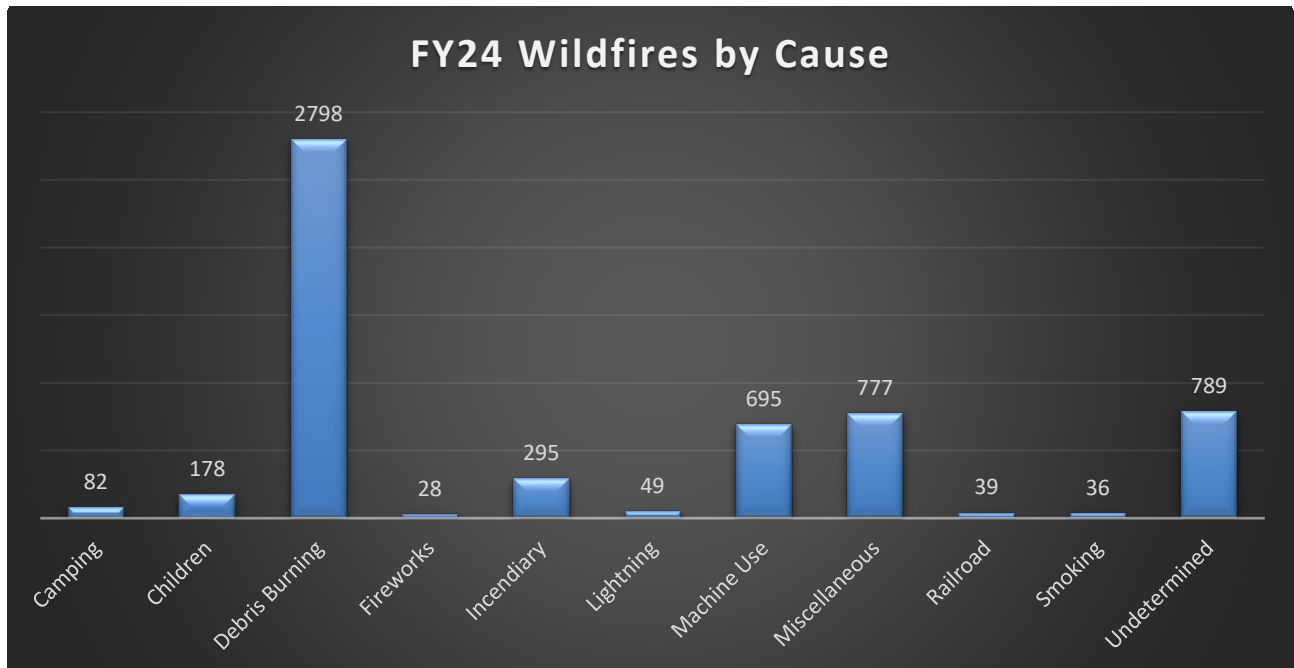


Figure 5. Leading causes of wildfires in North Carolina during FY23-24.

Table 6. Top five counties with the most wildfires in North Carolina during FY23-24.

County	Geographic area	Number of wildfires	Wildfire acres
Robeson	Piedmont	196	988
Moore	Piedmont	195	293
Richmond	Piedmont	189	366
Caldwell	Mountain	181	108
Chatham	Piedmont	158	299
Total for the five counties		919	2,054
% of annual total		16%	7%

Table 7. Top five counties with most acres burned by wildfire in North Carolina during FY23-24.

County	Geographic area	Number of wildfires	Wildfire acres
Carteret	Coastal	19	4,244
Cherokee	Mountain	56	3,159
Clay	Mountain	18	2,770
Scotland	Piedmont	107	2,133
Haywood	Mountain	46	2,116
Total for the five counties		246	14,422
% of annual total		4%	51%

Major wildfire data for FY23-24

North Carolina had 37 major wildfires between July 1, 2023, and June 30, 2024. NCFS classifies a major wildfire when any of the following occurs:

- A wildfire is more than 100 acres in size.
- Any inhabited or inhabitable dwelling has been destroyed regardless of value.
- Structure(s) destroyed with a value greater than \$50,000 (ex. commercial building, detached garage, farm shop).
- A firefighter fatality.
- Any significant firefighter injury requiring an emergency room visit or hospitalization.
- An incident management team (IMT) is assigned to the incident.
- Funding is requested from the NCFS Headquarters.¹

¹ When the cost of responding to an incident is projected to be more than the field unit can afford, financial support from the NCFS Headquarters budget can be requested.

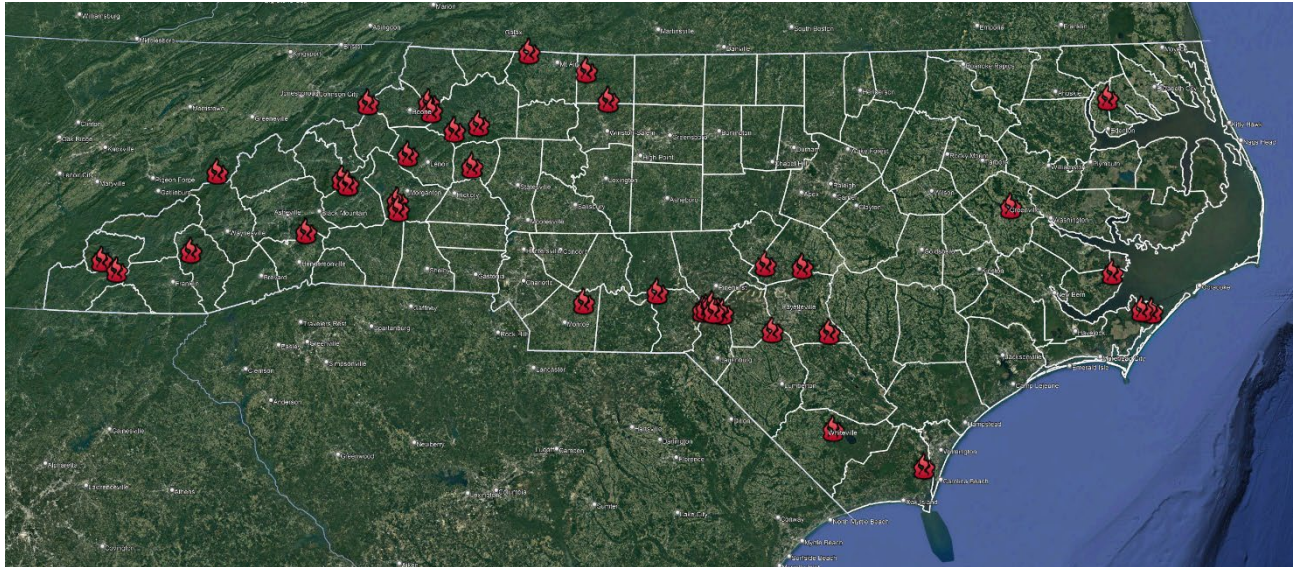


Figure 6. Locations of major wildfires in North Carolina during FY23-24.



Table 8. Dates, locations and acres burned by major wildfires during FY23-24.

County	Wildfire name	Wildfire start date	Wildfire control date	Days to control	Acres
Scotland	Scotland Lake Lane	7/2/2023	7/6/2023	4	868
Brunswick	Sunny Point/Orton Plantation	7/20/2023	7/25/2023	5	150
Pamlico	Spring Creek	8/19/2023	9/5/2023	17	257
Richmond	Cagle Grave	8/25/2023	9/19/2023	25	113
Chowan	Bear Swamp Fire	9/7/2023	12/13/2023	97	148
Cherokee	Collett Ridge	10/25/2023	12/4/2023	40	5,419
Surry	Halloween	10/31/2023	10/31/2023	0	0.2
Henderson	Poplar Drive	11/3/2023	11/19/2023	16	434
Jackson	East Fork	11/4/2023	11/12/2023	8	307
Caldwell	Winchester Road	11/7/2023	11/7/2023	0	2.1
Watauga	Elk Creek	11/8/2023	11/20/2023	12	214
Avery	Potter Lane	11/8/2023	11/8/2023	0	1.8
Wilkes	Tripplett	11/8/2023	11/16/2023	8	113
Pitt	NC 43S	11/10/2023	11/16/2023	6	5.7
Forsyth	6220 Baux Mountain Road Rd	11/14/2023	11/14/2023	0	2
Haywood	Black Bear	11/16/2023	12/18/2023	32	2,007
Stokes	Sauratown Mountain	11/18/2023	12/5/2023	17	806
Union	Ansonville Rd	11/20/2023	11/20/2023	0	0.4
McDowell	Clear Creek	11/30/2023	12/13/2023	13	125
McDowell	Locust Cove 2	11/30/2023	12/14/2023	14	161
Scotland	Luzon	12/9/2023	12/9/2023	0	300
Scotland	Hill Creek Fire	1/23/2024	1/25/2024	2	261
Columbus	Pone Hill Rd	1/28/2024	1/29/2024	1	181
Harnett	Bass Lake	2/5/2024	2/5/2024	0	8.9
Cherokee	Bonny Brae	2/6/2024	2/10/2024	4	214
Cumberland	Ramsey St	2/14/2024	2/14/2024	0	3.4
Scotland	Nashville Church	2/17/2024	2/17/2024	0	300
Robeson	Usher Clearing	3/14/2024	3/14/2024	0	1.5
Scotland	Drop Zone	3/18/2024	3/18/2024	0	101
Wilkes	Brushy Mountain	3/19/2024	3/22/2024	3	126
Rutherford	Huckleberry Mountain	3/19/2024	3/25/2024	6	472
Wilkes	Brookview	3/20/2024	3/20/2024	0	2
Bladen	Horseshoe Lake	3/20/2024	3/21/2024	1	569
Carteret	Hwy 12	4/8/2024	4/16/2024	8	3,671
Burke	Henry Fork	4/15/2024	4/19/2024	4	208
Catawba	Dam Cove Rd	4/18/2024	4/18/2024	0	0.4
Carteret	Morris Marina Road	6/16/2024	7/10/2024	24	547

Overtime data

During FY23-24, NCFS permanent employees worked 473,496 hours and earned 100,637 hours of compensatory time related to wildfire suppression. With an average hourly pay rate of \$24 for NCFS permanent firefighters, and if funds were available to pay out wildfire compensatory time, the cost would be \$2,415,288. Temporary employees do not earn compensatory time but are immediately paid out for their overtime. With an average hourly pay rate of \$18 for our temporary firefighters, temporary employees were paid 6,000.30 hours of wildfire overtime, approximately \$108,005.40. Employees record time worked on an incident with timesheet charge objects. Specific charge objects are assigned for major fires.

Table 9. Overtime/compensatory time for major wildfires in North Carolina during FY23-24. Data for incidents in green include numerous smaller wildfires as well as overtime for large wildfires that was not captured separately.

County	Wildfire name	Acres burned	Overtime hours worked	Reimbursement	Hours of earned comp. time
Scotland	Scotland Lake Lane	868	0	No reimbursement	0
Brunswick	Sunny Point/Orton Plantation	150	5	No reimbursement	7.5
Pamlico	Spring Creek	257	171.15	No reimbursement	246.98
Richmond	Cagle Grave	113	88.85	No reimbursement	115.78
Chowan	Bear Swamp Fire	148	1,186.7	No reimbursement	1,715.8
Cherokee	Collett Ridge	5,419	0	No reimbursement	0
Surry	Halloween	0.2	0	No reimbursement	0
R3	2023 Fall IA Support		14,981.53	Pending (billing in process) estimated state cost \$ 2,127,660.29)	20,634.84
R2	FY24 R2 Severity		1,193.29	Pending (billing in process) estimated state cost	1,718.85
Henderson	Poplar Drive	434	963.69	Included in 2023 Fall IA Support	1,365.73
Jackson	East Fork	307	83.41	No reimbursement	125.12
Caldwell	Winchester Road	2.1	5.14	Included in 2023 Fall IA Support	7.71
Watauga	Elk Creek	214	19.6	Included in 2023 Fall IA Support	19.6
Avery	Potter Lane	1.8	0	Included in 2023 Fall IA Support	0
Wilkes	Tripplett	113	244.46	Included in 2023 Fall IA Support	362.01
Pitt	NC 43S	5.7	0	No reimbursement	0
Forsyth	6220 Baux Mountain Road Rd	2	0	Included in 2023 Fall IA Support	0
Haywood	Black Bear	2,007	0	No reimbursement	0
Stokes	Sauratown Mountain	806	0	Included in 2023 Fall IA Support	0
Union	Ansonville Rd	0.4	12.31	Included in 2023 Fall IA Support	12.31
McDowell	Clear Creek	125	104.76	No reimbursement	156.64
McDowell	Locust Cove 2	161	0	No reimbursement	0
Scotland	Luzon	300	3.5	No reimbursement	5.25
Scotland	Hill Creek Fire	261	11	No reimbursement	16.5
Columbus	Pone Hill Rd	181	55	No reimbursement	82
Harnett	Bass Lake	8.9	24.5	No reimbursement	35.75

Cherokee	Bonny Brae	214	0	No reimbursement	0
Cumberland	Ramsey St	3.4	6.75	No reimbursement	9
Scotland	Nashville Church	300	7.5	No reimbursement	11.25
Robeson	Usher Clearing	1.5	6	No reimbursement	9
Scotland	Drop Zone	101	5	No reimbursement	5
Wilkes	Brushy Mountain	126	109.31	No reimbursement	155.97
Rutherford	Huckleberry Mountain	472	206.59	No reimbursement	287.14
Wilkes	Brookview	2	14.66	No reimbursement	21.99
Bladen	Horseshoe Lake	569	652.72	No reimbursement	933.1
Carteret	Hwy 12	3,671	116.28	No reimbursement	174.42
Burke	Henry Fork	208	229.35	No reimbursement	333.28
Catawba	Dam Cove Rd	0.4	3.5	No reimbursement	5.25
Carteret	Morris Marina Road	547	2,056.8	Pending (billing in process) estimated state cost \$ 356,833.48)	2,934.21
R1	Summer 24 Fire Support		837.2	No Reimbursement	1,125.31

Fiscal impacts

The NCFS tracks cost information for reimbursable² and billable³ wildfires. The NCFS Fire Reporting System tracks estimated costs. These estimated costs include employee salary (based on an average salary of the position), and standard equipment use rates. Table 10 shows the estimated costs of each of the 37 major wildfires from July 1, 2023, through June 30, 2024. The total estimated suppression cost for all wildfires during the fiscal year was \$7,562,610.35. These are highlighted below in Table 10.

Cost and reimbursement for several of the major wildfires in western North Carolina during Fall 2023 were tracked under 2023 Fall IA Support. Also included in 2023 Fall IA Support reimbursement are numerous smaller wildfires that were supported by out-of-state resources as well as NCFS resources that were prepositioned in the mountains. These resources were used to aggressively suppress new wildfires to prevent them from becoming large and costly.

Table 10. Estimated fiscal impacts of wildfires in North Carolina during FY23-24. Wildfires listed in orange were managed under the 2023 Fall IA Support Incident and those in green were managed under the FY23-24 R2 Severity Incident. Numerous smaller wildfires were also tracked under each. Reimbursement was requested for both and are estimated with costs currently still being calculated.

County	Wildfire name	Acres burned	Estimated cost	Reimbursement	State cost
Scotland	Scotland Lake Lane	868	\$1,390.00	No reimbursement	\$ 1,390.00

² Reimbursable wildfires – A wildfire where NCFS may obtain a reimbursement of funds from FEMA, USFS or other agencies.

³ Billable wildfires – Wildfires where NCFS has a cost share cooperative agreement or provided suppression services to a federal agency.

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Annual Legislative Report on Wildfires
Fiscal Year 23-24

Brunswick	Sunny Point/Orton Plantation	150	\$8,553.00	No reimbursement	\$ 8,553.00
Pamlico	Spring Creek	257	\$28,653.00	No reimbursement	\$28,653.00
Richmond	Cagle Grave	113	\$22,911.00	No reimbursement	\$22,911.00
Chowan	Bear Swamp Fire	148	\$127,586.20	No reimbursement	\$127,586.20
Cherokee	Collett Ridge	5,419	\$587,200.00	No reimbursement	\$587,200.00
Surry	Halloween	0.2	\$1,735.85	No reimbursement	\$1,735.85
R3	2023 Fall IA Support		\$2,012,868.72	Pending (billing in process) estimated state cost \$ 1,347,867.78	\$665,000.94
R2	FY24 R2 Severity		\$249,912.76	Pending (billing in process) estimated state cost \$151,700.45	\$98,212.31
Henderson	Poplar Drive	434	\$1,676,970.00	Included in 2023 Fall IA Support	
Jackson	East Fork	307	\$90,941.50	No reimbursement	\$90,941.50
Caldwell	Winchester Road	2.1	\$2,891.77	Included in 2023 Fall IA Support	
Watauga	Elk Creek	214	\$17,648.25	Included in 2023 Fall IA Support	
Avery	Potter Lane	1.8	\$955.62	Included in 2023 Fall IA Support	
Wilkes	Tripplett	113	\$63,322.00	Included in 2023 Fall IA Support	
Pitt	NC 43S	5.7	\$14,983.76	No reimbursement	\$14,983.76
Forsyth	6220 Baux Mountain Road Rd	2	\$2,120.76	Included in FY24 R2 Severity	
Haywood	Black Bear	2,007	\$360.00	No reimbursement	\$360.00
Stokes	Sauratown Mountain	806	\$247,792.00	Included in FY24 R2 Severity	
Union	Ansonville Rd	0.4	\$1,168.32	Included in 2023 Fall IA Support	
McDowell	Clear Creek	125	\$61,646.00	No reimbursement	\$61,646.00
McDowell	Locust Cove 2	161	\$16,220.00	No reimbursement	\$16,220.00
Scotland	Luzon	300	\$741.00	No reimbursement	\$741.00
Scotland	Hill Creek Fire	261	\$3,795.00	No reimbursement	\$3,795.00
Columbus	Pone Hill Rd	181	\$9,732.50	No reimbursement	\$9,732.50
Harnett	Bass Lake	8.9	\$6,884.80	No reimbursement	\$6,884.80
Cherokee	Bonny Brae	214	\$23,741.00	No reimbursement	\$23,741.00
Cumberland	Ramsey St	3.4	\$492.00	No reimbursement	\$492.00
Scotland	Nashville Church	300	\$778.75	No reimbursement	\$778.75
Robeson	Usher Clearing	1.5	\$998.25	No reimbursement	\$998.25
Scotland	Drop Zone	101	\$2,043.76	No reimbursement	\$2,043.76
Wilkes	Brushy Mountain	126	\$17,275.59	No reimbursement	\$17,275.59
Rutherford	Huckleberry Mountain	472	\$36,488.00	No reimbursement	\$36,488.00
Wilkes	Brookview	2	\$1,588.35	No reimbursement	\$1,588.35
Bladen	Horseshoe Lake	569	\$10,231.76	No reimbursement	\$10,231.76
Carteret	Hwy 12	3,671	\$42,127.00	No reimbursement	\$42,127.00
Burke	Henry Fork	208	\$32,309.00	No reimbursement	\$32,309.00
Catawba	Dam Cove Rd	0.4	\$3,227.52	No reimbursement	\$3,227.52
Carteret	Morris Marina Road	547	\$280,979.76	Pending (billing in process) estimated state cost \$ 356,833.48)	\$0.00
R1	Summer 24 Fire Support		\$20,097.60	No reimbursement	\$20,097.60

To have resources available for immediate response to wildfires, the NCFS places employees on-call during evening hours, weekends and holidays. The number of employees placed on-call increases as unfavorable wildfire conditions escalate.

During FY23-24, NCFS employees were on-call for more than 329,662 hours at a cost of \$692,997.

Wildfire personnel and equipment

The NCFS would be unable to perform its legislative mandate without trained personnel and specialized equipment. The agency puts a considerable emphasis on training our employees in wildfire and all-hazard emergency response. During FY23-24, NCFS employees spent 48,839 hours training. Training for incident response is a career endeavor that is essential for safe incident response.

Along with training comes the need for specialized equipment for wildfire response. This equipment ranges from simple tools like a fire rake to complex tools such as helicopters and single engine air tankers (SEAT). Each tool has a specific use and all are necessary for effective wildfire management across the state.

Hand crews

Constructing fireline by hand is still a common tactic when battling wildfires. Especially in terrain that is inaccessible by mechanized equipment. Firefighters use a variety of hand tools as well as chainsaws and leaf blowers to construct handline and suppress wildfires. Once wildfire spread is stopped, firefighters often use these same tools to put out hot spots that could cause the wildfire to escape. Our B.R.I.D.G.E crews are standing hand crews in western North Carolina, however, all NCFS personnel are taught these basic firefighting skills.



BRIDGE crewman constructing handline.



NCFS employees digging out hotspots.

Type 6 Engine

The most visible tools include heavy equipment and aviation resources. Of these resources, the Type 6 Engine (Figure 10) is the most frequently used. These units are designed for maneuverability to allow for direct attack on wildfires to minimize the number of acres burned. Many of the wildfires in the state are controlled by these types of engines, equipped with 150-gallon water tanks, pump and hose along with an assortment of hand tools commonly used in wildland firefighting.



Figure 9. Type 6 Engine.

Wildland fire tractor-plow units

When wildfires cannot be controlled with Type 6 engines, heavier equipment is needed. Wildland fire tractor-plow units are the next line of defense (see Figure 10). These units differ in size and configuration depending on the terrain where they are located. While configurations vary, the purpose of these units is to quickly install firebreaks.

All units are equipped with a plow that's pulled behind the tractor allowing for quick construction of a firebreak. Currently, the NCFS has 92 tractor-plow units across the state that are designated for initial attack of wildfires.



Figure 10. This John Deere 750K is one of 92 wildland fire tractor-plow units across the state.

Aviation resources

Aviation is a critical tool used in the detection and control of wildfires. In North Carolina, the aviation fleet consists of 12 patrol aircraft, five helicopters, two single engine air tankers (SEATS), one SEAT load plane and two SEAT lead plane aircraft as shown in Figures 11-15.



Figure 11. Patrol plane.



Figure 12. A-Star 350B3 helicopter.



Figure 13. AT-802F Single Engine Air Tanker (SEAT).



Figure 14. Lead plane (T-34C).



Figure 15. Kodiak 100 (SEAT) load crew plane.

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