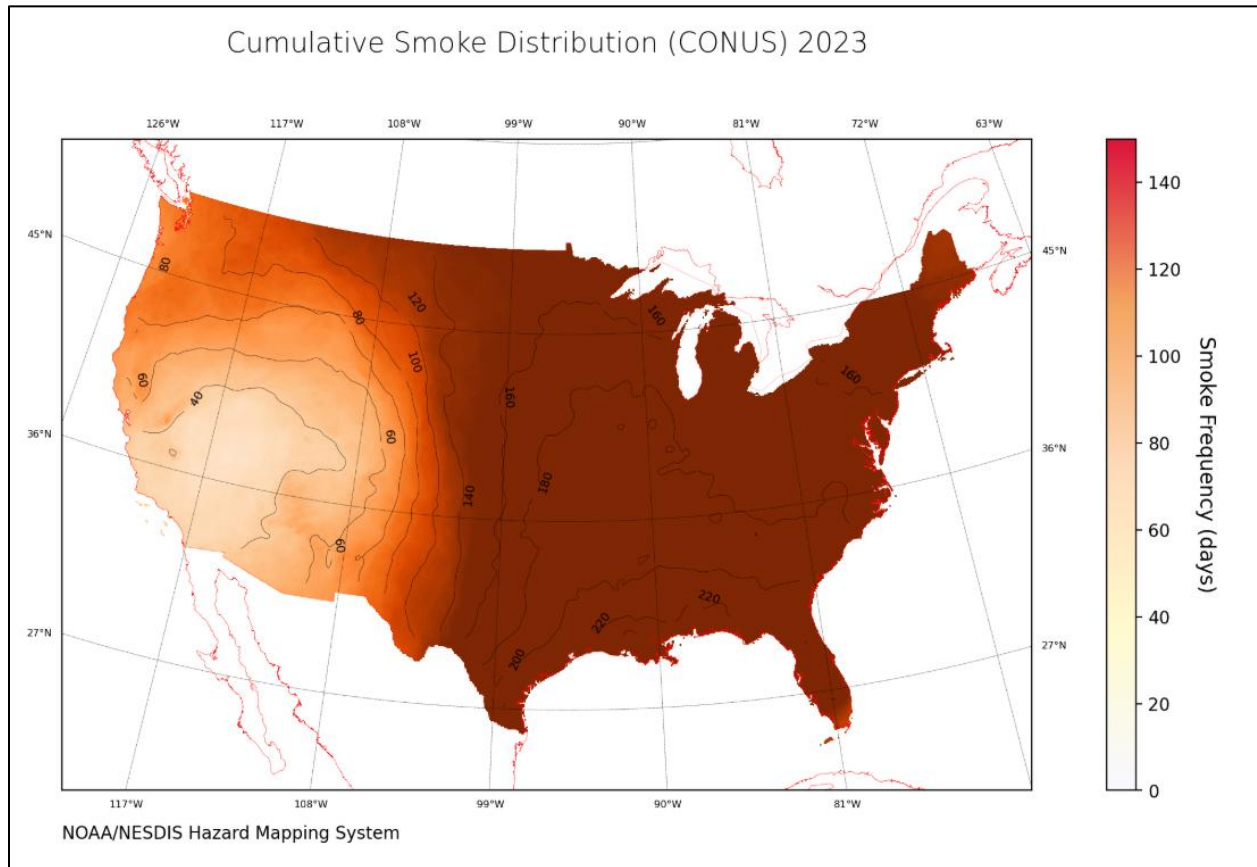


2023



Major 2023 Wildfires/Incidents:

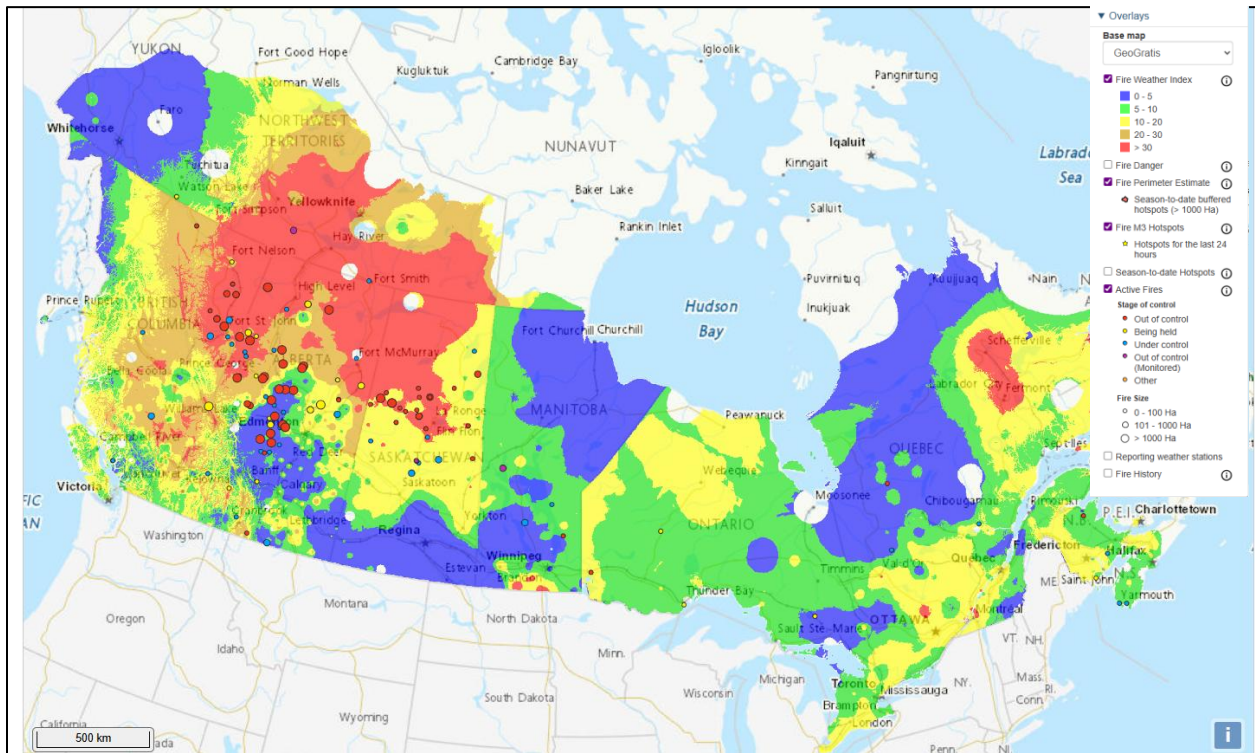
Canadian Wildfires¹⁰

U.S. agricultural burns ()

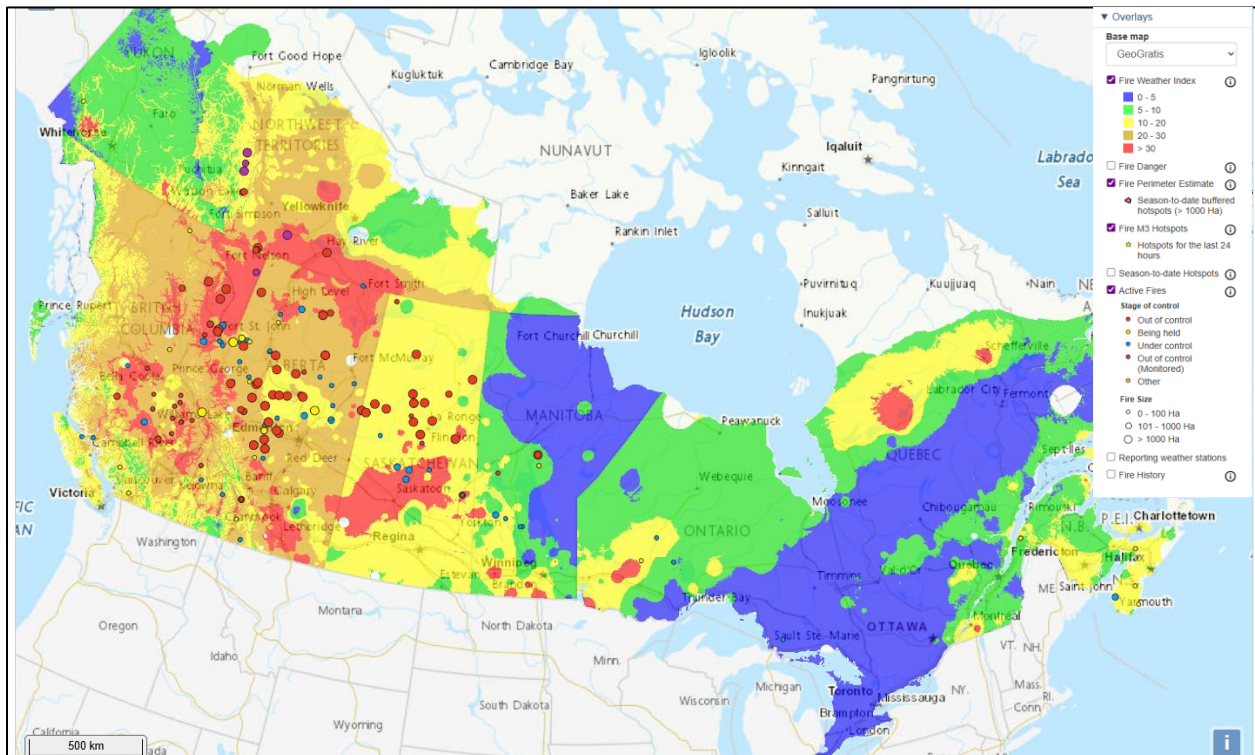
Canadian Wildland Fire Information System (CWFIS) shows the fire weather and fire hotspots evident on each day. Below are various dates through 2023 that shows the growth and extent of the wildfires in Canada from May to September. Associated smoke with these fires impacted the United States at various times. It is evident that wildfires were more prevalent in southeast Canada during the May – July period and southwest and western wildfires, while during the entire spring and summer, ramped up more in the July – September period.

¹⁰ <https://cwfis.cfs.nrcan.gc.ca/interactive-map?zoom=1¢er=232891.20933093745%2C1125875.7762041301&month=6&day=24&year=2023#iMap>

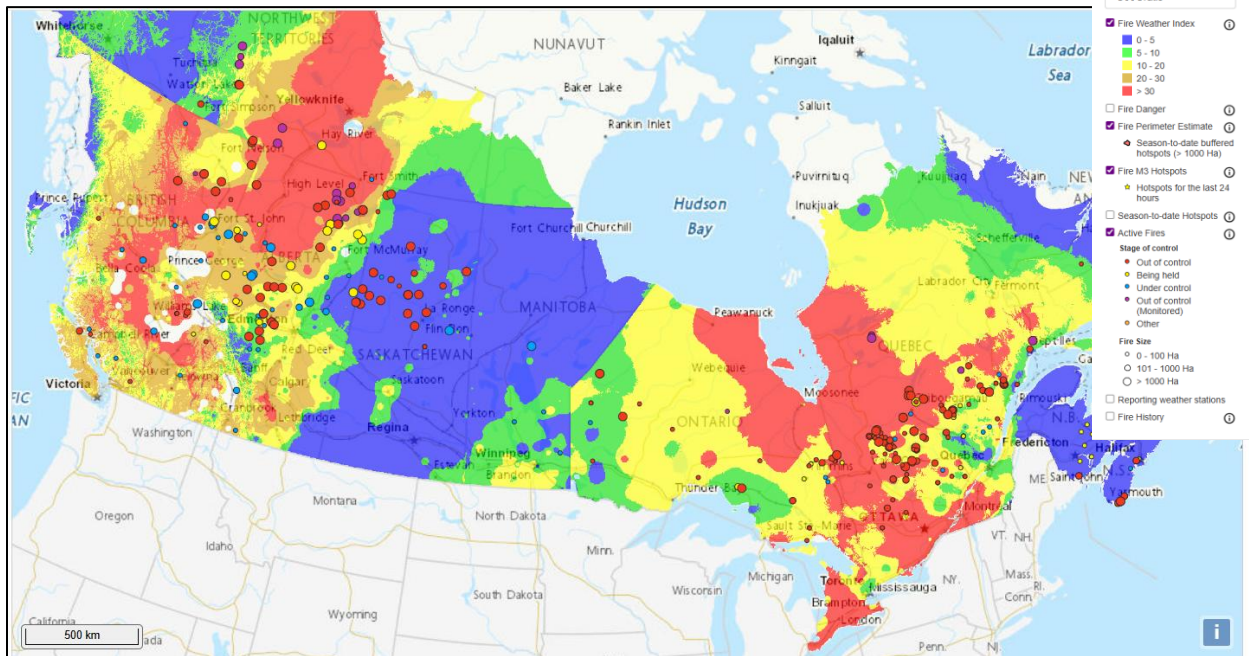
CWFIS fire weather and fire hotspots - May 12, 2023



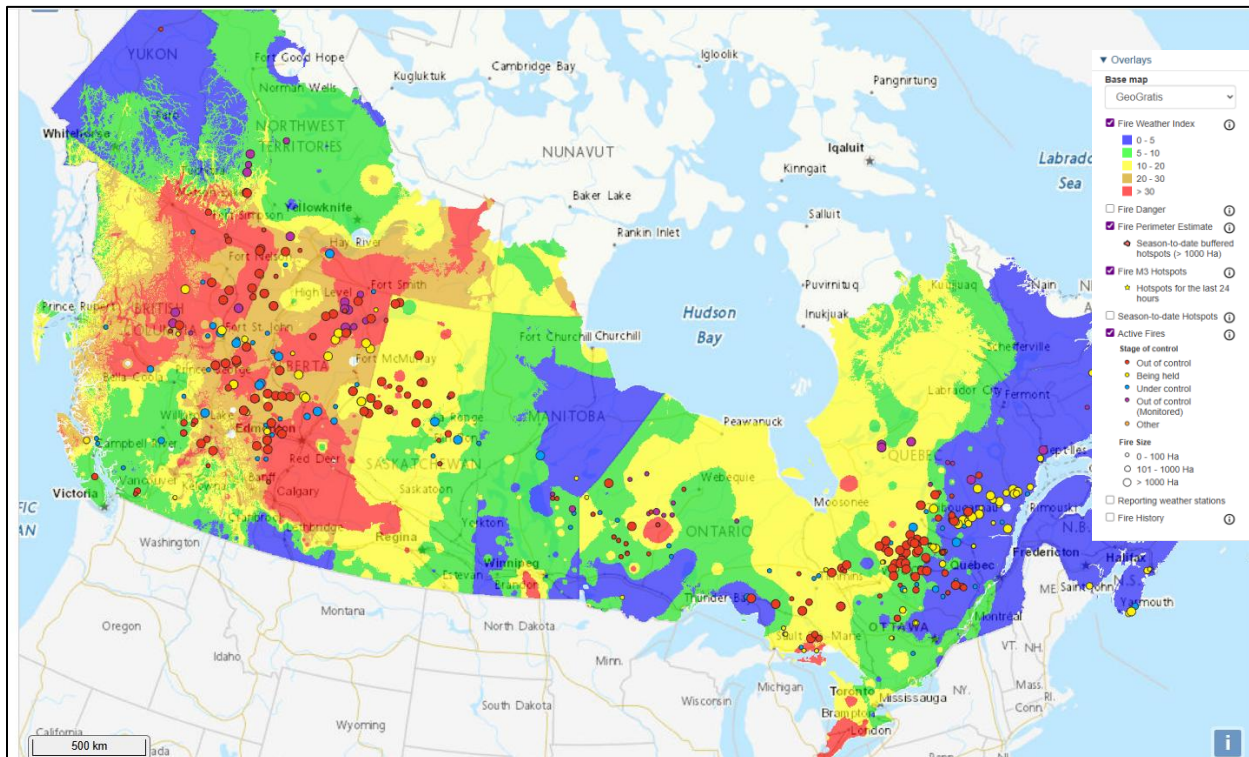
CWFIS fire weather and fire hotspots - May 20, 2023



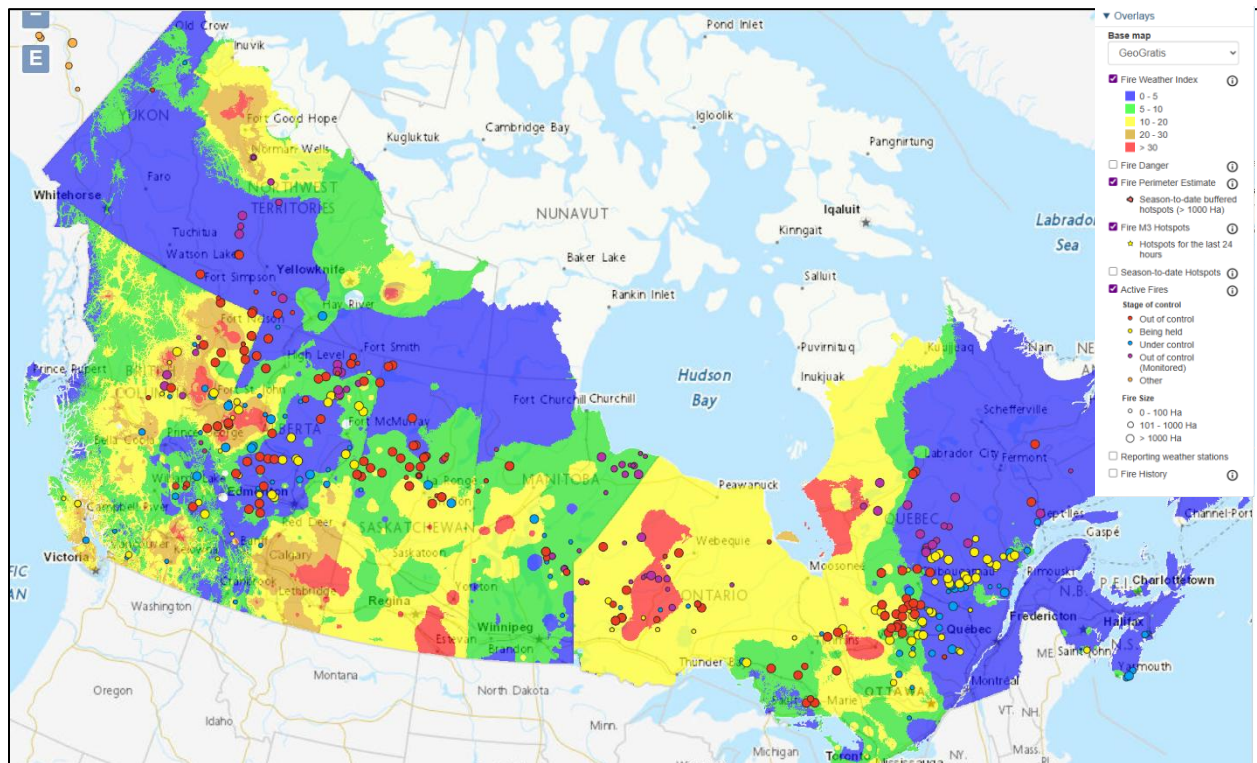
CWFIS fire weather and fire hotspots - June 3, 2023



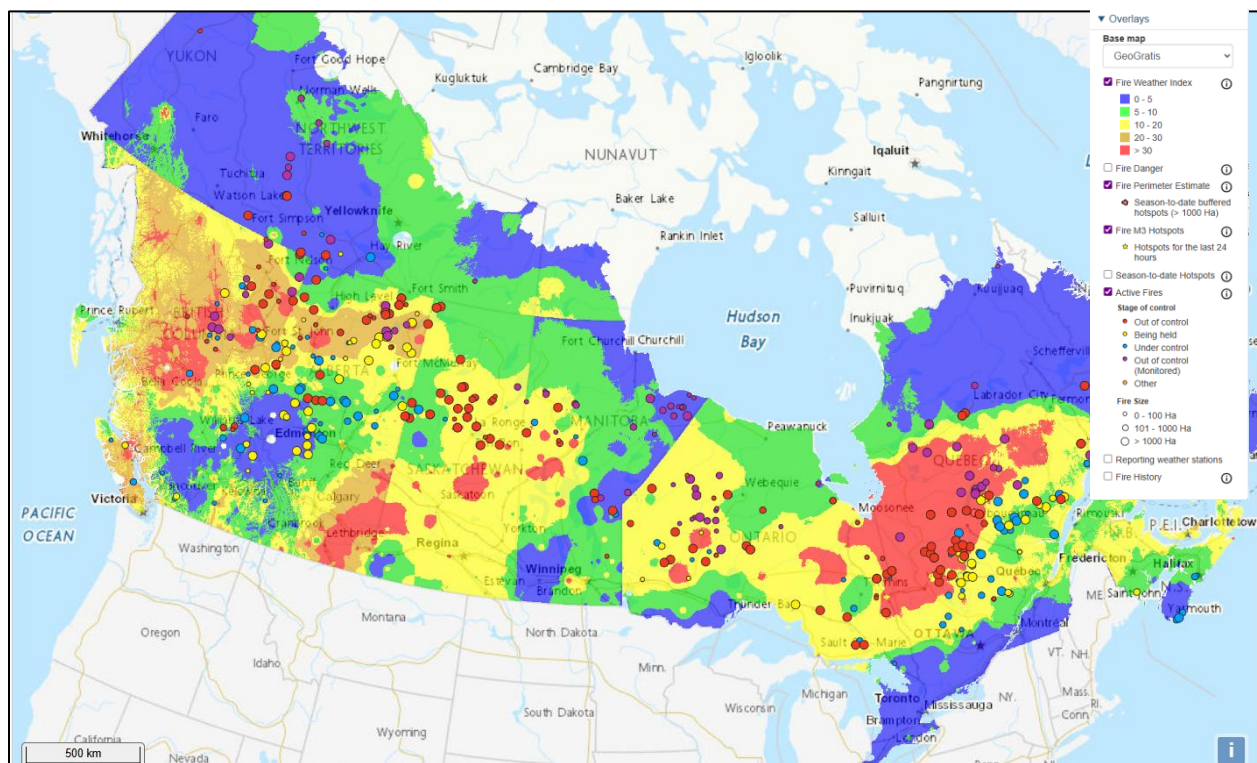
CWFIS fire weather and fire hotspots - June 10, 2023



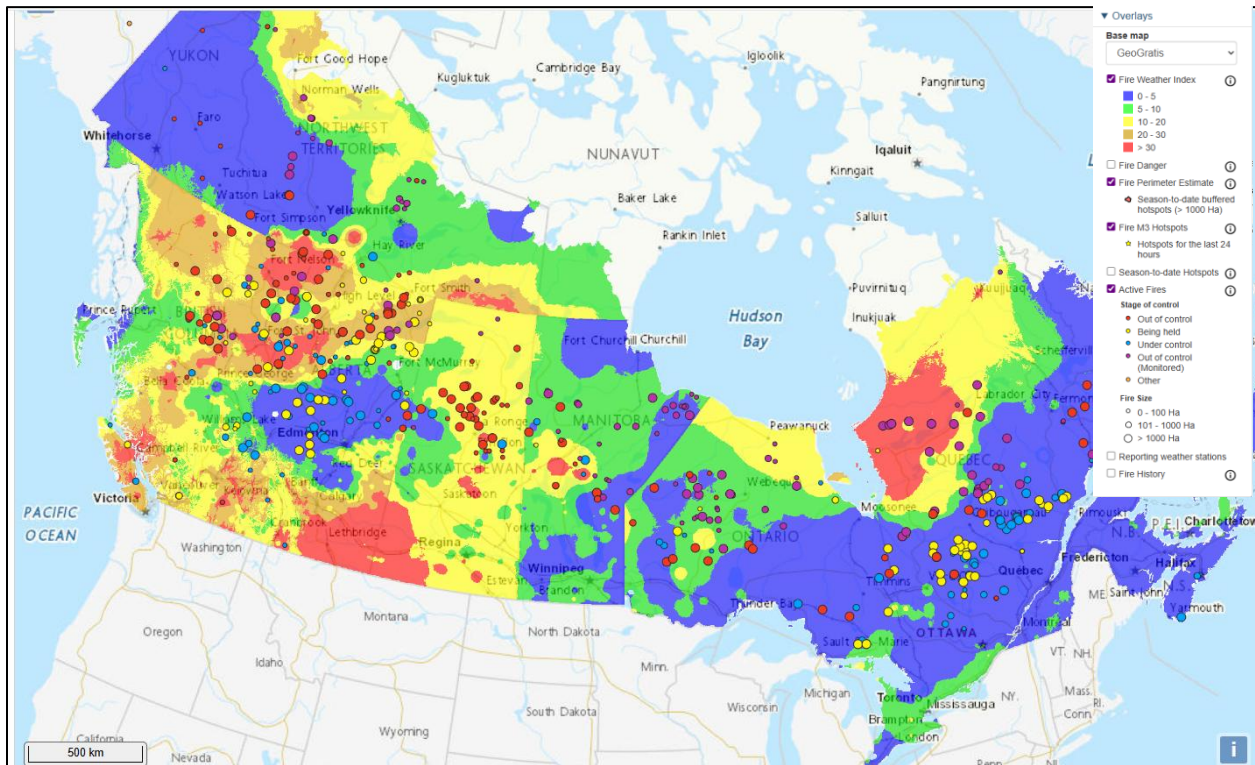
CWFIS fire weather and fire hotspots - June 17, 2023



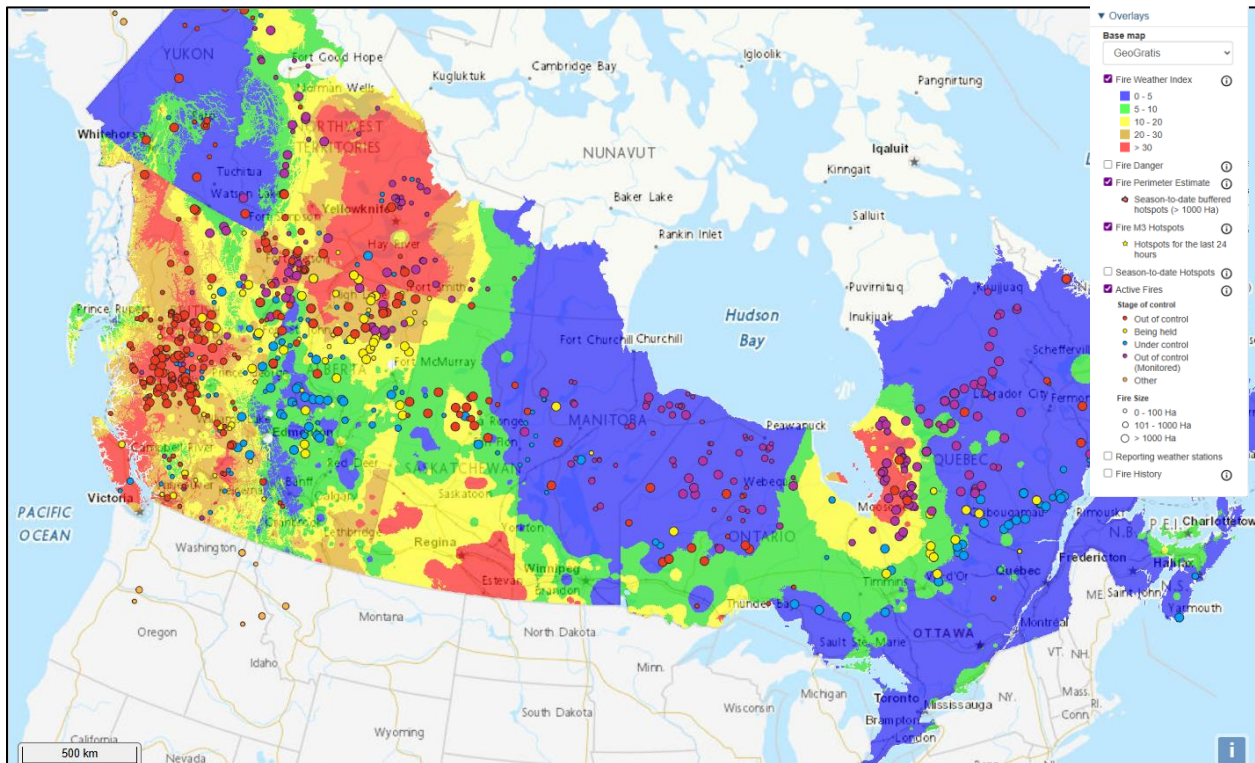
CWFIS fire weather and fire hotspots - June 24, 2023



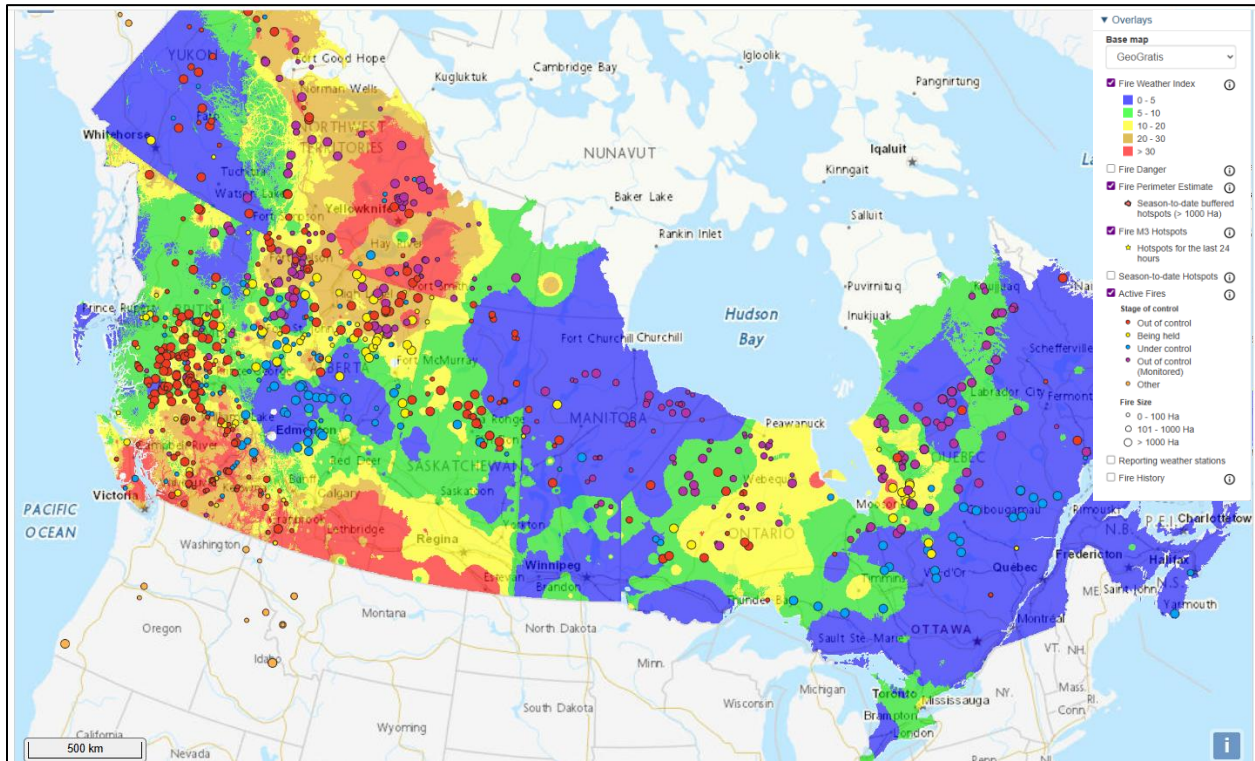
CWFIS fire weather and fire hotspots - July 1, 2023



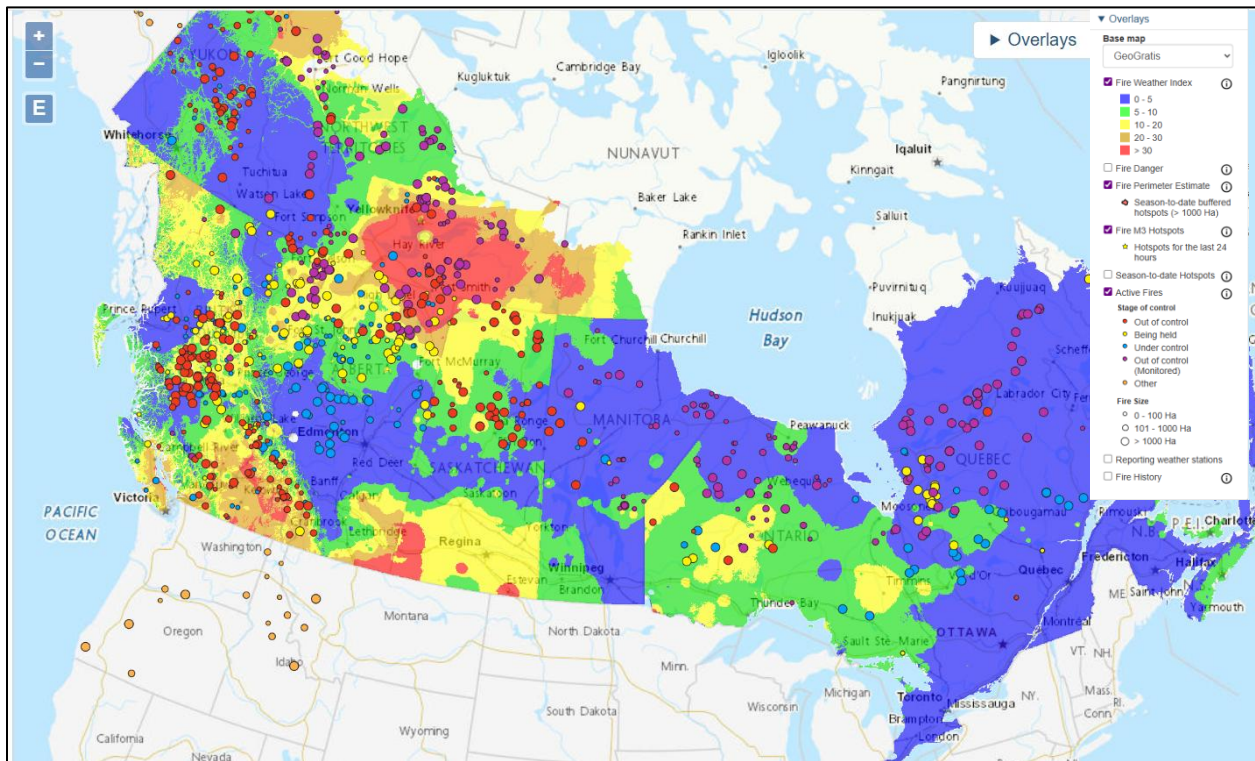
CWFIS fire weather and fire hotspots - July 15, 2023



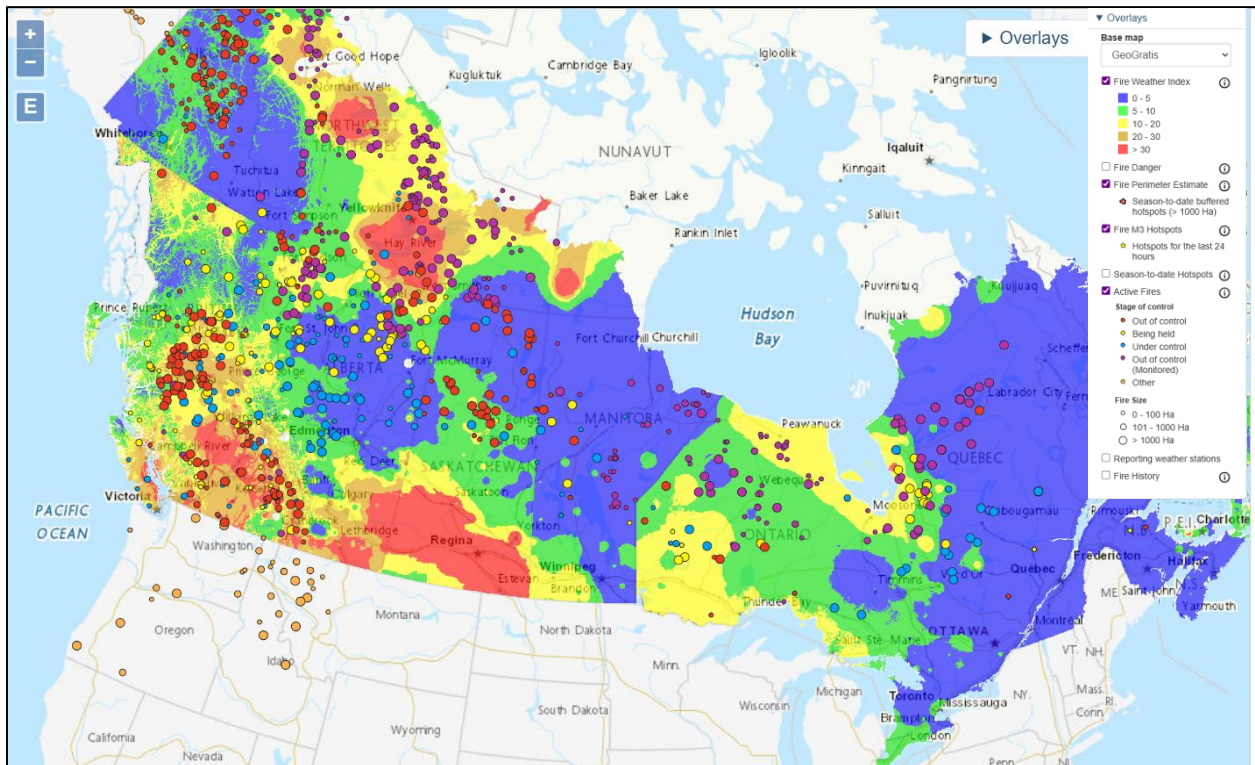
CWFIS fire weather and fire hotspots - July 22, 2023



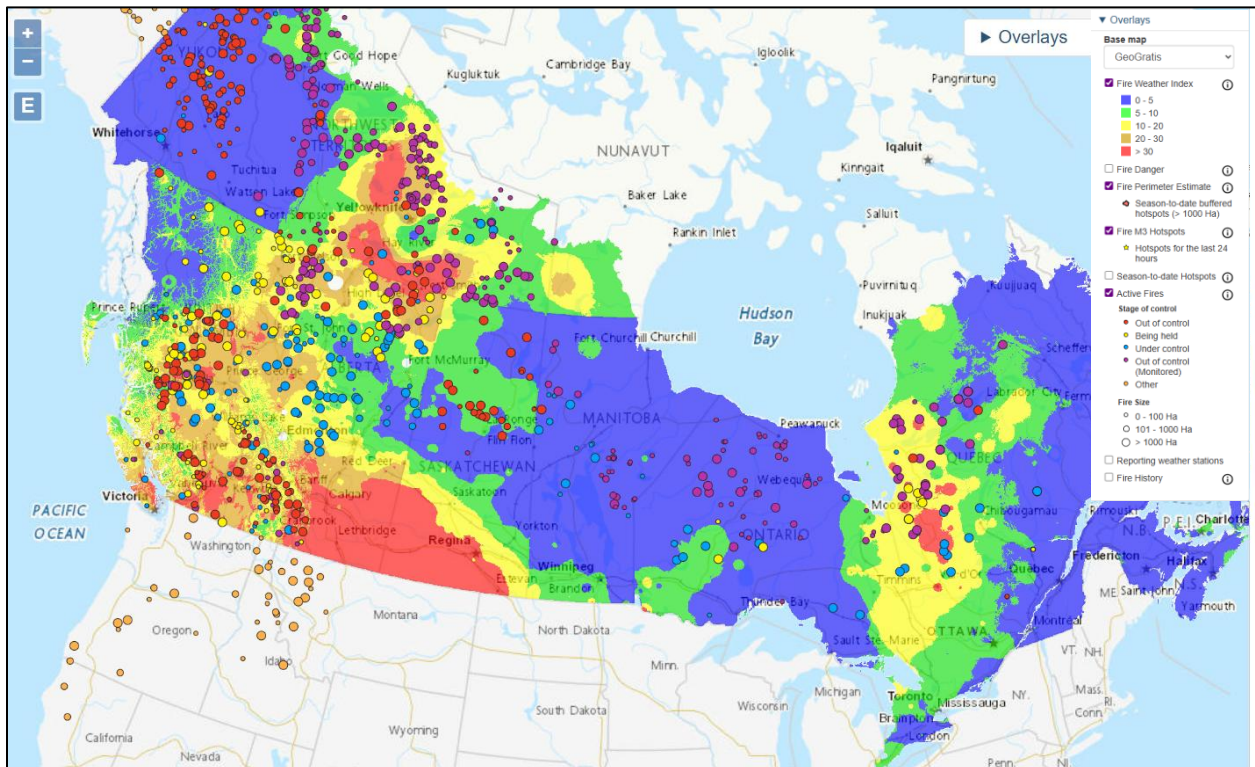
CWFIS fire weather and fire hotspots - July 29, 2023



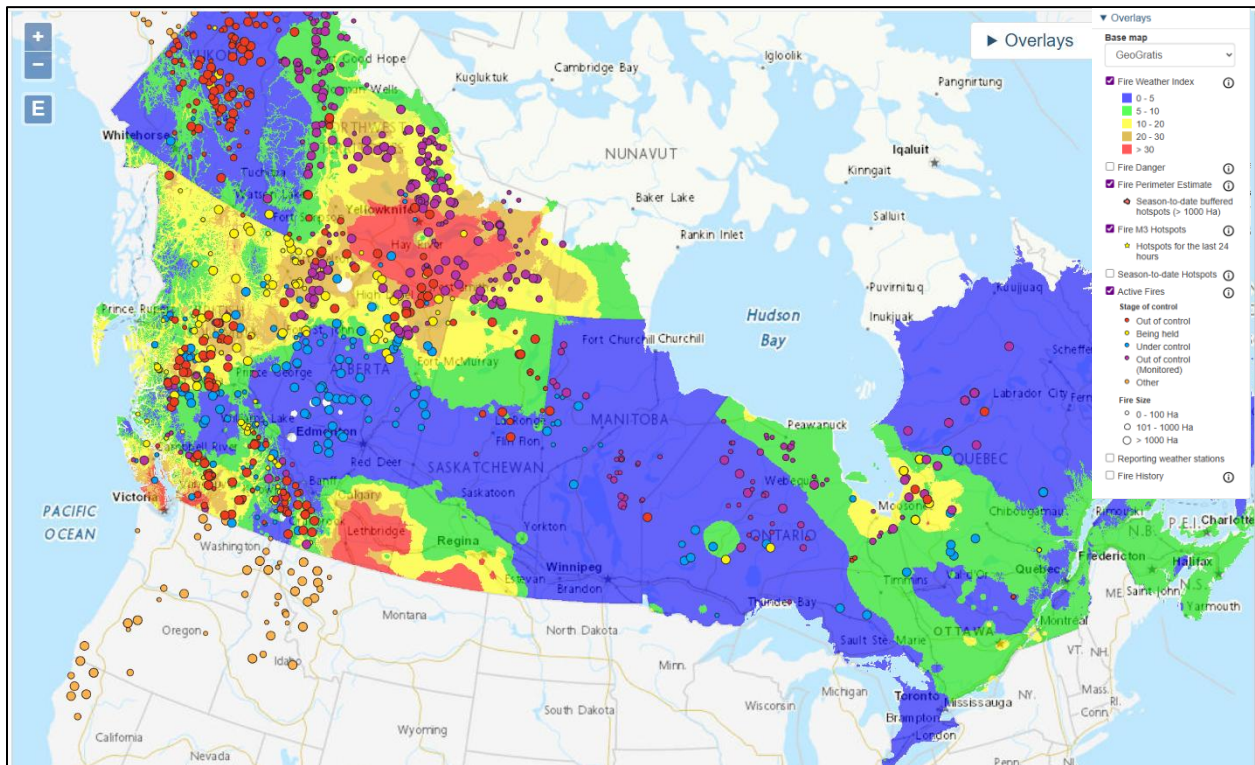
CWFIS fire weather and fire hotspots - August 5, 2023



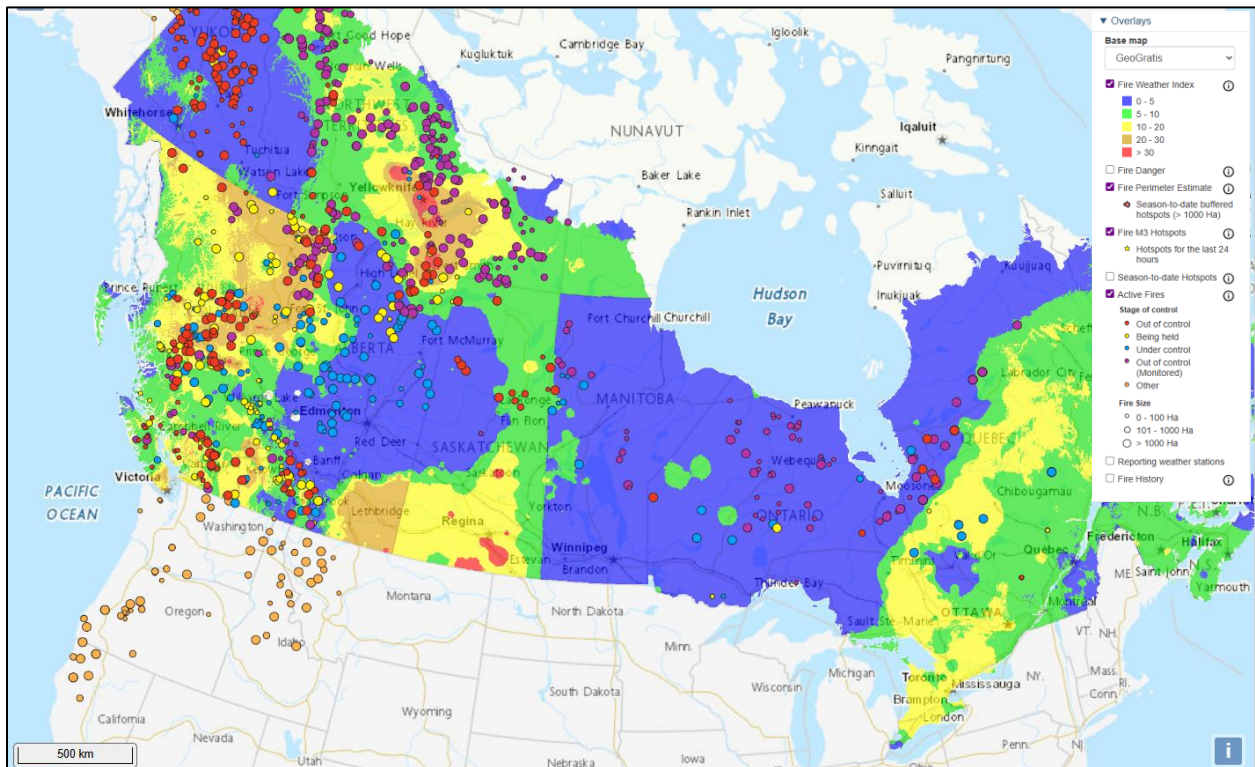
CWFIS fire weather and fire hotspots - August 17, 2023



CWFIS fire weather and fire hotspots - August 24, 2023



CWFIS fire weather and fire hotspots - September 6, 2023



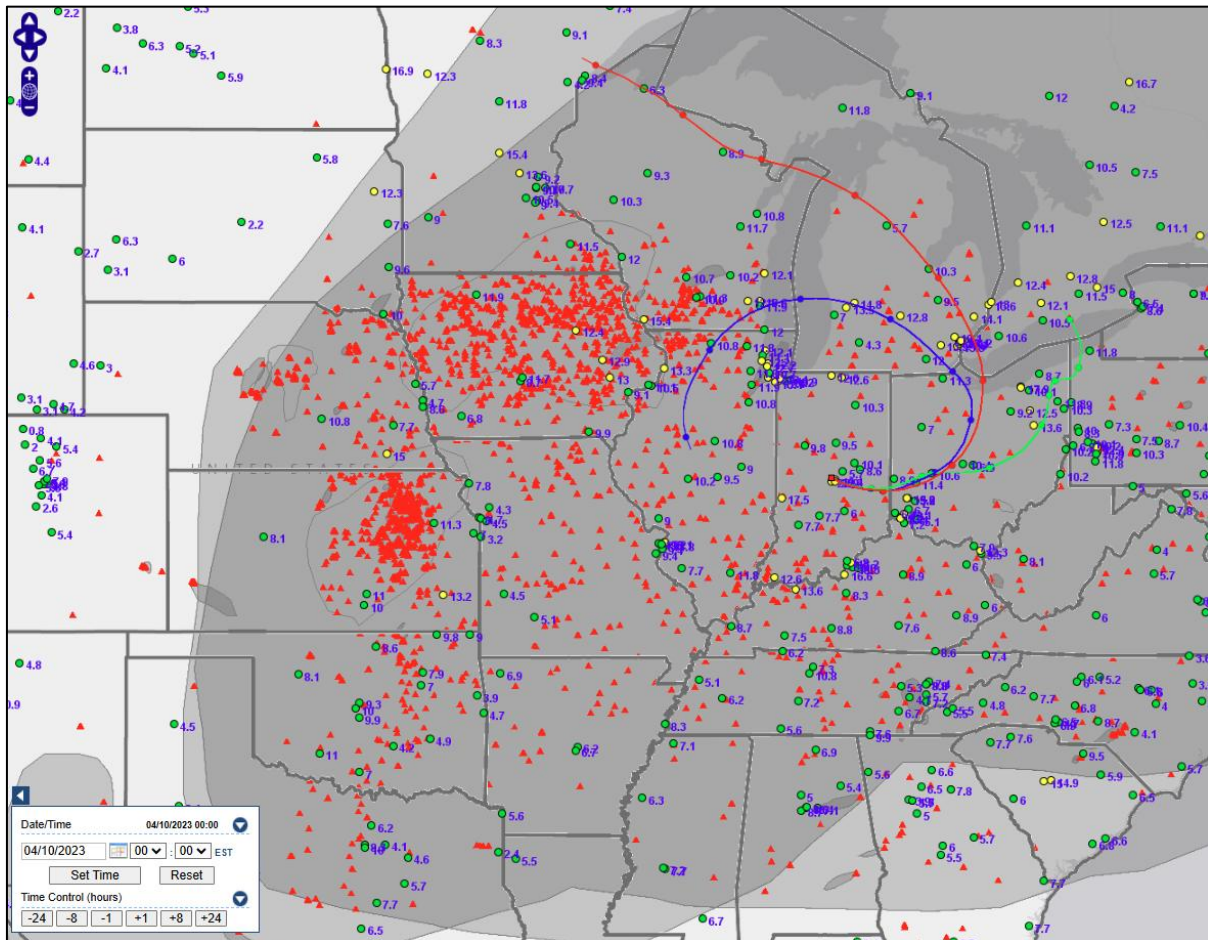
Daily wildfire and firework smoke impacts for 2023

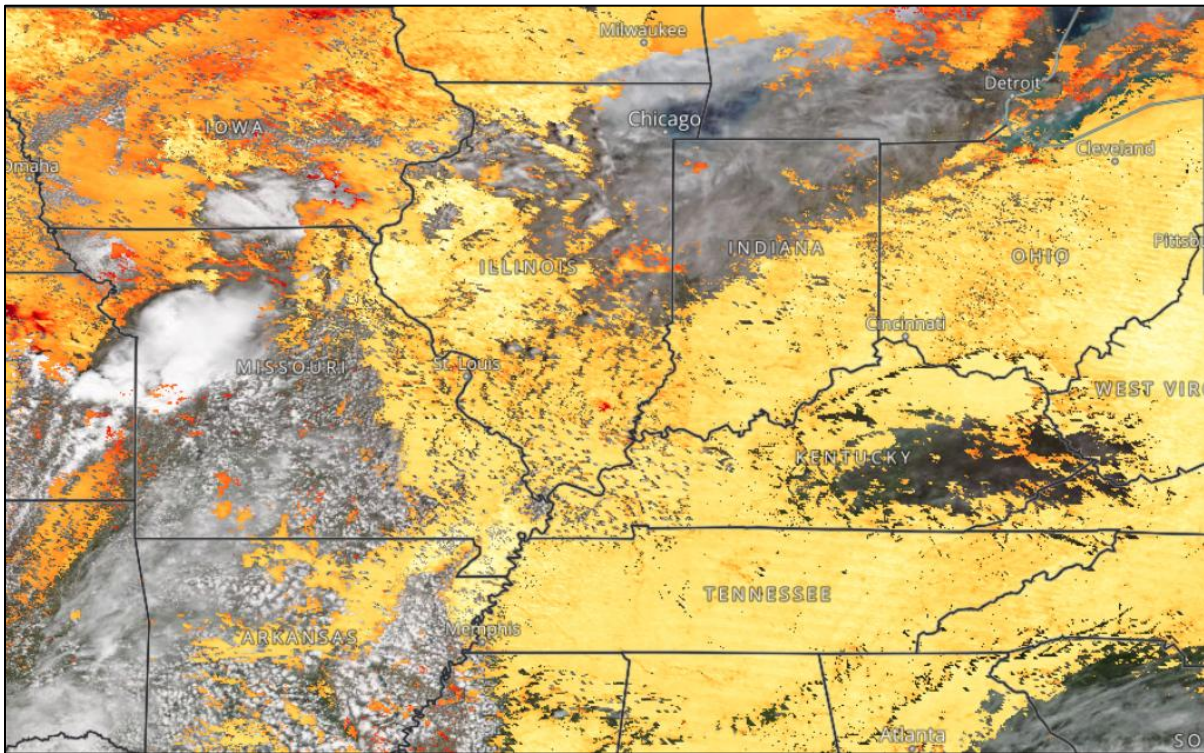
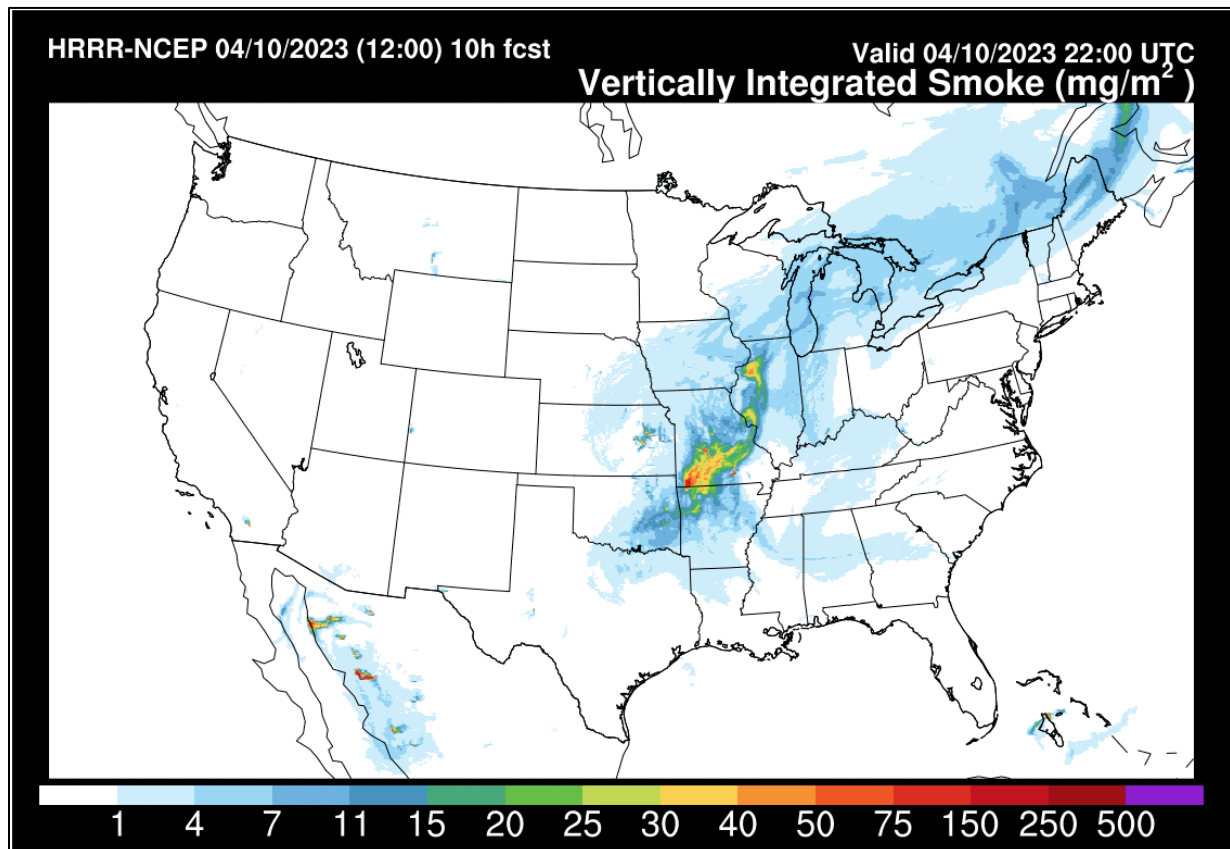
April 10, 2023

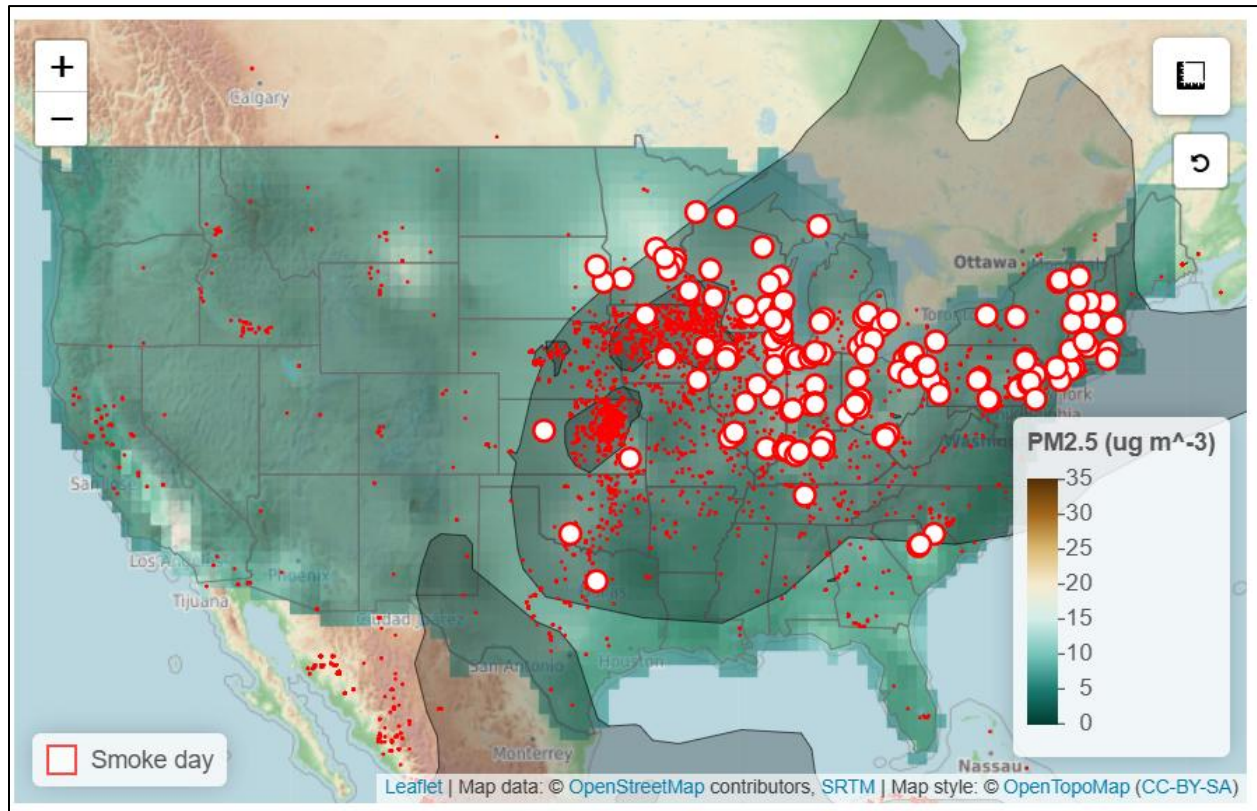
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Indianapolis - W. 18th St.	180970081	4/10/2023	22.8	20.9
Indianapolis - I-70 E	180970087	4/10/2023	27.3	20.5

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – April 10, 2023



Satellite Imagery with MAIAC AOD – April 10, 2023**HRRR Smoke - Vertically Integrated Smoke – April 10, 2023**

GAM PMO3 Smoke Output – April 10, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1630Z April 10, 2023****SMOKE:**

Central and Eastern U.S./Southeastern Canada/Atlantic Ocean...

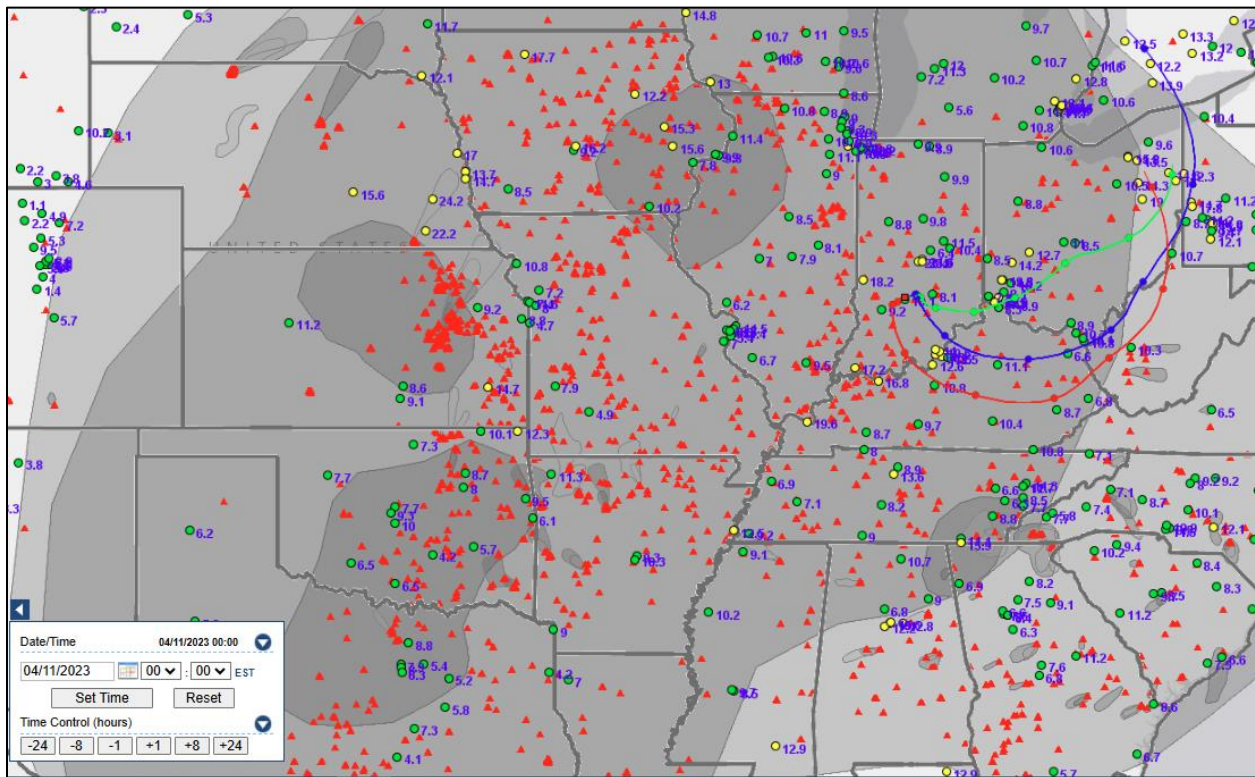
Significant rounds of seasonal burning the past few days across the central U.S. were responsible for a large area of mainly thin density smoke extending from Central U.S. eastward to the northeastern U.S., the Mid-Atlantic region, the northern portion of the southeastern U.S., and narrowing into a band off the coast of the Mid-Atlantic region and Northeast over the Atlantic Ocean passing just south of the coastal part of far southeastern Canada. The smoke also extended to the northeast over eastern Ontario and southern Quebec in southeastern Canada.

April 11, 2023

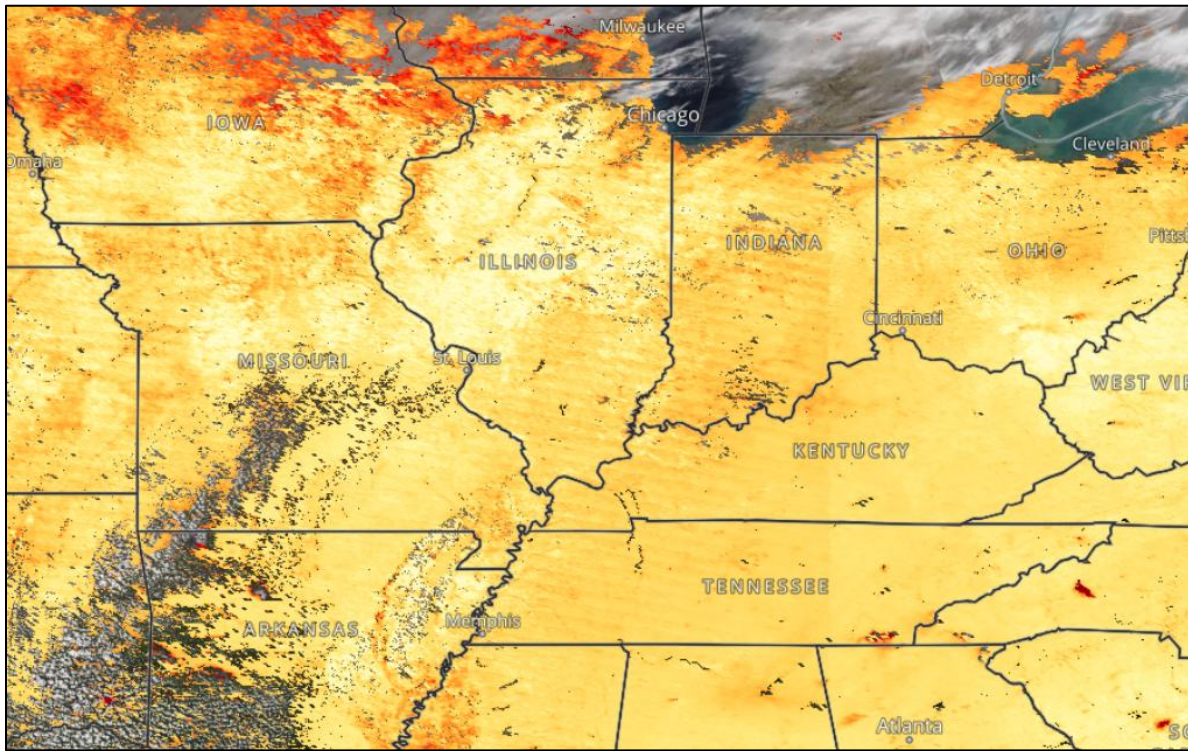
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Jeffersonville - Bates-Bowyer Ave	180190010	4/11/2023	18.0	17.0
Indianapolis - Washington Park	180970078	4/11/2023	23.1	17.8
Indianapolis - W. 18th St.	180970081	4/11/2023	22.4	20.9
Indianapolis- I-70 E	180970087	4/11/2023	32.3	20.5

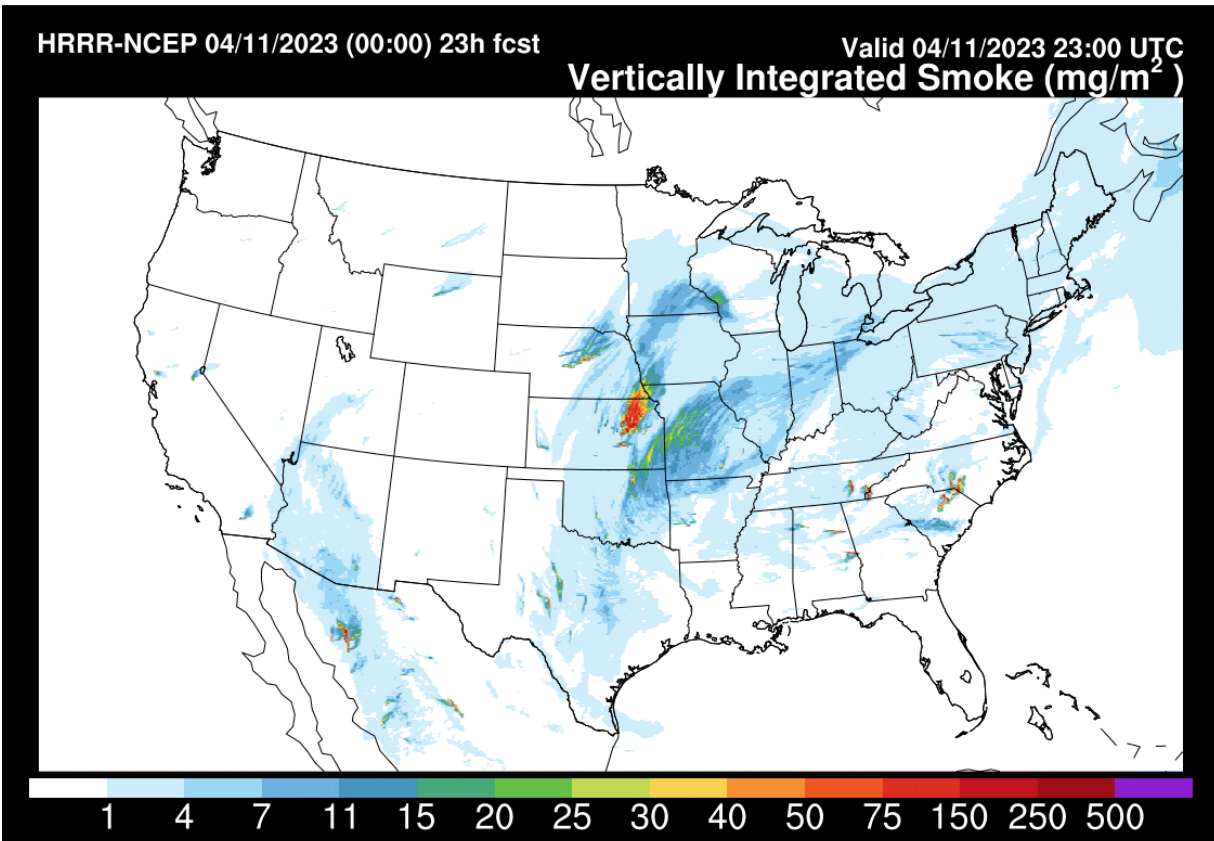
AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – April 11, 2023

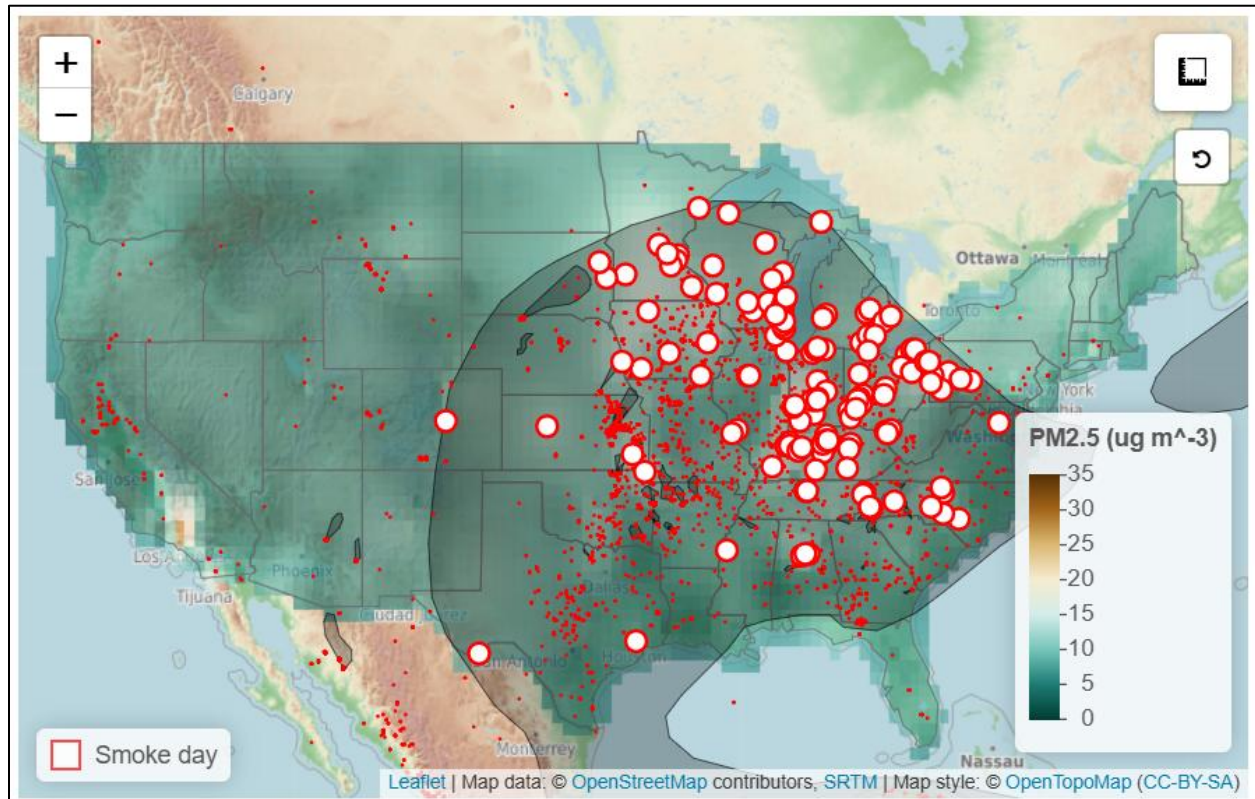


Satellite Imagery with MAIAC AOD – April 11, 2023



HRRR Smoke - Vertically Integrated Smoke – April 11, 2023



GAM PMO3 Smoke Output – April 11, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z April 11, 2023****SMOKE:**

Central and Eastern CONUS...

An area of light remnant smoke was observed mainly across the Plains and Upper Midwest, although another smaller area was noted across eastern Tennessee and northern Alabama. This is remnant from yesterday's fire activity.

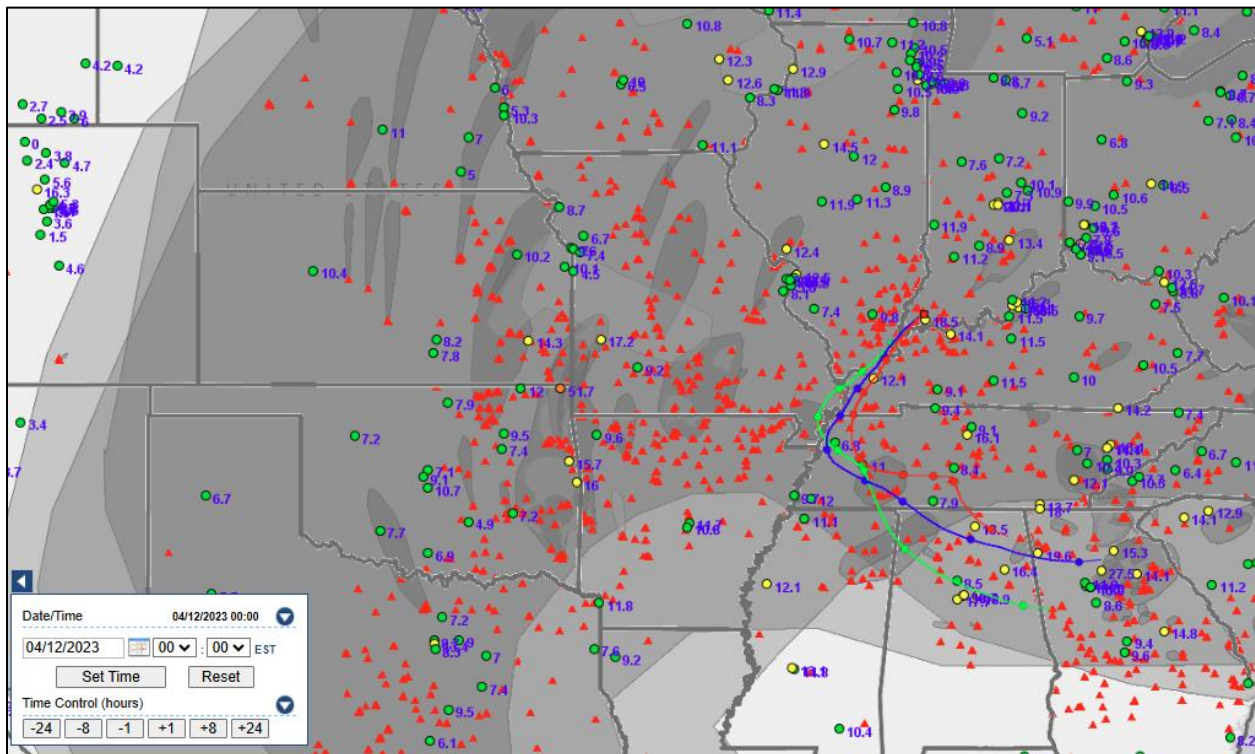
Active fire emissions were also noted scattered across the Plains and southeast, with smoke moving north-northeastward from fire activity in eastern Kansas while smoke across the Southeast smoke was moving west-southwest

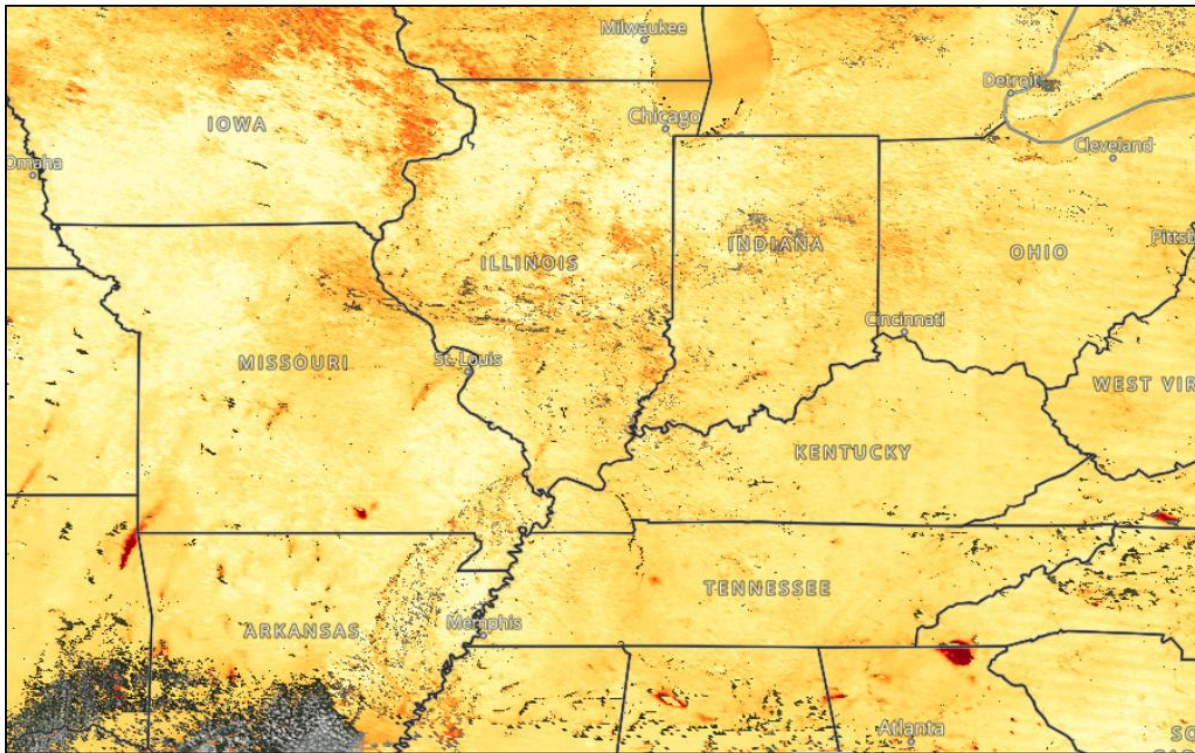
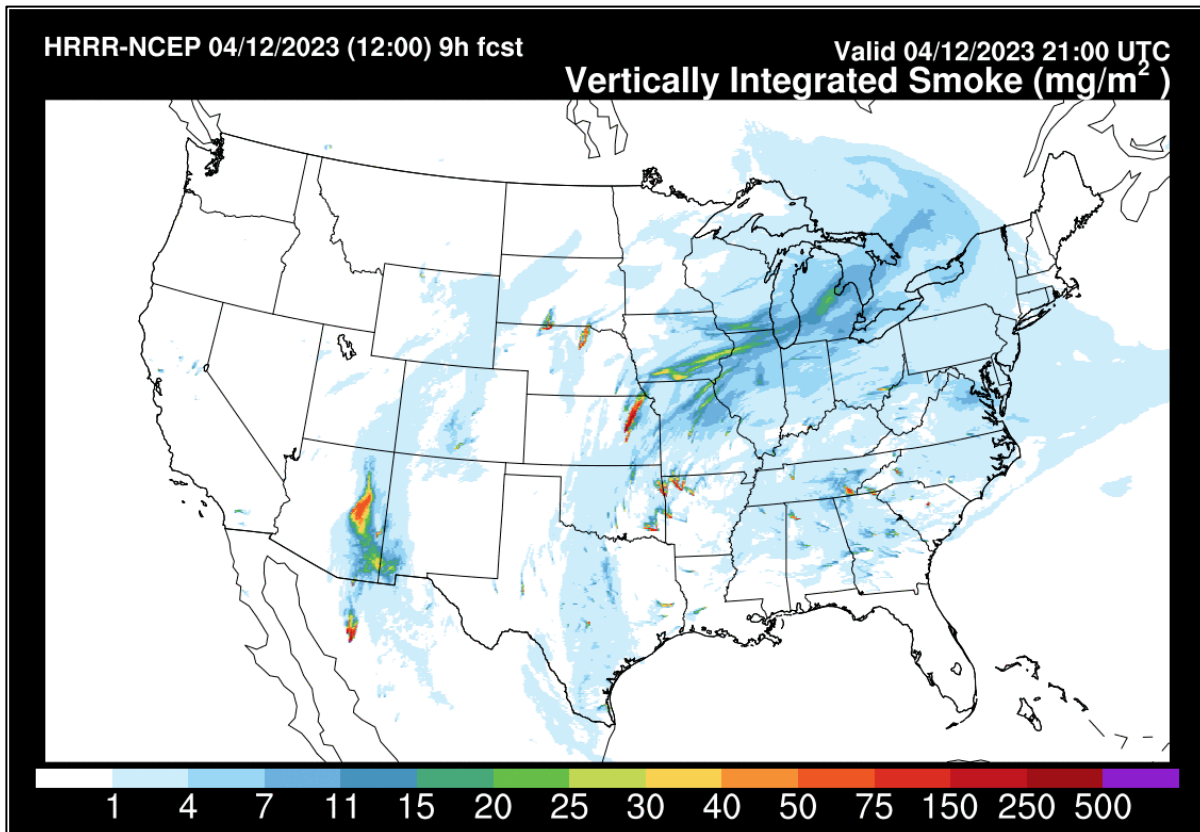
April 12, 2023

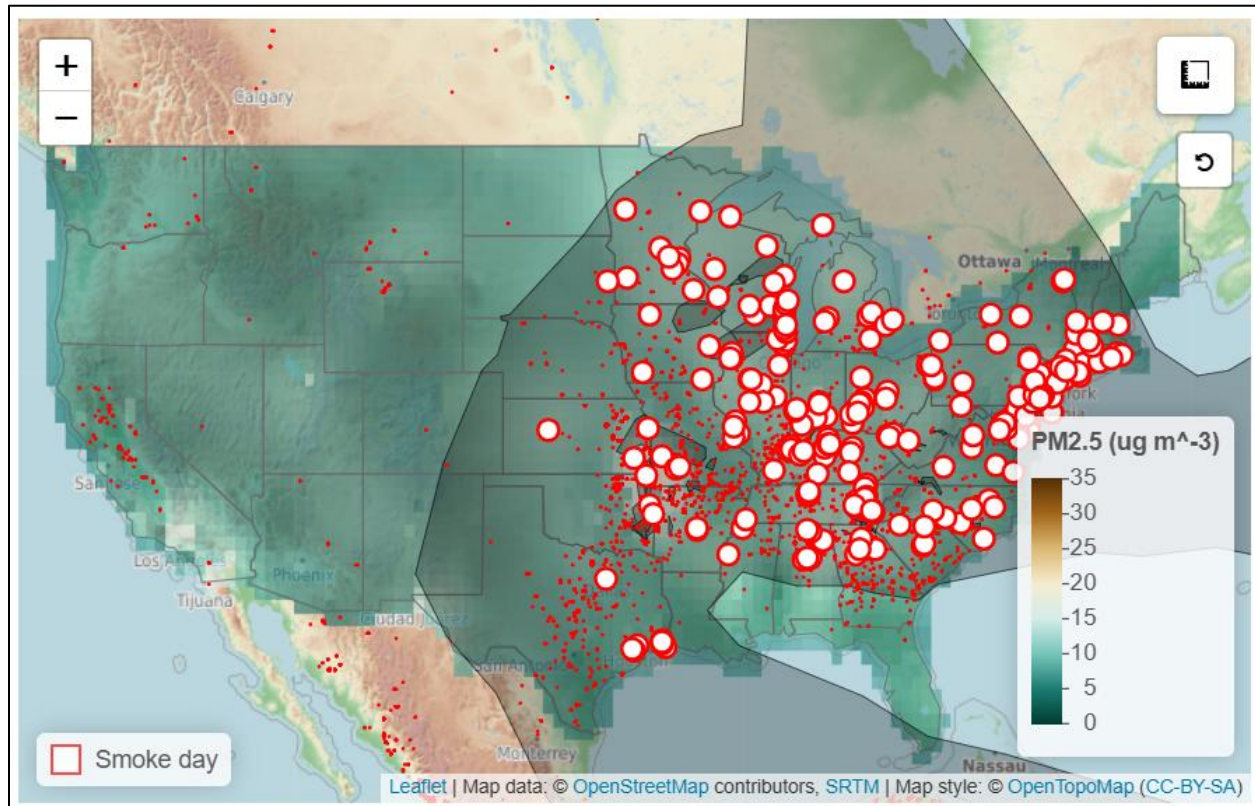
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Columbus - Rocky Ford Drive	180050008	4/12/2023	13.4	13.4
Dale	181470009	4/12/2023	13.9	13.9
Evansville - U of E	181630016	4/12/2023	19.6	15.5
Evansville - Buena Vista	181630021	4/12/2023	17.0	16.4

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – April 12, 2023



Satellite Imagery with MAIAC AOD – April 12, 2023**HRRR Smoke - Vertically Integrated Smoke – April 12, 2023**

GAM PMO3 Smoke Output – April 12, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z April 12, 2023****SMOKE:**

Central and Eastern CONUS...

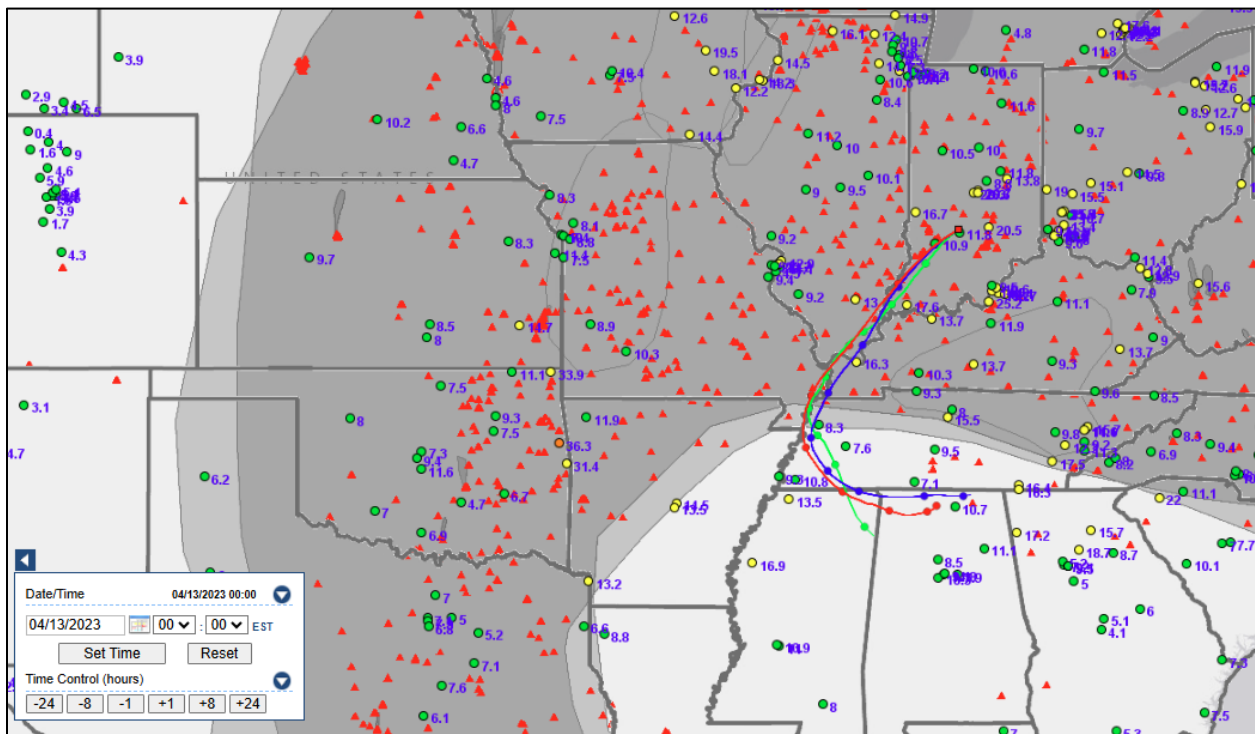
A large area of remnant smoke comprised of emissions from mainly agricultural burns across the central and southeastern CONUS over the past few days was seen blanketing a region that includes a vast majority of the eastern CONUS, central and eastern Ontario, far southwestern Quebec, and portions of the western North Atlantic. The smoke is mainly light, but some areas of slightly higher density were seen across western South Carolina, northern Georgia, the Mid-Mississippi Valley, the Central Plains, and the Upper Midwest, where some of the remnant smoke was thickest. There was also one fire in northeastern Oklahoma that did persist overnight and was observed emitting light to perhaps some moderate density smoke.

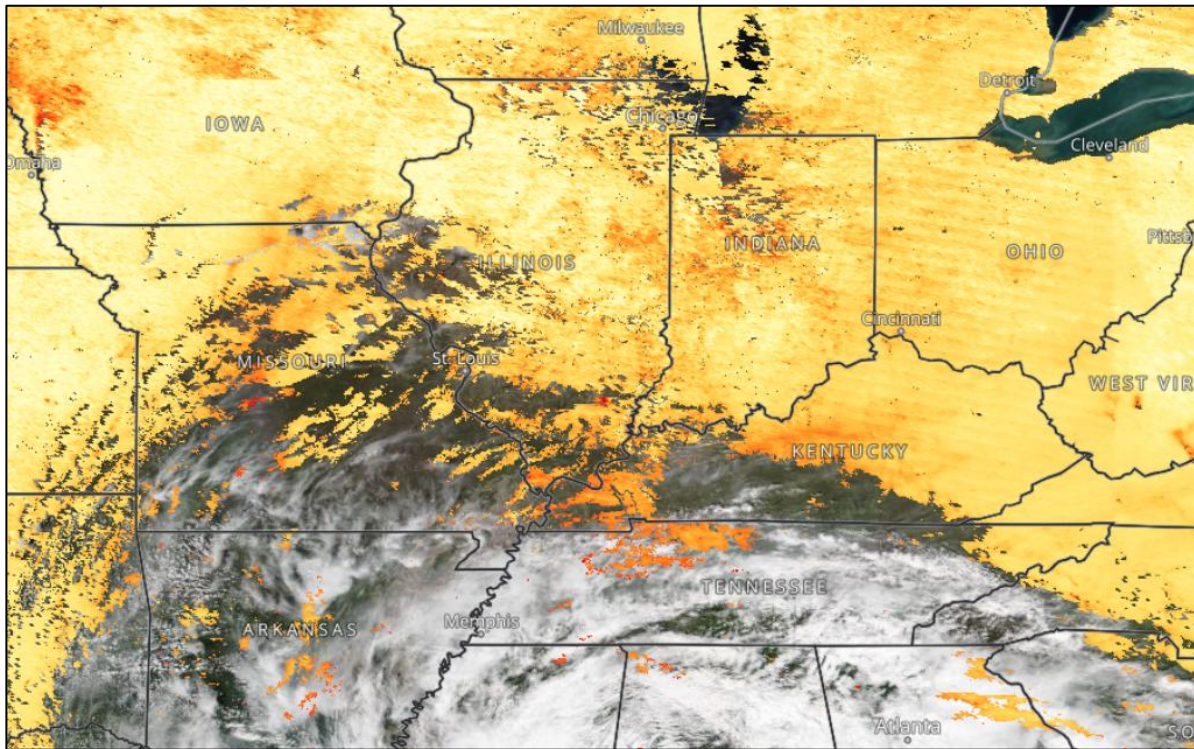
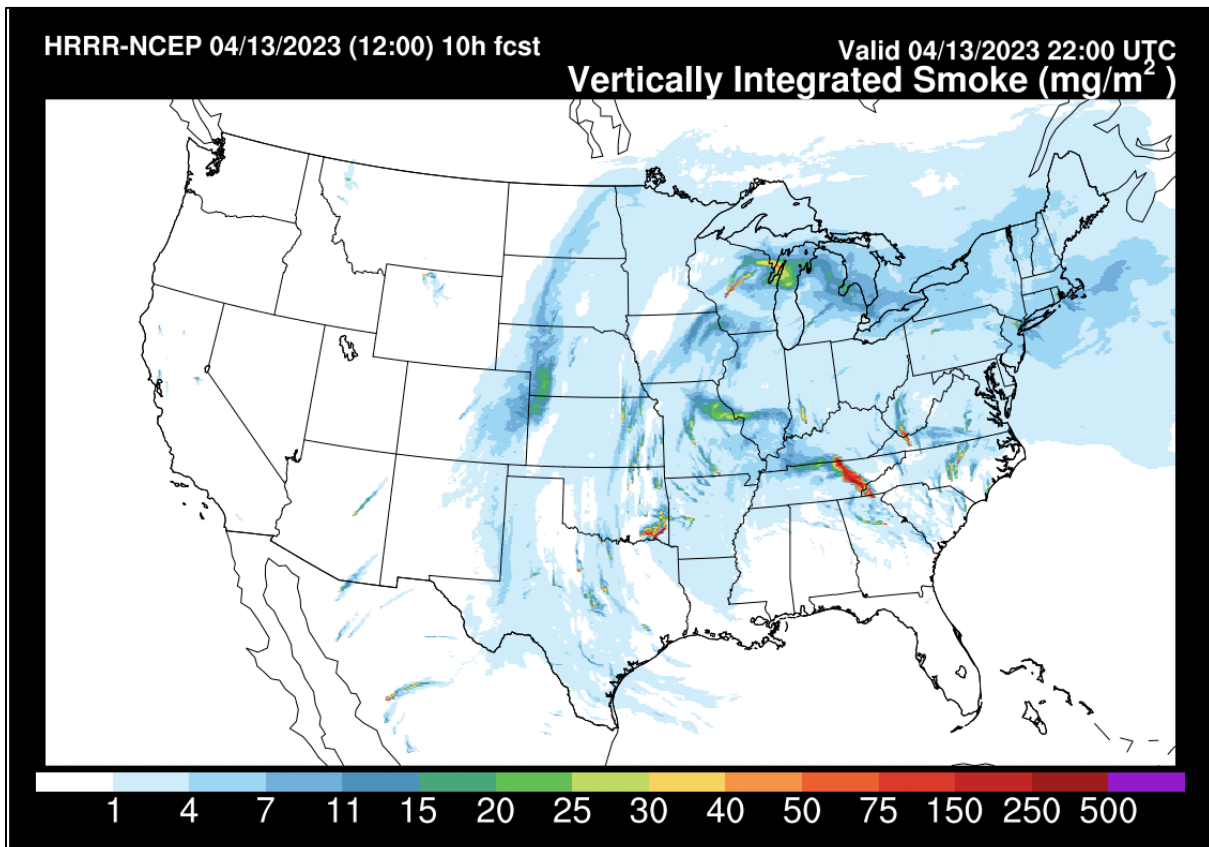
April 13, 2023

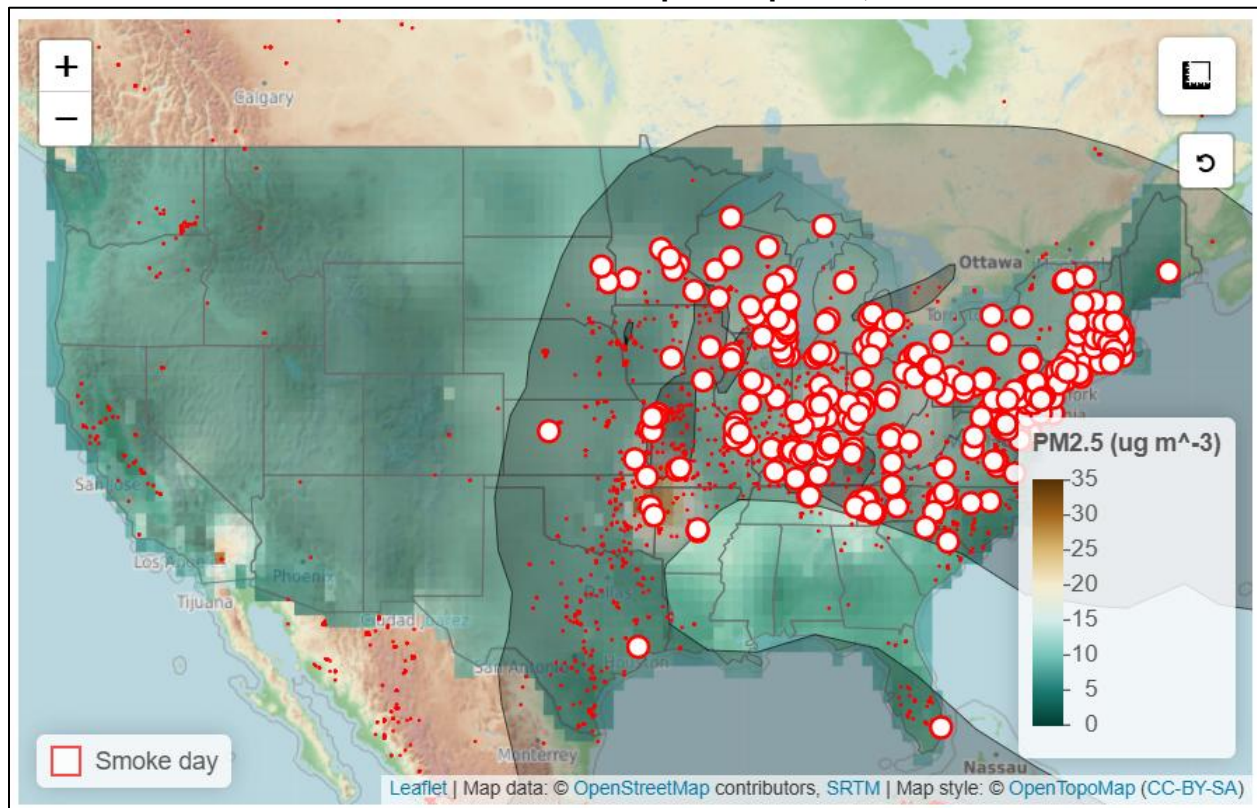
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Columbus - Rocky Ford Drive	180050008	4/13/2023	20.5	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	4/13/2023	18.1	17.0
Indianapolis - Washington Park	180970078	4/13/2023	19.2	17.8
Indianapolis - W. 18th St.	180970081	4/13/2023	27.3	20.9
Indianapolis- I-70 E	180970087	4/13/2023	25.2	20.5

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – April 13, 2023



Satellite Imagery with MAIAC AOD – April 13, 2023**HRRR Smoke - Vertically Integrated Smoke – April 13, 2023**

GAM PMO3 Smoke Output – April 13, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1550Z April 13, 2023****SMOKE:**

Central and Eastern United States...

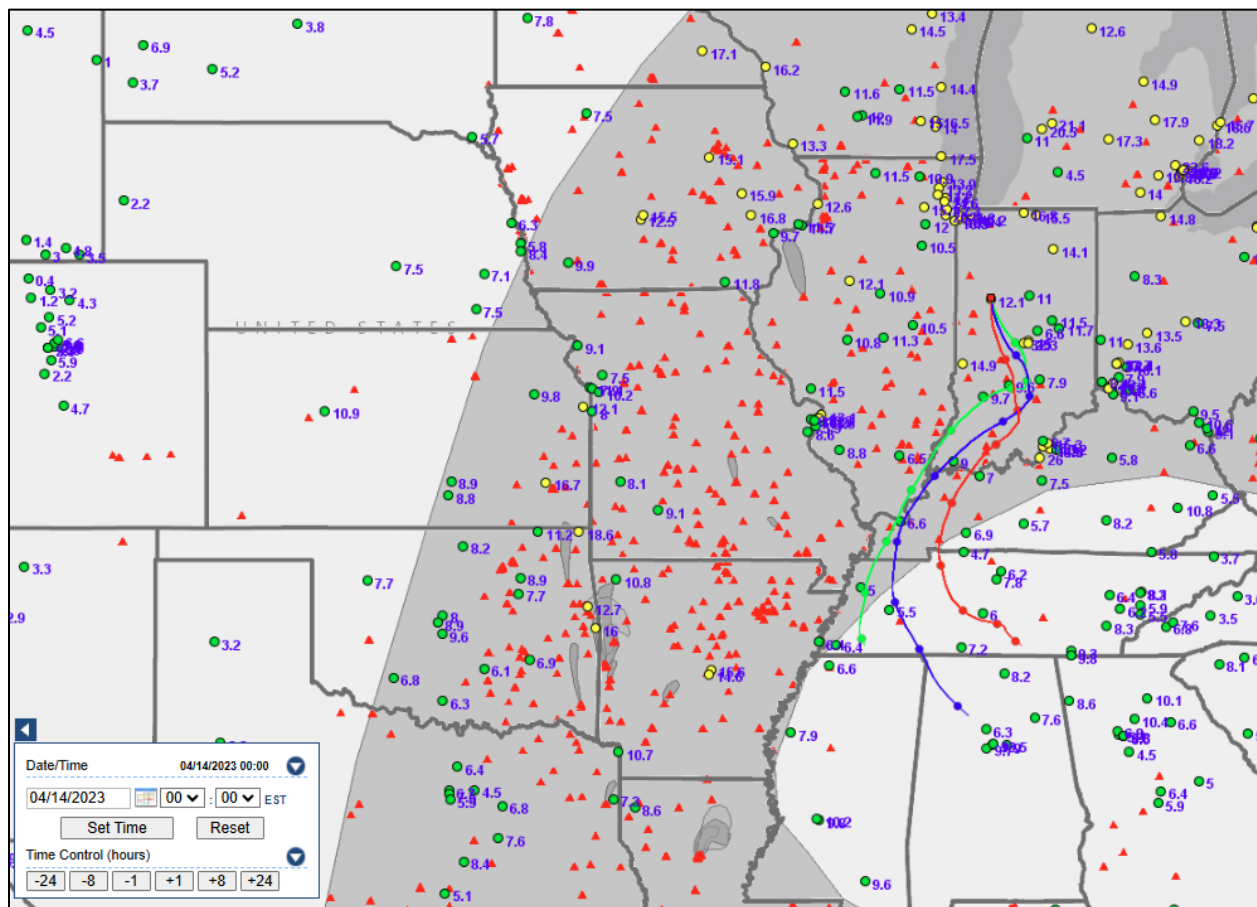
A large area of smoke comprised of emissions from mainly agricultural burns across the central and southeastern United States continued to be seen over a region that includes a vast majority of the eastern and central United States, southern Ontario and portions of the western North Atlantic. The smoke is mainly light, but some areas of medium density smoke were seen over Kentucky and Tennessee, Michigan and southern Ontario and also over Missouri and Illinois.

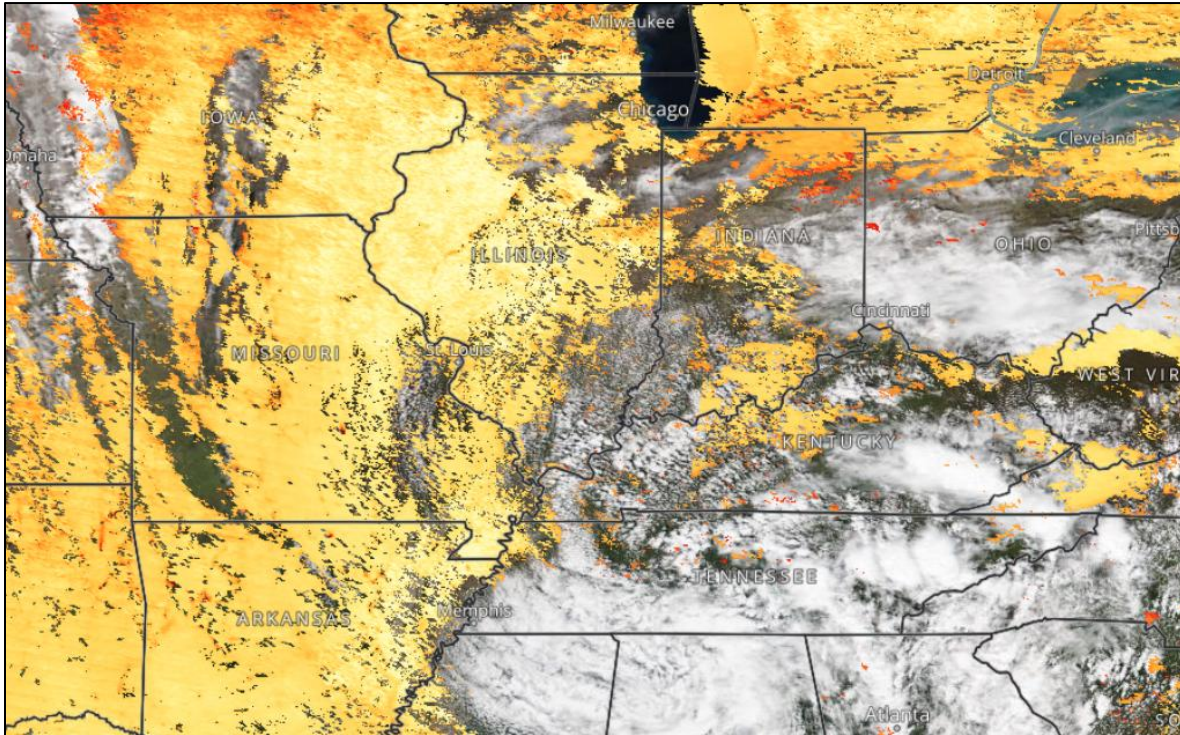
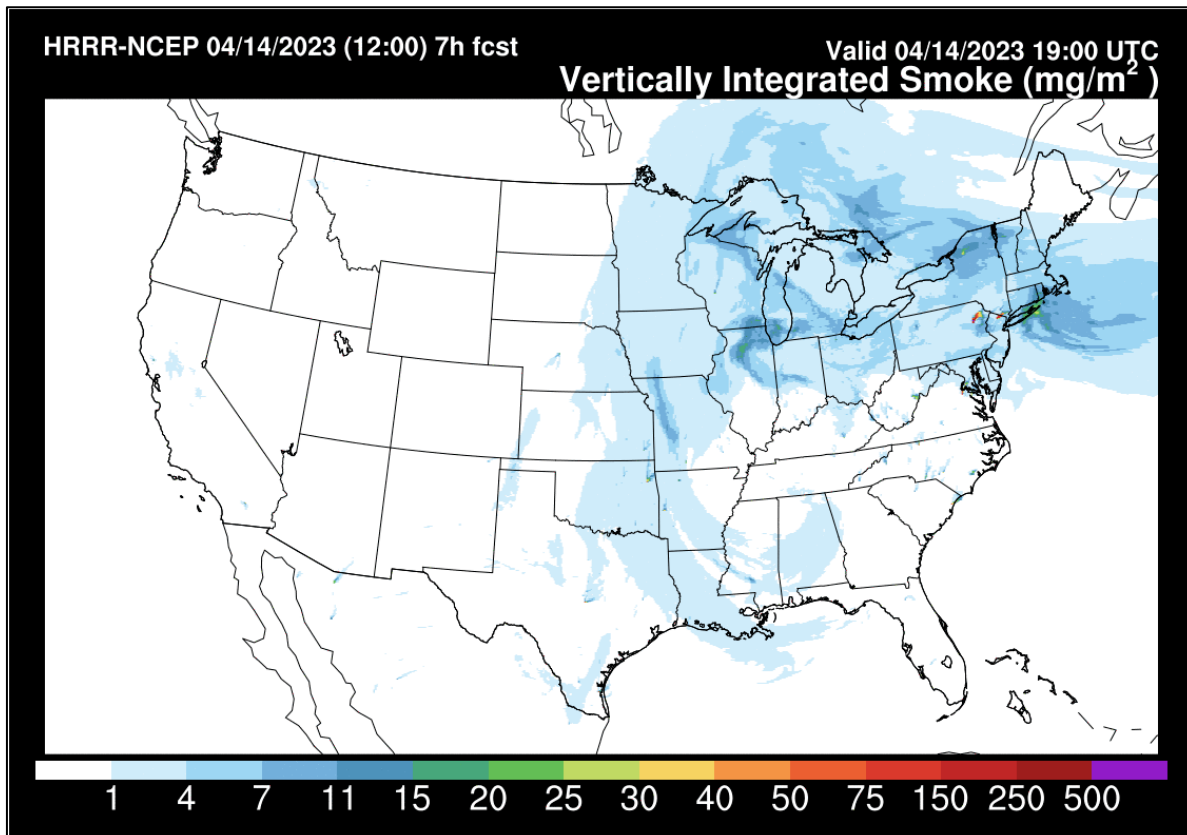
April 14, 2023

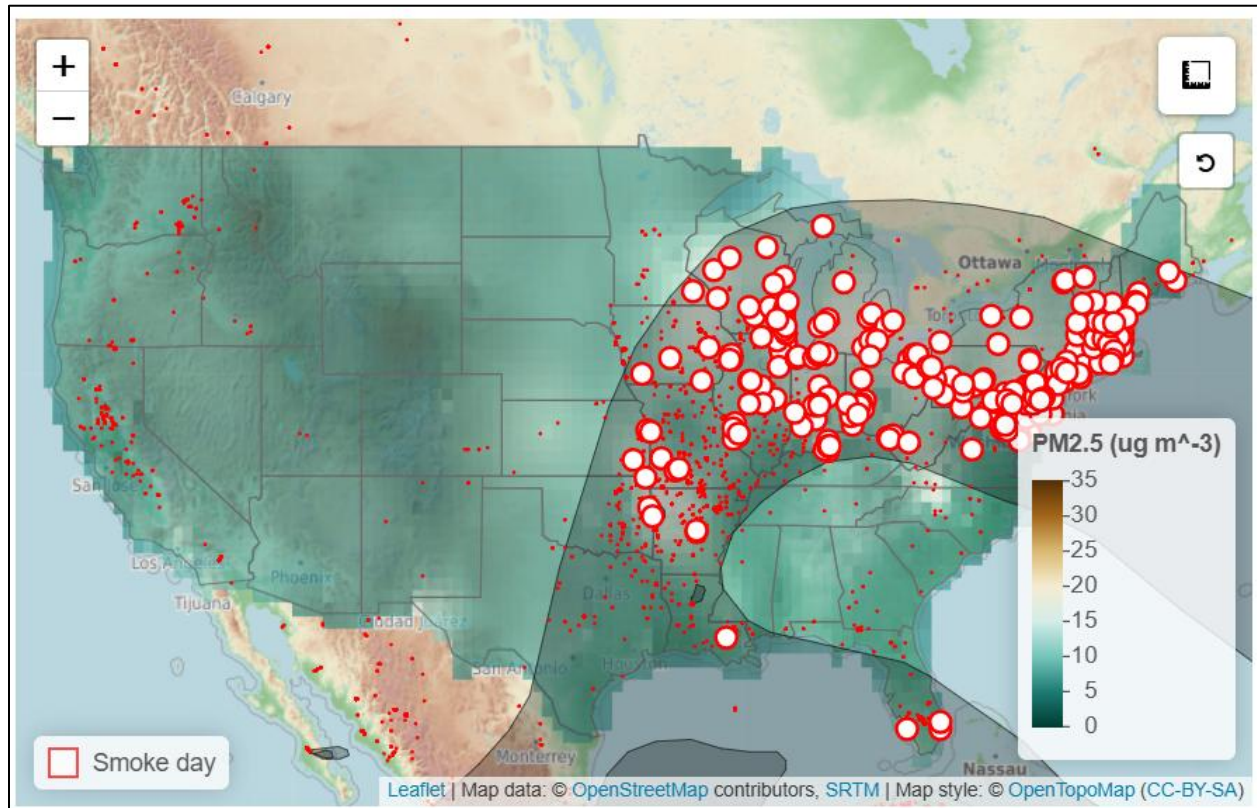
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
East Chicago - Marina	180890034	4/14/2023	20.2	18
Hammond-167th St	180890036	4/14/2023	17.3	16.3
Indianapolis - W. 18th St.	180970081	4/14/2023	31.3	20.9
Indianapolis - I-70 E	180970087	4/14/2023	21.5	20.5

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – April 14, 2023



Satellite Imagery with MAIAC AOD – April 14, 2023**HRRR Smoke - Vertically Integrated Smoke – April 14, 2023**

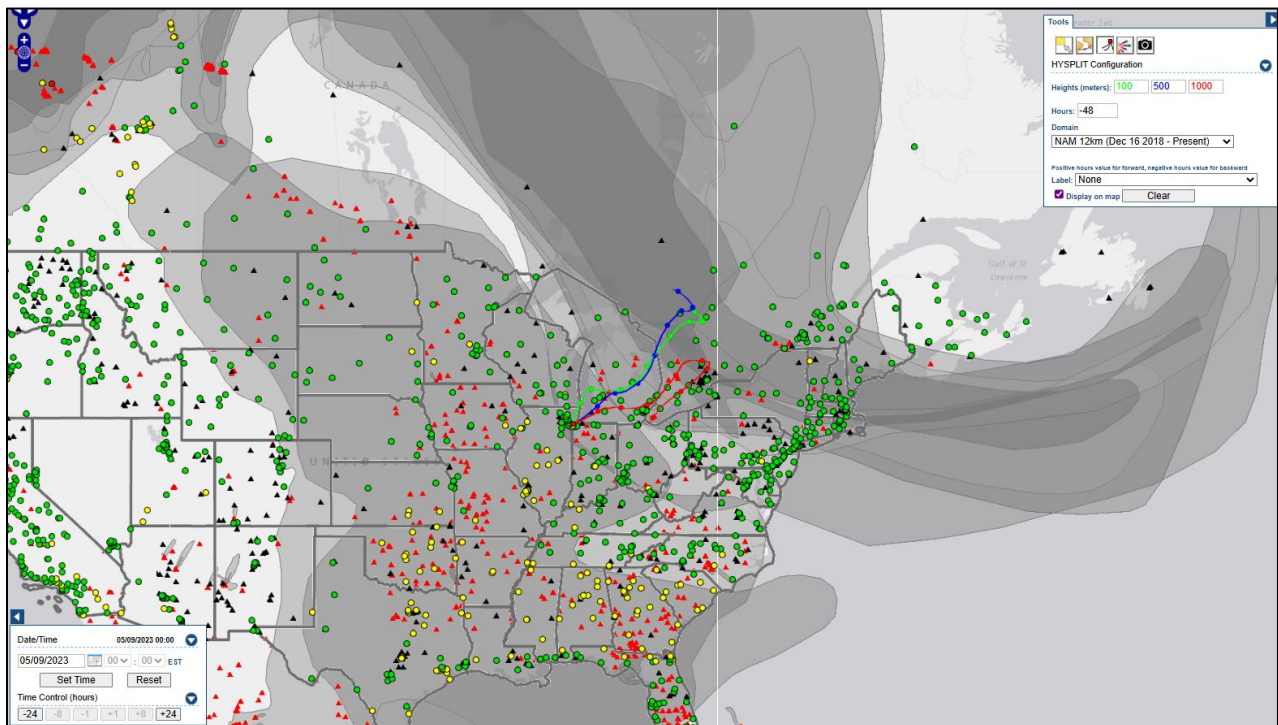
GAM PMO3 Smoke Output – April 14, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1800Z April 14, 2023****SMOKE:**

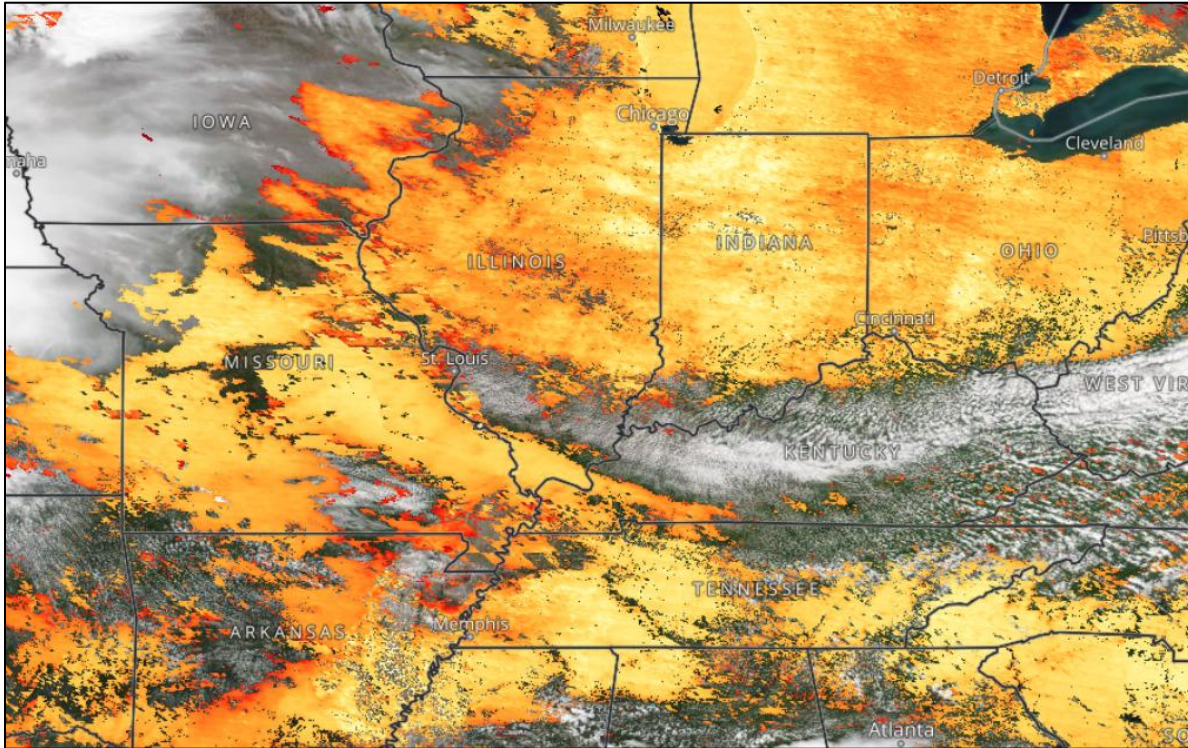
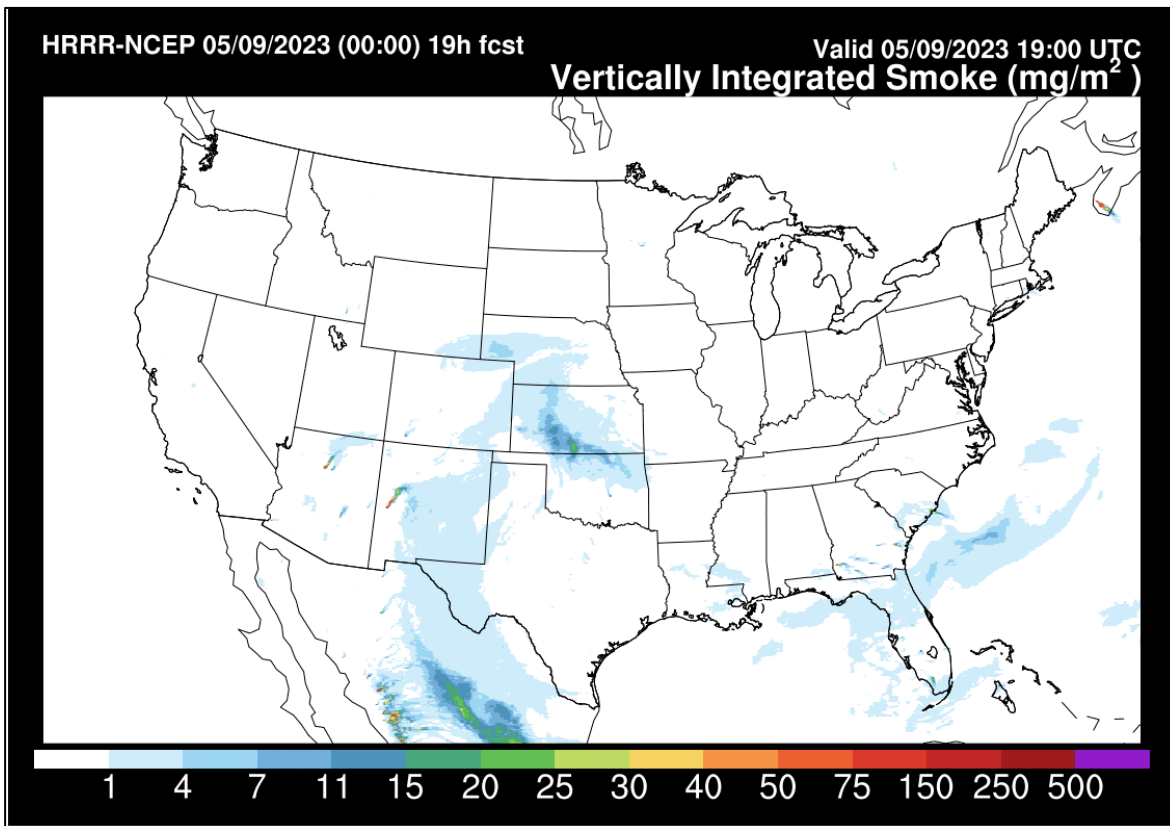
Central and Eastern United States...

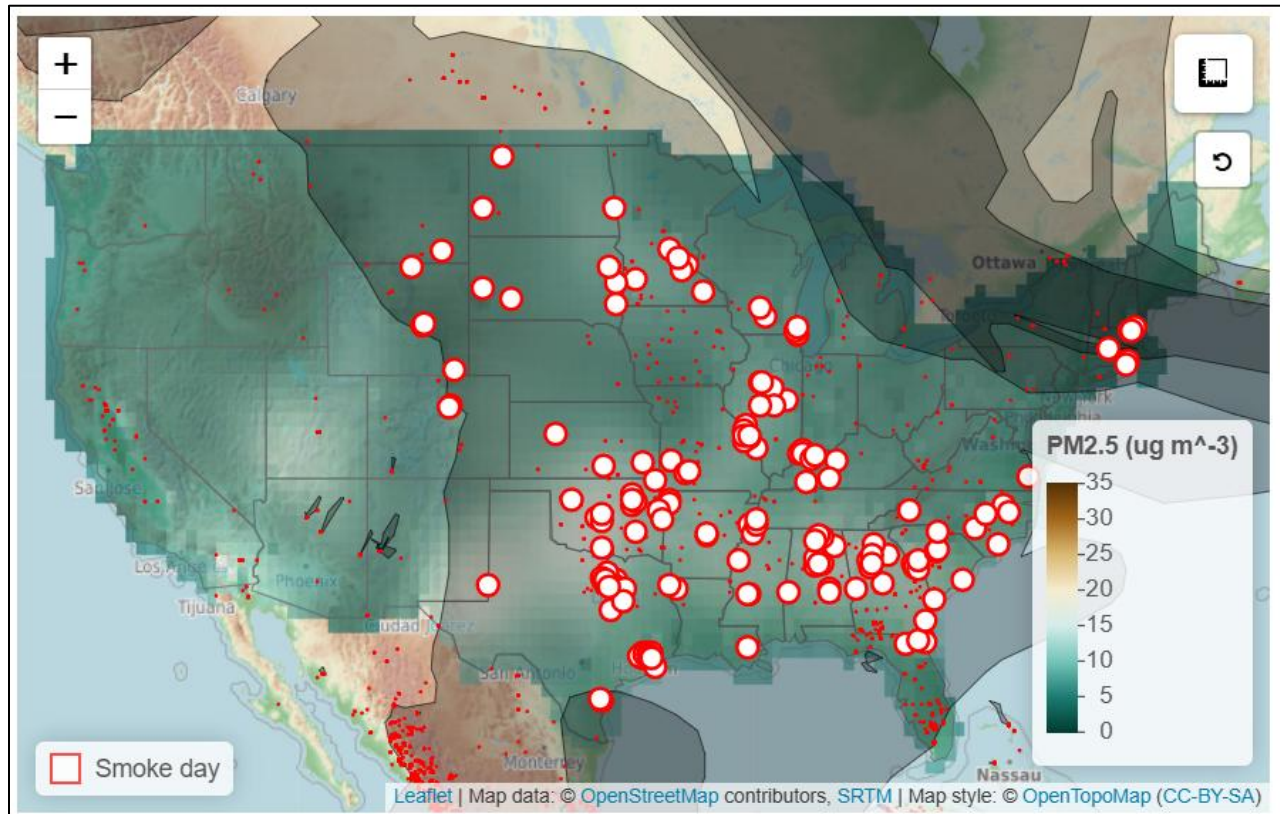
There was remnant smoke from yesterday's fire activity over the Central U.S. this morning but had dissipated by this early afternoon. There was cloud coverage over most of the eastern, southeastern region of the U.S. which made it difficult to visibly see smoke activity. There were a few fires in the NE corner, Pennsylvania, northern New Jersey, and southern New York that were emitting light density smoke plumes with the exception of the PA fire which emitted light to heavy smoke.

May 9, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor Name	AQS	Date	Daily Average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Gary - Madison St	180890031	5/9/2023	17.0	16

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 9, 2023

Satellite Imagery with MAIAC AOD – May 9, 2023**HRRR Smoke - Vertically Integrated Smoke – May 9, 2023**

GAM PMO3 Smoke Output – May 9, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1630Z May 9, 2023**

SMOKE:

Canada/Great Lakes Region/Northeastern U.S./Atlantic Ocean off the Northeast U.S. Coast...

A very large area of smoke of varying density linked primarily to recent significant wildfire activity in western Canada was seen this morning covering much of Canada as well as most of the Great Lakes region and the northeastern U.S. and extending well offshore of the northeastern U.S. over the Atlantic Ocean south of the Canadian Maritimes. Very thick smoke was present extending from northern Manitoba to the east and southeast over much of Ontario. From there the smoke area narrowed but was still concentrated in a band over far southwestern Quebec and the northeastern U.S. before passing off the coast. Another area of thicker smoke was visible over eastern British Columbia, northern Alberta, northwestern Saskatchewan, and most of the Northwest Territories and western Nunavut. It is also possible that smoke from the intense burning season in Mexico and Central America may be mixing in with the smoke from the Canadian fires especially around the Great Lakes region.

SMOKE/AEROSOL:

Central U.S./Southeastern U.S./Atlantic Ocean off the Southeast

U.S. Coast/Gulf of Mexico/Mexico/Northwestern Central America/Pacific Ocean Well to the South and Southwest of Northwestern Central America and Southern Mexico...

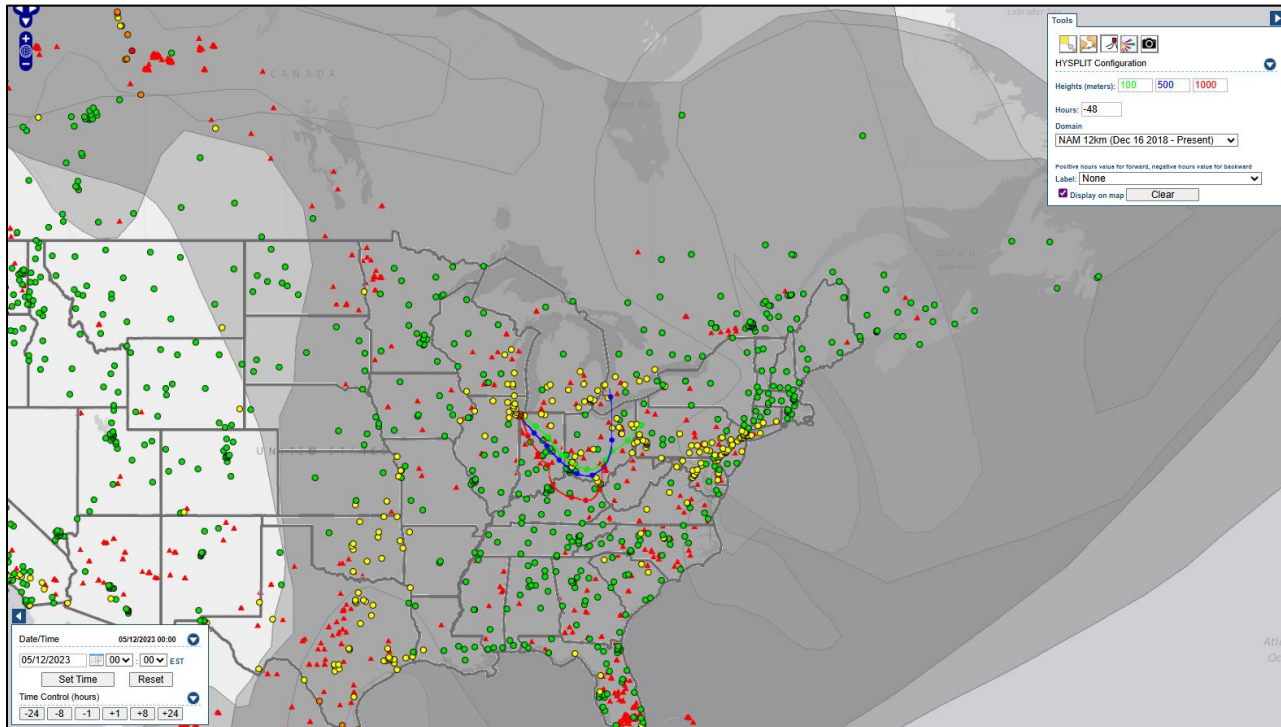
The huge mass of mainly thin to moderate density smoke from the ongoing significant seasonal fire activity along with a few wildfires occurring in Mexico and Central America was seen this morning over a good part of Mexico, northwestern Central America, the Pacific Ocean well south and southwest of the southern coast of Mexico and Central America, the Gulf of Mexico, the southeastern U.S., and all of the central U.S.

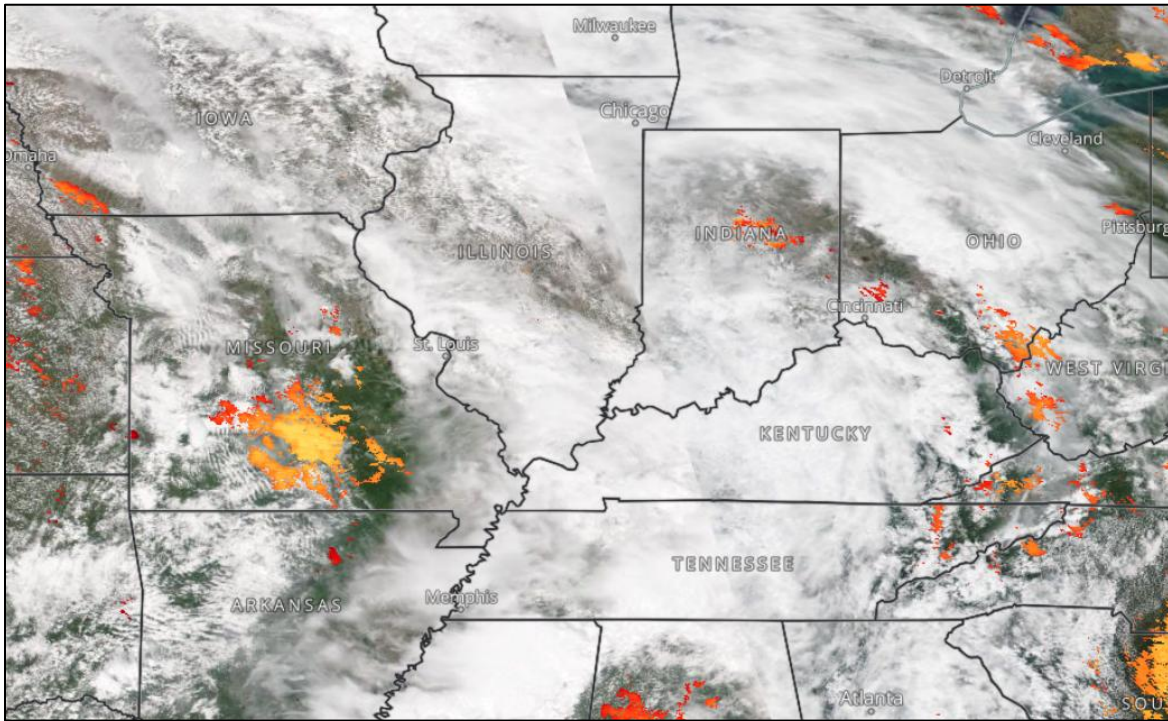
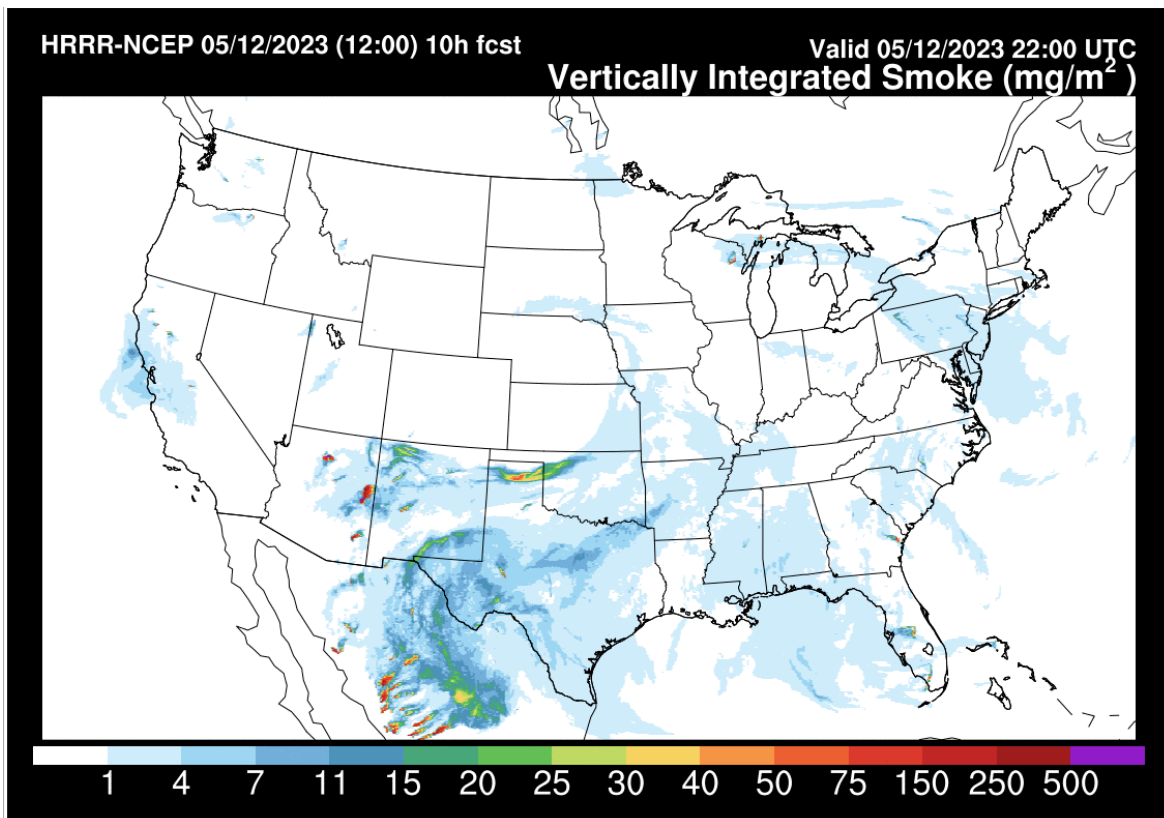
May 12, 2023

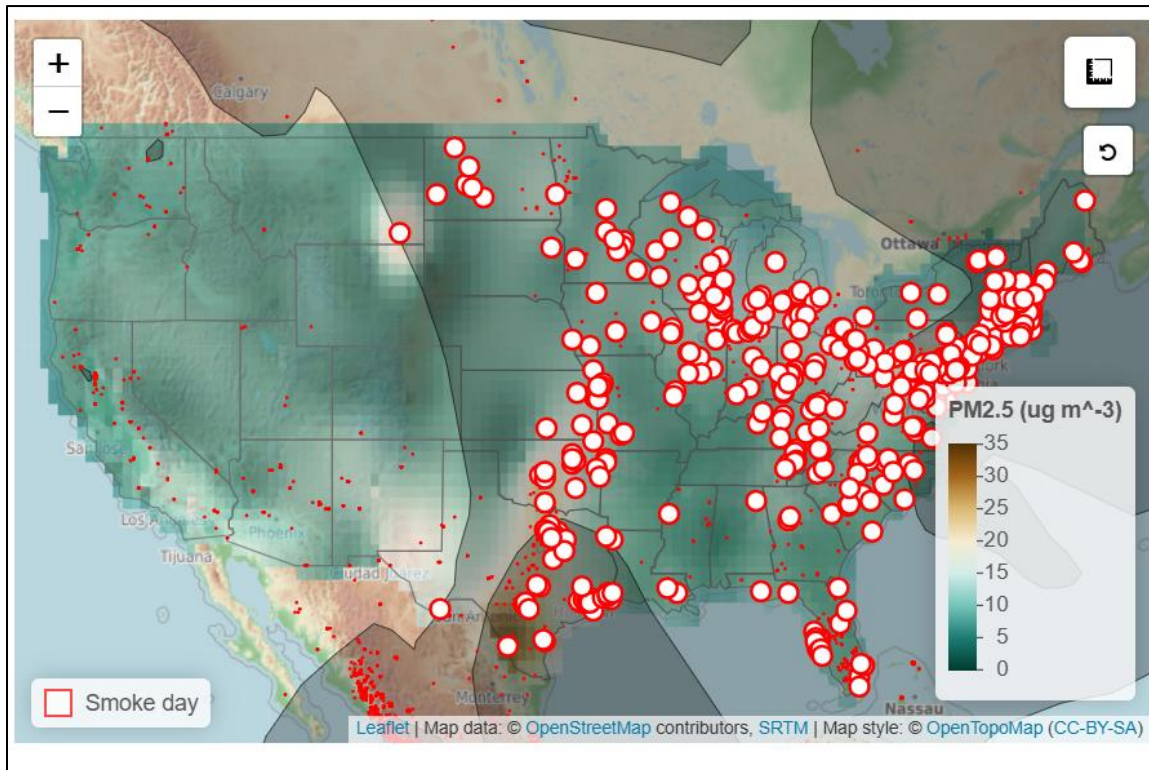
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
East Chicago – Franklin	18089000	5/12/2023	19.5	16.1
Gary - Madison St	18089003	5/12/2023	17.5	16
Hammond-167th St	18089003	5/12/2023	16.3	16.3

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 12, 2023



Satellite Imagery with MAIAC AOD – May 12, 2023**HRRR Smoke - Vertically Integrated Smoke – May 12, 2023**

GAM PMO3 Smoke Output – May 12, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1550Z May 12, 2023****SMOKE:**

Canada, Central and Eastern United States and the Atlantic Ocean off the Northeast United States Coast...

A very large area of smoke of varying density from recent wildfire activity in western Canada continued to be seen covering much of Canada as well the Northeastern United States and extending well offshore of the northeastern United State and over the Atlantic Ocean south of southeastern Canada. Moderate to localized high density smoke was seen extending from northern Manitoba and northern Alberta north into the Northwest Territories. An area of moderate to high density smoke was also seen off the southeastern Canadian coast and extending northeast into the North Atlantic Ocean. It is also possible that smoke from fires in Mexico and Central America may be mixing in with the smoke from the Canadian fires especially around Central and Southern United States.

SMOKE/AEROSOL:

Atlantic Ocean off the Southeast United States Coast, Eastern United States, Central United States, Gulf of Mexico, Western Caribbean Sea, Mexico, Northwestern Central America and the Pacific Ocean south and southwest of Northwestern Central America and Southern Mexico...

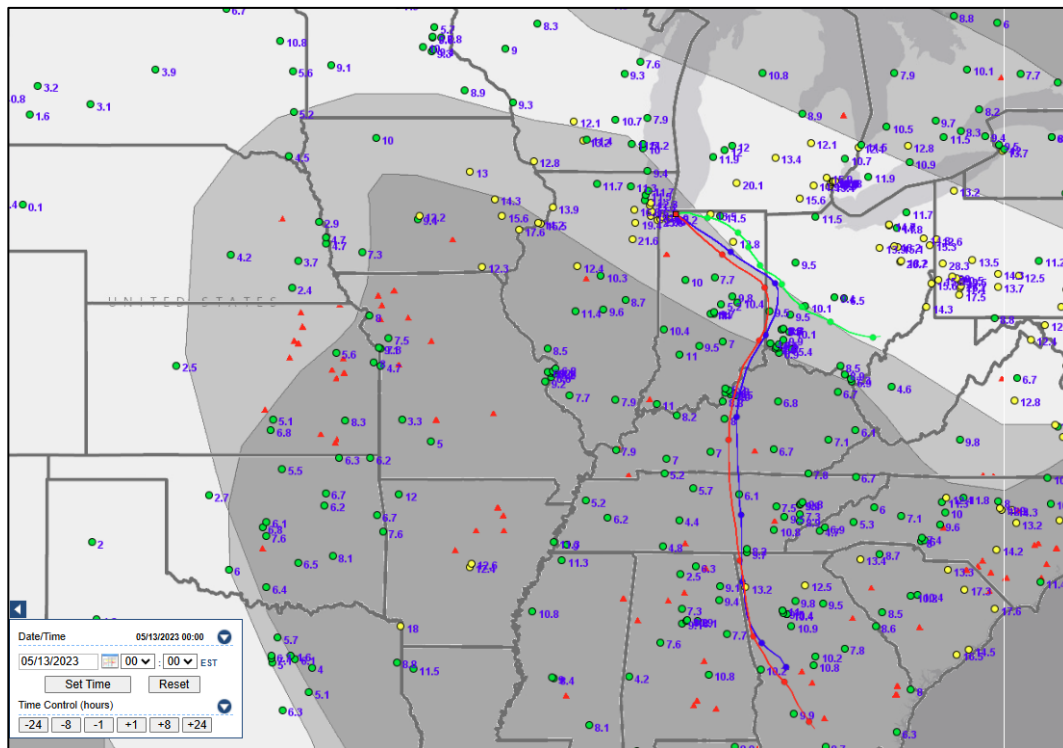
The huge area of mainly thin to moderate density smoke from the ongoing seasonal fire activity occurring in Mexico and Central America continued to be visible from the Atlantic Ocean off the Southeast United States Coast, extending west to the Eastern and Central United States, Gulf of Mexico, western Caribbean Sea, Mexico, northwestern Central America and the Pacific Ocean south and southwest of the southwestern coast of northwestern Central America and southwestern Mexico. The highest density smoke within this region was an area of moderate density smoke that was seen extending from northwestern Central America and southern Mexico north through the western Gulf of Mexico and Mexico coastline to southern Texas. While most of what is seen in satellite imagery is believed to be smoke, some aerosols from industrial activity mainly in Mexico and Central America may be mixing in.

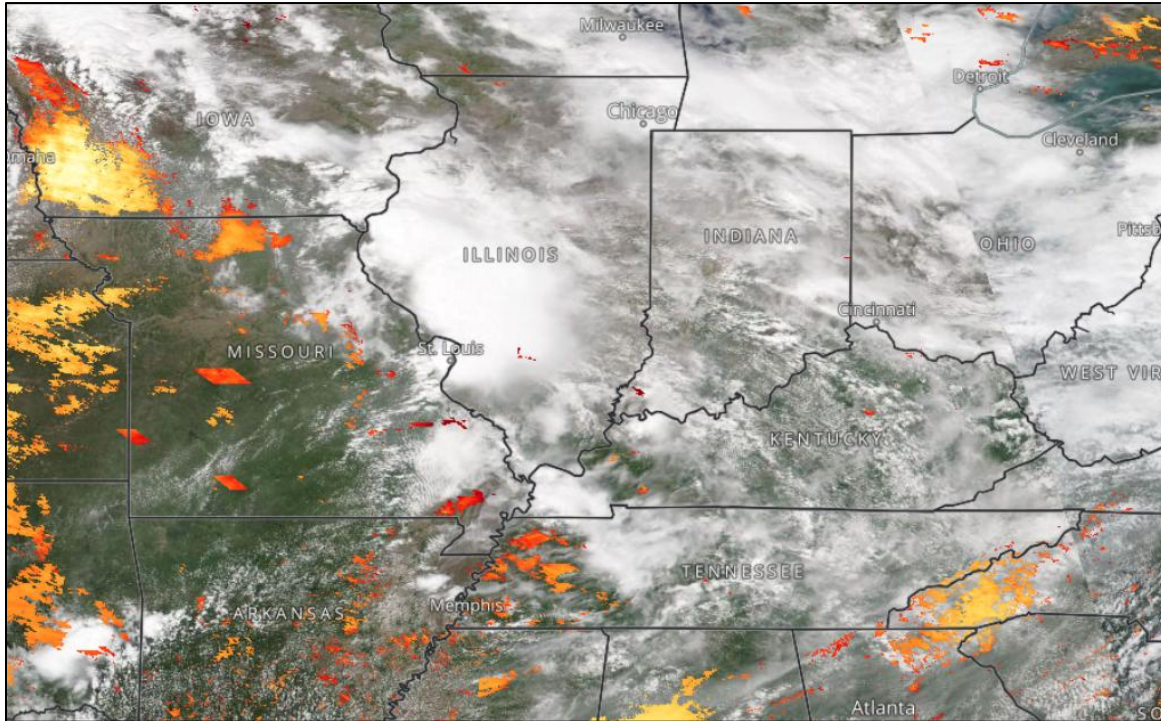
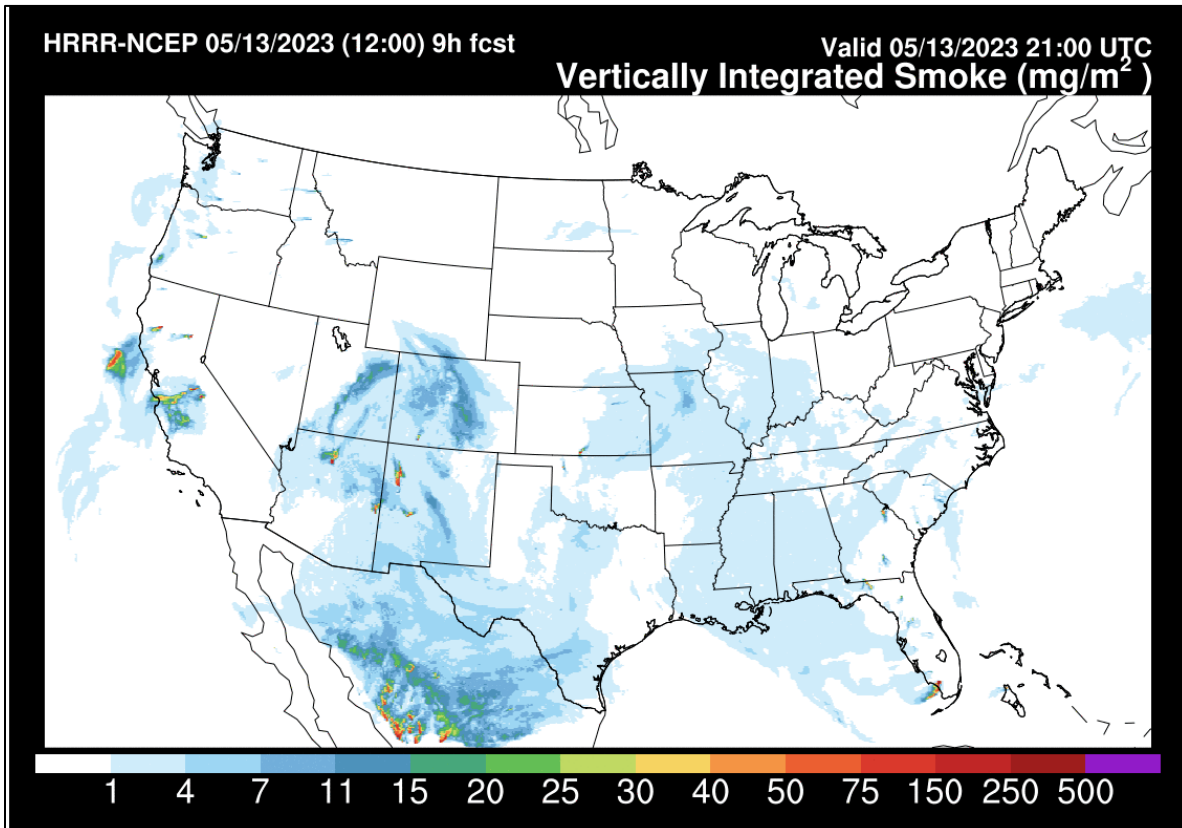
May 13, 2023

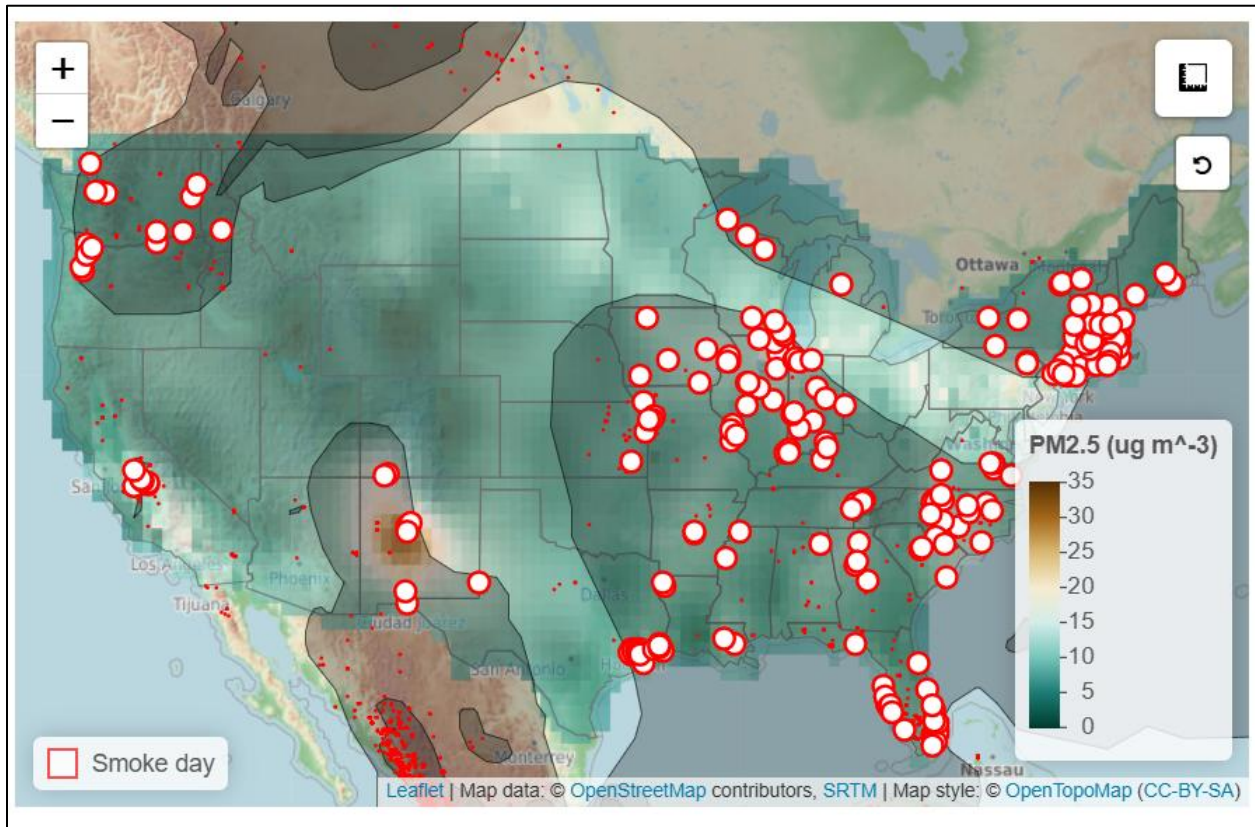
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor Name	AQS	Date	Daily Average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Hammond-167th St	180890036	5/13/2023	20.0	16.3
Ogden Dunes	181270024	5/13/2023	18.5	15.3

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 13, 2023



Satellite Imagery with MAIAC AOD – May 13, 2023**HRRR Smoke - Vertically Integrated Smoke – May 13, 2023**

GAM PMO3 Smoke Output – May 13, 2023

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1645Z May 13, 2023

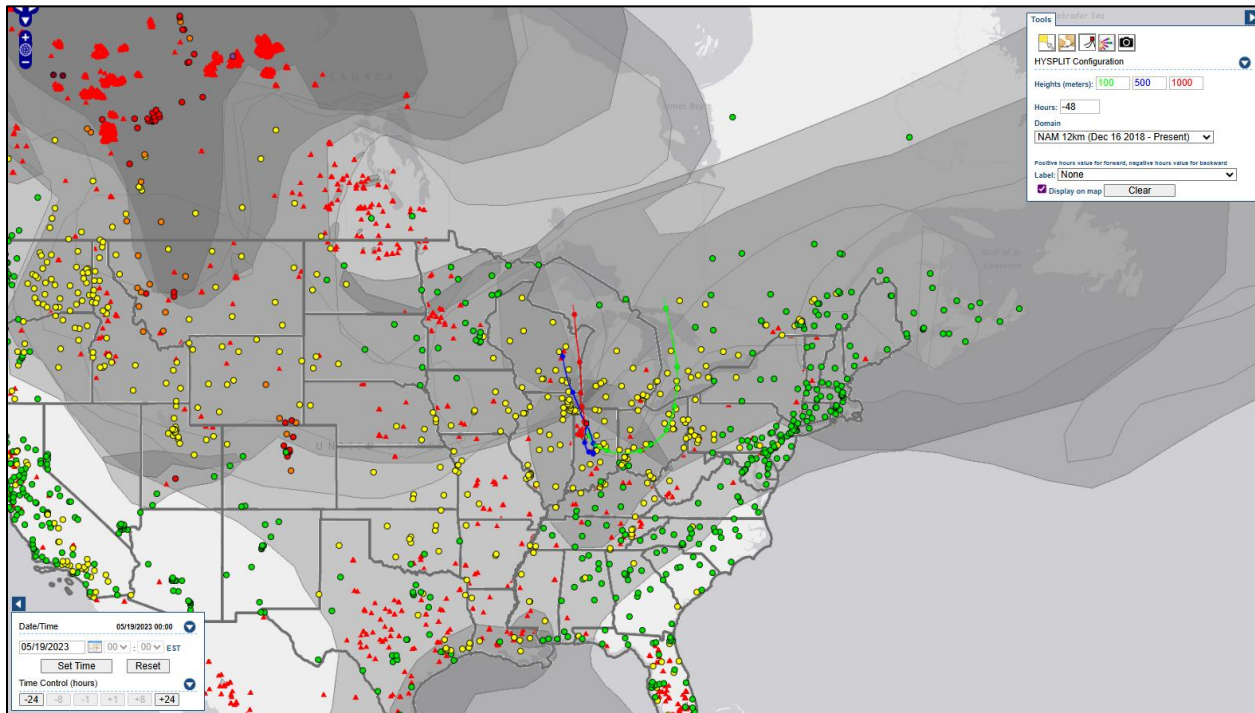
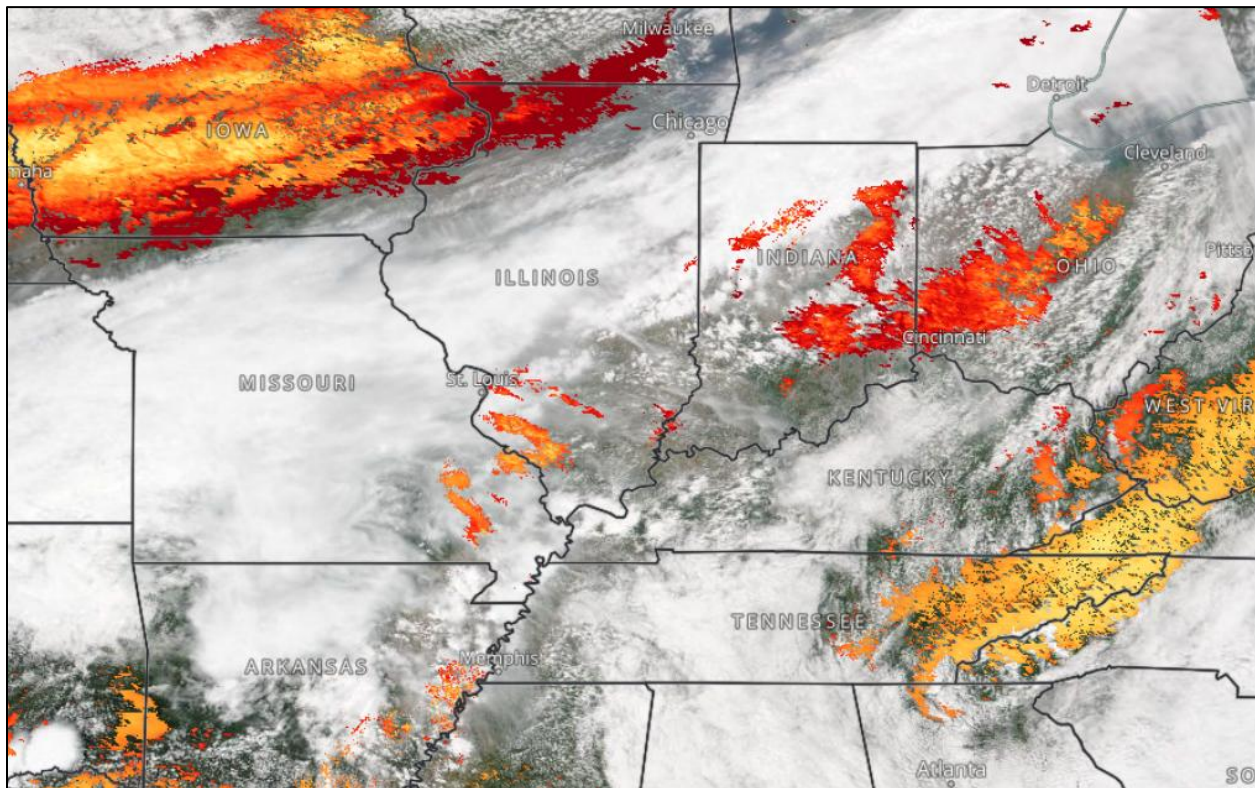
SMOKE:

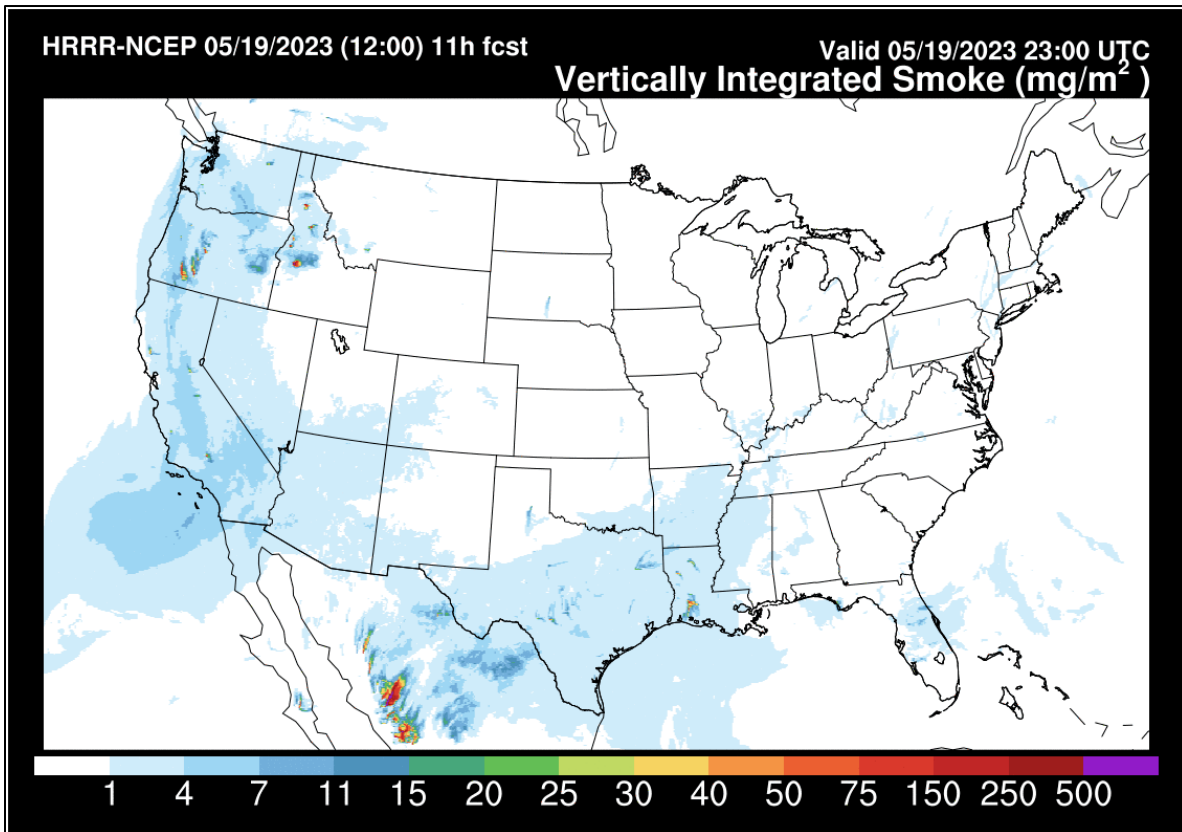
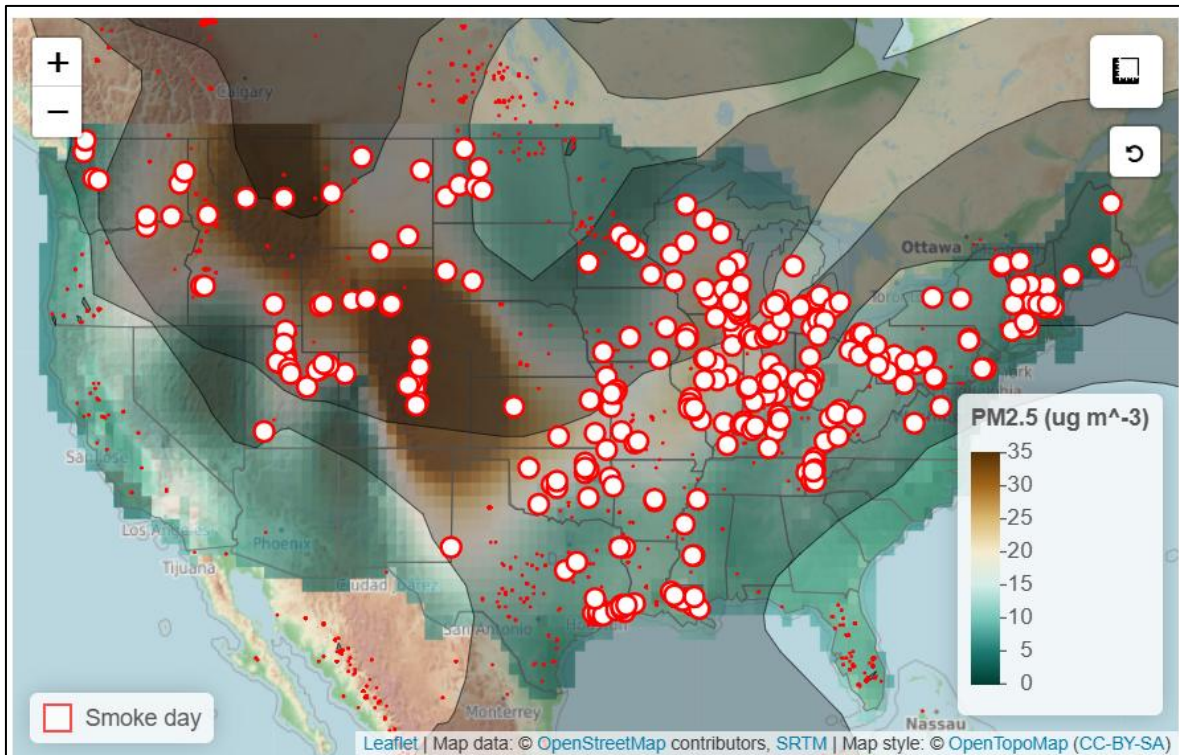
Canada/Northeastern U.S./Atlantic Ocean Extending Well off the East
Coast of Canada and the U.S...

A very large area of smoke attributed to a number of large wildfires
burning in portions of northeastern British Columbia, Alberta, and
Saskatchewan provinces of western Canada was visible this morning
extending from western Canada eastward over much of the remainder of
Canada and extending to the south over the Northeastern U.S.

May 19, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Elkhart - Prairie St	180390008	5/19/2023	18.6	16.3
Kokomo - E. Vaile Ave	180670004	5/19/2023	15.4	14.7
East Chicago - Marina	180890034	5/19/2023	22.2	18
Hammond-167th St	180890036	5/19/2023	19.7	16.3
Indianapolis - Washington Park	180970078	5/19/2023	17.8	17.8
Indianapolis - W. 18th St.	180970081	5/19/2023	30.1	20.9
Indianapolis - I-70 E	180970087	5/19/2023	20.9	20.5
Ogden Dunes	181270024	5/19/2023	19.6	15.3
South Bend - Shields Dr.	181410015	5/19/2023	19.5	16.9
Lafayette - Greenbush St	181570008	5/19/2023	18.4	15.1
Larwill	181830003	5/19/2023	16.2	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 19, 2023**Satellite Imagery with MAIAC AOD – May 19, 2023**

HRRR Smoke - Vertically Integrated Smoke – May 19, 2023**GAM PMO3 Smoke Output – May 19, 2023**

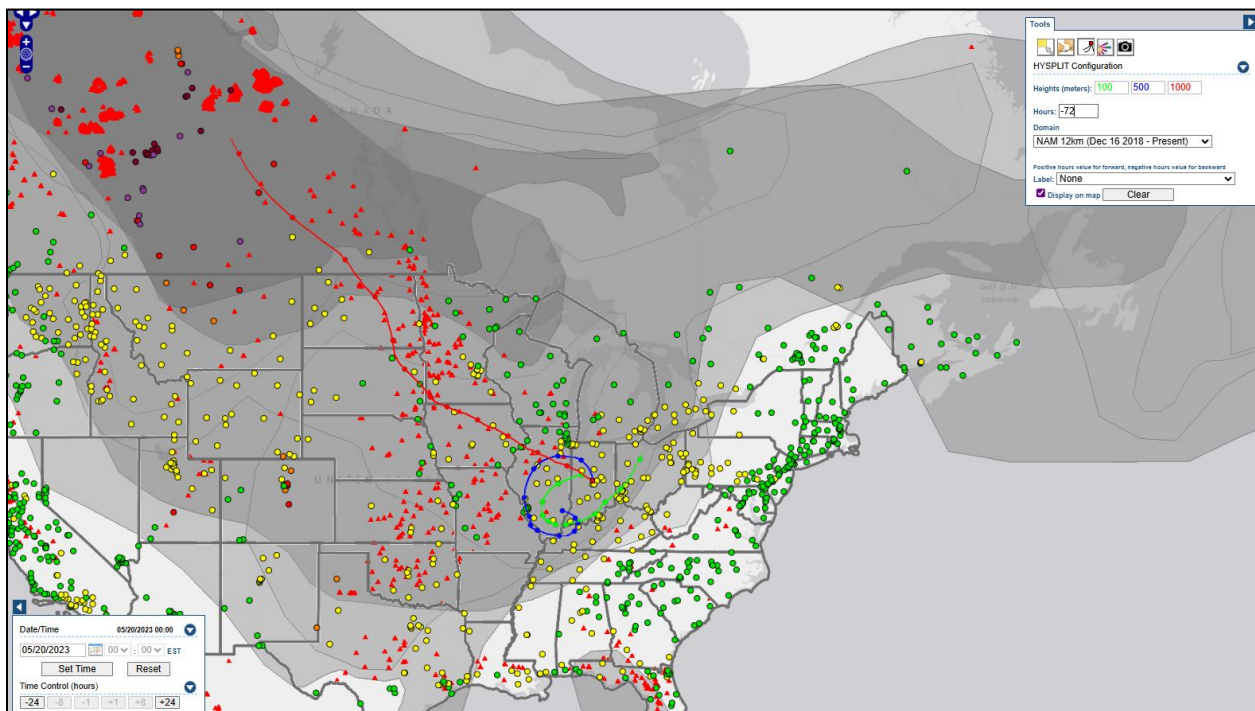
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1630Z May 19, 2023****SMOKE:**

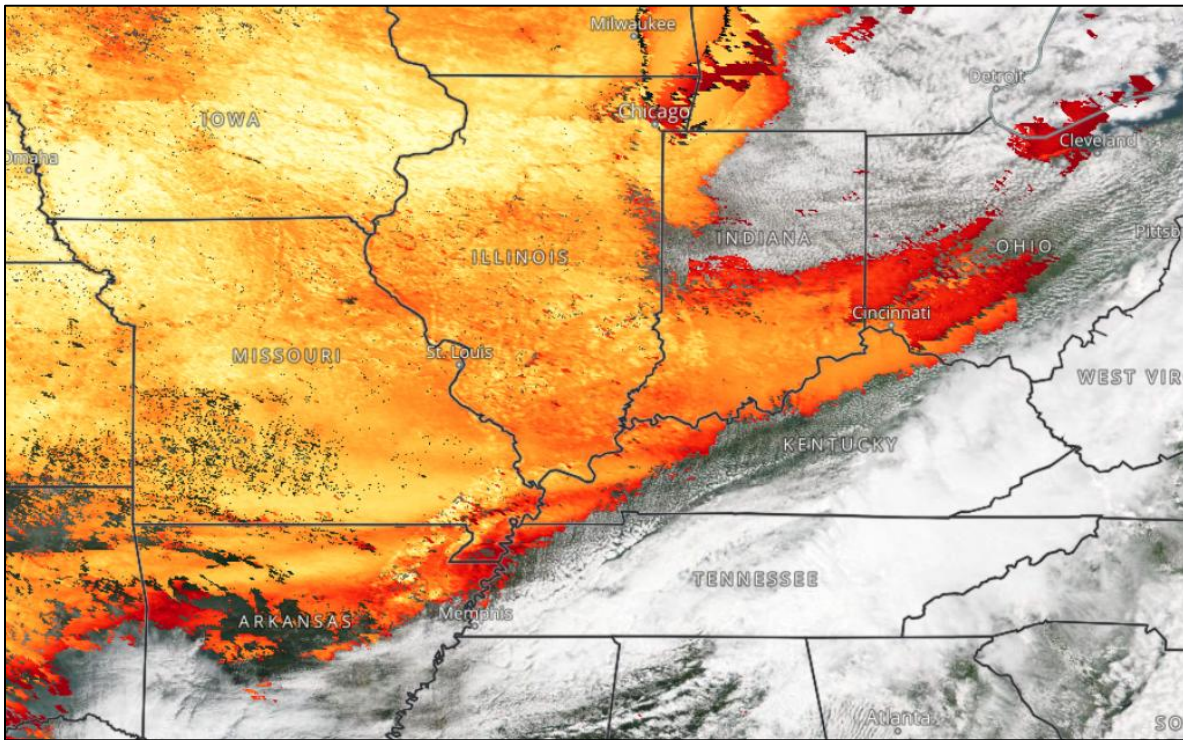
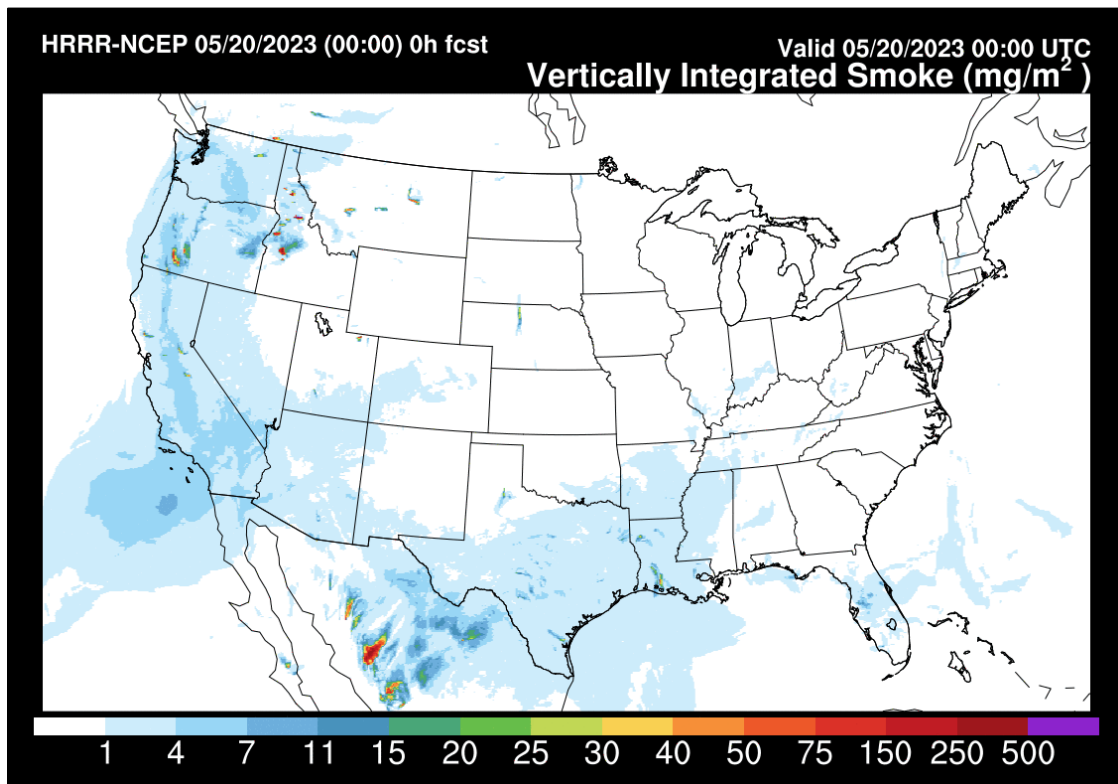
Northern Half of U.S./Canada...

Many large wildfires across northeastern British Columbia, central and northern Alberta, and northern Saskatchewan continue to spread a huge plume of smoke across much of Canada and the northern half of the U.S. Thin density smoke was detected over southeastern Yukon, southern Nunavut/Northwest Territories, eastern British Columbia, all of Alberta/Saskatchewan, northern Manitoba, and far northwestern Ontario. Just about all the northern half of the U.S was covered with thin density smoke. Moderate density smoke was found over the southern Northwest Territories, northeastern British Columbia, all of Alberta, and northern Saskatchewan/Manitoba. In the U.S, moderate density smoke was found over the Northern Rockies, parts of the Northern Plains, the Upper Mississippi Valley, the Great Lakes, southern Quebec, and northern New England. A large plume of heavy density smoke was detected over far northern British Columbia, most of Alberta, northern Saskatchewan, and northwestern Manitoba.

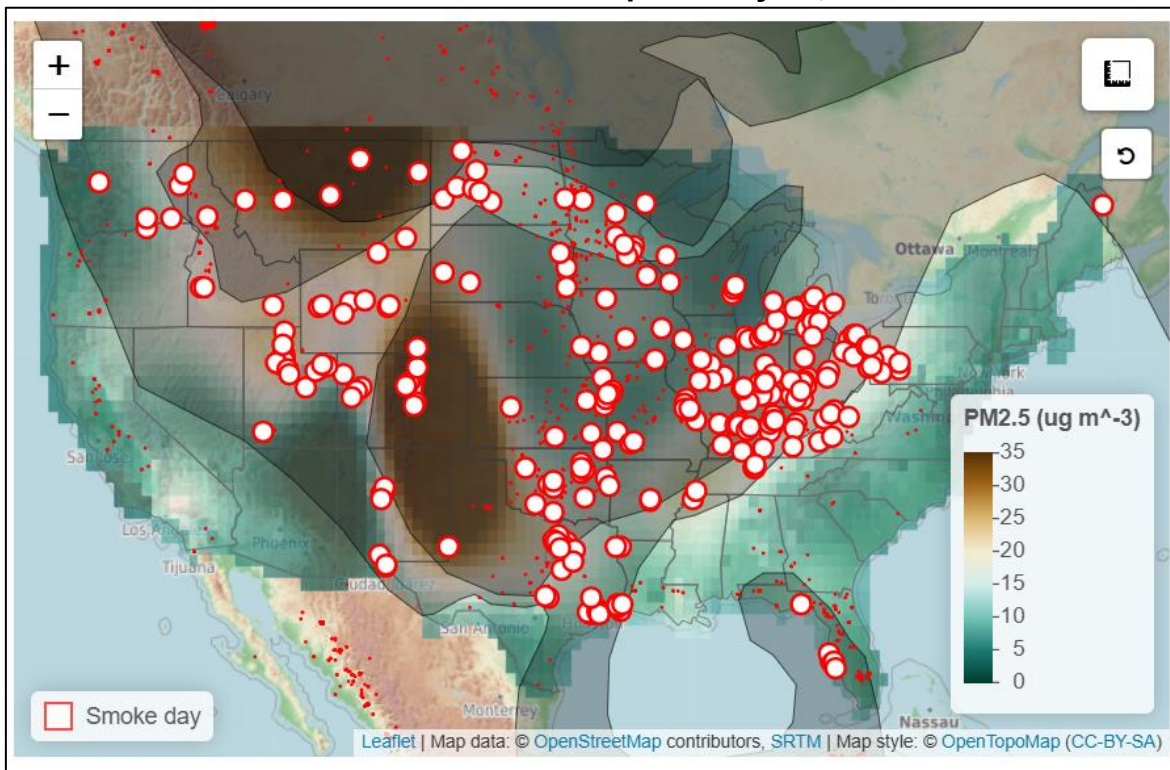
May 20, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Columbus - Rocky Ford Drive	180050008	5/20/2023	17.7	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	5/20/2023	25.1	17.0
Mechanicsburg	180650003	5/20/2023	18.7	15.5
Anderson - Eastside Elem	180950011	5/20/2023	18.1	15.4
Indianapolis - Washington Park	180970078	5/20/2023	19.3	17.8
Indianapolis - W. 18th St.	180970081	5/20/2023	22.2	20.9
Indianapolis- I-70 E	180970087	5/20/2023	20.5	20.5
Bloomington - Binford	181050003	5/20/2023	20.4	13.9
Evansville - Buena Vista	181630021	5/20/2023	21.2	15.1

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 20, 2023

Satellite Imagery with MAIAC AOD – May 20, 2023**HRRR Smoke - Vertically Integrated Smoke – May 20, 2023**

GAM PMO3 Smoke Output – May 20, 2023



NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1646Z May 20,2023

SMOKE:

U.S/Canada/Atlantic Ocean Extending Well off the East Coast of U.S and Canada...

An exceptionally large area of smoke of varying density from the large wildfires across northeastern British Columbia, central and northern Alberta, and northern Saskatchewan continue to expand across much of the U.S and Canada. The smoke also extended well offshore over in the northern Atlantic Ocean, with moderate smoke visible over in central Atlantic Ocean and likely spreading towards Europe. Within the large area of smoke, heavy density smoke was visible over much of the main sources from the smoke, with the smoke seen over eastern British Columbia, all of Alberta and Saskatchewan, and northern Manitoba. Moderate density smoke was seen over multiple areas, with the largest area of moderate smoke encompassing western and central Canada and the northern half of the U.S. The other area of moderate density smoke was visible over the eastern/central Atlantic Ocean offshore of Northeast U.S and eastern Canada. Although the large wildfires within Western Canada are the main driving forces behind the large area of smoke, wildfires in western U.S was seen contributing to the overall smoke.

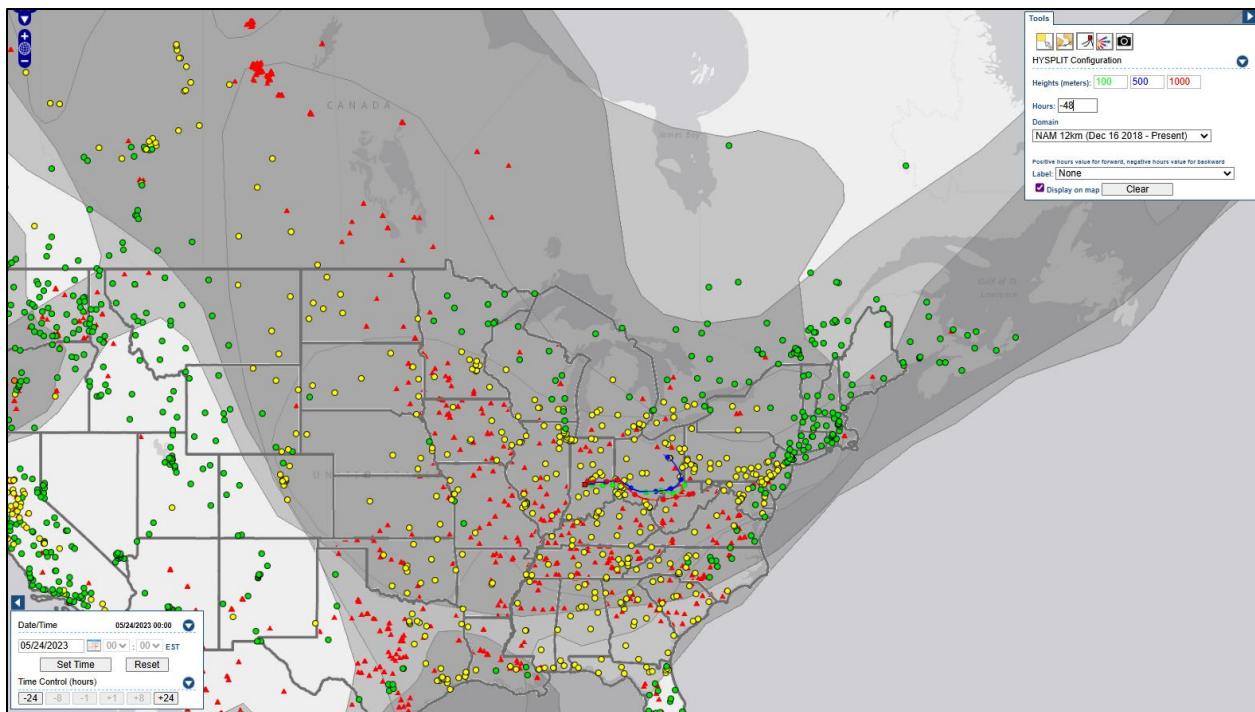
SMOKE/AEROSOL:

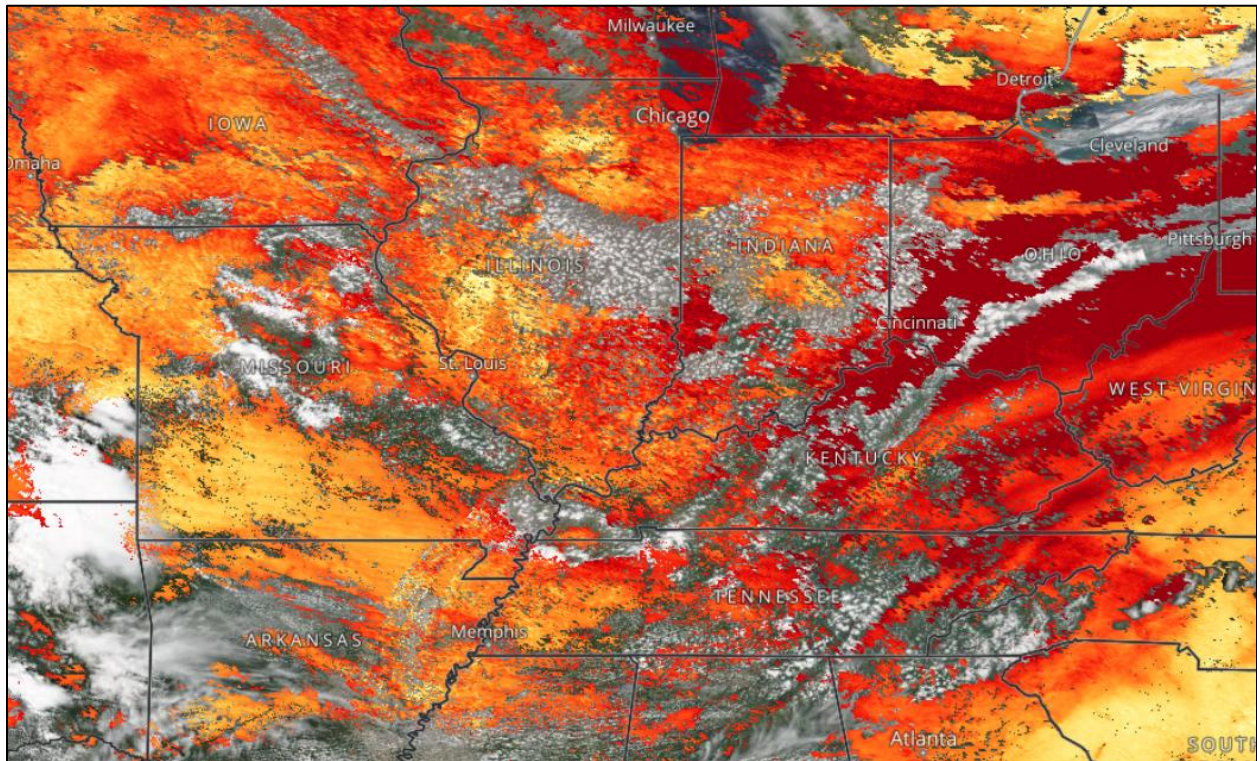
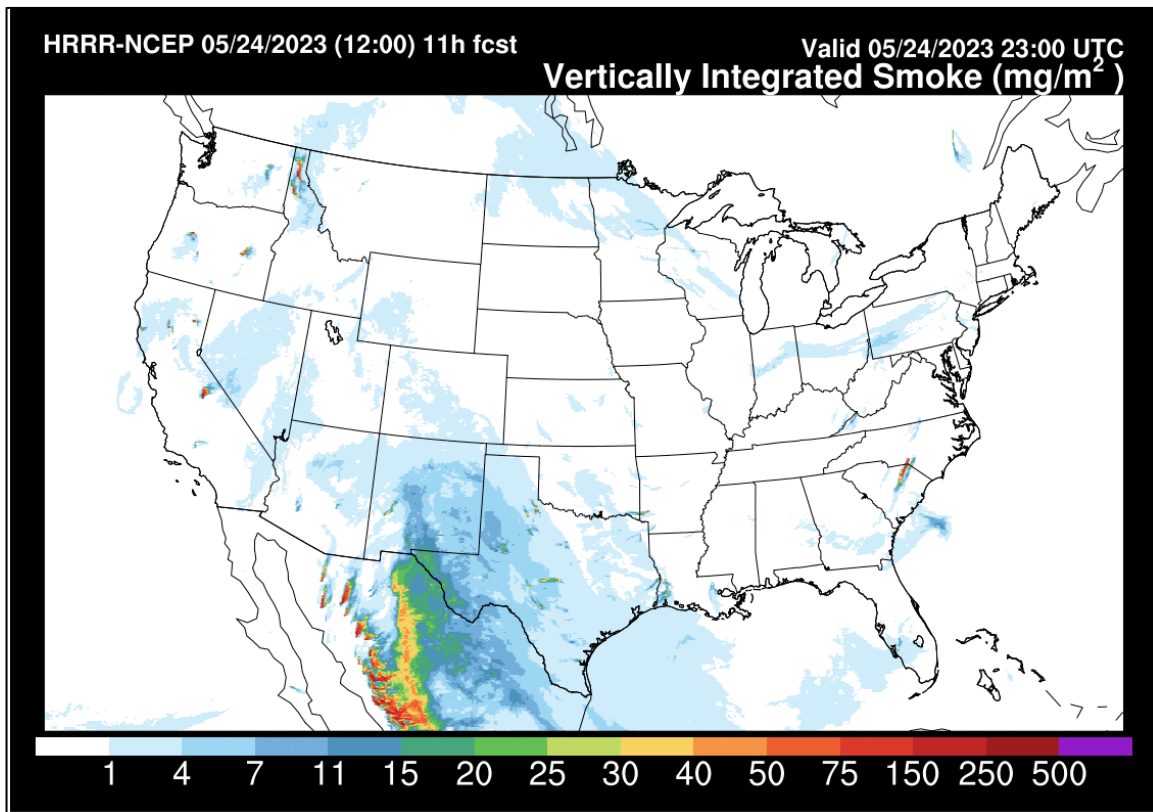
Southern U.S./Gulf of Mexico/Mexico/Central America...

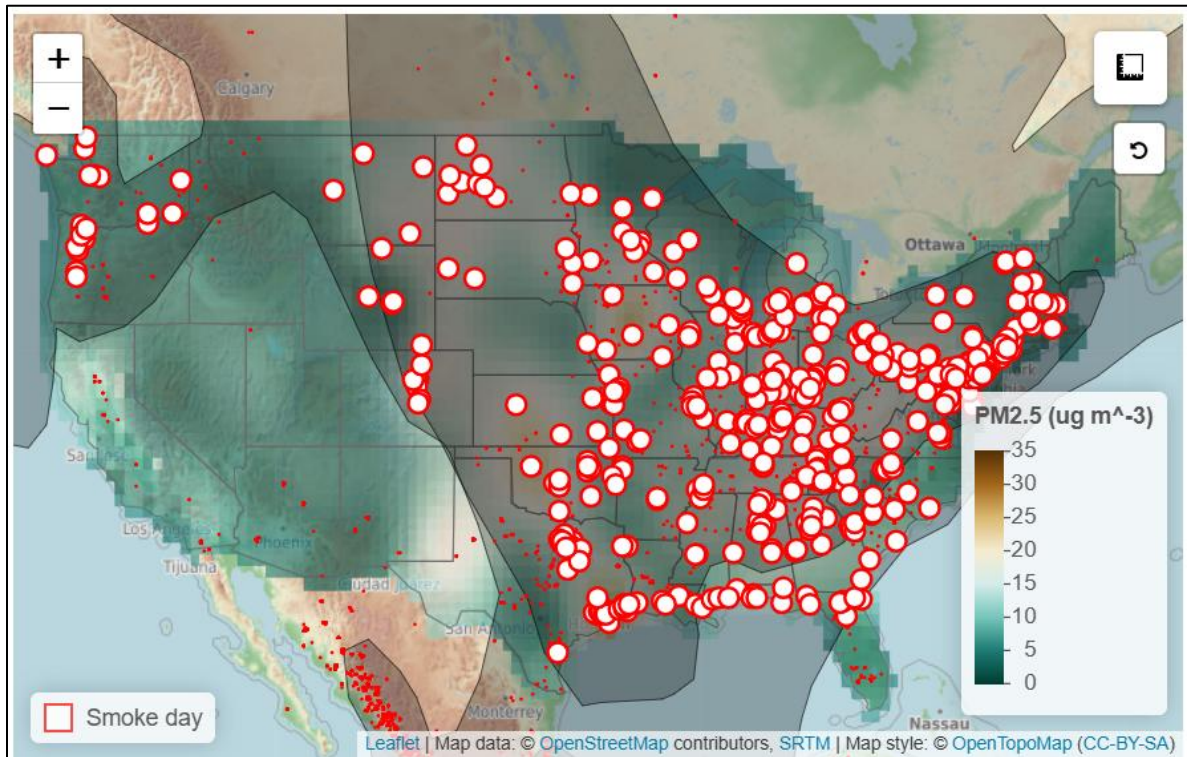
An extensive area of thin density smoke linked mainly to the ongoing widespread burning season along with a few wildfires in Mexico and northwestern Central America was detected over much of eastern and southern Mexico, all of northwestern Central America, the Pacific Ocean well south and southwest off coast of Mexico and Northwest Central America, and the Gulf of Mexico. This smoke extended northward towards the southern and Central U.S, where it is mingling with the larger expansive area of smoke mentioned in the "SMOKE" section prior. Within this large mass of thin density smoke was an area of moderate density smoke which was detected over south-central Mexico and Pacific Ocean offshore of southern Mexico. While the majority of what was detected on satellite imagery was believed to be smoke, some aerosols from industrial activity mainly in Mexico and Central America may be mixing in.

May 24, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Kokomo - E. Vaile Ave	180670004	5/24/2023	15.7	14.7
Indianapolis - School 21	180970084	5/24/2023	15.9	15.5
Bloomington - Binford	181050003	5/24/2023	13.5	12.8
Evansville – U of E	181630016	5/24/2023	15.0	15.0

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 24, 2023

Satellite Imagery with MAIAC AOD – May 24, 2023**HRRR Smoke - Vertically Integrated Smoke – May 24, 2023**

GAM PMO3 Smoke Output – May 24, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1600Z May 24,2023**

SMOKE:

Canada/U.S./Atlantic...

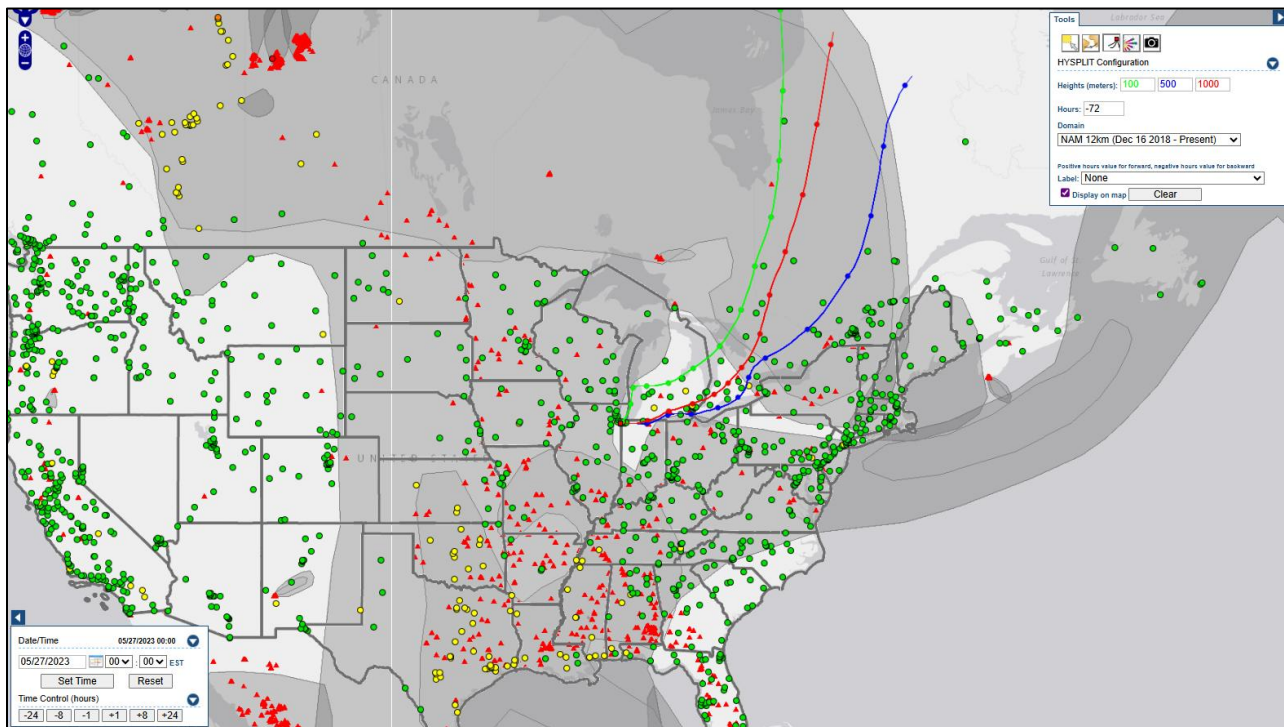
An exceptionally large area of smoke, emanating from the large wildfires occurring mainly in central and northern Saskatchewan, northern Alberta, and southwestern Northwest Territories, continues to impact significant portions of Canada, the United States, and extending off the east coast of the United States and into the North Atlantic Ocean. Moderate to very thick density smoke from the large wildfires in the Northwest Territories was seen moving southeast briefly before extending northeast across the region. Moderate smoke was also seen over the majority of the northern U.S. Cloud cover over portions of western and south-central Canada and northern U.S limited smoke detection from satellite imagery in those areas.

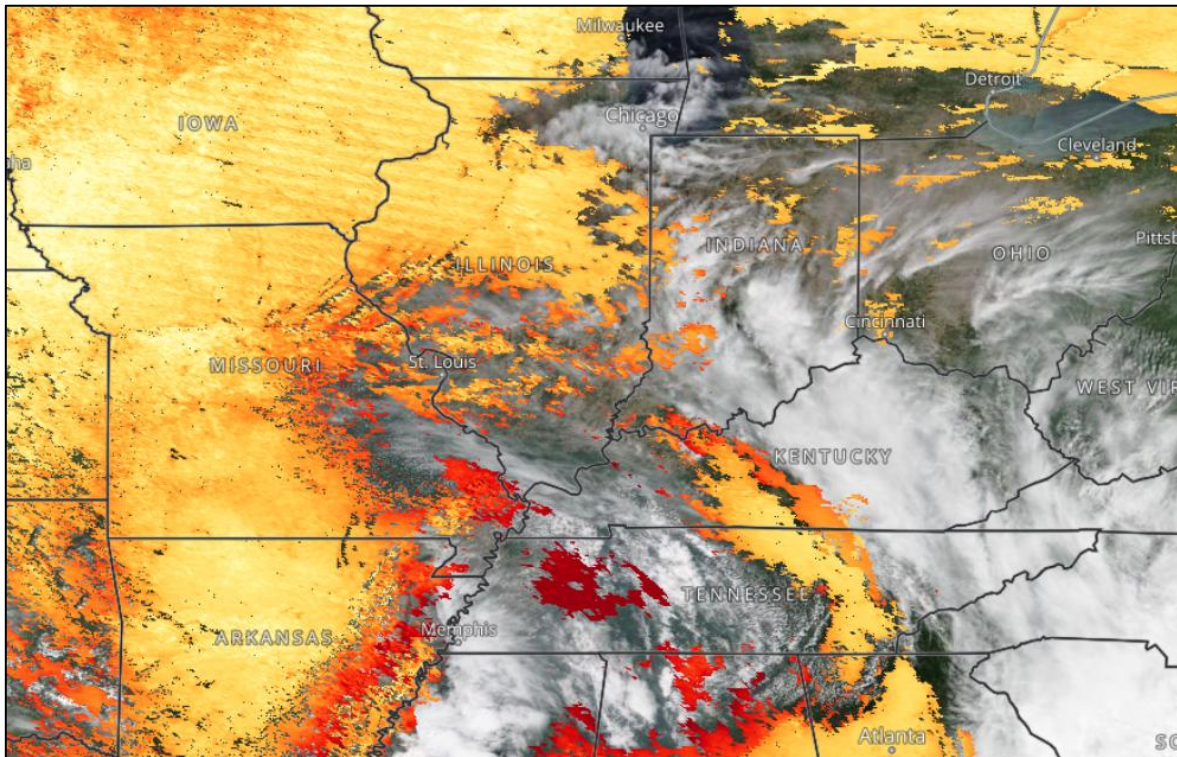
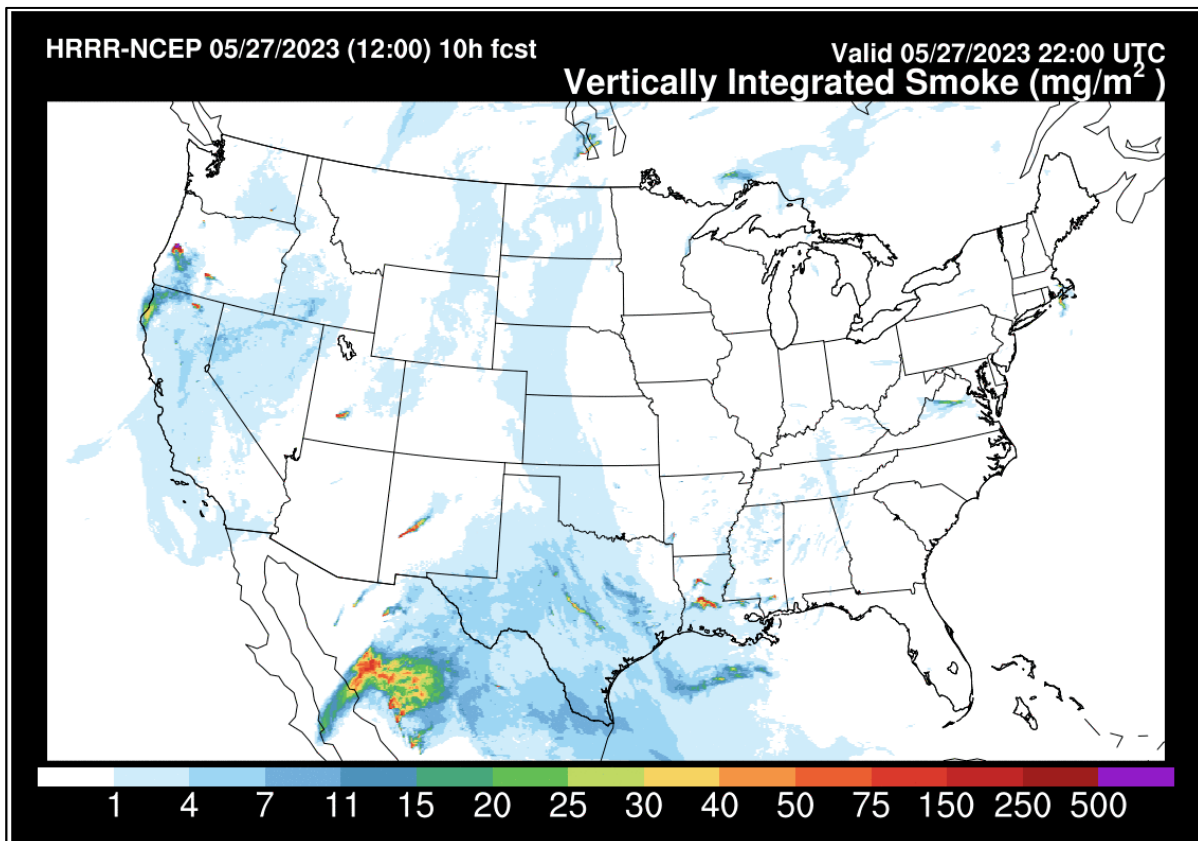
May 27, 2023

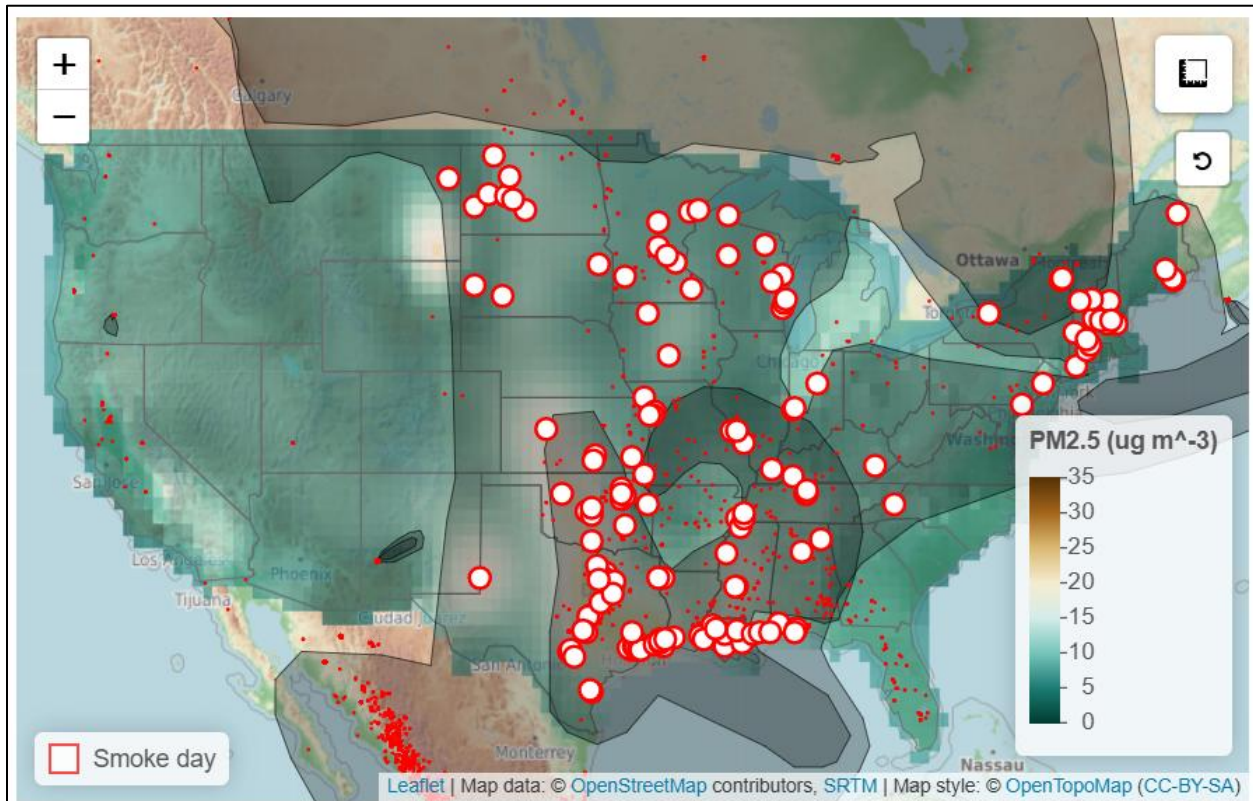
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Gary - Madison St	180890031	5/27/2023	22.2	16

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – May 27, 2023



Satellite Imagery with MAIAC AOD – May 27, 2023**HRRR Smoke - Vertically Integrated Smoke – May 27, 2023**

GAM PMO3 Smoke Output – May 27, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1600Z May 27, 2023**

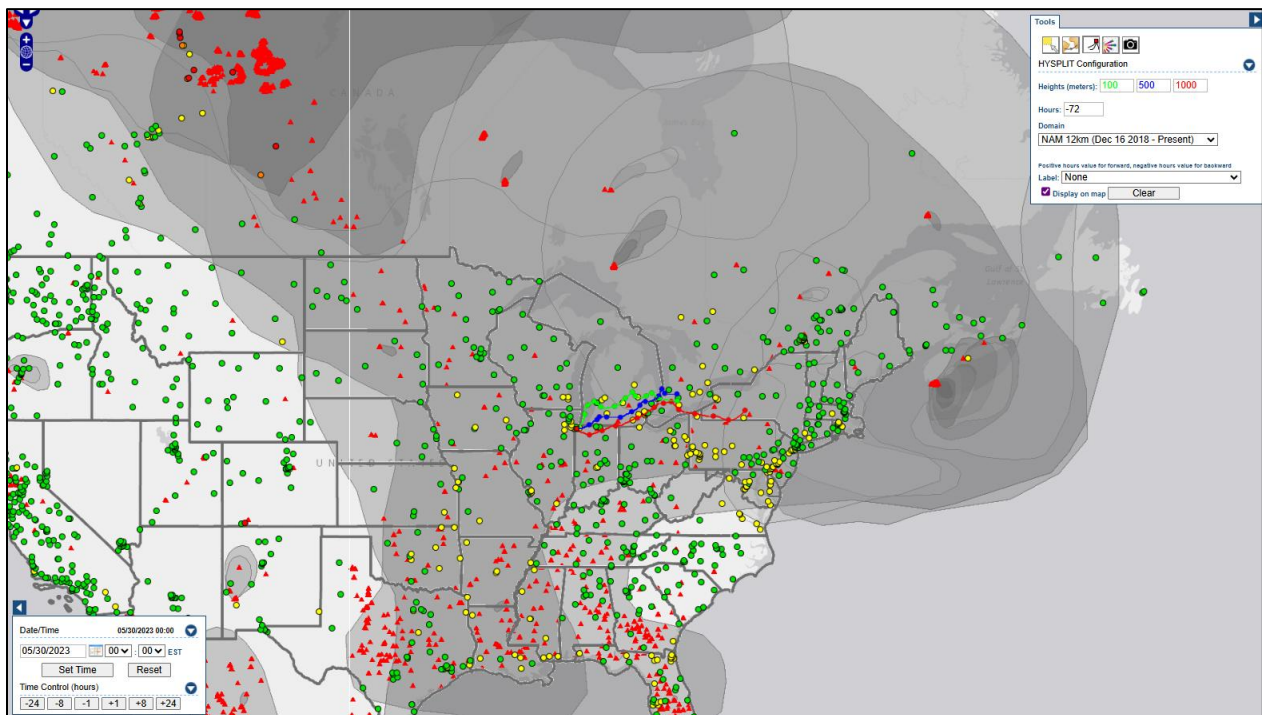
SMOKE:

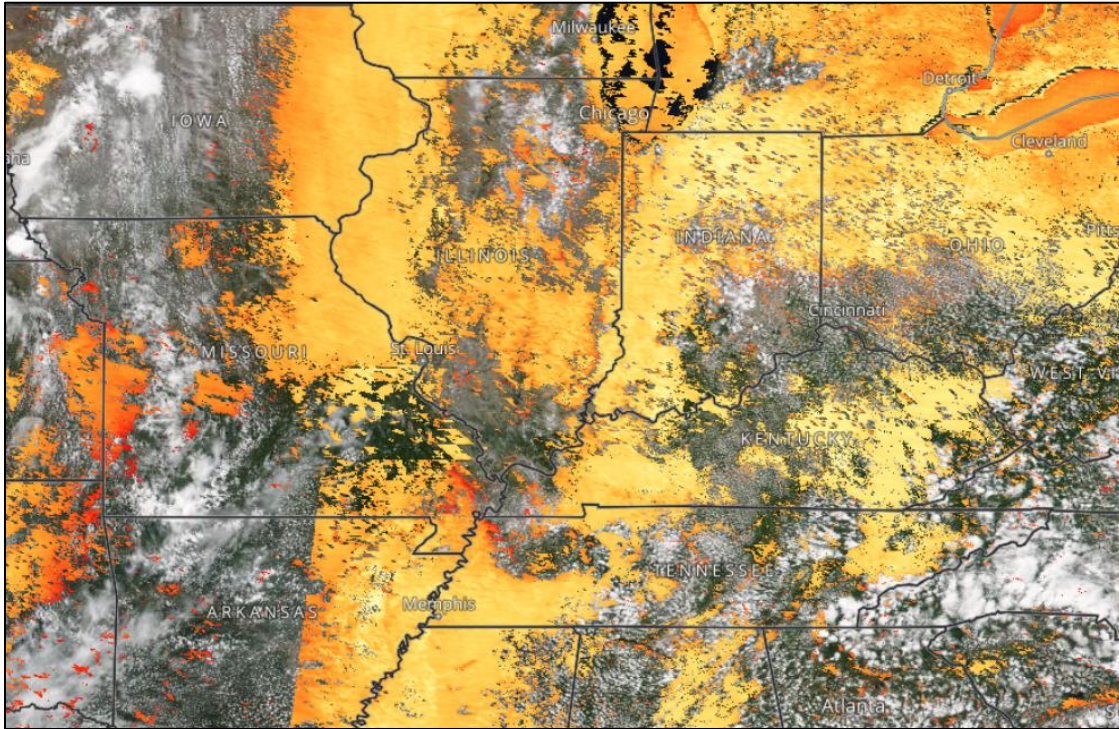
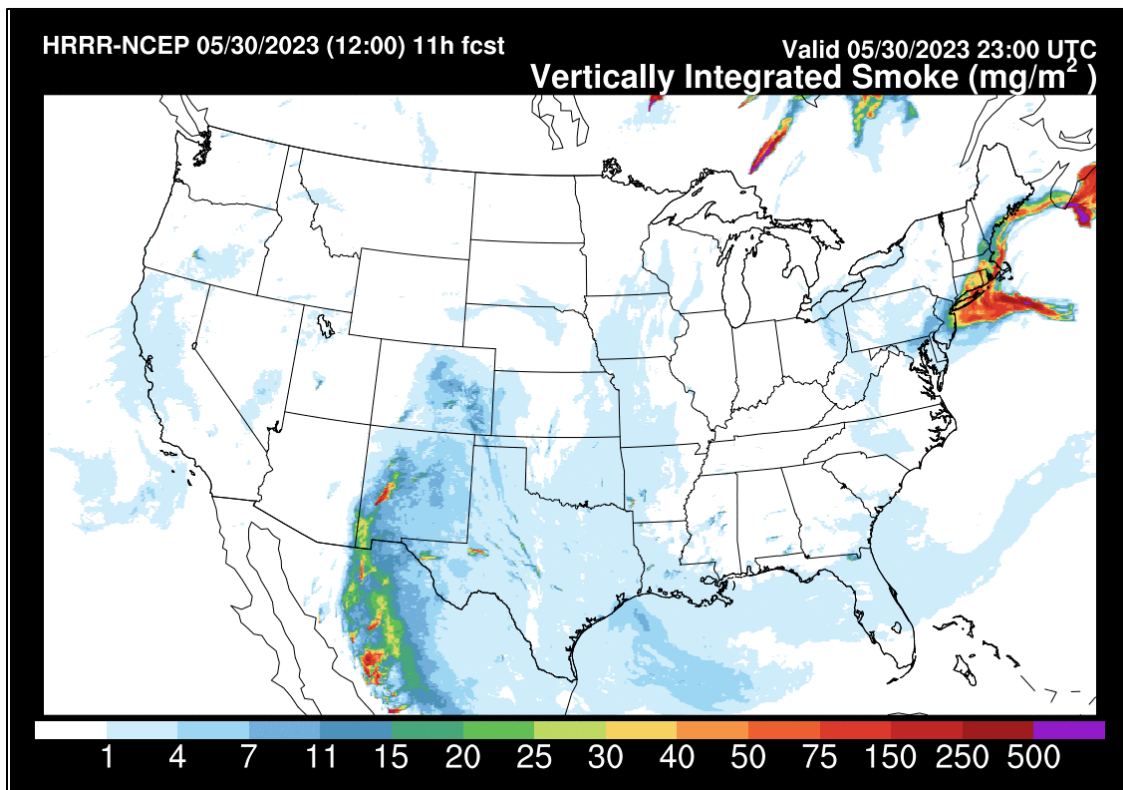
Canada/U.S./Atlantic Ocean...

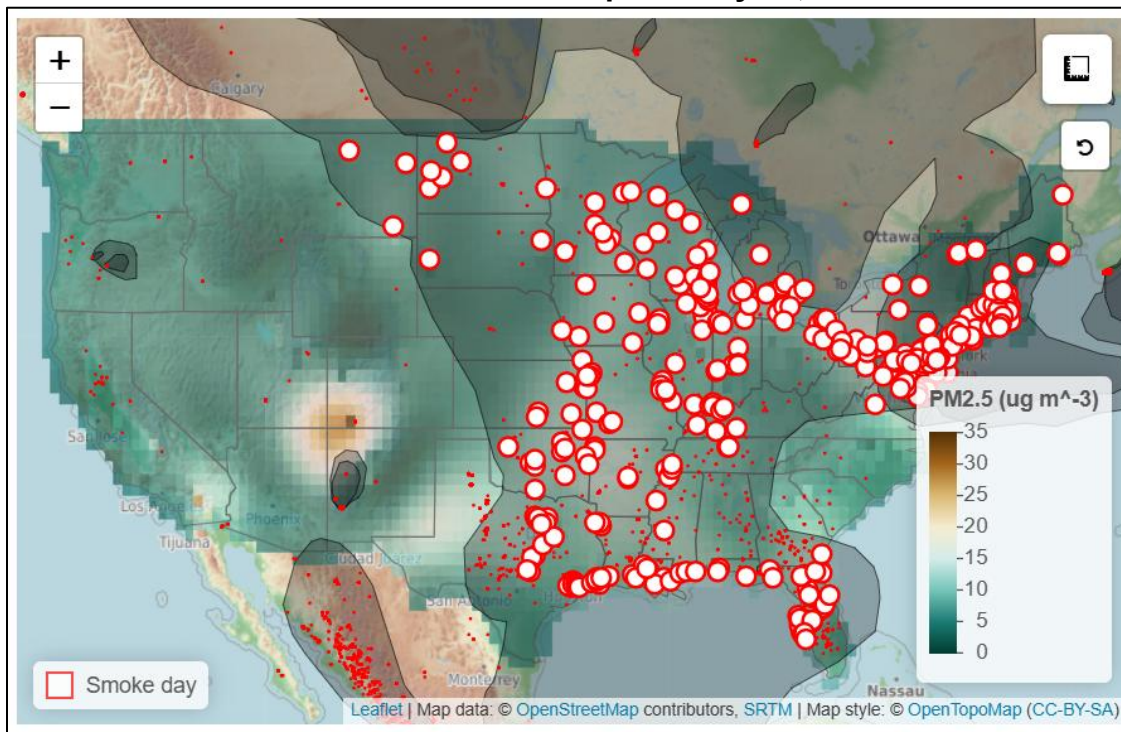
An expansive area that is the result of smoke from wildfire activity across northern and western Canada was observed blanketing much of Canada, the eastern and central CONUS, and significant portions of the north Atlantic. The most significant smoke was observed emanating from the wildfire activity in the Northwest Territory, far northeastern BC, and northern Alberta extending northeastward then east-southeastward. Moderate density smoke was also seen in a thin stripe off the NE US Coast and into a cyclone over the Maritime Provinces with a separate area across the southeastern and south-central CONUS. Much of the smoke across Canada and the North Atlantic is moving eastward, while smoke over the southern CONUS was drifting westward.

May 30, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Gary - Madison St	180890031	5/30/2023	26.4	16

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories - May 30, 2023

Satellite Imagery with MAIAC AOD – May 30, 2023**HRRR Smoke - Vertically Integrated Smoke – May 30, 2023**

GAM PMO3 Smoke Output – May 30, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1610Z May 30, 2023****SMOKE:**

Canada/Atlantic...

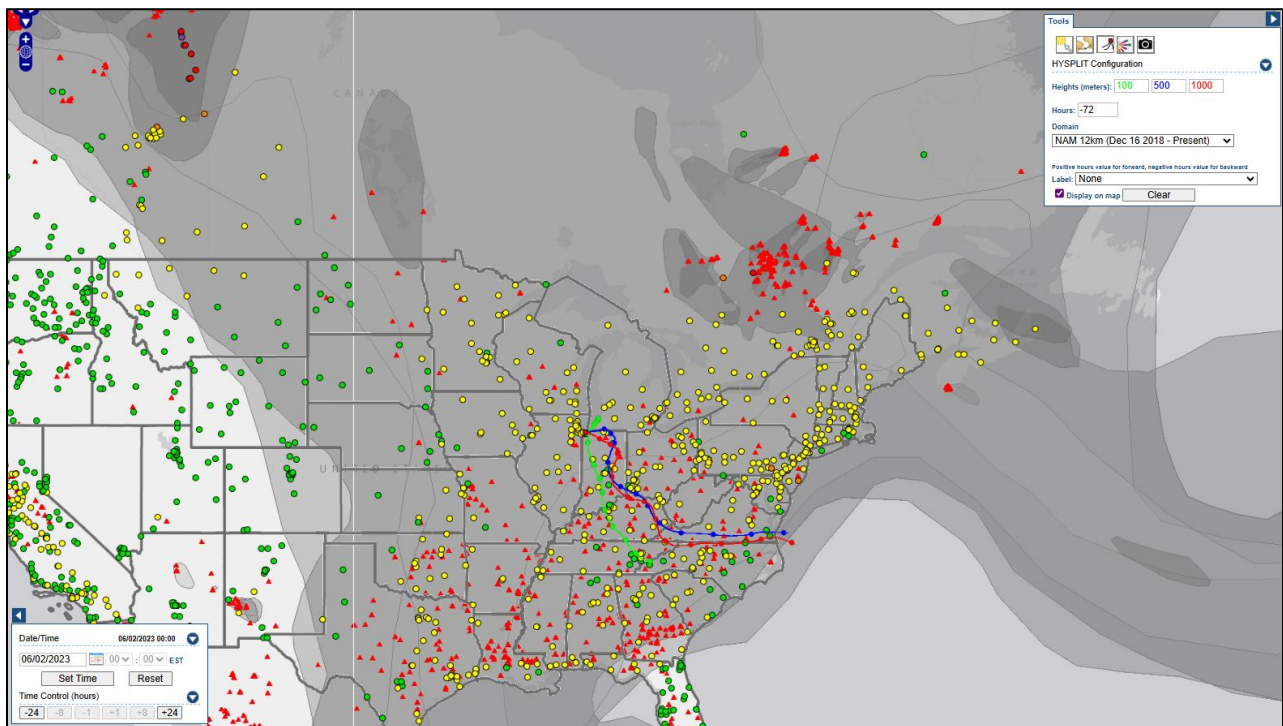
A large area of smoke primarily linked to major wildfire activity in northeastern British Columbia, northern Alberta, and central/northern Saskatchewan continues to blanket a large part of Canada. Areas of high smoke concentration were found along northern Alberta, central/northern Saskatchewan, southeastern Northwest Territories, and northwestern Manitoba. Moderate density smoke was detected over northern Hudson's Bay and across central Quebec, extending over the northwestern Atlantic Ocean. Overall, the bulk of the large area smoke was dispersing eastward in the general direction of the northern Atlantic.

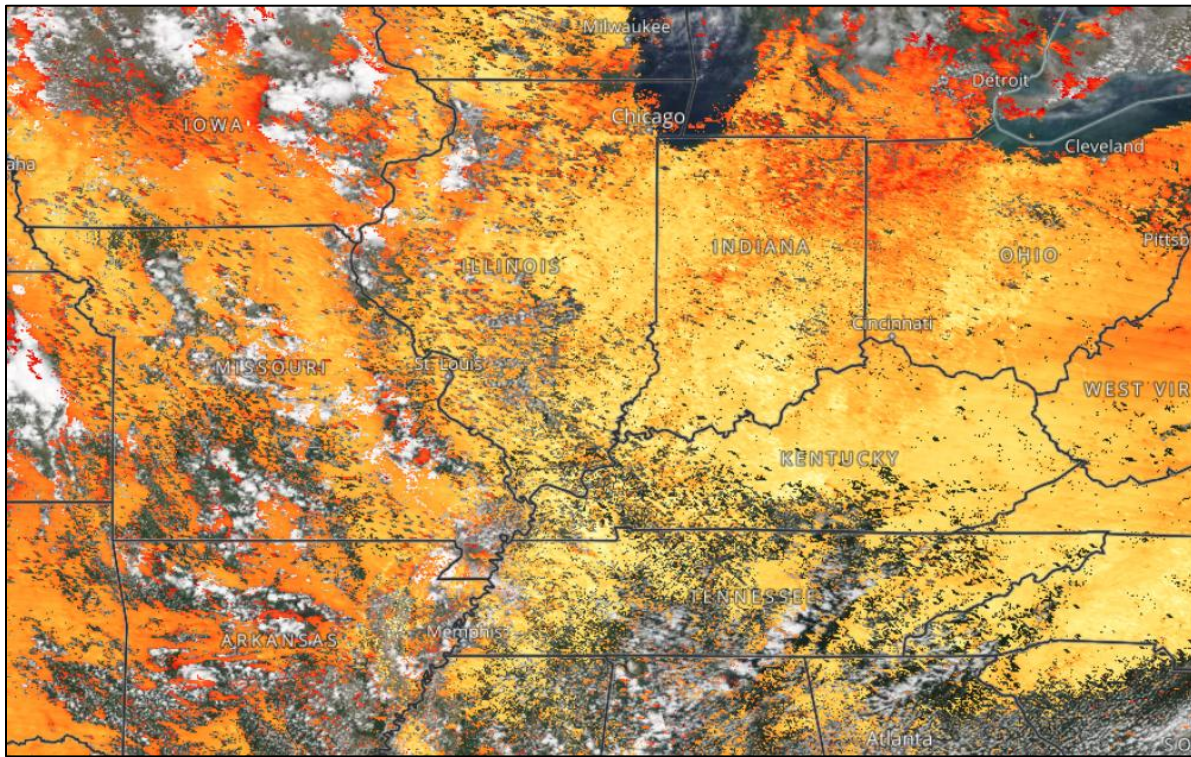
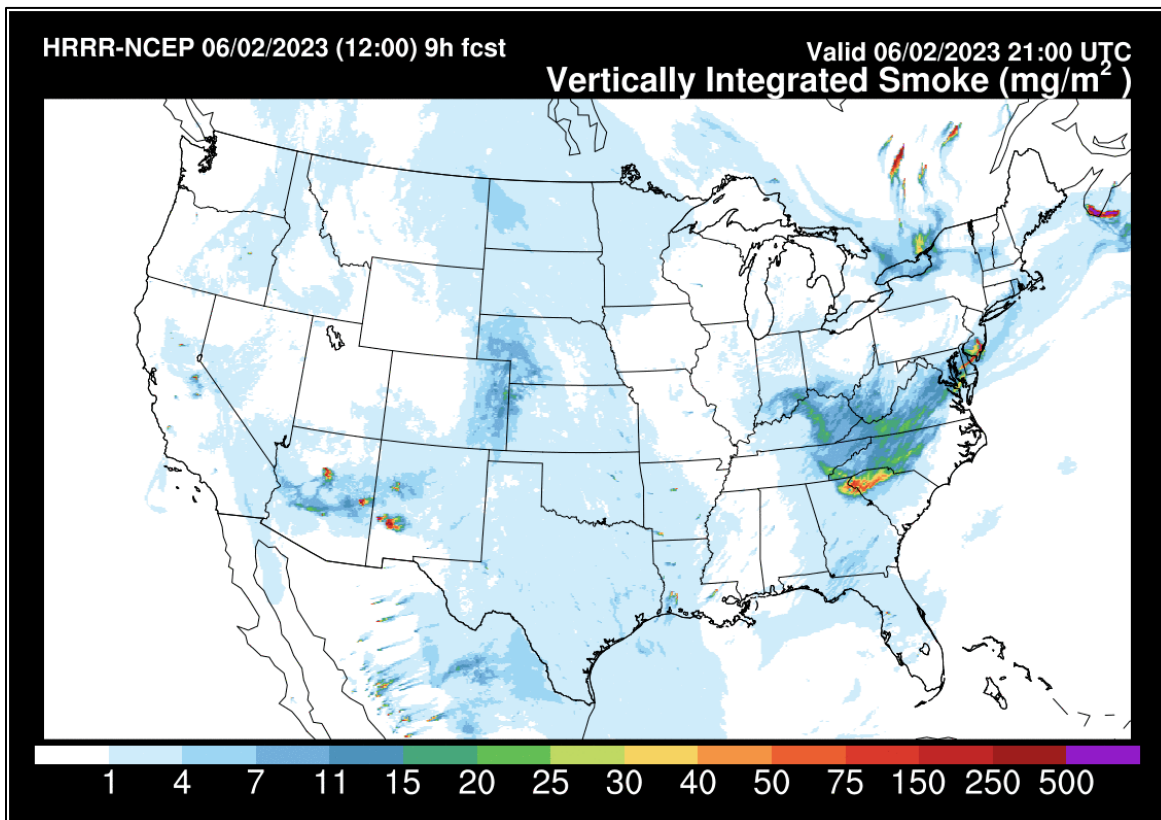
Central U.S...

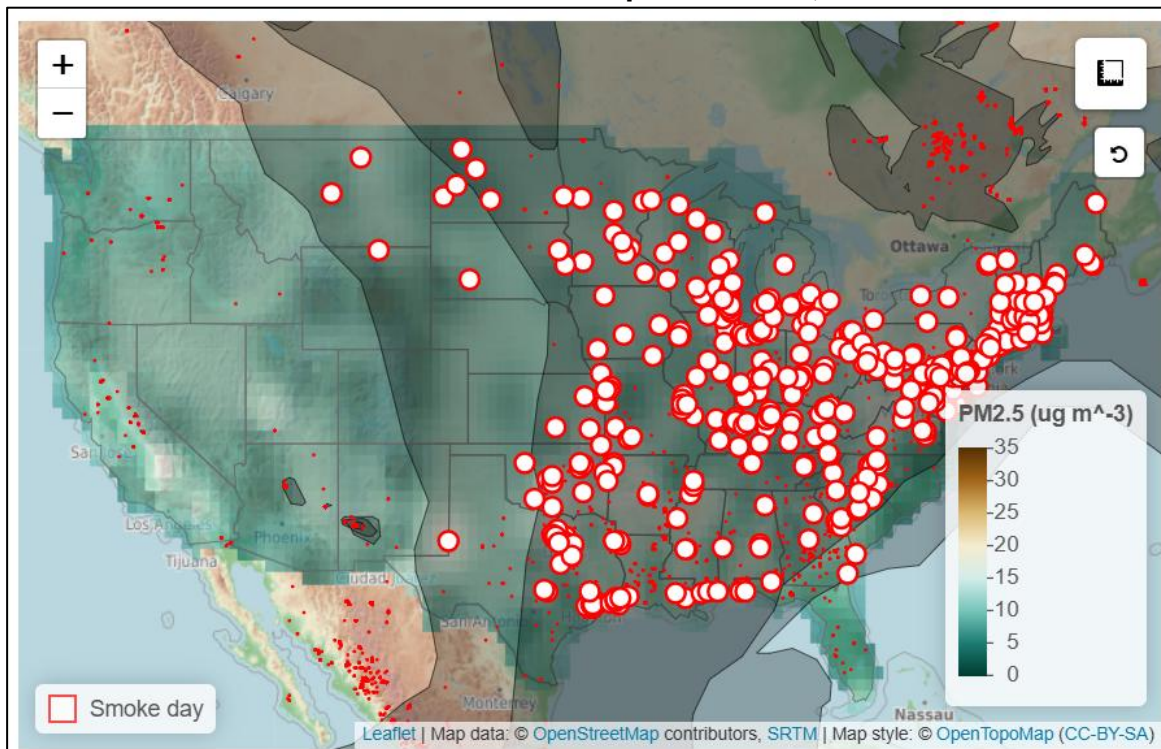
Light smoke resulting from Canadian wildfires extended south into the Great Plains where it mixed with smoke from seasonal fires in the Mississippi Valley reaching the coastal areas along the Gulf of Mexico.

June 2, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Gary - Madison St	180890031	6/2/2023	40.8	16

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 2, 2023

Satellite Imagery with MAIAC AOD – June 2, 2023**HRRR Smoke - Vertically Integrated Smoke – June 2, 2023**

GAM PMO3 Smoke Output – June 2, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z June 2, 2023**

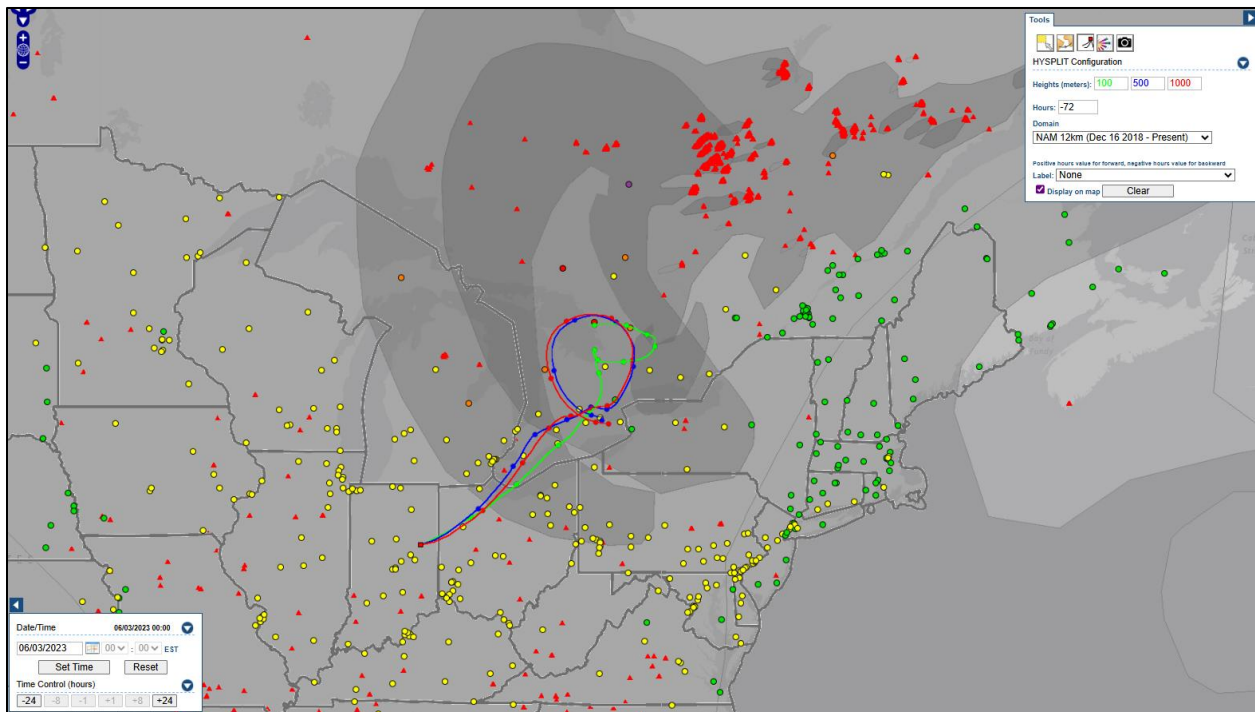
SMOKE:

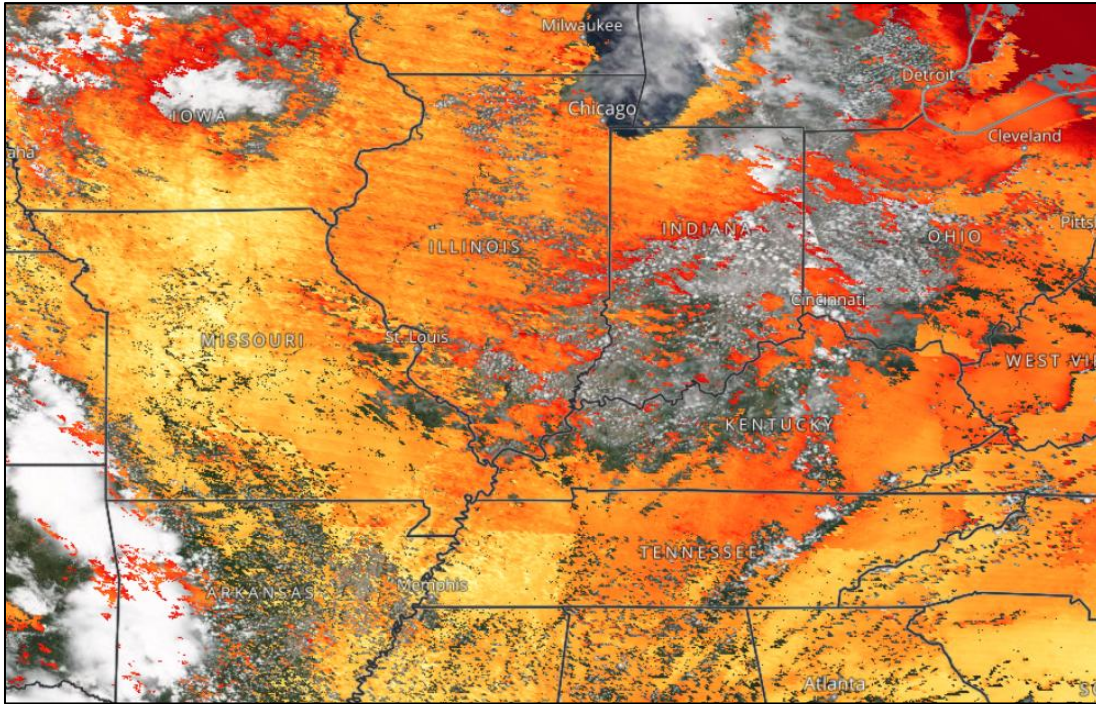
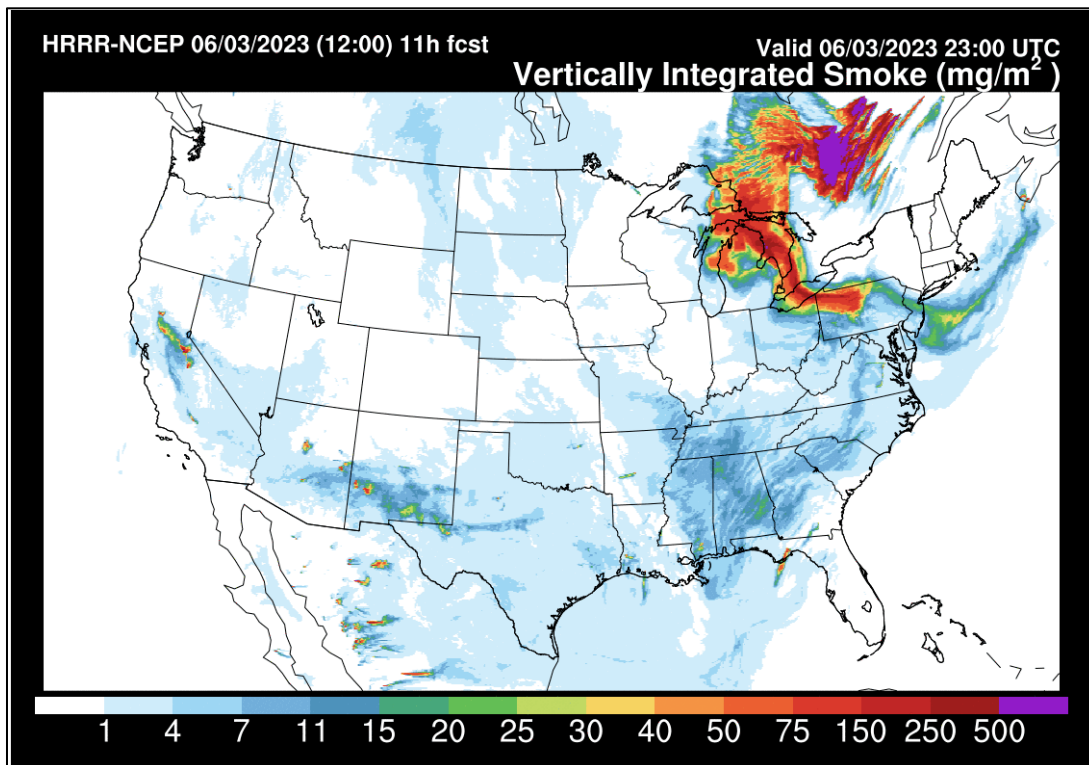
Canada/Eastern CONUS/North Atlantic...

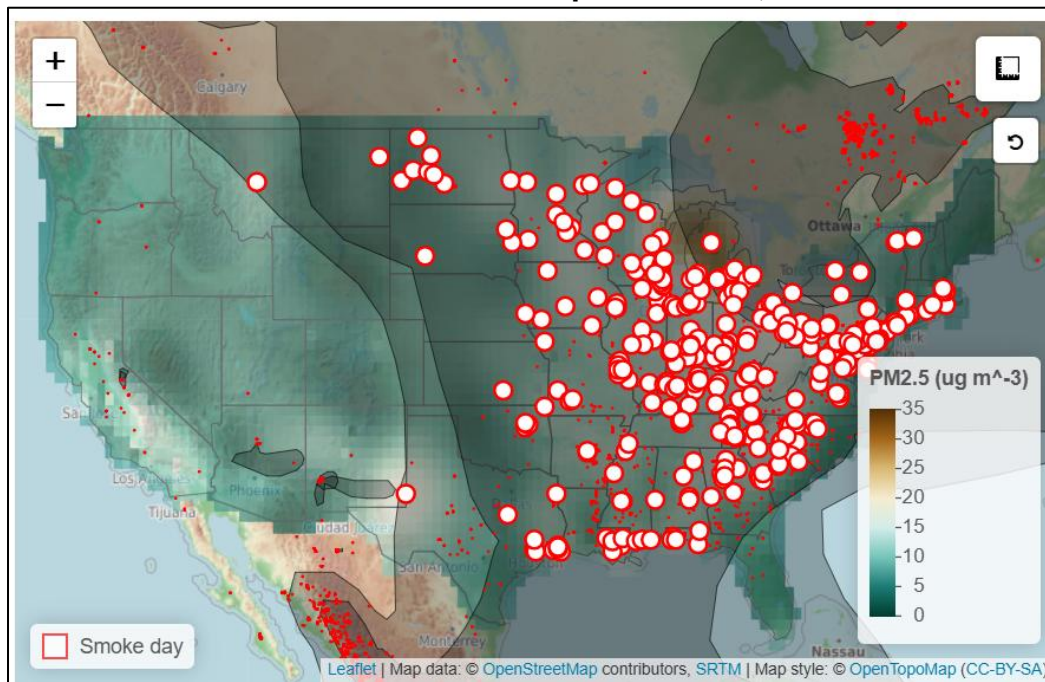
Wildfire activity in west-central Canada, now along with some activity in the southern half of Quebec, continues to produce moderate to thick smoke that blankets an area covering much of Canada, the eastern half of the CONUS, and portions of the North Atlantic. The thickest smoke resides closer to the wildfires in central and north-central Canada, extending northeast across the Northwestern Territories and Nunavut. Further thick smoke was seen from the southern parts of James Bay to across the Quebec/Ontario border as well as over parts of the Maritime Provinces that specifically was emitted by a large fire north of Sept-Îles, Quebec. Moderate density smoke was seen over in central and northern Canada, then extending east/southeast across Canada, the Great Lakes, Great Plains, and northeastern CONUS. In far southern Nova Scotia, a wildfire continues to produce smoke that extends east-southeastward out over the Atlantic as well.

June 3, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Jeffersonville - Bates-Bowyer Ave	180190010	6/3/2023	18.8	17.0
Mechanicsburg	180650003	6/3/2023	16.2	15.5
Anderson - Eastside Elem	180950011	6/3/2023	15.4	15.4
Larwill	181830003	6/3/2023	16.9	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 3, 2023

Satellite Imagery with MAIAC AOD – June 3, 2023**HRRR Smoke - Vertically Integrated Smoke – June 3, 2023**

GAM PMO3 Smoke Output – June 3, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1630Z June 3, 2023

SMOKE:

Canada/Eastern CONUS/North Atlantic...

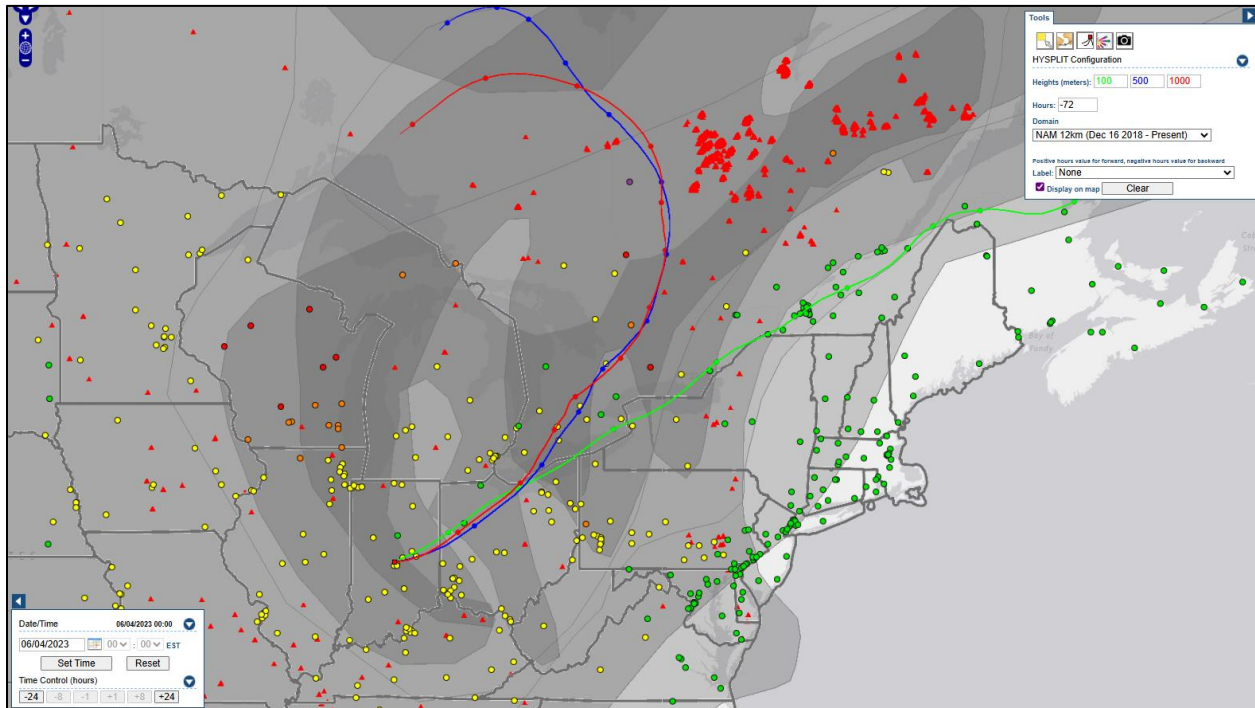
Wildfire activity in west-central Canada, now along with some activity in the southern half of Quebec, continues to produce moderate to thick smoke that blankets an area covering much of Canada, the eastern half of the CONUS, and portions of the North Atlantic. The thickest smoke resides closer to the wildfires in central and north-central Canada, extending northeast across the Northwestern Territories and Nunavut. Further thick smoke was seen from numerous fires in the southern/western parts of Quebec enveloped southwestern Quebec continuing into southeastern Ontario and into parts of New York. Moderate density smoke was seen over in central and northern Canada, then extending east/southeast across Canada, the Great Lakes, Great Plains, over the central/eastern U.S and the Atlantic Ocean off the coast eastern U.S and southeastern Canada. Some of the smoke from the fires in Mexico and Central America is mixing in with the smoke from the Canadian wildfires somewhere over the south central and southeastern U.S., and the northern Gulf of Mexico.

Arizona/New Mexico...

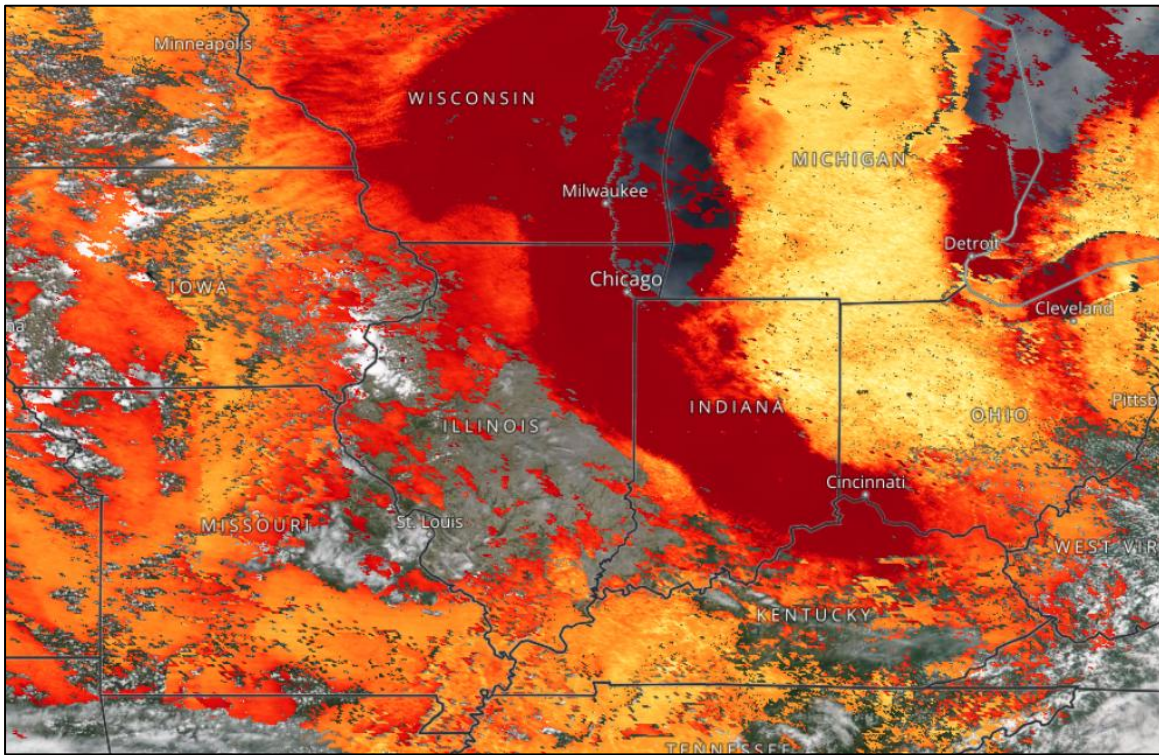
Current wildfire activity in New Mexico was seen producing moderate density smoke plumes moving south. Remnant thin density smoke from the wildfires in both Arizona and New Mexico was seen scattering to the east and south.

June 4, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

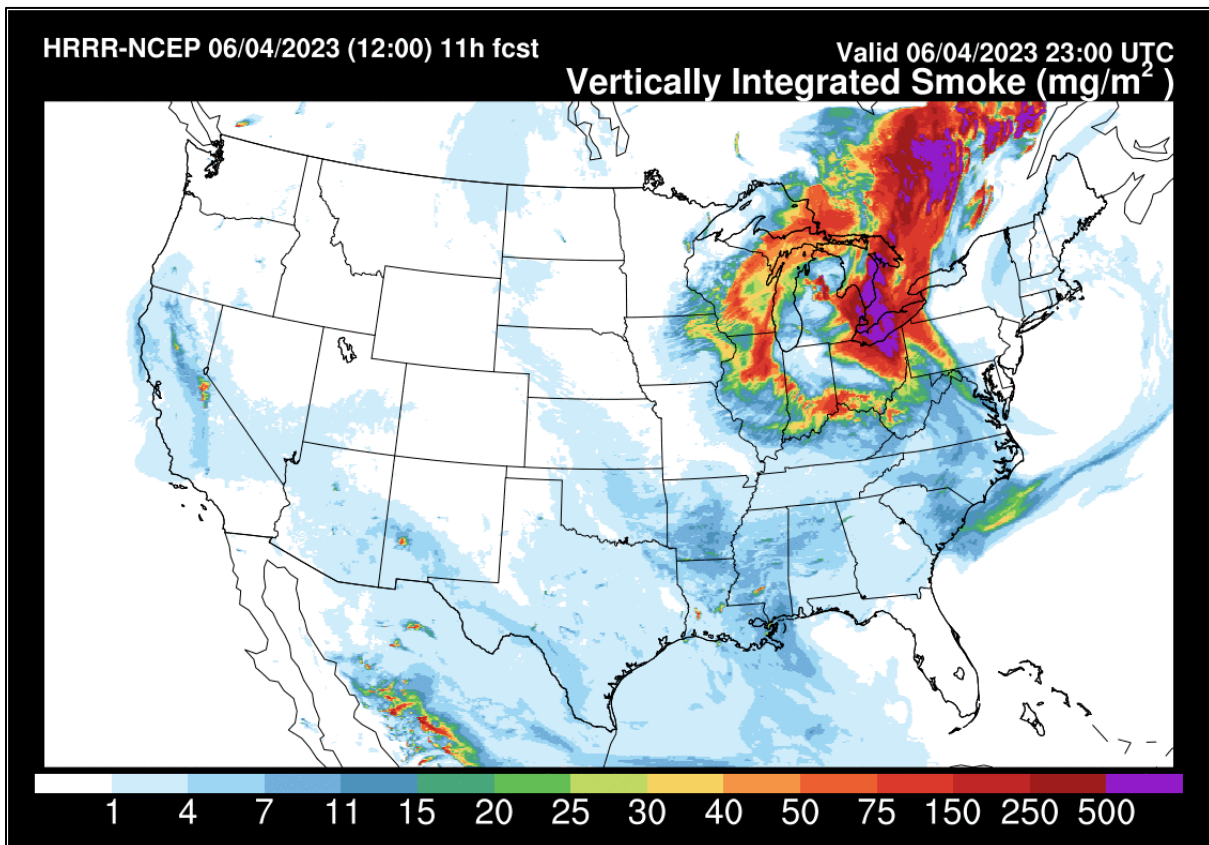
Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Columbus - Rocky Ford Drive	180050008	6/4/2023	17.2	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/4/2023	29.5	17.0
New Albany	180430008	6/4/2023	20.9	20.9
Plummer	180550001	6/4/2023	29.1	14.7
East Chicago - Marina	180890034	6/4/2023	19.7	18
Hammond-167th St	180890036	6/4/2023	19.2	16.3
Bloomington - Binford	181050003	6/4/2023	24.9	13.9
Evansville - Buena Vista	181630021	6/4/2023	21.9	15.1
Terre Haute - Lafayette Ave	181670018	6/4/2023	18.9	18.8

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 4, 2023

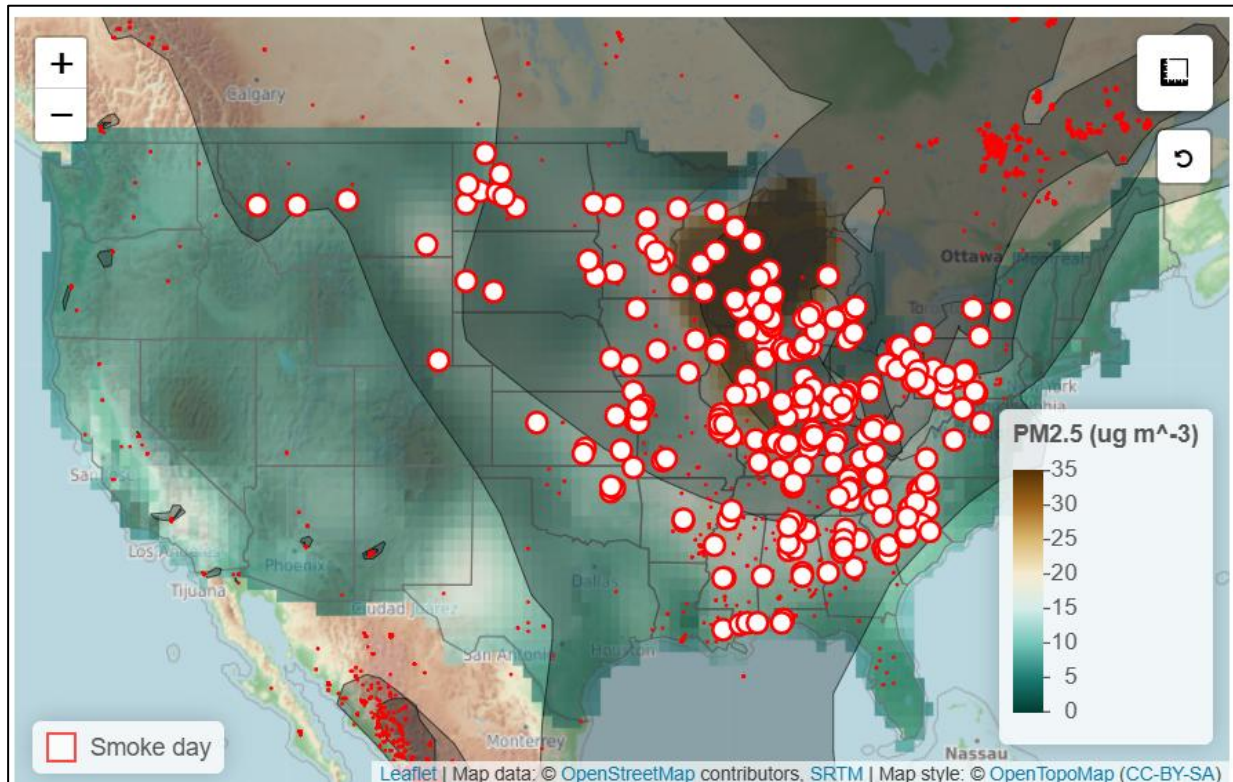
Satellite Imagery with MAIAC AOD – June 4, 2023



HRRR Smoke - Vertically Integrated Smoke – June 4, 2023



GAM PMO3 Smoke Output – June 4, 2023



NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z June 4, 2023

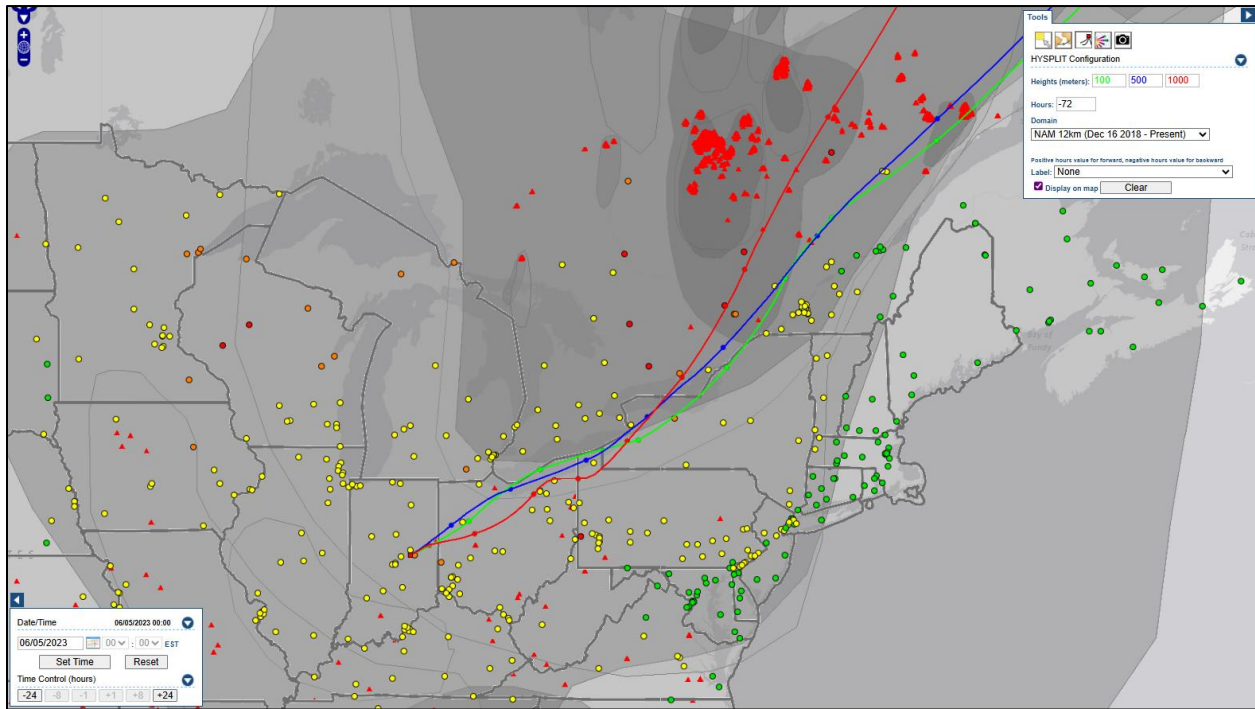
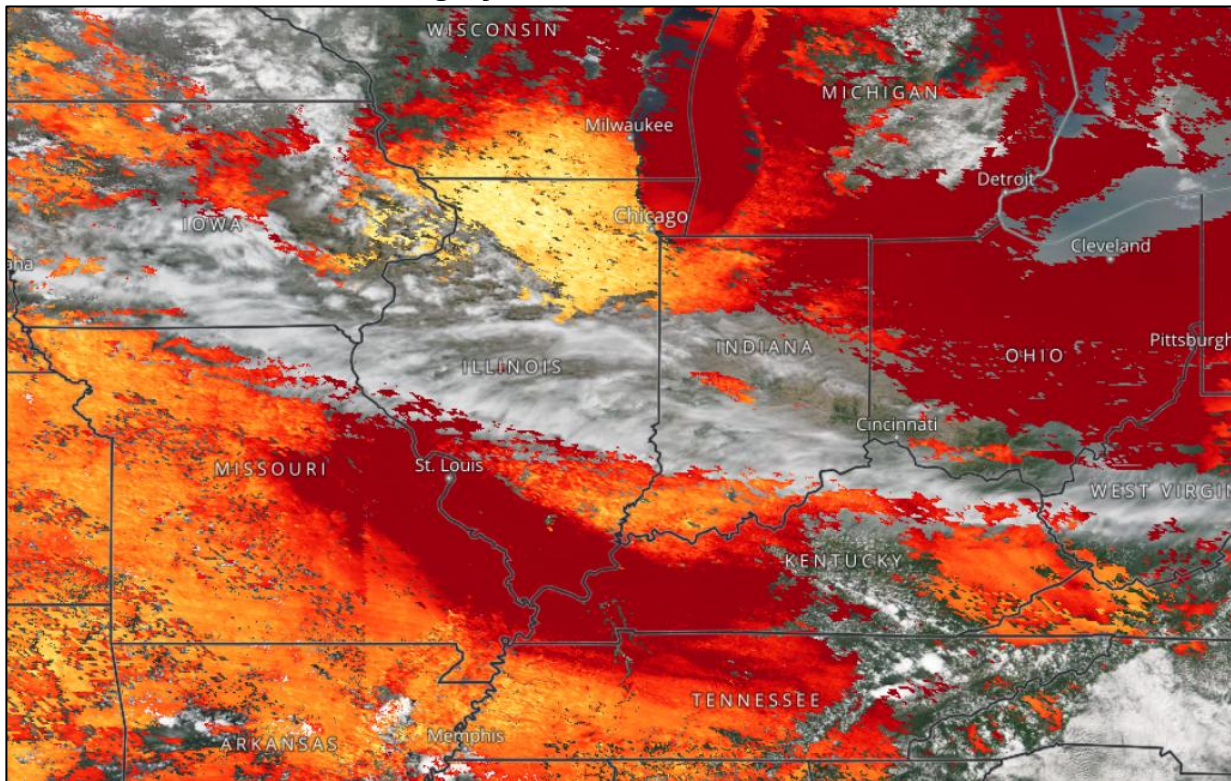
SMOKE:

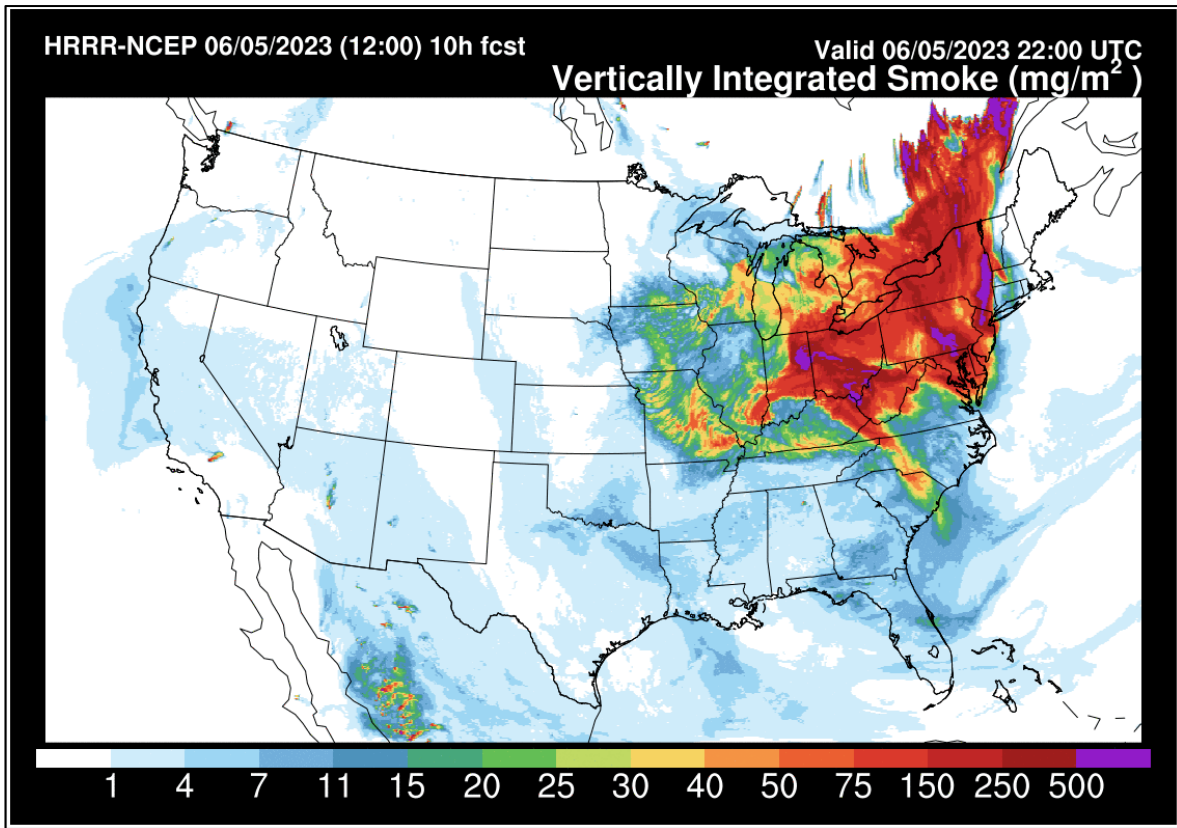
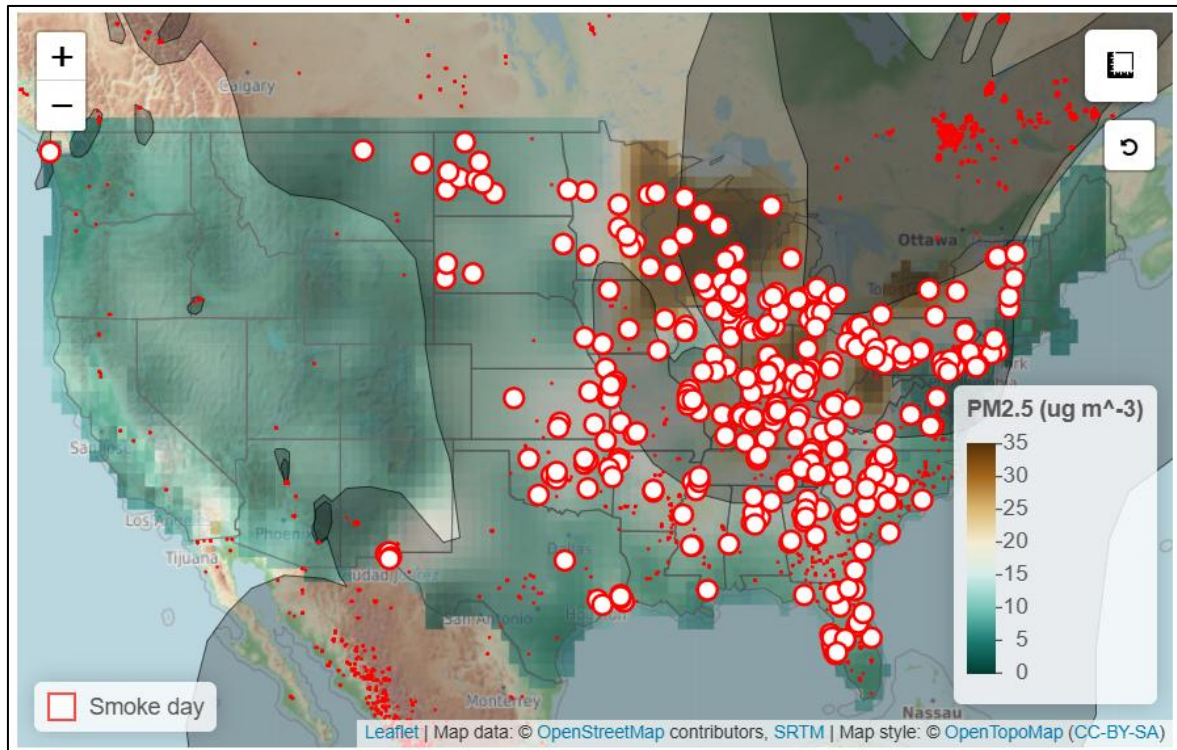
Canada/Eastern CONUS...

Wildfire activity in west-central Canada, now along with some activity in the southern half of Quebec, continues to produce moderate to thick smoke that blankets an area covering much of Canada, the eastern half of the CONUS, and portions of the North Atlantic. The thickest smoke resides closer to the wildfires in central and north-central Canada, extending northeast across the Northwestern Territories and Nunavut. Further thick smoke was seen from numerous fires in the southern/western parts of Quebec enveloping southwestern Quebec continuing into eastern Ontario, also extending over parts of the U.S, notably the Ohio Valley region. Moderate density smoke was seen over in northern Canada, then extending east/southeast across Canada, the Great Lakes, Great Plains, and over the central/eastern U.S. Some of the smoke from the fires in Mexico and Central America is mixing in with the smoke from the Canadian wildfires somewhere over the south central and southeastern U.S., and the northern Gulf of Mexico.

June 5, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus - Rocky Ford Drive	180050008	6/5/2023	15.9	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/5/2023	38.8	17.0
Muncie - Central HS	180350006	6/5/2023	26.1	13.2
Fishers	180570007	6/5/2023	19.8	13.8
Carmel - Hazel Dell Parkway	180570008	6/5/2023	20.7	16.5
Mechanicsburg	180650003	6/5/2023	23.3	15.5
Kokomo - E. Vaile Ave	180670004	6/5/2023	27.7	14.7
East Chicago - Franklin	180890006	6/5/2023	16.9	16.1
Gary - Madison St	180890031	6/5/2023	28.3	16
Hammond-167th St	180890036	6/5/2023	18.3	16.3
Anderson - Eastside Elem	180950011	6/5/2023	33.3	15.4
Indianapolis - Washington Park	180970078	6/5/2023	31.9	17.8
Indianapolis - W. 18th St.	180970081	6/5/2023	21.7	20.9
Indianapolis - School 21	180970084	6/5/2023	24.0	15.5
Indianapolis - I-70 E	180970087	6/5/2023	31.3	20.5
Bloomington - Binford	181050003	6/5/2023	14.6	13.9
Ogden Dunes	181270024	6/5/2023	15.5	15.3
Dale	181470009	6/5/2023	13.9	13.9
Lafayette - Greenbush St	181570008	6/5/2023	23.1	15.1
Terre Haute - Lafayette Ave	181670018	6/5/2023	23.8	18.8
Larwill	181830003	6/5/2023	20.4	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 5, 2023**Satellite Imagery with MAIAC AOD – June 5, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 5, 2023**GAM PMO3 Smoke Output – June 5, 2023**

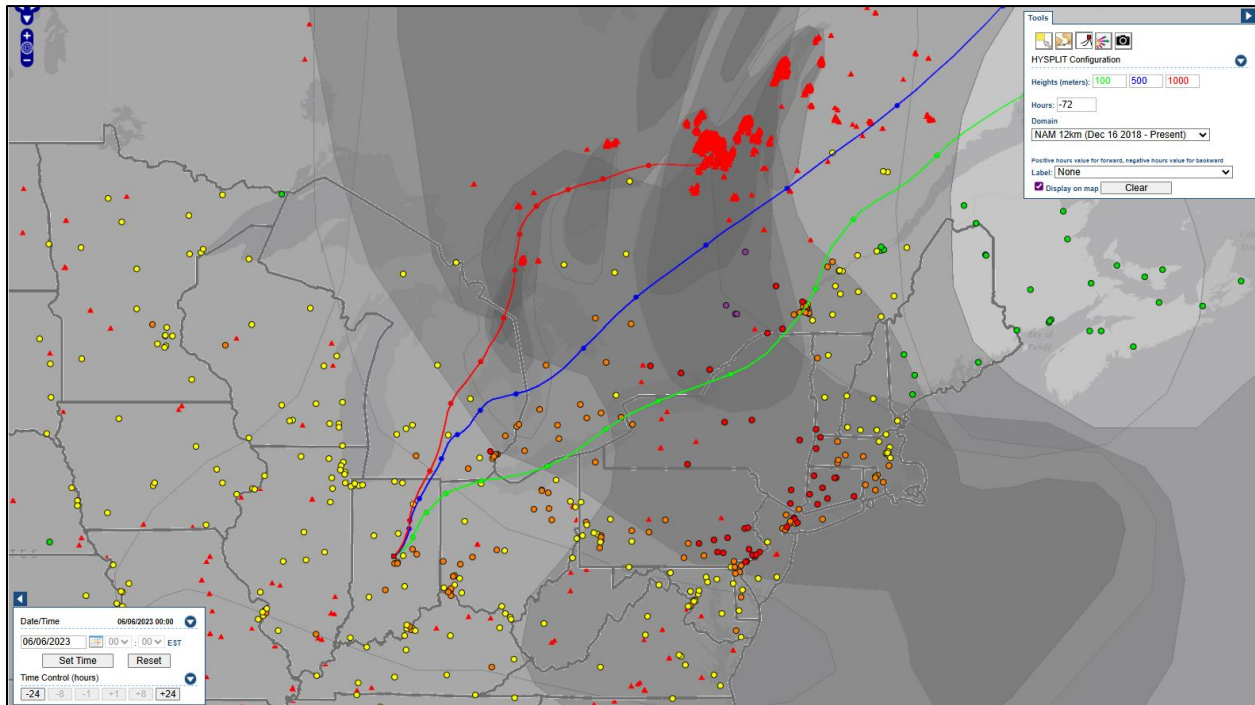
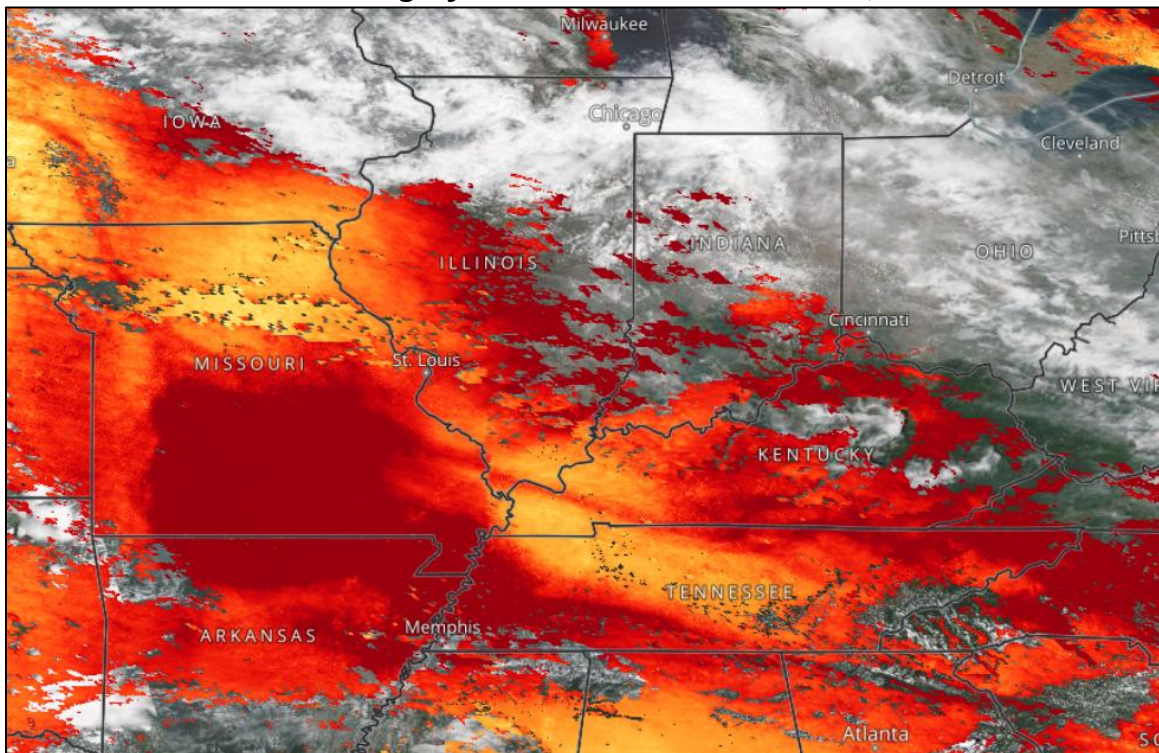
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1550Z June 5, 2023****SMOKE:**

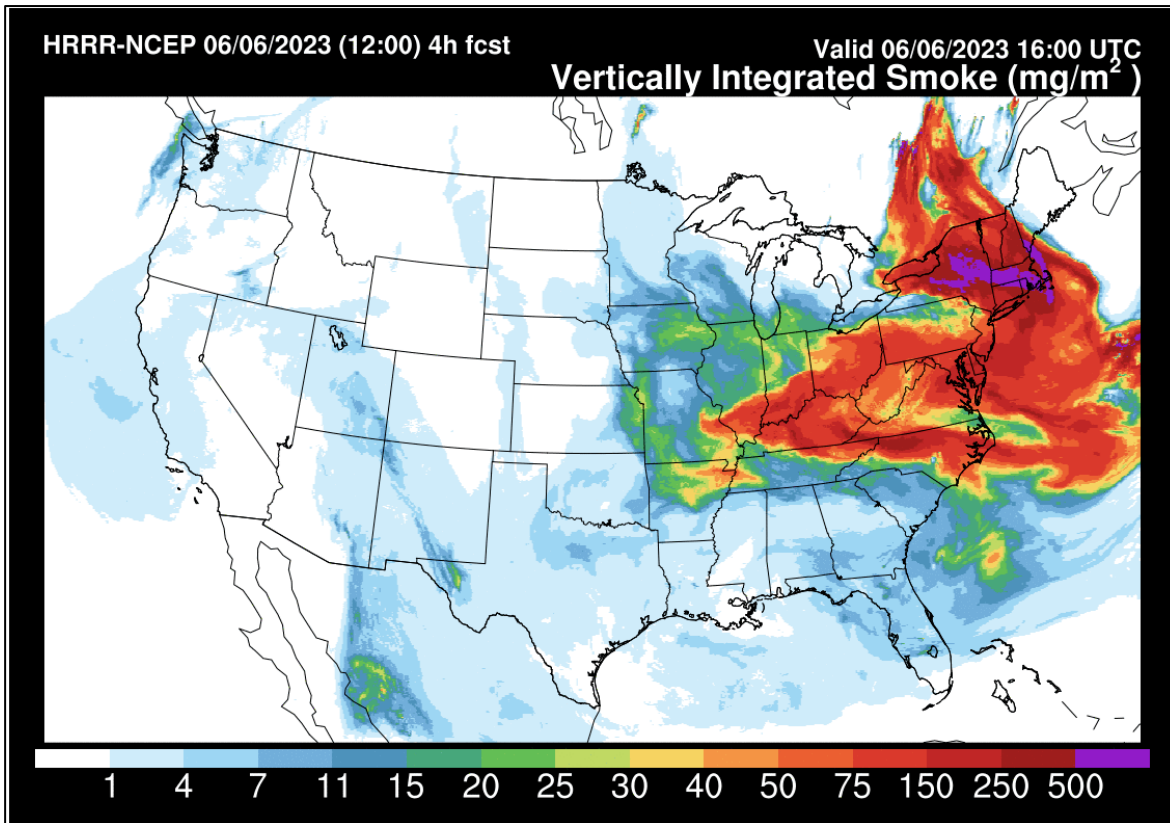
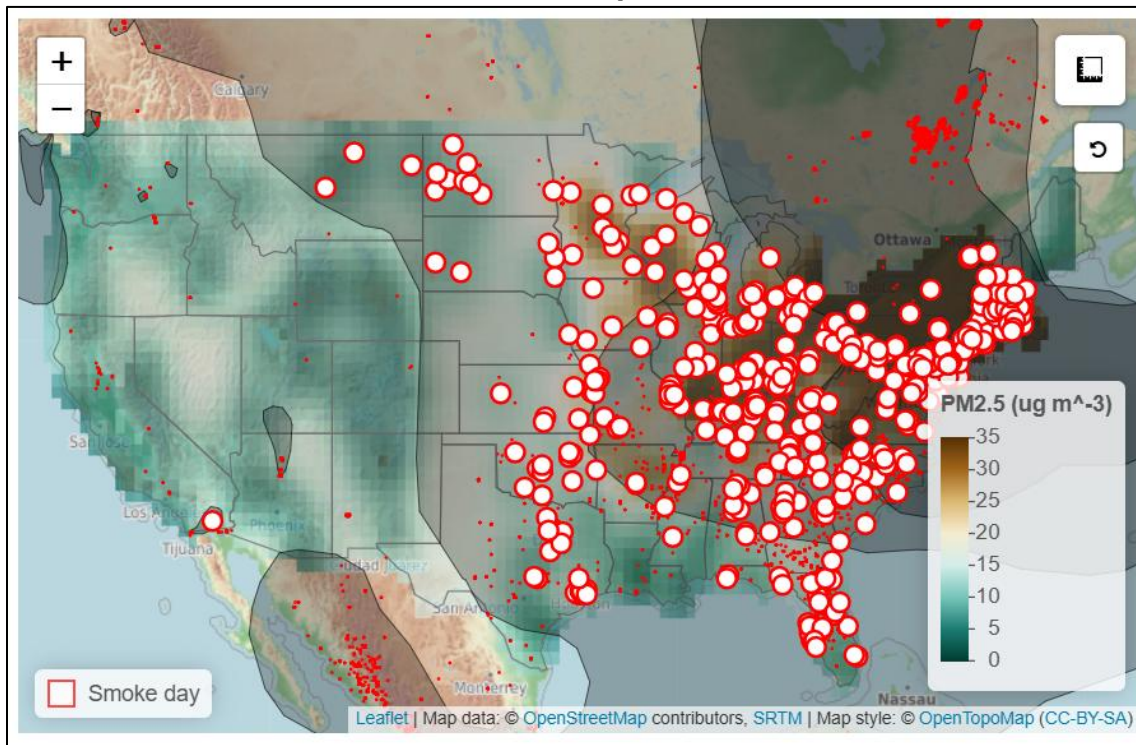
Canada, Central United States and Eastern United States....

Wildfire activity in west-central Canada and over southern Quebec, continues to produce a large area of smoke that extends over most of Canada, the Central and Eastern United States and extending into the north Atlantic Ocean. Within this large area of smoke, moderate to high density smoke extends over much of northern Canada, south through eastern and southeastern Canada to portions of the Upper Midwest and northern portions of the Northeastern United States.

June 6, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus - Rocky Ford Drive	180050008	6/6/2023	34.0	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/6/2023	30.1	17.0
Elkhart - Prairie St	180390008	6/6/2023	28.1	16.3
New Albany	180430008	6/6/2023	26.3	20.9
Plummer	180550001	6/6/2023	33.8	14.7
Fishers	180570007	6/6/2023	24.2	13.8
Mechanicsburg	180650003	6/6/2023	34.5	15.5
East Chicago - Marina	180890034	6/6/2023	22.8	18
Hammond-167th St	180890036	6/6/2023	26.1	16.3
Anderson - Eastside Elem	180950011	6/6/2023	34.8	15.4
Indianapolis - Washington Park	180970078	6/6/2023	38.8	17.8
Indianapolis - W. 18th St.	180970081	6/6/2023	42.8	20.9
Indianapolis - I-70 E	180970087	6/6/2023	38.6	20.5
Bloomington - Binford	181050003	6/6/2023	40.9	13.9
Ogden Dunes	181270024	6/6/2023	22.9	15.3
South Bend - Shields Dr.	181410015	6/6/2023	31.2	16.9
Lafayette - Greenbush St	181570008	6/6/2023	26.9	15.1
Evansville - Buena Vista	181630021	6/6/2023	27.5	15.1
Terre Haute - Lafayette Ave	181670018	6/6/2023	27.7	18.8
Larwill	181830003	6/6/2023	31.1	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 6, 2023**Satellite Imagery with MAIAC AOD – June 6, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 6, 2023**GAM PMO3 Smoke Output – June 6, 2023**

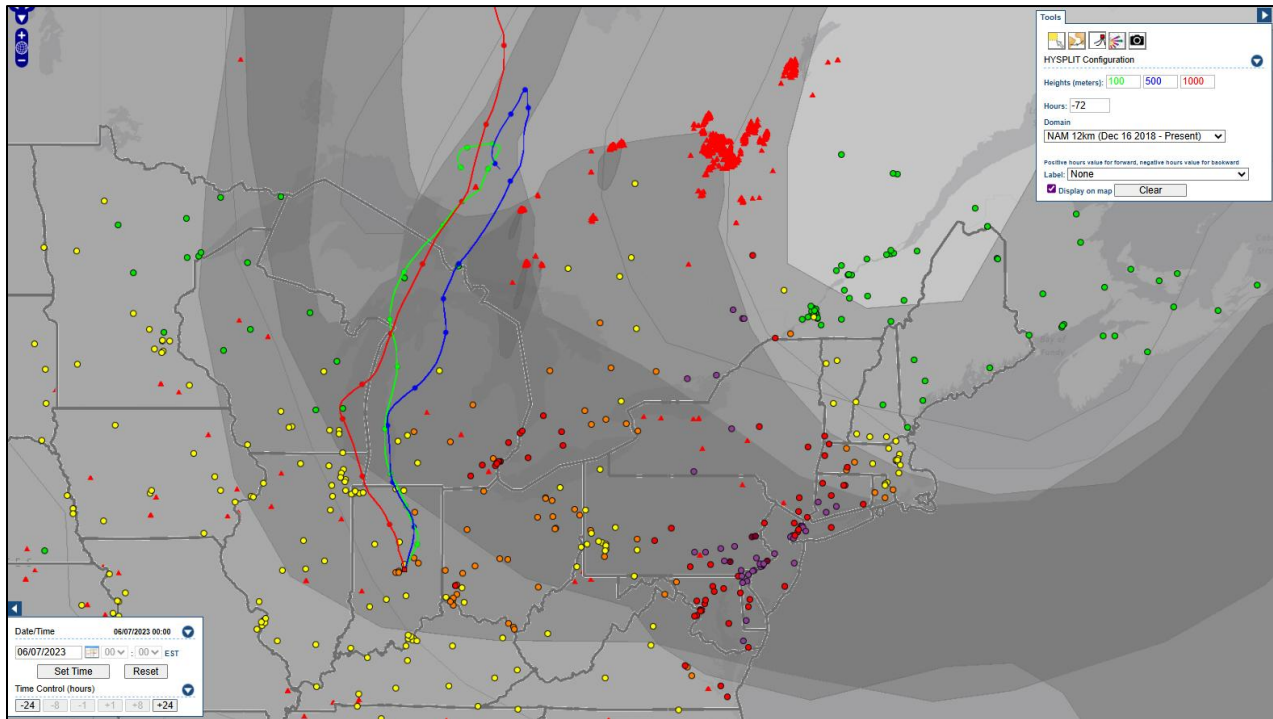
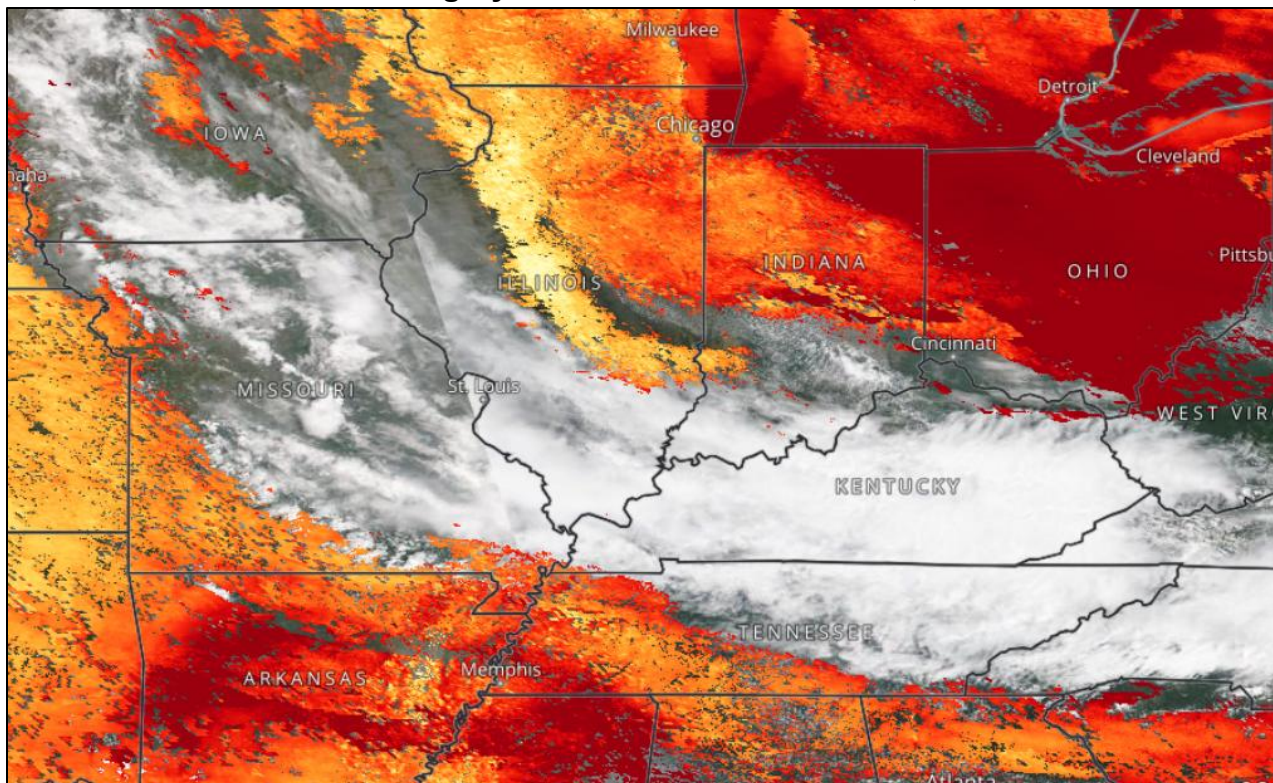
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1550Z June 6, 2023****SMOKE:**

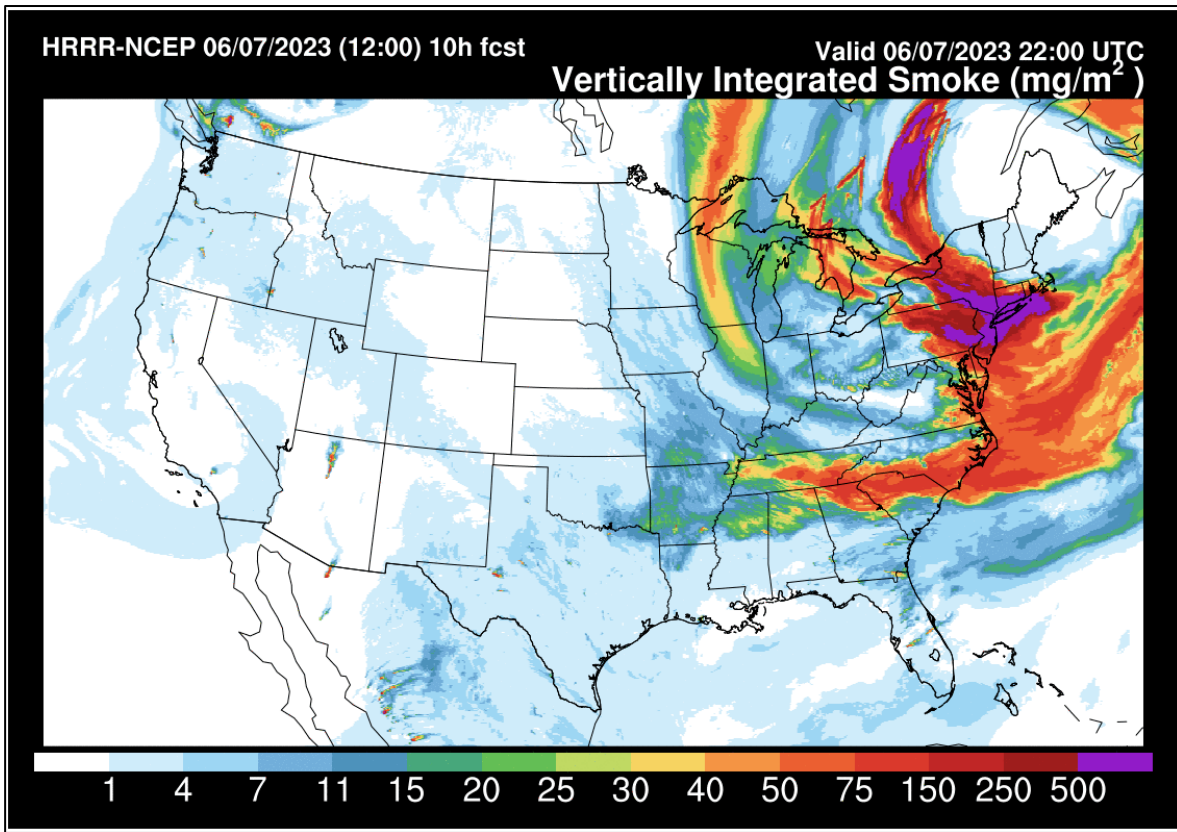
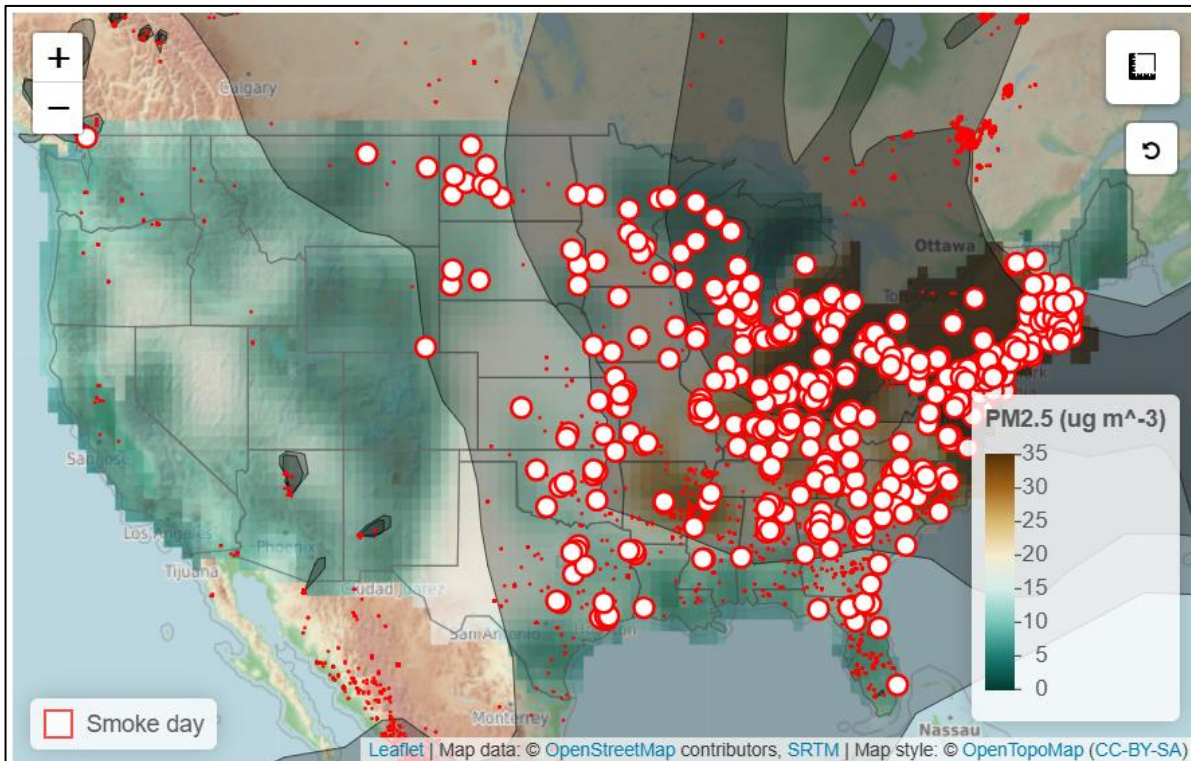
Canada, Central United States and Eastern United States...

Wildfire activity in northern British Columbia and the Northwest Territories continued to produce high-density smoke, contributing to a lengthy plume of moderate to high-density remnant smoke extending eastward over northern Canada and southward over Ontario and Quebec. Over southern Quebec, wildfire activity was producing a large area of high density smoke extending southwestward and southward, adding to the smoke from the western fires. This area of moderate to high density smoke was extending south and southwestward over much of the Eastern United States to as far south and west as portions of the Southeastern United States and Midwestern United States.

June 7, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus - Rocky Ford Drive	180050008	6/7/2023	25.7	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/7/2023	23.3	17.0
Elkhart - Prairie St	180390008	6/7/2023	21.7	16.3
New Albany	180430008	6/7/2023	23.5	20.9
Plummer	180550001	6/7/2023	30.8	14.7
Fishers	180570007	6/7/2023	28.8	13.8
Mechanicsburg	180650003	6/7/2023	44.9	15.5
East Chicago - Marina	180890034	6/7/2023	19.7	18
Hammond-167th St	180890036	6/7/2023	18.9	16.3
Anderson - Eastside Elem	180950011	6/7/2023	42.8	15.4
Indianapolis - Washington Park	180970078	6/7/2023	42.5	17.8
Indianapolis - W. 18th St.	180970081	6/7/2023	43.5	20.9
Indianapolis - I-70 E	180970087	6/7/2023	43.7	20.5
Bloomington - Binford	181050003	6/7/2023	32.1	13.9
Ogden Dunes	181270024	6/7/2023	16.5	15.3
South Bend - Shields Dr.	181410015	6/7/2023	27.6	16.9
Lafayette - Greenbush St	181570008	6/7/2023	23.2	15.1
Evansville - Buena Vista	181630021	6/7/2023	30.2	15.1
Terre Haute - Lafayette Ave	181670018	6/7/2023	27.2	18.8
Larwill	181830003	6/7/2023	37.3	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 7, 2023**Satellite Imagery with MAIAC AOD – June 7, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 7, 2023**GAM PMO3 Smoke Output – June 7, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1550Z June 7, 2023****SMOKE:**

Canada, Central United States and Eastern United States...

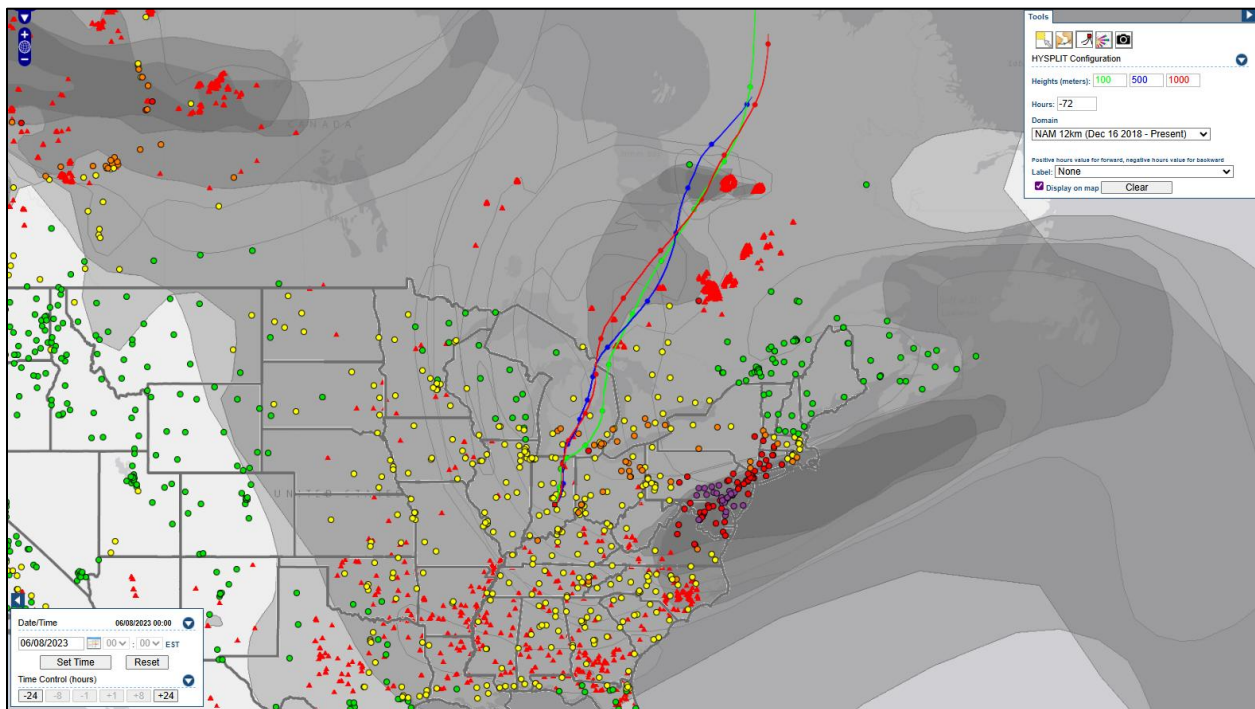
Wildfire activity in northern British Columbia and the Northwest Territories continued to produce an area of moderate to high-density smoke that was extending east and northeastward across much of northern Canada and southward through portions of Ontario and Quebec. In southern Quebec, wildfire activity was producing a large area of high density smoke extending southward and southeastward, adding to the smoke from the western fires. This area of moderate to high density smoke was extending southward and southeastward over much of the Upper Midwest and Eastern United States to as far south as the Southeastern United States and also over the northwestern Atlantic Ocean. The highest density smoke within this large area appeared to be over portions of New York and northern Pennsylvania and was moving southeast and should overspread portions of New York City, Long Island, southern Connecticut, southern Rhode Island, New Jersey and Eastern Pennsylvania throughout the day.

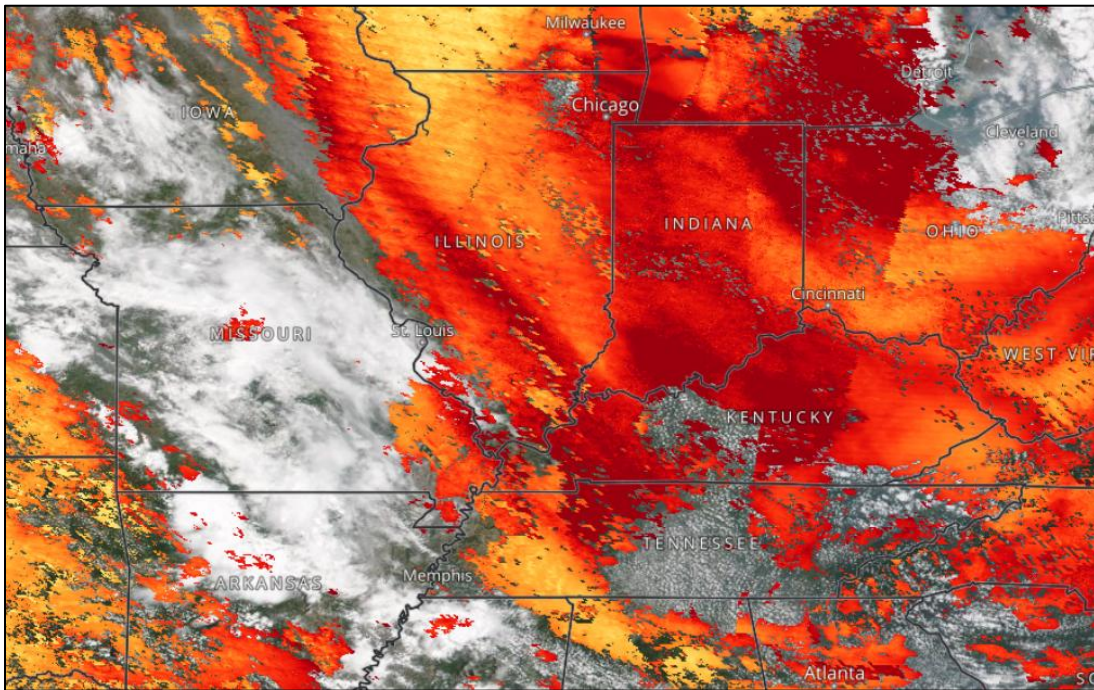
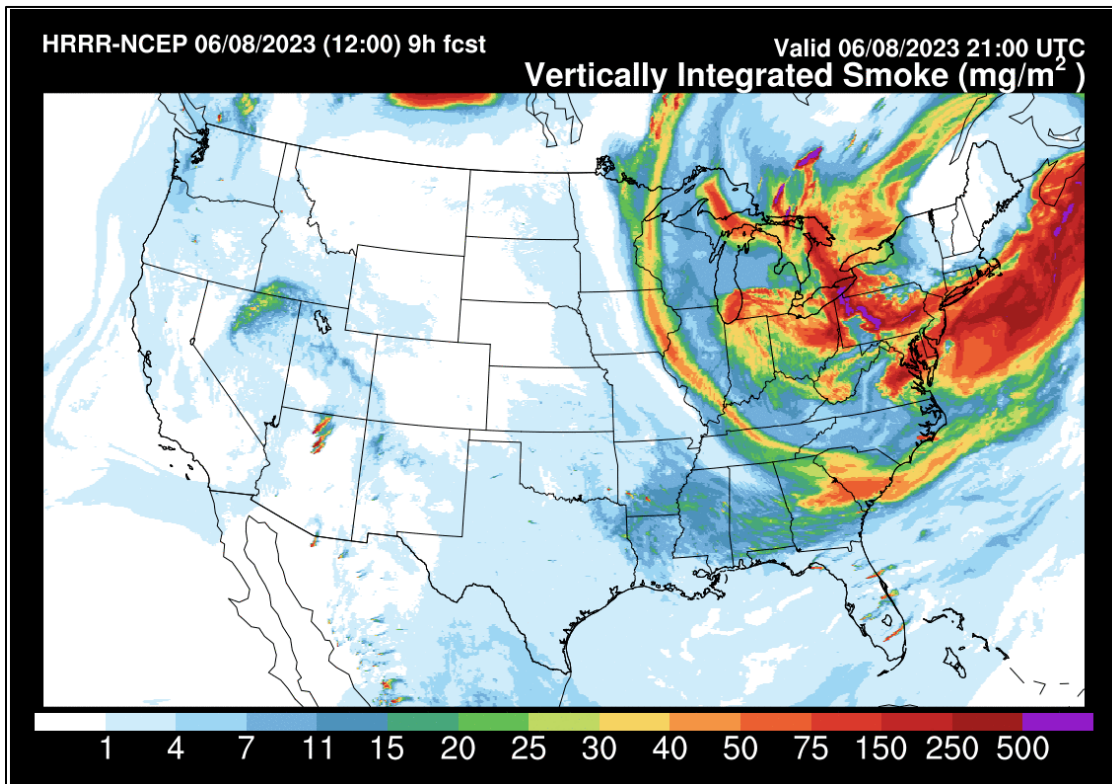
June 8, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

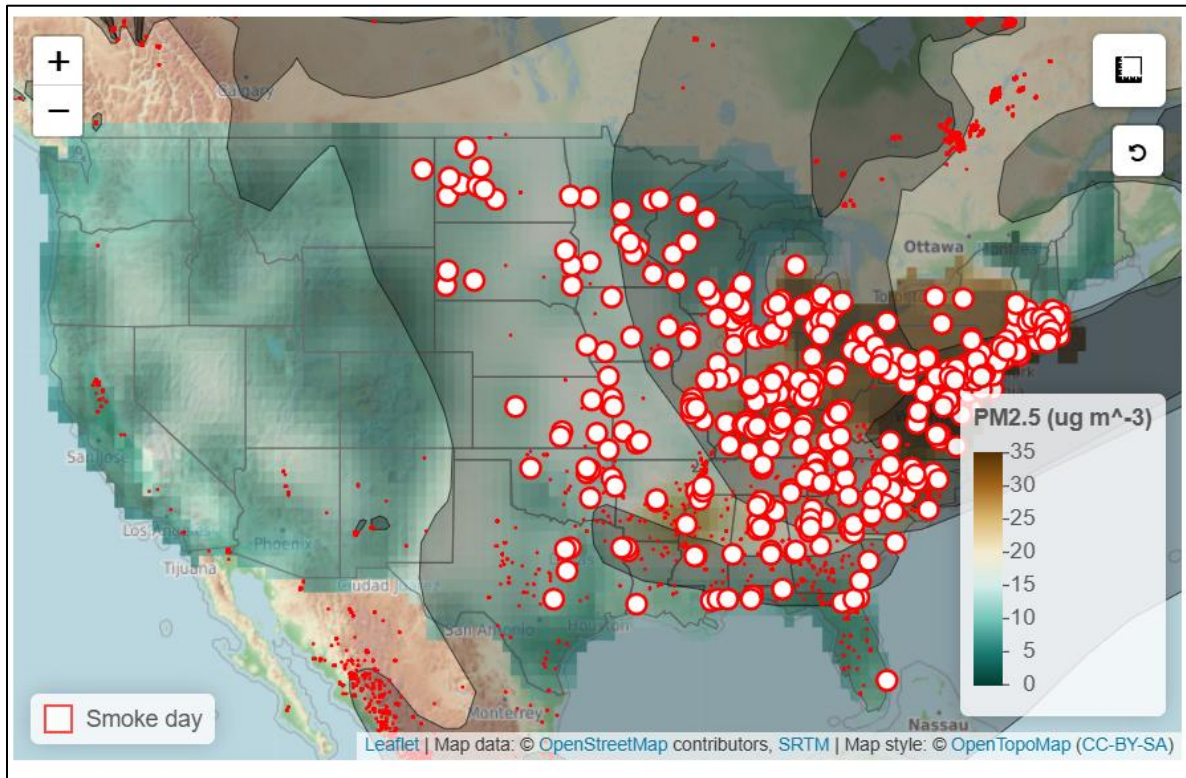
Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus - Rocky Ford Drive	180050008	6/8/2023	25.9	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/8/2023	27.9	17.0
Muncie - Central HS	180350006	6/8/2023	19.3	13.2
Jasper - Post Office	180372001	6/8/2023	26.0	15.7
Elkhart - Prairie St	180390008	6/8/2023	17.4	16.3
New Albany	180430008	6/8/2023	22.4	20.9
Plummer	180550001	6/8/2023	21.4	14.7
Fishers	180570007	6/8/2023	20.1	13.8
Carmel - Hazel Dell Parkway	180570008	6/8/2023	20.0	16.5
Mechanicsburg	180650003	6/8/2023	19.5	15.5
East Chicago - Franklin/Washington Sch	180890006	6/8/2023	19.8	16.1
Gary - Madison St	180890031	6/8/2023	27.4	16
East Chicago - Marina	180890034	6/8/2023	19.7	18
Hammond-167th St	180890036	6/8/2023	24.7	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/8/2023	16.9	15.9
Anderson - Eastside Elem	180950011	6/8/2023	27.9	15.4
Indianapolis - Washington Park	180970078	6/8/2023	28.6	17.8
Indianapolis - W. 18th St.	180970081	6/8/2023	21.0	20.9
Indianapolis - School 21	180970084	6/8/2023	21.8	15.5
Indianapolis- I-70 E	180970087	6/8/2023	30.7	20.5
Bloomington - Binford	181050003	6/8/2023	21.3	13.9

Ogden Dunes	181270024	6/8/2023	15.7	15.3
Dale	181470009	6/8/2023	27.9	13.9
Lafayette - Greenbush St	181570008	6/8/2023	18.8	15.1
Evansville - U of E	181630016	6/8/2023	24.6	15.5
Evansville - Buena Vista	181630021	6/8/2023	29.7	15.1
Terre Haute - Lafayette Ave	181670018	6/8/2023	19.1	18.8
Larwill	181830003	6/8/2023	21.7	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 8, 2023



Satellite Imagery with MAIAC AOD – June 8, 2023**HRRR Smoke - Vertically Integrated Smoke – June 8, 2023**

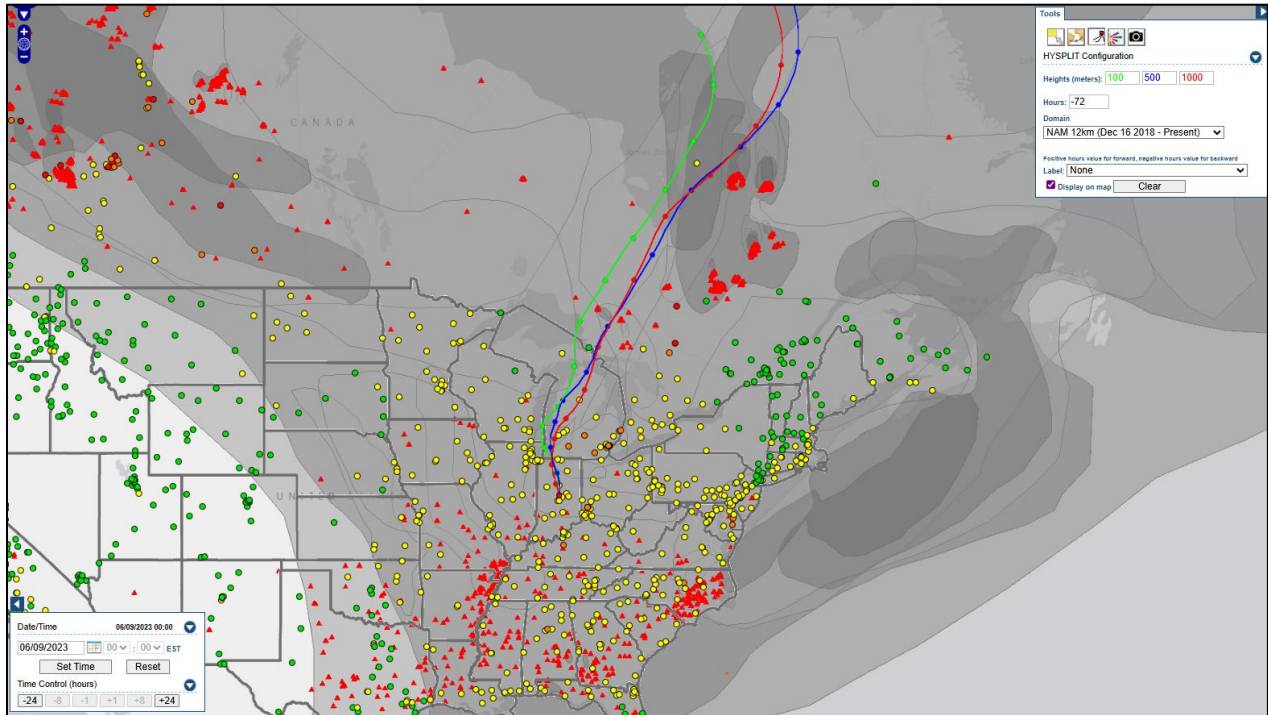
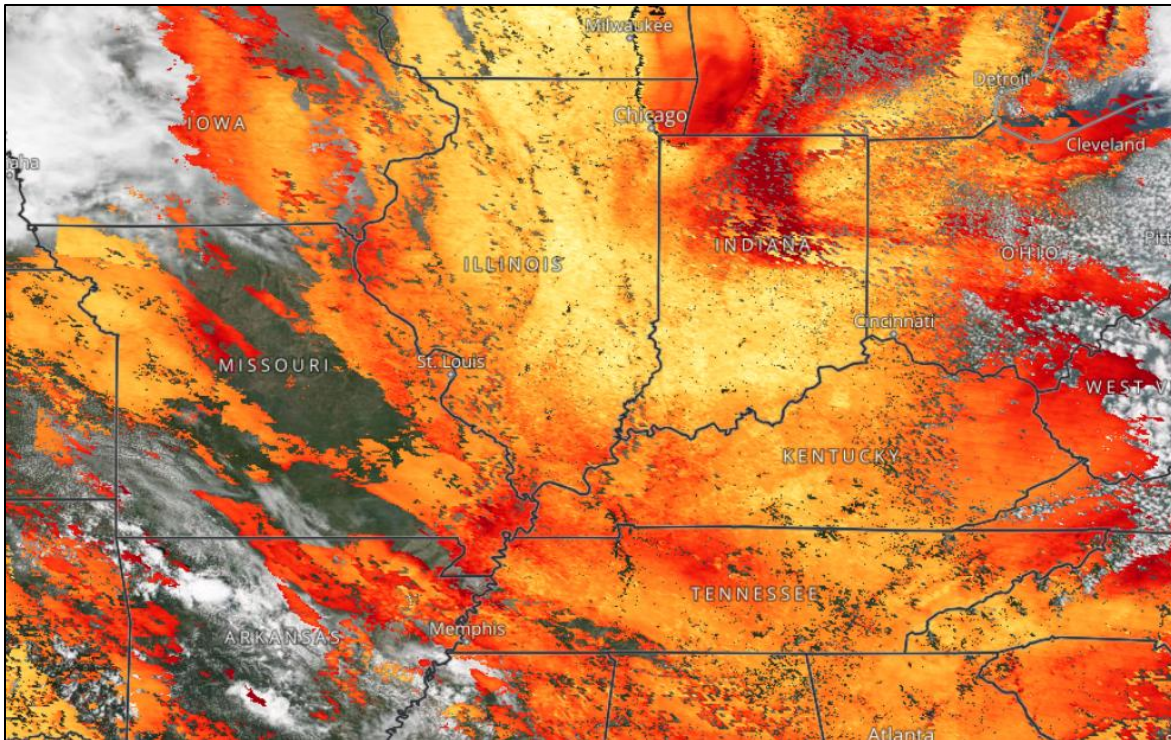
GAM PMO3 Smoke Output – June 8, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z June 8, 2023****SMOKE:**

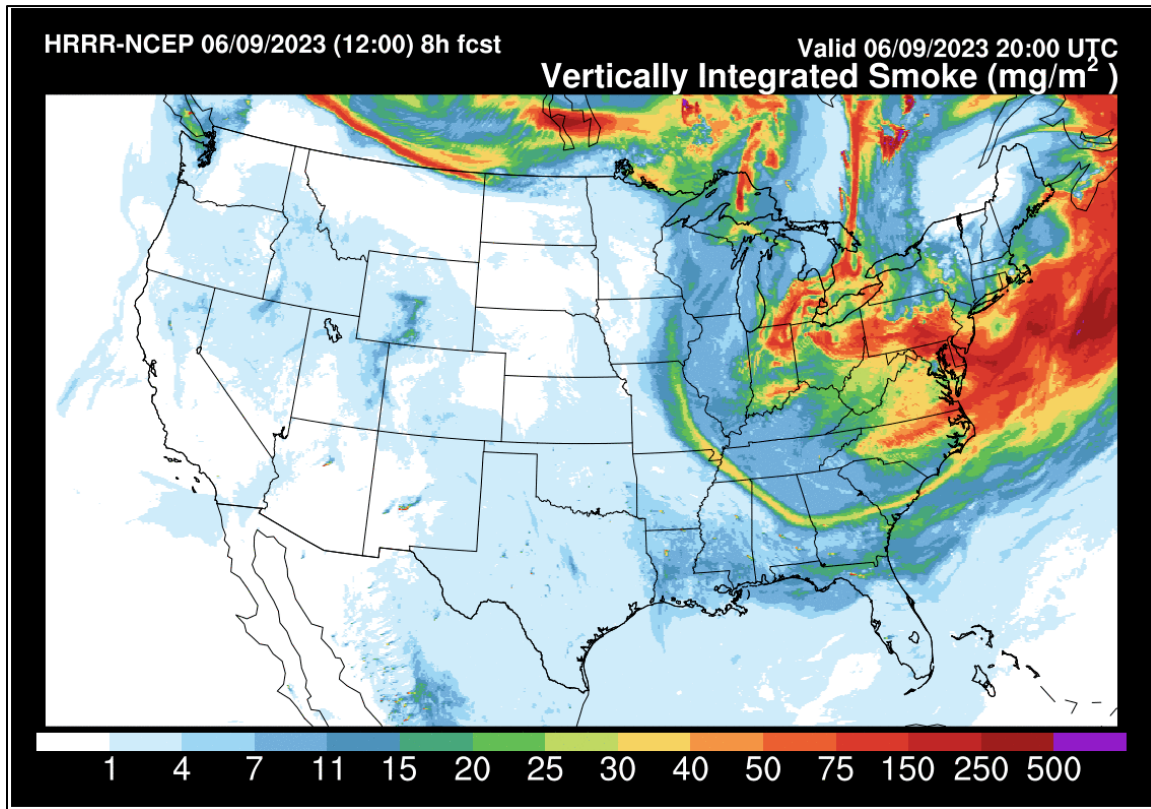
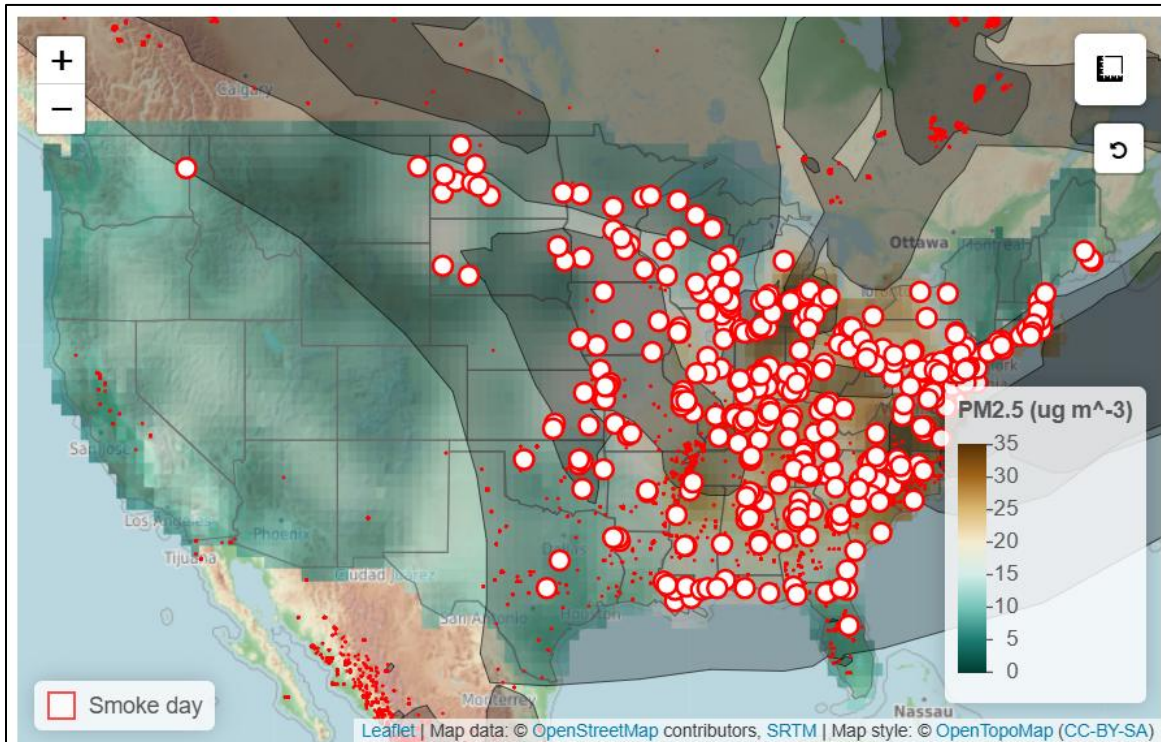
Canada, Central and Eastern United States and the northwestern Atlantic Ocean...

Multiple large wildfires across western and central Canada continued to produce large amounts of dense smoke in a plume stretching from northeastern British Columbia to the Saskatchewan/Manitoba border. Moderate-density smoke extended from the eastern Yukon and British Columbia to Hudson Bay and Nunavut, with some smoke continuing southward. Additional fires in Quebec and Ontario were adding moderate to high density smoke emanating westward before joining the main plumes moving southward over the western Great Lakes and eastward across the Ohio River Valley, the Mid-Atlantic, southern New York, Connecticut, Rhode Island, and southeastern Massachusetts, extending over the Atlantic Ocean south of Nova Scotia and as far as Newfoundland. An additional region of moderate-density smoke was drifting generally southward and extended from the Ark-La-Tex region to southern Georgia and South Carolina.

June 9, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus - Rocky Ford Dr	180050008	6/9/2023	14.4	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/9/2023	25.1	17.0
Elkhart - Prairie St	180390008	6/9/2023	28.5	16.3
Plummer	180550001	6/9/2023	18.0	14.7
Fishers	180570007	6/9/2023	21.5	13.8
Mechanicsburg	180650003	6/9/2023	31.4	15.5
East Chicago - Marina	180890034	6/9/2023	20.3	18
Hammond-167th St	180890036	6/9/2023	18.7	16.3
Anderson - Eastside Elem	180950011	6/9/2023	33.9	15.4
Indianapolis - Washington Park	180970078	6/9/2023	27.2	17.8
Indianapolis - W. 18th St.	180970081	6/9/2023	27.7	20.9
Indianapolis - I-70 E	180970087	6/9/2023	27.8	20.5
Bloomington - Binford	181050003	6/9/2023	16.7	13.9
Ogden Dunes	181270024	6/9/2023	16.4	15.3
South Bend - Shields Dr.	181410015	6/9/2023	30.8	16.9
Lafayette - Greenbush St	181570008	6/9/2023	20.1	15.1
Evansville - Buena Vista	181630021	6/9/2023	25.7	15.1
Larwill	181830003	6/9/2023	32.0	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 9, 2023**Satellite Imagery with MAIAC AOD – June 9, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 9, 2023**GAM PMO3 Smoke Output – June 9, 2023**

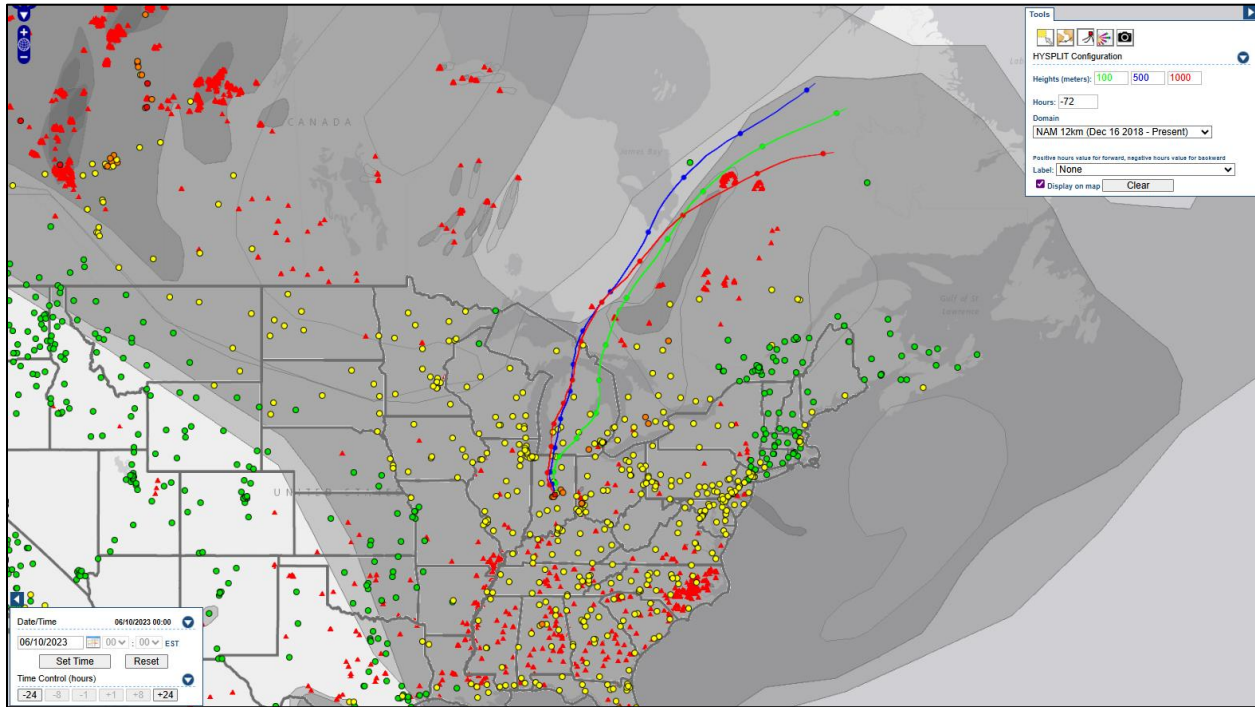
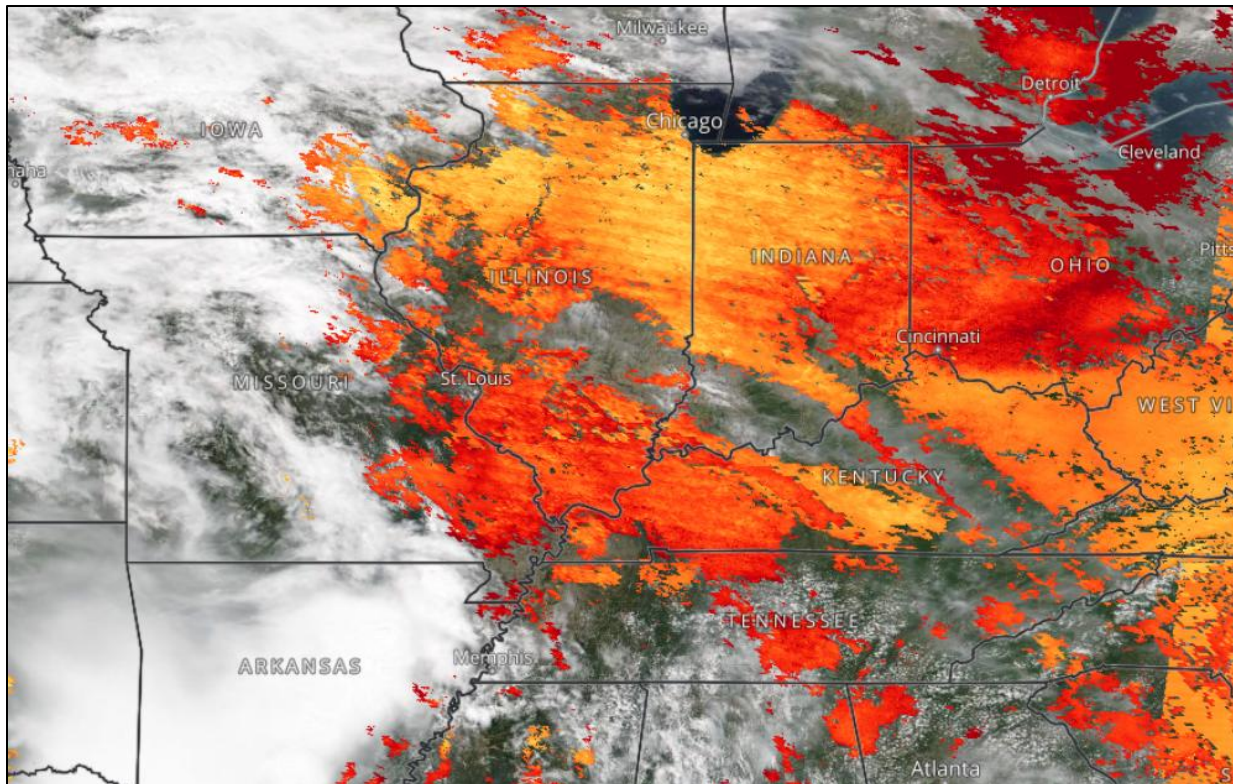
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1530Z June 9, 2023****SMOKE:**

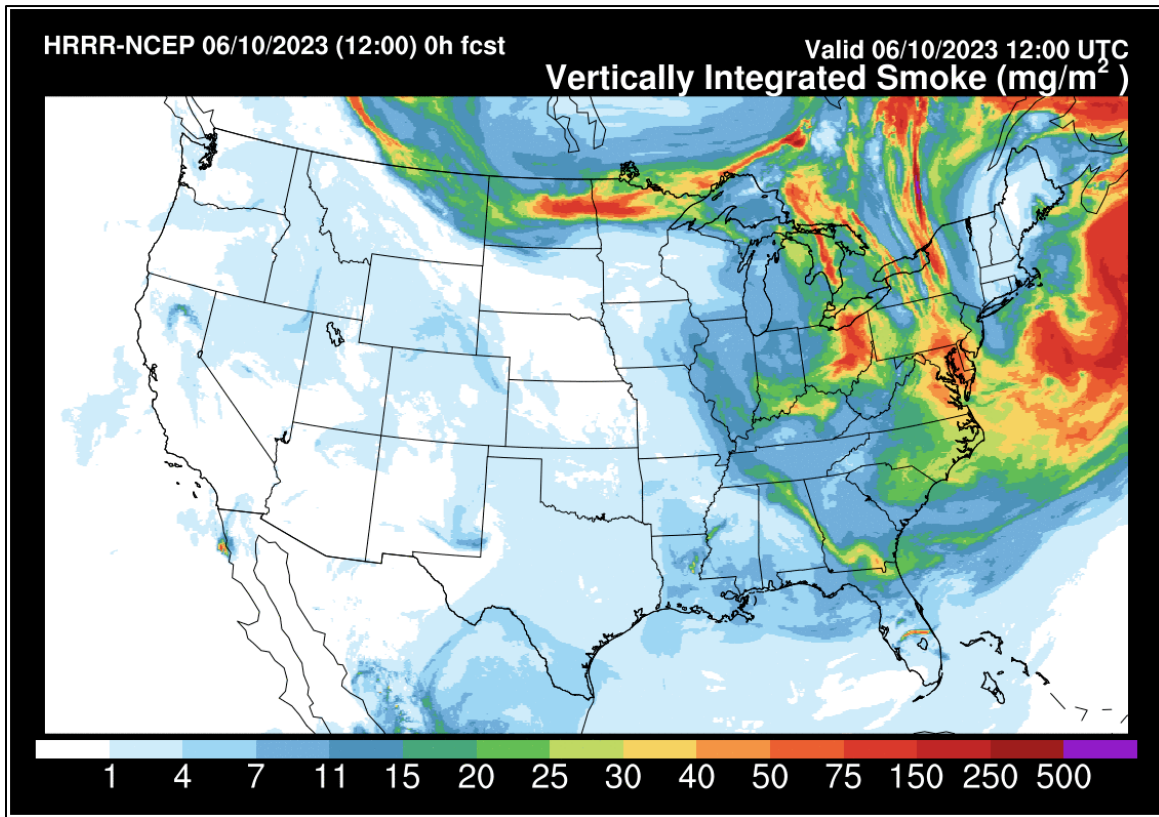
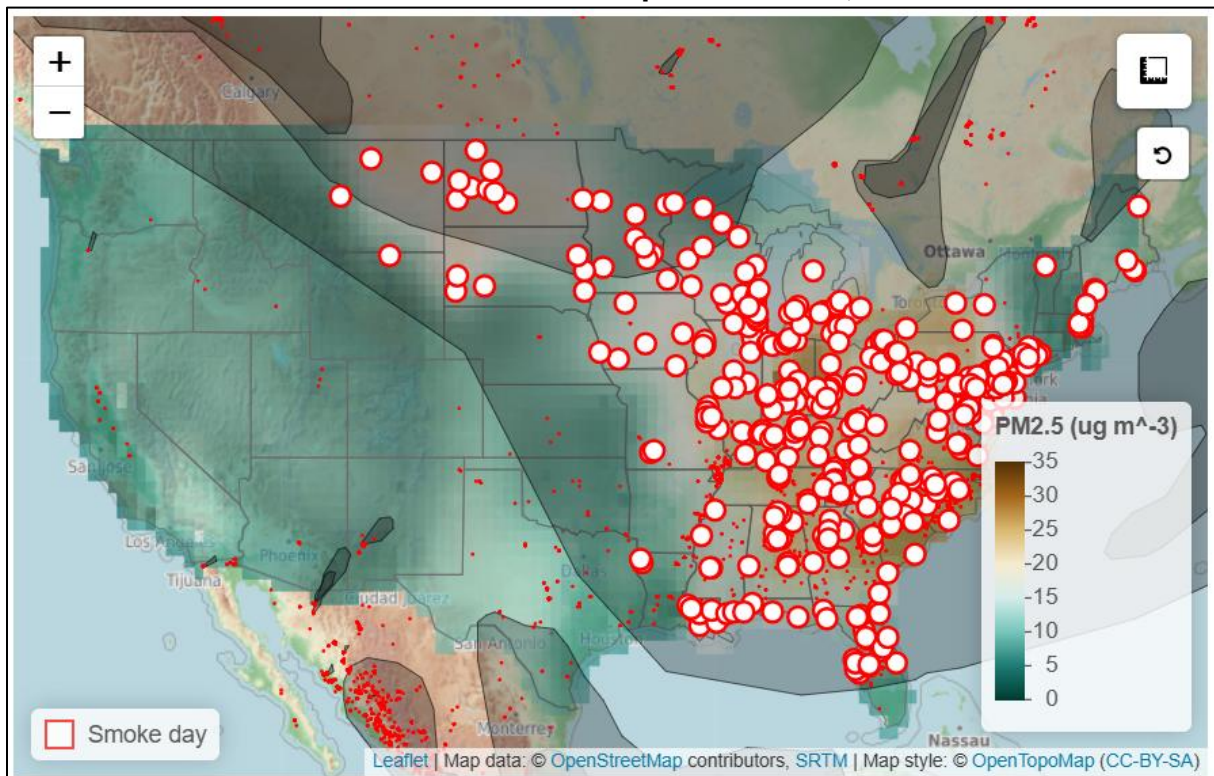
Canada, Central and Eastern United States and the northwestern Atlantic Ocean...

Multiple large wildfires continued burning across British Columbia, Alberta, Saskatchewan, Ontario, and Quebec. They continued to produce large amounts of moderate to high density smoke in an area stretching from southern Yukon Territory, northern/central British Columbia east through most of Alberta, southern/central Saskatchewan and Manitoba and east central Ontario. The area of smoke extended east and northeast through northeastern Canada and into the north Atlantic Ocean where areas of moderate density smoke was seen over northern Quebec and another area in the north Atlantic Ocean. Wildfires in Quebec and Ontario have continued to spread smoke over the last few days across central/southern Ontario/Quebec and the eastern U.S. with moderate to high density smoke seen across southeast Virginia, eastern North Carolina and northeast into the Atlantic ocean and off the Canadian coast. Lighter smoke has spread as far south as northern sections of the Gulf of Mexico and Central Florida and off the southeast coast. Other moderate density smoke from the wildfires in Canada were seen stretching from central South Dakota south to eastern Oklahoma, from south central Minnesota to eastern Missouri, and through northern Indiana and Ohio into Michigan and southern Ontario. Light smoke is also seen as far west as central Montana south to central Texas and the northeast region of the Gulf of Mexico.

June 10, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m³)	Tier 2 Threshold (µg/m³)
Columbus – Rocky Ford Drive	180050008	6/10/2023	13.5	13.4
Jeffersonville - Bates-Bowyer Ave	180190010	6/10/2023	26.6	17.0
Elkhart - Prairie St	180390008	6/10/2023	19.0	16.3
Fishers	180570007	6/10/2023	26.8	13.8
Mechanicsburg	180650003	6/10/2023	38.4	15.5
Kokomo - E. Vaile Ave	180670004	6/10/2023	23.9	14.7
Anderson - Eastside Elem	180950011	6/10/2023	38.1	15.4
Indianapolis - Washington Park	180970078	6/10/2023	41.0	17.8
Indianapolis - W. 18th St.	180970081	6/10/2023	36.1	20.9
Indianapolis - I-70 E	180970087	6/10/2023	38.1	20.5
South Bend - Shields Dr.	181410015	6/10/2023	21.4	16.9
Lafayette - Greenbush St	181570008	6/10/2023	20.6	15.1
Evansville – U of E	181630016	6/10/2023	15.0	15.0
Evansville - Buena Vista	181630021	6/10/2023	22.4	15.1
Larwill	181830003	6/10/2023	22.6	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories - June 10, 2023**Satellite Imagery with MAIAC AOD – June 10, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 10, 2023**GAM PMO3 Smoke Output – June 10, 2023**

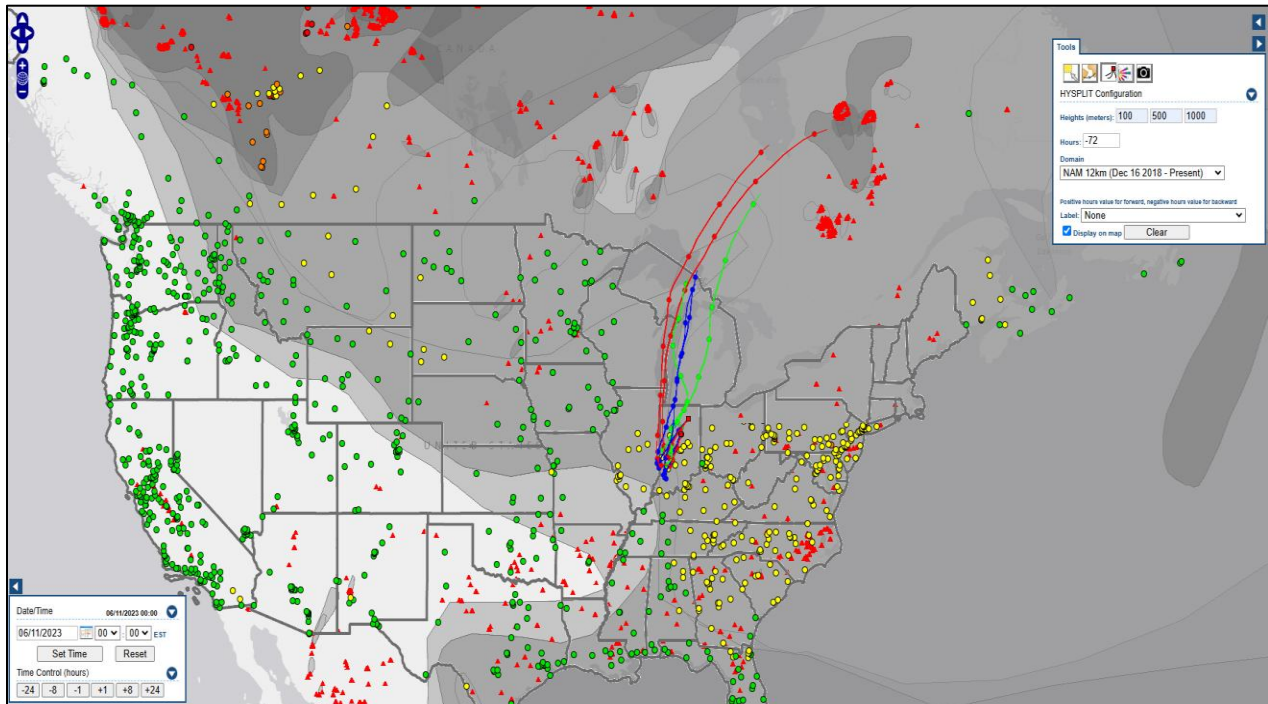
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1500Z June 10, 2023****SMOKE:**

Canada, Central and Eastern United States and the northwestern Atlantic Ocean...

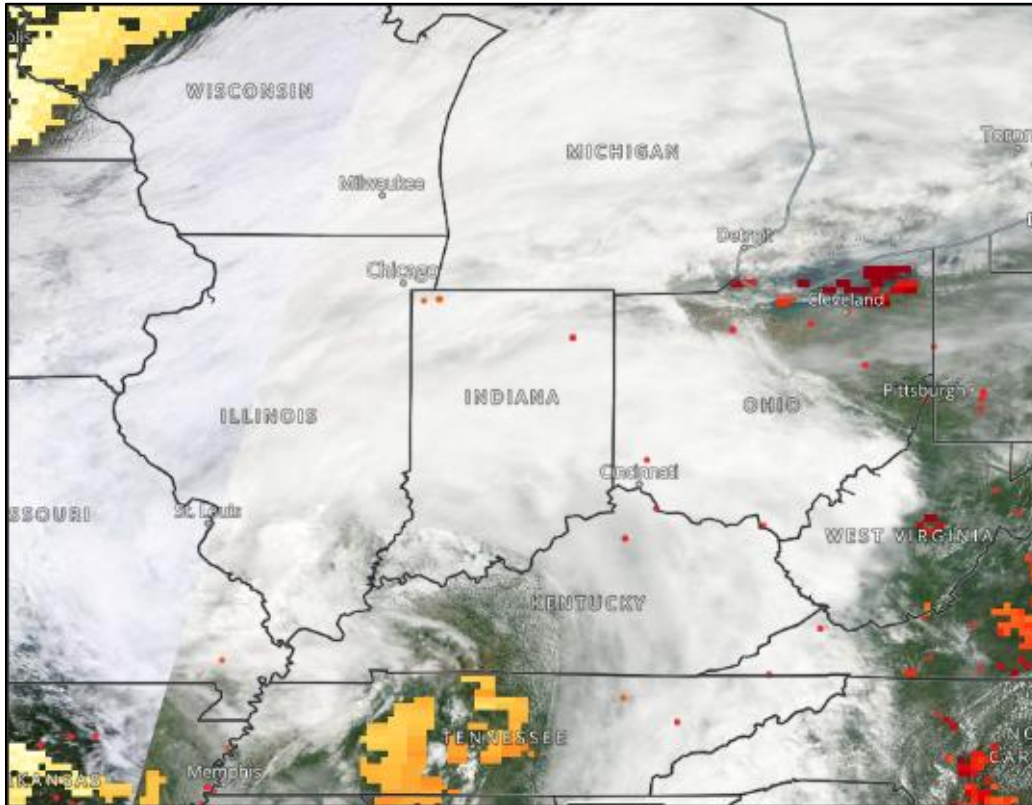
Wildfires throughout Saskatchewan, Alberta, British Columbia, and the southern Northwest Territories continued to produce large amounts of light to medium-density smoke extending from southeastern Yukon to northern Montana, the Dakotas, and Minnesota and southern Ontario. Heavy density smoke was concentrated over the NW Territories, British Columbia, Alberta, and Saskatchewan. Due to heavy cloud coverage, it was difficult to the full extent of smoke over most of Ontario and Quebec. Light smoke from these fires also extended across all of the Canadian territories and over Hudson Bay, and additional areas of the central, southern and eastern U.S. This smoke then became combined with smoke mainly emitted from fires in Ontario and Quebec, with light to moderate-density smoke extending from the over the Atlantic Ocean southeast of New England and Nova Scotia.

June 11, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

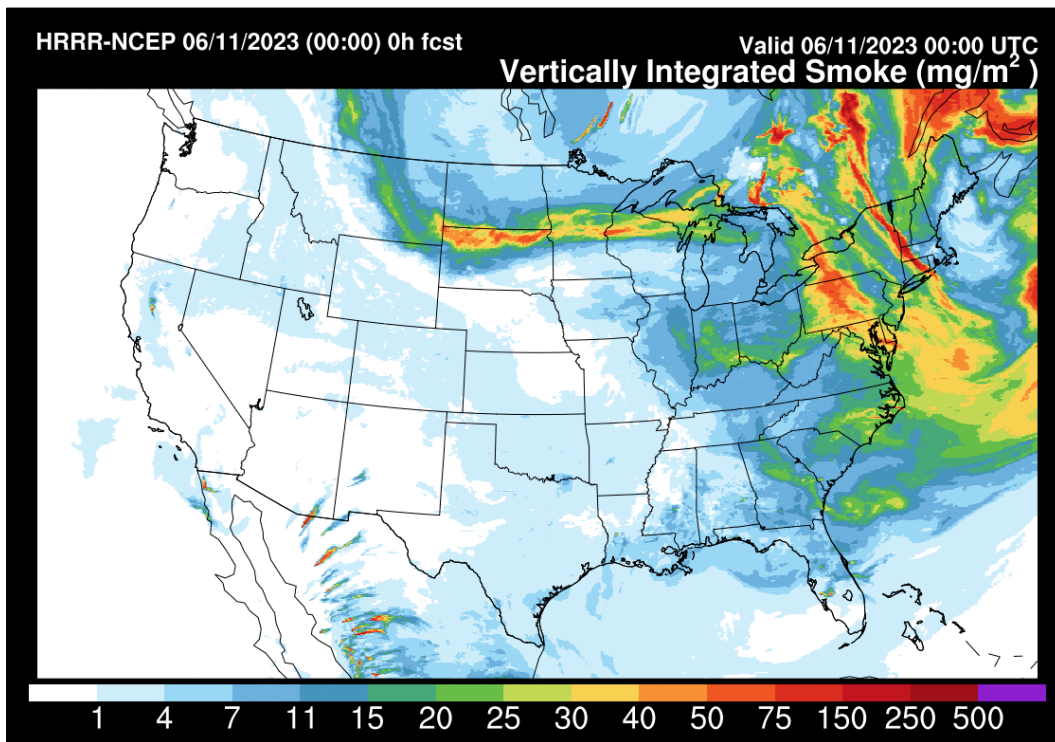
Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Columbus - Rocky Ford Drive	180050008	6/11/2023	14.1	13.7
Muncie - Central HS	180350006	6/11/2023	17.4	13.2
Elkhart - Prairie St	180390008	6/11/2023	17.5	16.3
Plummer	180550001	6/11/2023	14.9	14.7
Carmel - Hazel Dell Parkway	180570008	6/11/2023	17.5	16.5
Mechanicsburg	180650003	6/11/2023	16.1	15.5
Kokomo - E. Vaile Ave	180670004	6/11/2023	15.1	14.7
Anderson - Eastside Elem	180950011	6/11/2023	18.6	15.4
Indianapolis - Washington Park	180970078	6/11/2023	18.0	17.8
Indianapolis - School 21	180970084	6/11/2023	16.8	15.5
Larwill	181830003	6/11/2023	15.1	15

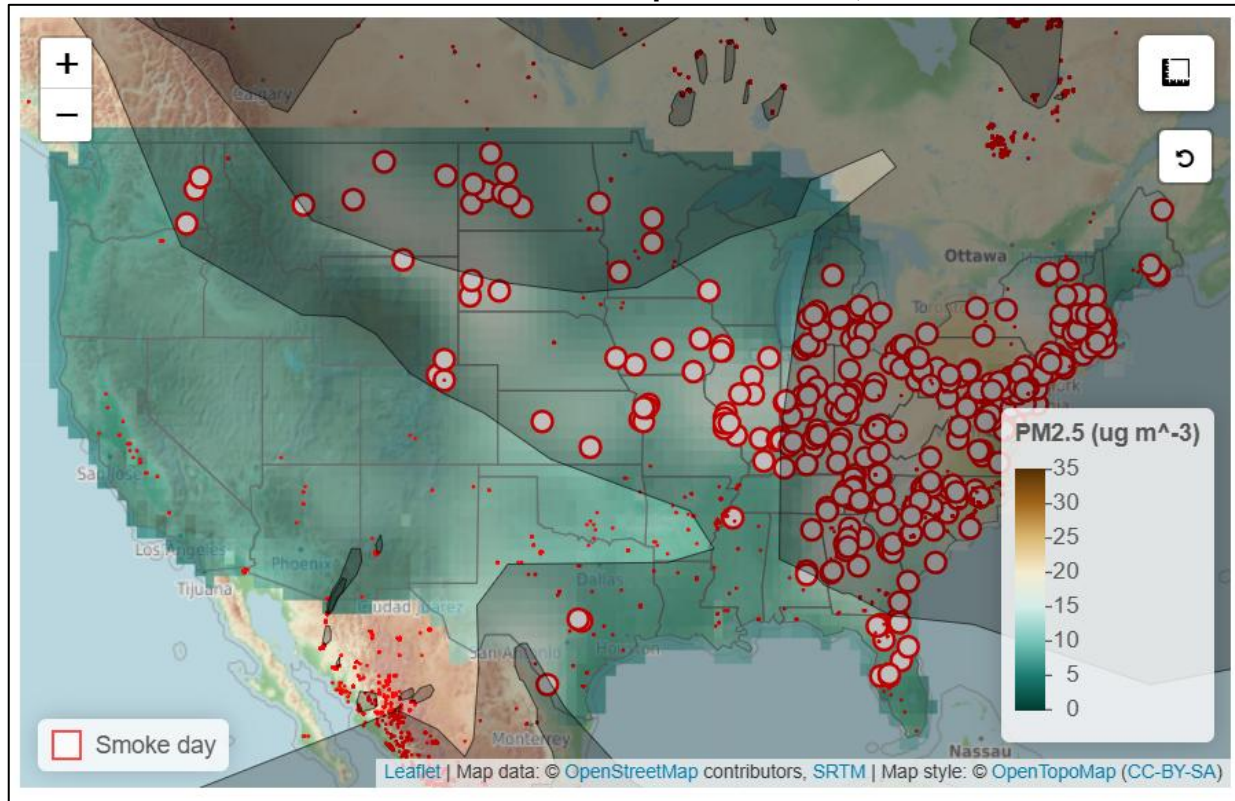
AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 11, 2023

Satellite Imagery with MAIAC AOD – June 11, 2023



HRRR Smoke - Vertically Integrated Smoke – June 11, 2023



GAM PMO3 Smoke Output – June 11, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1700Z June 11, 2023**

SMOKE:

Canada, Northern, Central and Eastern United States and the Atlantic Ocean...

Wildfires continue to burn across far southwestern Northwest Territory, northeastern British Columbia, northern and central Alberta, and northern Saskatchewan. This fire activity is emitting thick smoke that initially extends east to southeast from fires in BC and central Alberta and northeast from activity in central Saskatchewan. As the thick smoke lofts, the thick smoke begins to move east northeastward over southern NW Territory, northern Alberta, and far northern Saskatchewan and into southern Nunavut. From here, a portion becomes incorporated into an upper-level high over the central Saskatchewan/Manitoba border moving south then southwest across far northwestern Ontario, northern and central Manitoba and central Saskatchewan. The rest is drawn eastward across Hudson Bay into northern Quebec. Wildfires also continue to burn across southern Quebec. The smoke from this ongoing activity is getting forced in multiple directions, with one system across central Quebec into Greenland drawing smoke east-northeastward...a second system over the southern Labrador Sea and Newfoundland drawing smoke southeastward across the St. Lawrence River Valley and Maine across the Atlantic then incorporating the smoke into the circulation system with smoke seen wrapping around and moving south across the Gulf of St. Lawrence...and

some smoke moving slowly southwestward with some of this smoke also then getting drawn east-southeast from the Great Lakes after the smoke reaches there. Light remnant smoke from a combination of the fire activity in Canada is seen as far east as the eastern Atlantic and into Europe.