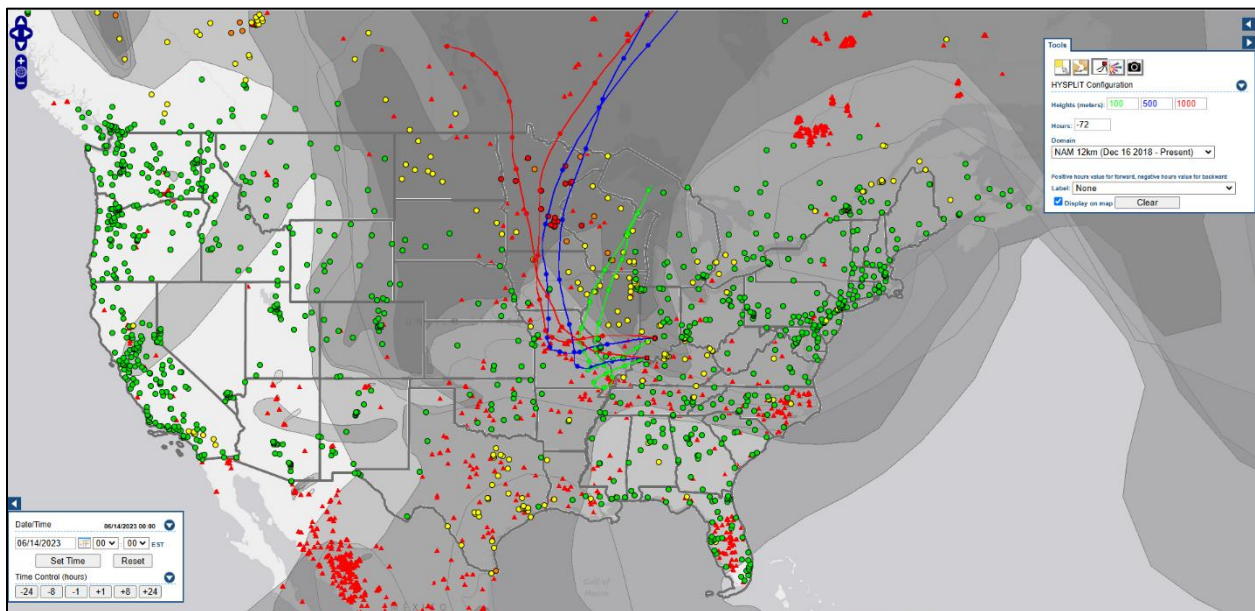


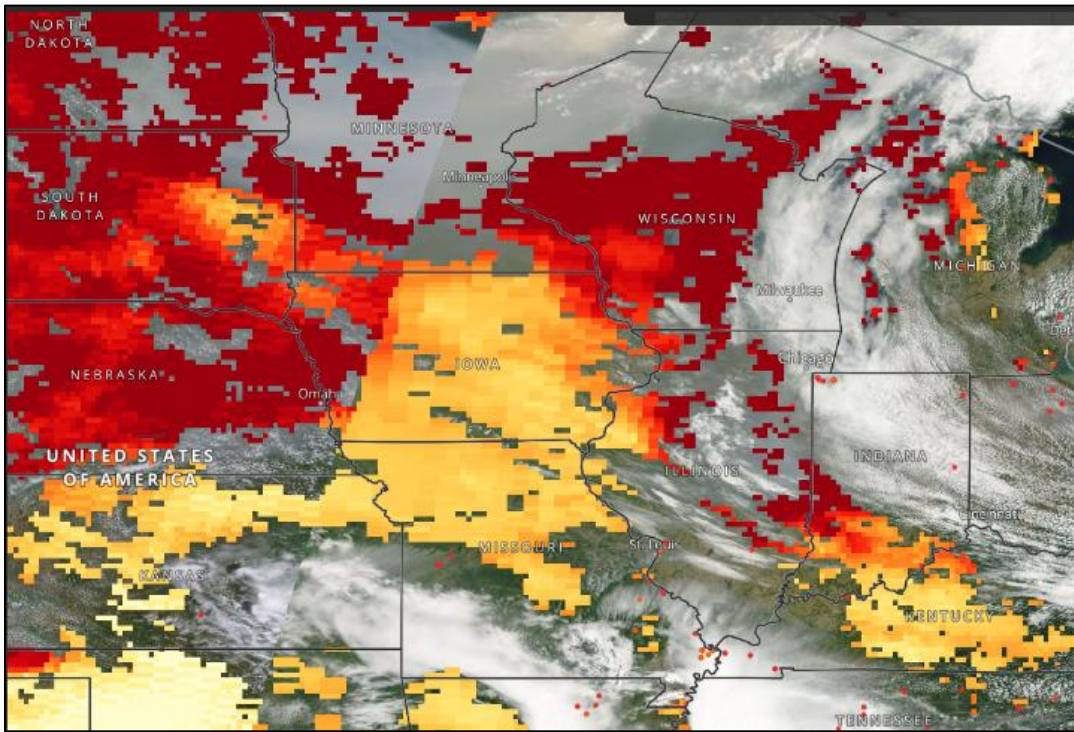
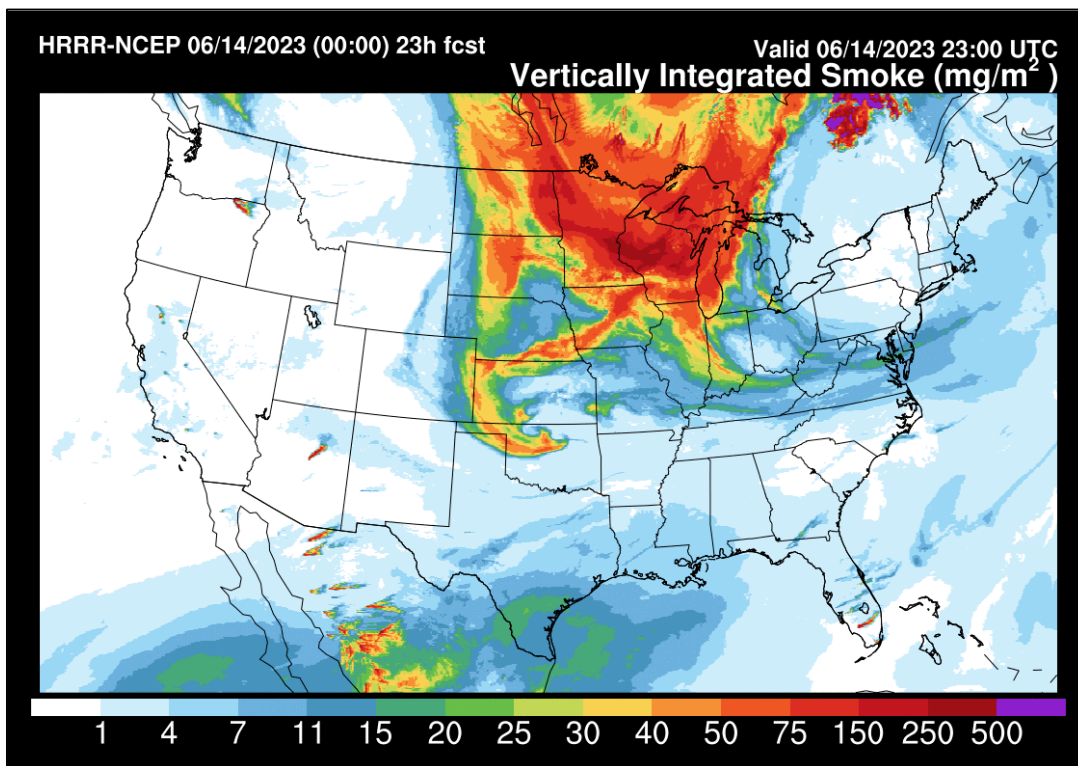
June 14, 2023

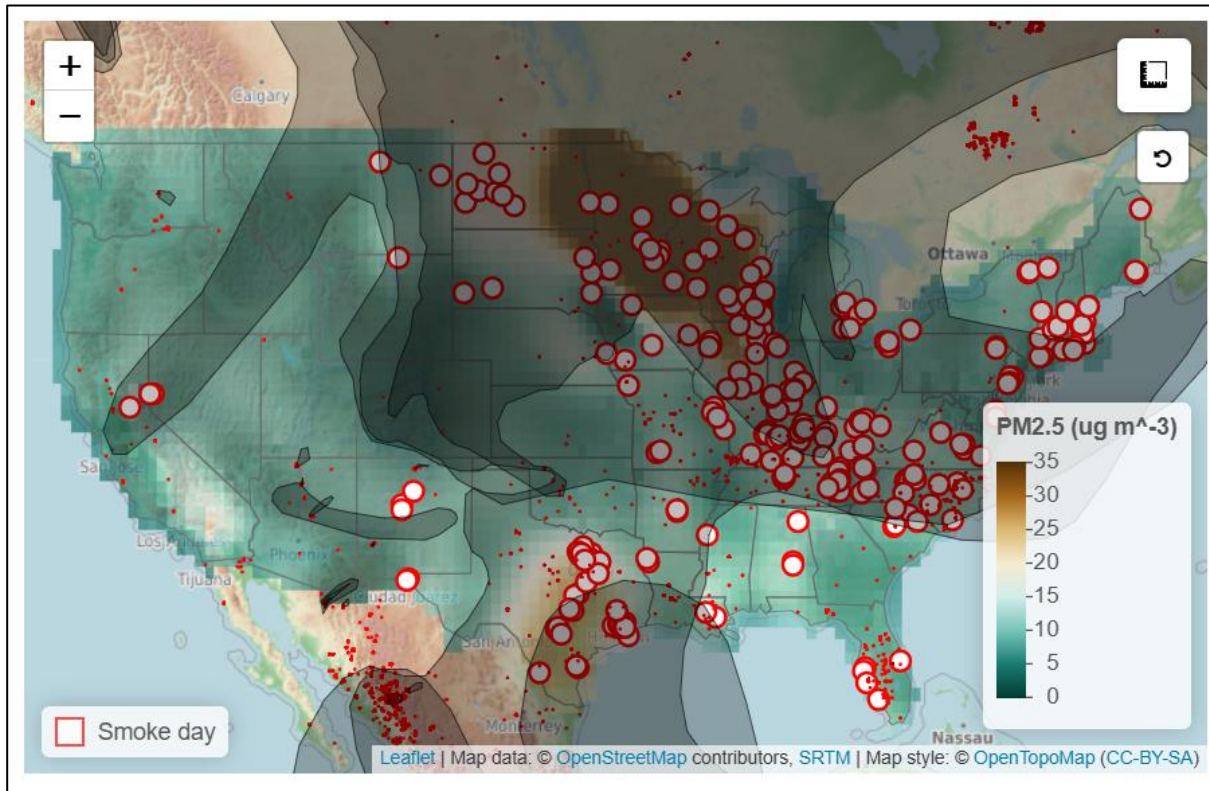
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Bloomington - Binford	181050003	6/14/2023	14.2	13.9
Dale	181470009	6/14/2023	19.9	13.9

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



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

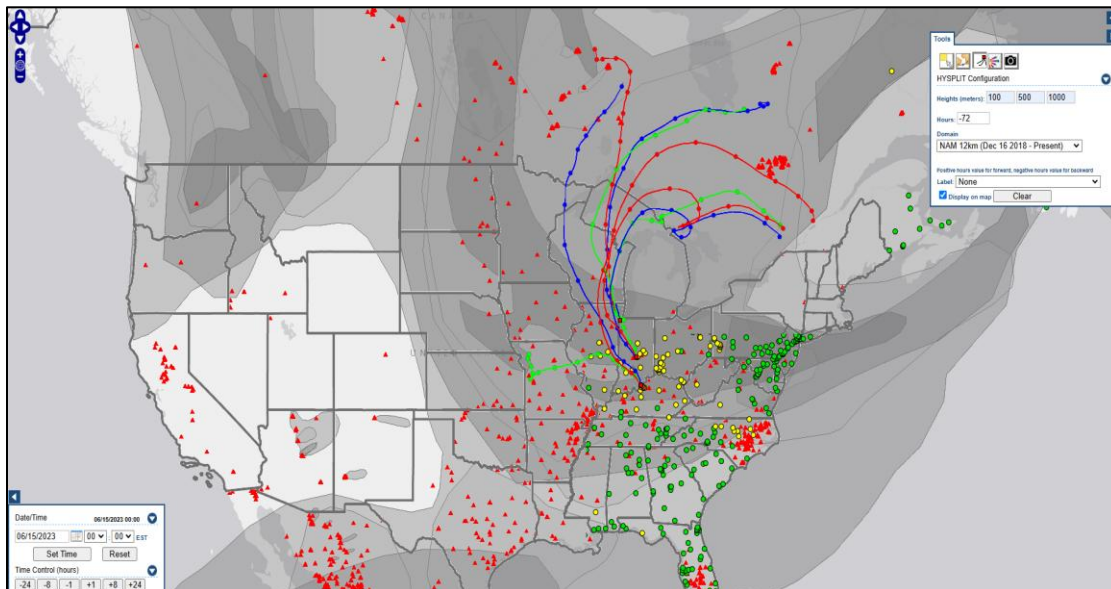
GAM PMO3 Smoke Output – June 14, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 14, 2023****SMOKE:**

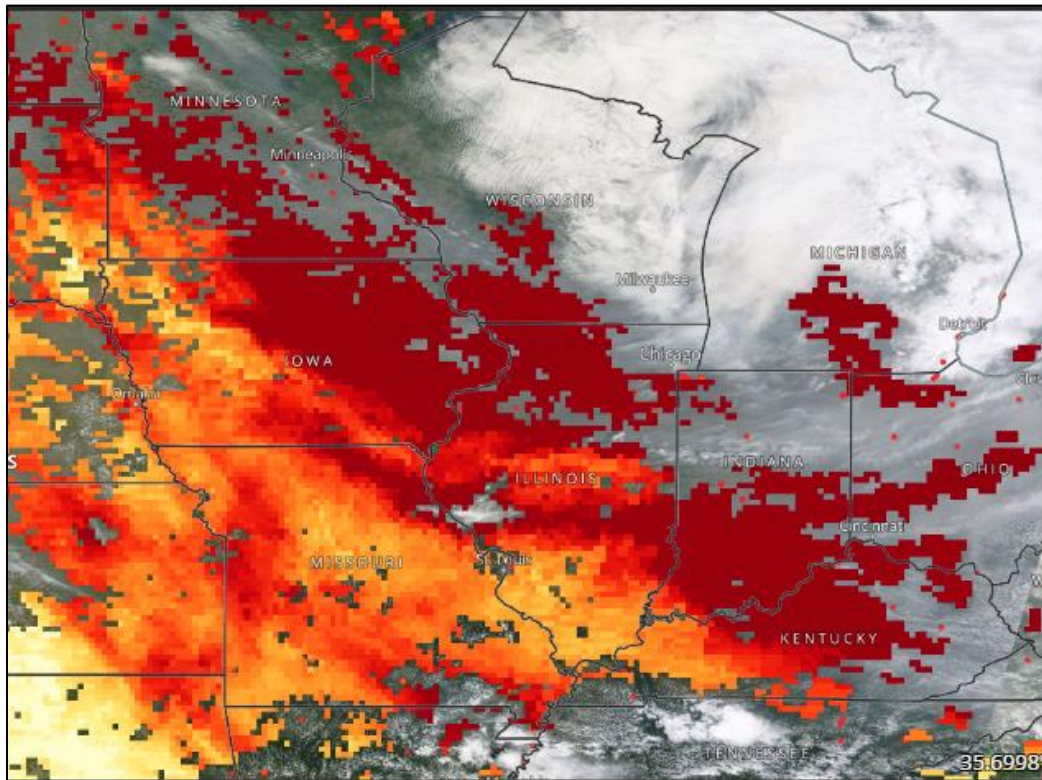
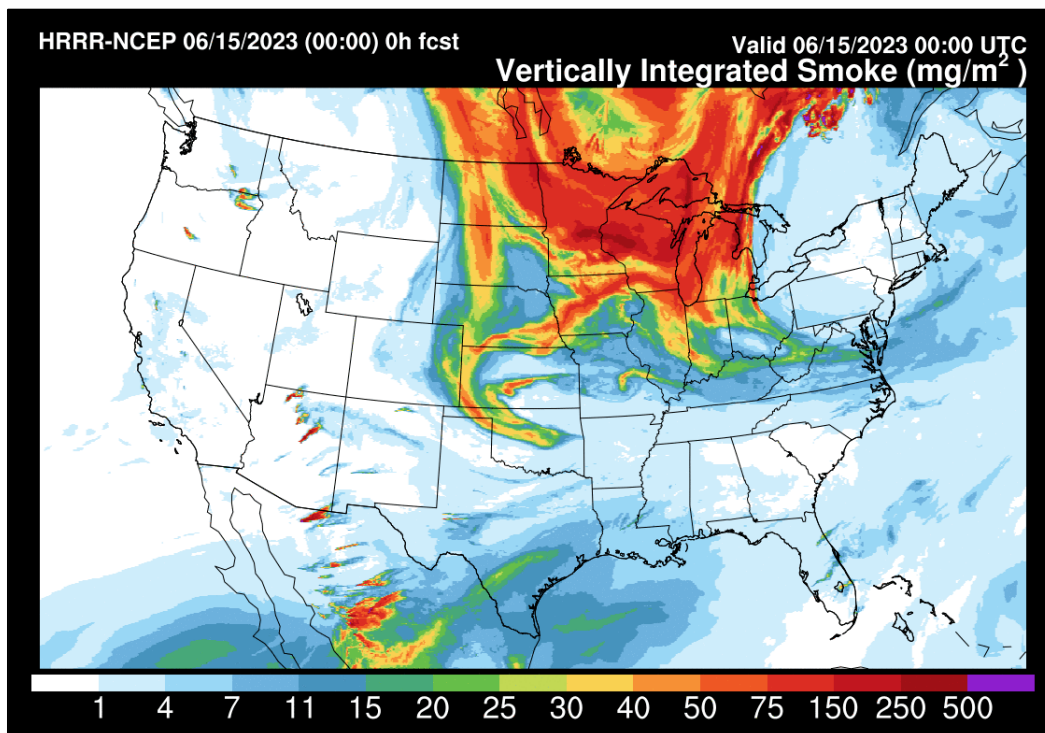
Canada/United States/Atlantic Ocean...

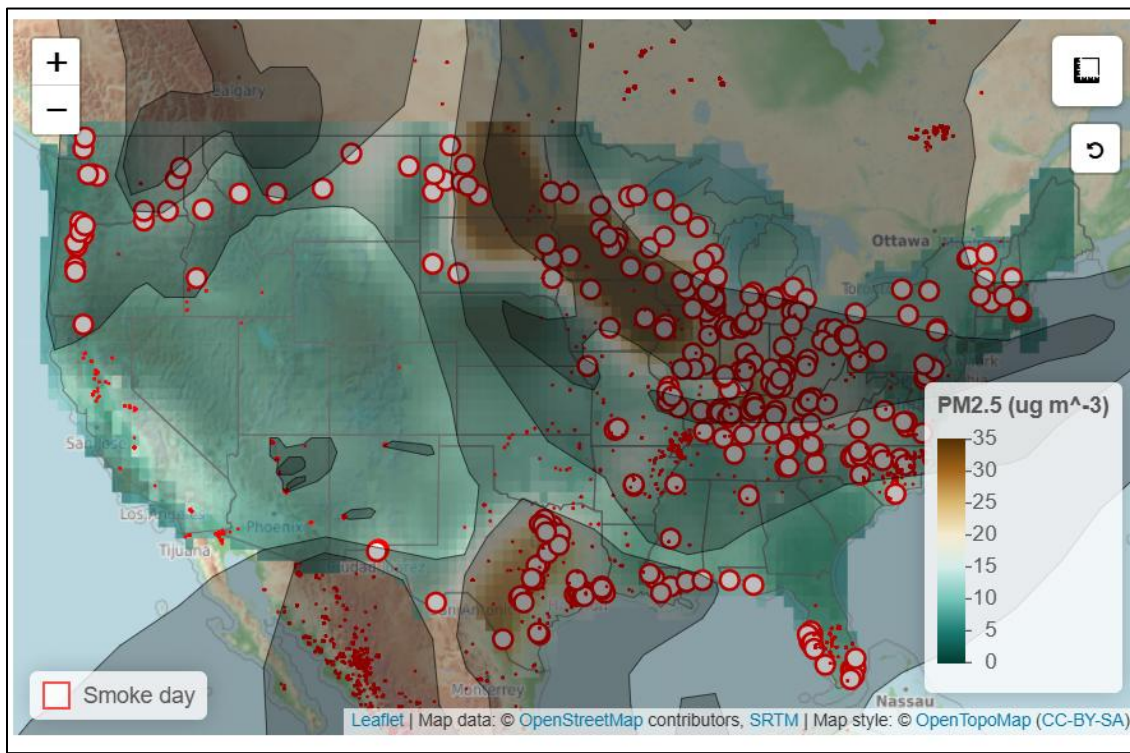
Numerous large wildfires scattered across portions of the southern half of Canada from northern British Columbia and the southwestern part of the Northwest Territories eastward over the southern tier of Canadian provinces to Quebec continued to result in a very large area of moderate to thick density smoke which covered a good part of southern and central Canada and extended off the east and southeast coast of Canada over the north Atlantic. The southern part of the thicker area of smoke also extended to the south across the region extending from the Northern and Central High Plains to the western Great Lakes. In addition, a narrow curving band of moderate density smoke stretched from the Middle Mississippi Valley eastward to North Carolina and northeastward from there off the Mid-Atlantic and Northeast coast. Thinner density smoke from these fires covered a sizable part of the Atlantic reaching as far east as Europe.

June 15, 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	6/15/2023	19.0	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/15/2023	43.5	17.0
New Albany	180430008	6/15/2023	29.0	20.9
Plummer	180550001	6/15/2023	23.2	14.7
Fishers	180570007	6/15/2023	15.8	13.8
Mechanicsburg	180650003	6/15/2023	19.4	15.5
Kokomo - E. Vaile Ave	180670004	6/15/2023	17.5	14.7
East Chicago - Marina	180890034	6/15/2023	19.8	18
Hammond-167th St	180890036	6/15/2023	17.7	16.3
Anderson - Eastside Elem	180950011	6/15/2023	20.1	15.4
Indianapolis - Washington Park	180970078	6/15/2023	23.6	17.8
Indianapolis - W. 18th St.	180970081	6/15/2023	29.0	20.9
Indianapolis- I-70 E	180970087	6/15/2023	27.3	20.5
Bloomington - Binford	181050003	6/15/2023	28.5	13.9
South Bend - Shields Dr.	181410015	6/15/2023	17.8	16.9
Terre Haute - Lafayette Ave	181670018	6/15/2023	22.4	18.8
Larwill	181830003	6/15/2023	18.7	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 15, 2023

Satellite Imagery with MAIAC AOD – June 15, 2023**HRRR Smoke - Vertically Integrated Smoke – June 15, 2023**

GAM PMO3 Smoke Output – June 15, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1710Z June 15, 2023****SMOKE:**

Canada/United States/Atlantic...

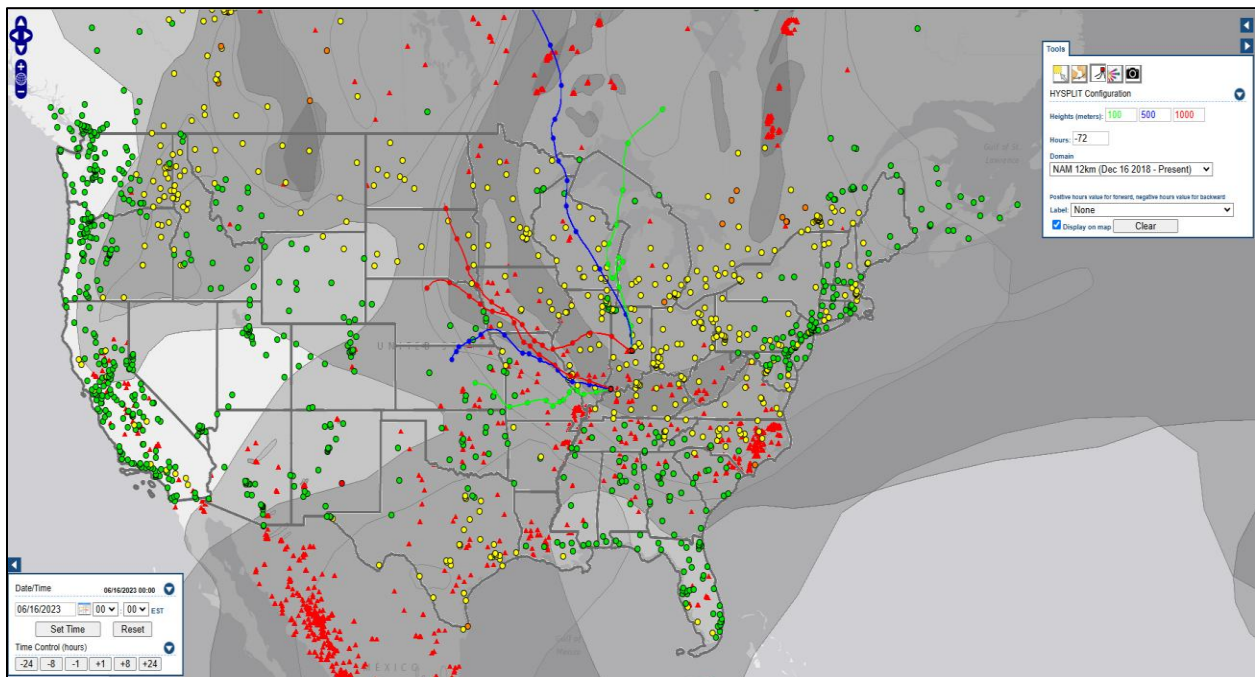
Ongoing wildfires across northeastern British Columbia, northern Alberta/Saskatchewan, western Ontario, and central Quebec were spreading a very large plume of light density smoke over a large part of southern and central Canada, parts of the Pacific Northwest, a large part of the central and eastern U.S., and portions of the western Atlantic. Within this area of thin density smoke, moderate density smoke was found over parts of British Columbia and Alberta, northeastern Saskatchewan, most of Manitoba/Ontario, and western Quebec. Over the U.S., moderate density smoke was detected over most the Northern and Central Plains, the Upper and Mid-Mississippi Valley, the Great Lakes, the Ohio/Tennessee Valleys, and most of the Mid Atlantic. Small areas of heavy density smoke were detected near the large wildfires over northeastern British Columbia and far northwestern Alberta.

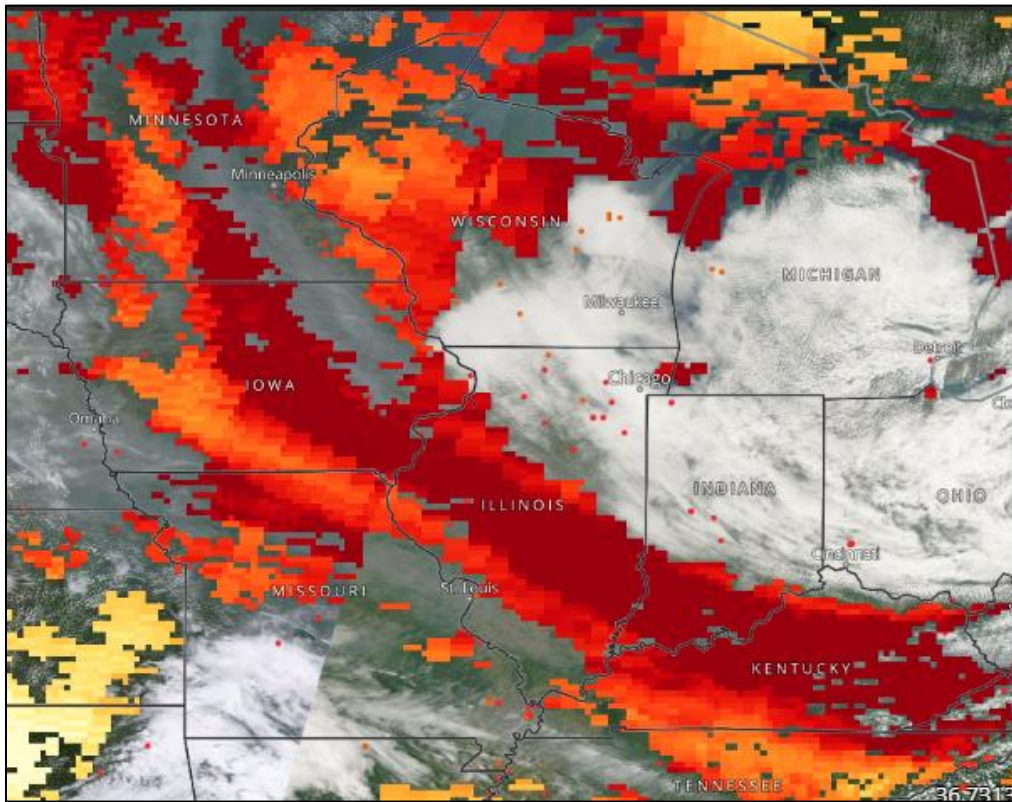
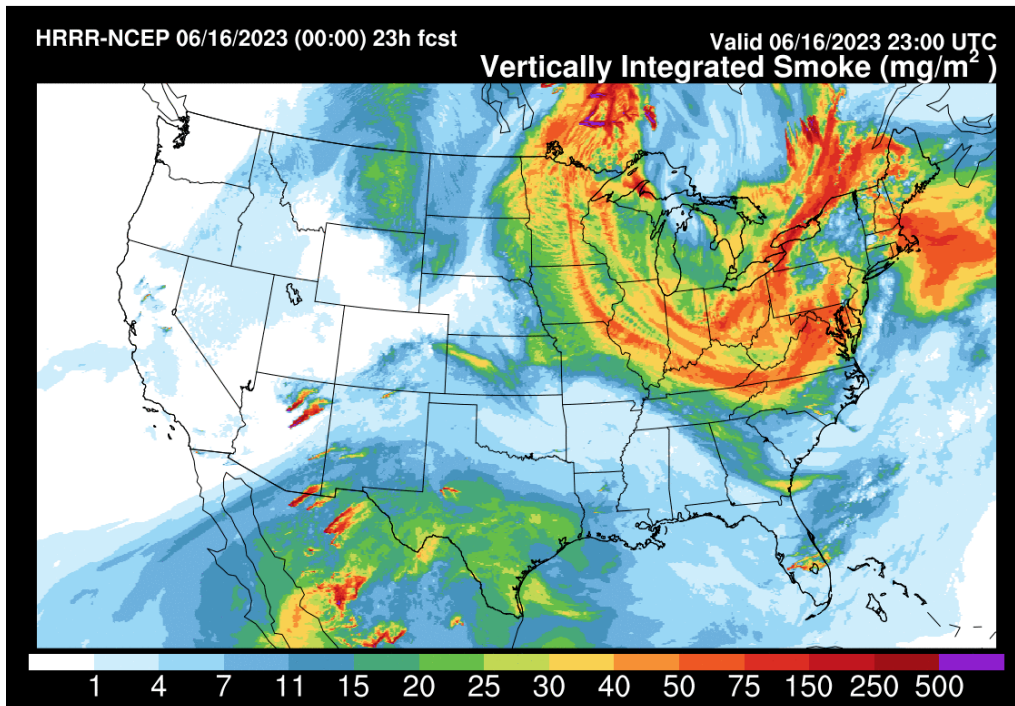
June 16, 2023

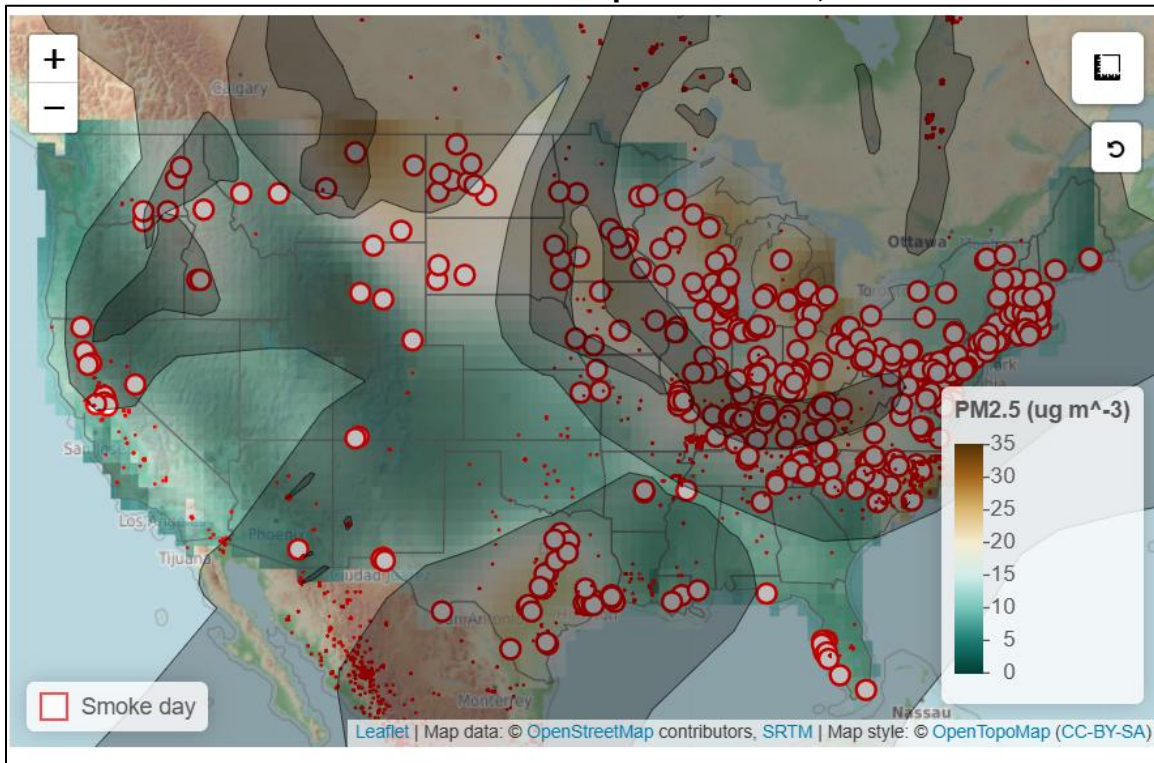
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Columbus - Rocky Ford Drive	180050008	6/16/2023	14.9	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/16/2023	24.1	17.0
Plummer	180550001	6/16/2023	17.4	14.7
Mechanicsburg	180650003	6/16/2023	16.0	15.5
Anderson - Eastside Elem	180950011	6/16/2023	17.9	15.4
Indianapolis- I-70 E	180970087	6/16/2023	21.2	20.5
Bloomington - Binford	181050003	6/16/2023	18.0	13.9
Evansville - Buena Vista	181630021	6/16/2023	23.3	15.1
Larwill	181830003	6/16/2023	17.7	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 16, 2023



Satellite Imagery with MAIAC AOD – June 16, 2023**HRRR Smoke - Vertically Integrated Smoke – June 16, 2023**

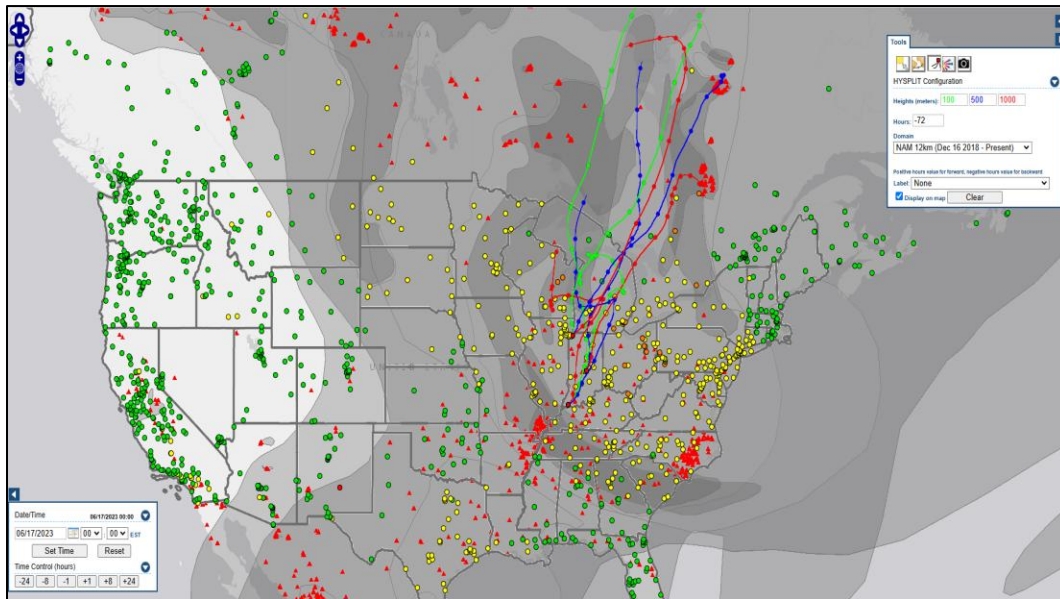
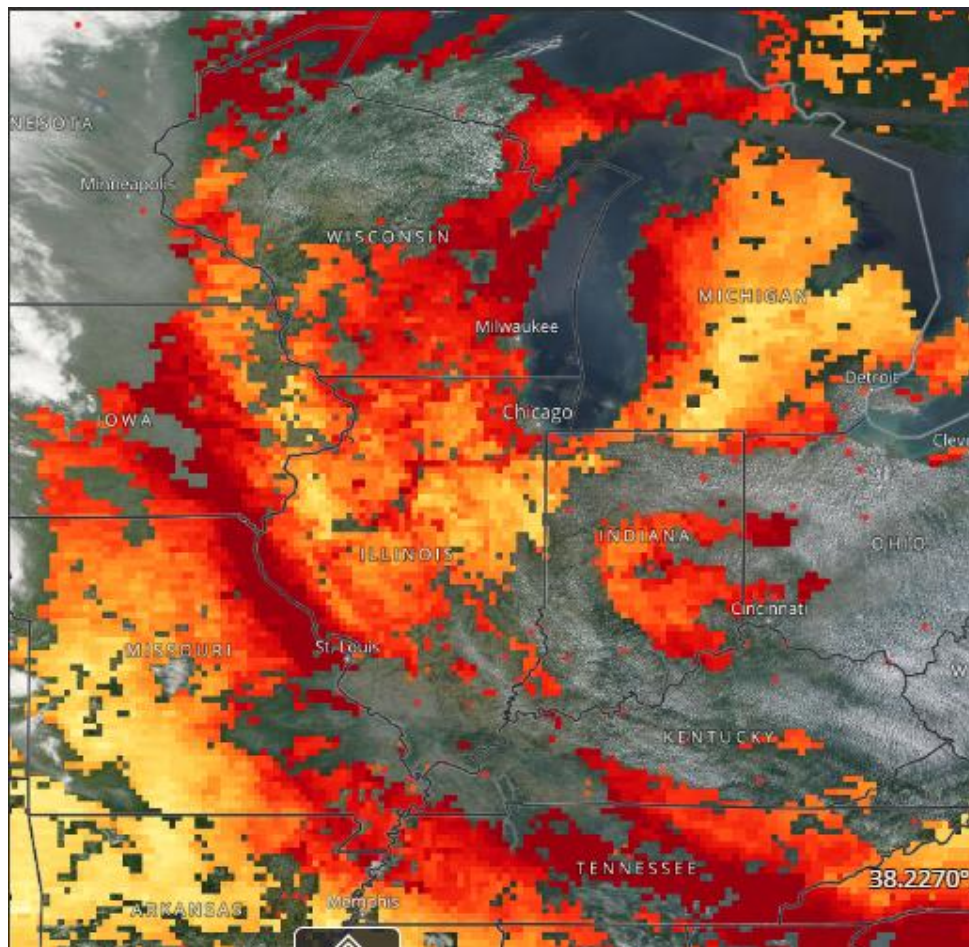
GAM PMO3 Smoke Output – June 16, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts****DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 16, 2023****SMOKE:**

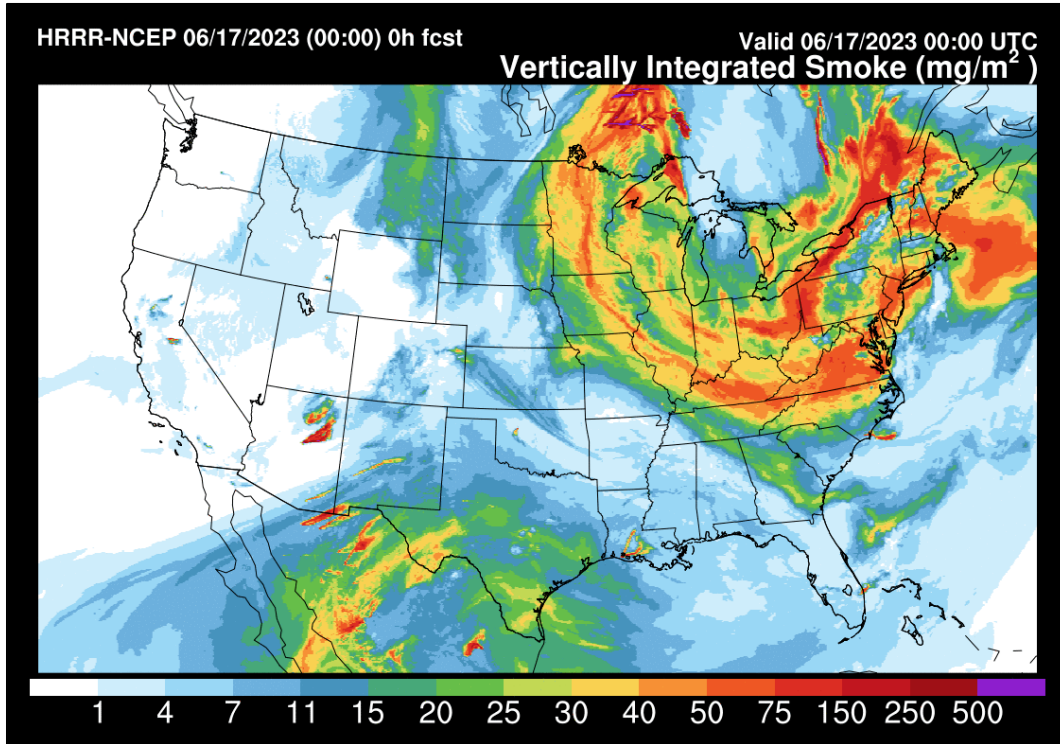
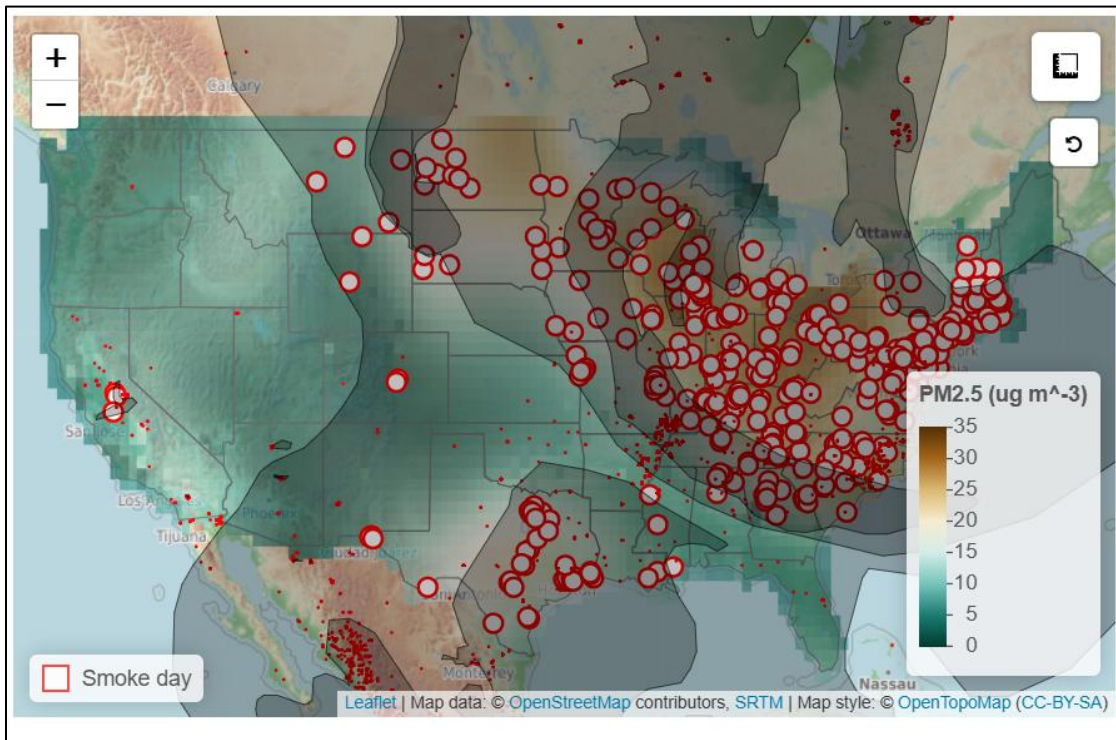
Canada/United States/Atlantic Ocean...

Numerous large wildfires scattered across portions of the southern half of Canada from northern British Columbia and the southwestern part of the Northwest Territories eastward over the southern tier of Canadian provinces to Quebec continued to result in a very large area of moderate to thick density smoke which covered parts of southern and central Canada. The southern part of the moderate to thick area of smoke also extended to the south over some of the northwestern U.S. and a sizable portion of the eastern half of the U.S. Thinner density smoke from these fires covered a sizable part of the Atlantic reaching as far east as Europe. Across the south-central United States, it is likely that the Canadian wildfire smoke merged with smoke spreading to the north from the ongoing widespread seasonal fire activity occurring in Mexico and Central America. Cloud cover over the southeastern U.S. prevented smoke detection in satellite imagery.

June 17, 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	6/17/2023	24.0	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/17/2023	25.4	17.0
Muncie - Central HS	180350006	6/17/2023	25.2	13.2
Jasper - Post Office	180372001	6/17/2023	19.0	15.7
Elkhart - Prairie St	180390008	6/17/2023	23.8	16.3
New Albany	180430008	6/17/2023	24.6	20.9
Plummer	180550001	6/17/2023	18.9	14.7
Fishers	180570007	6/17/2023	21.7	13.8
Carmel - Hazel Dell Parkway	180570008	6/17/2023	22.0	16.5
Mechanicsburg	180650003	6/17/2023	22.7	15.5
Kokomo - E. Vaile Ave	180670004	6/17/2023	22.8	14.7
East Chicago - Franklin/Washington Sch	180890006	6/17/2023	20.0	16.1
Gary - Madison St	180890031	6/17/2023	28.8	16
East Chicago - Marina	180890034	6/17/2023	19.7	18
Hammond-167th St	180890036	6/17/2023	29.0	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/17/2023	18.6	15.9
Anderson - Eastside Elem	180950011	6/17/2023	29.1	15.4
Indianapolis - Washington Park	180970078	6/17/2023	32.2	17.8
Indianapolis - W. 18th St.	180970081	6/17/2023	25.3	20.9
Indianapolis - School 21	180970084	6/17/2023	24.2	15.5
Indianapolis- I-70 E	180970087	6/17/2023	33.2	20.5
Bloomington - Binford	181050003	6/17/2023	27.1	13.9
Ogden Dunes	181270024	6/17/2023	22.3	15.3
South Bend - Shields Dr.	181410015	6/17/2023	23.4	16.9
Evansville - U of E	181630016	6/17/2023	18.1	15.5
Evansville - Buena Vista	181630021	6/17/2023	21.1	15.1
Terre Haute - Lafayette Ave	181670018	6/17/2023	27.1	18.8
Larwill	181830003	6/17/2023	21.7	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 17, 2023**Satellite Imagery with MAIAC AOD – June 17, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 17, 2023**GAM PMO3 Smoke Output – June 17, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 17, 2023****SMOKE:**

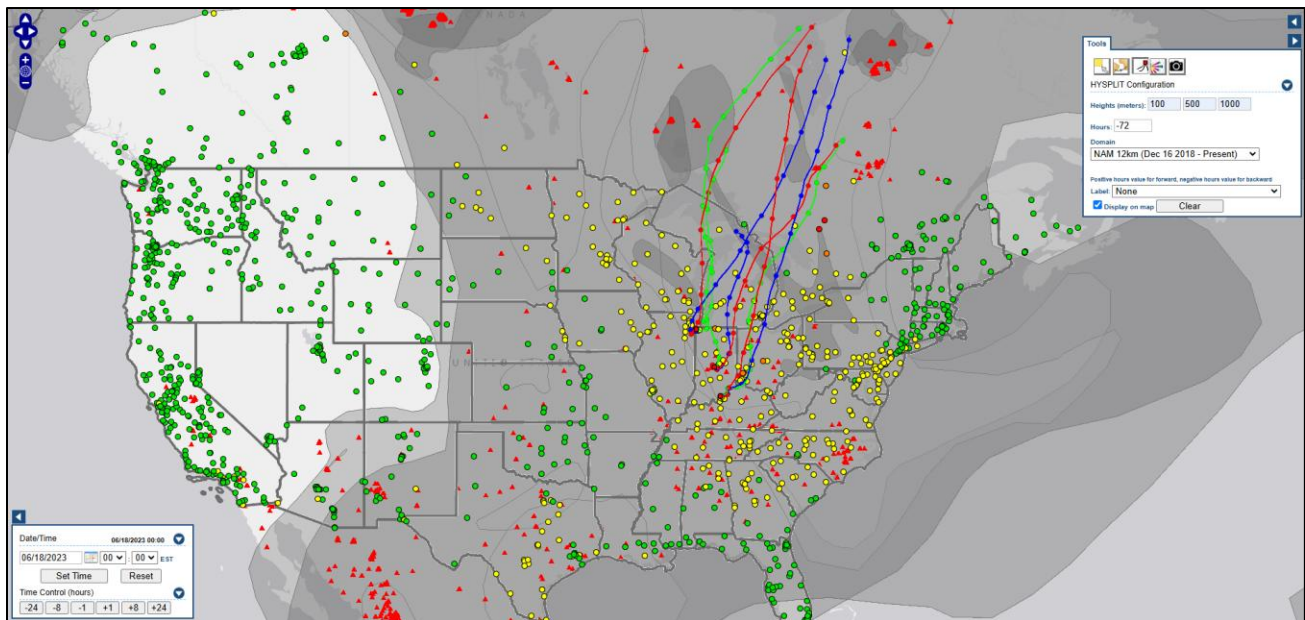
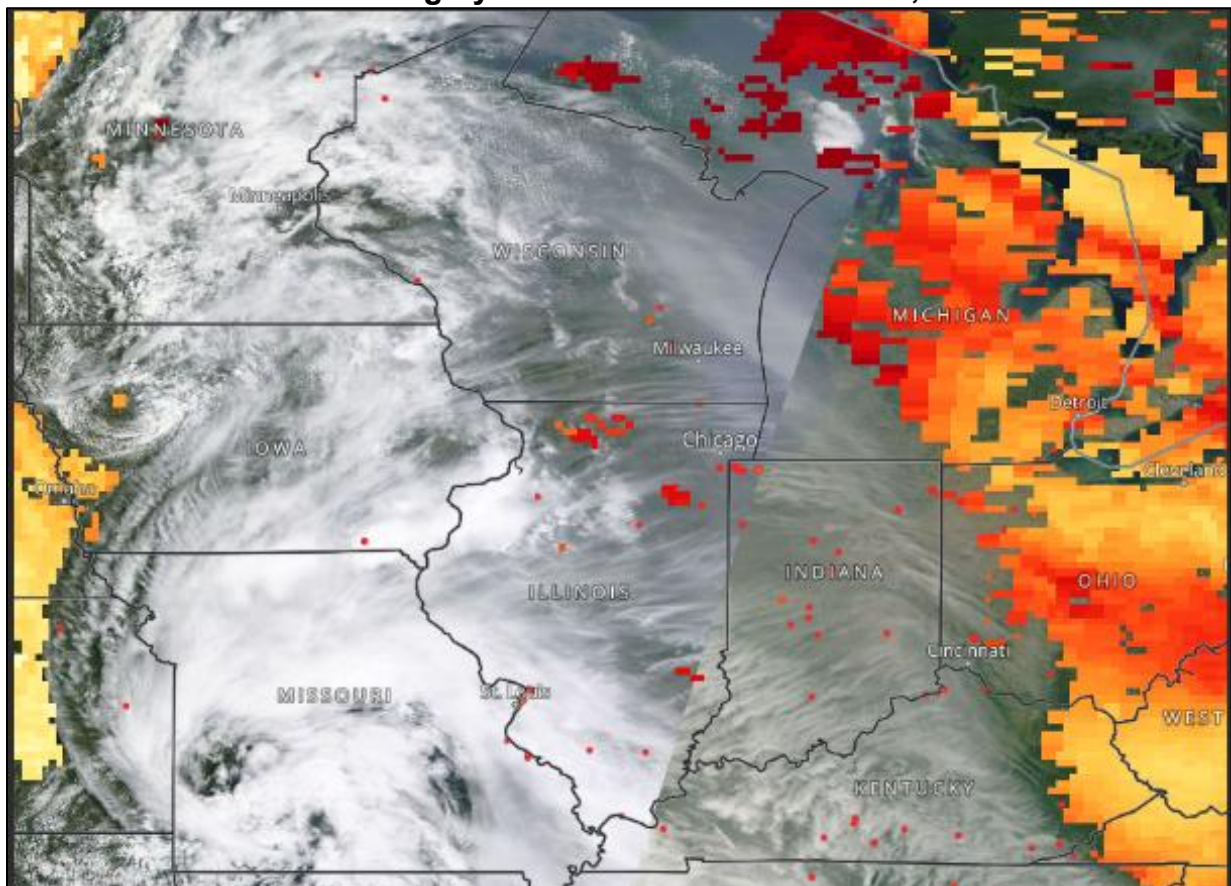
Canada/United States/Atlantic Ocean...

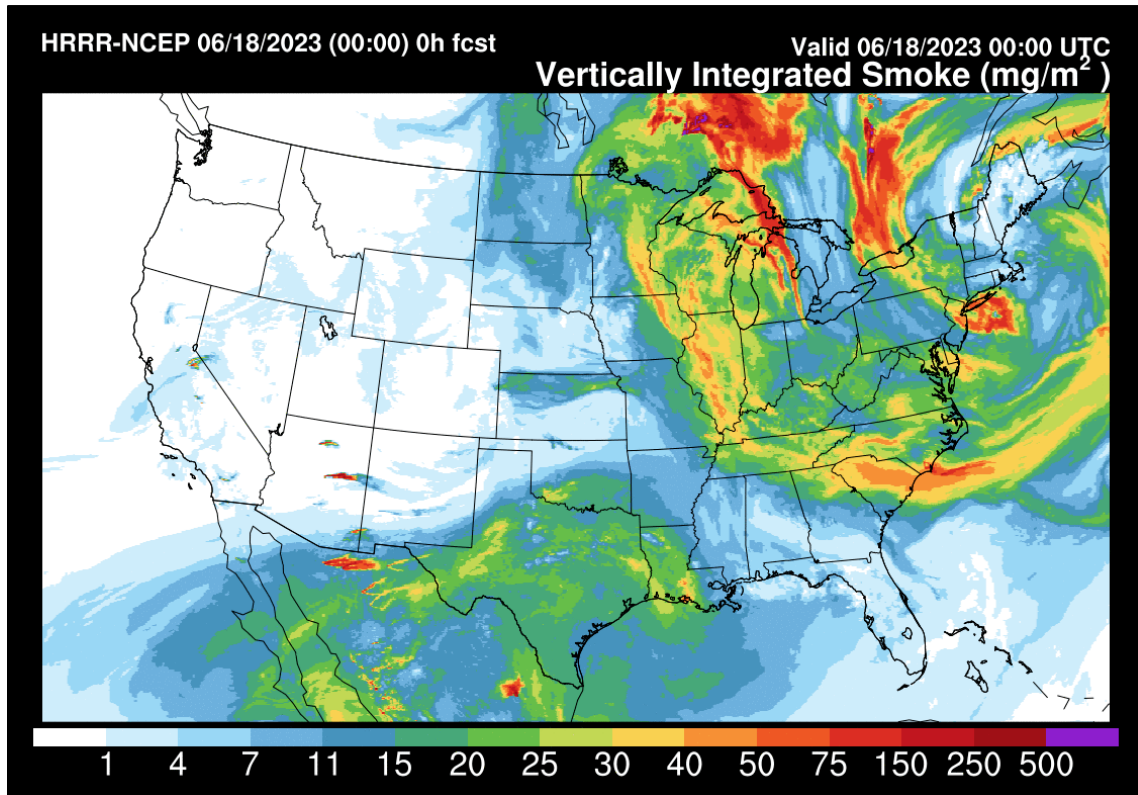
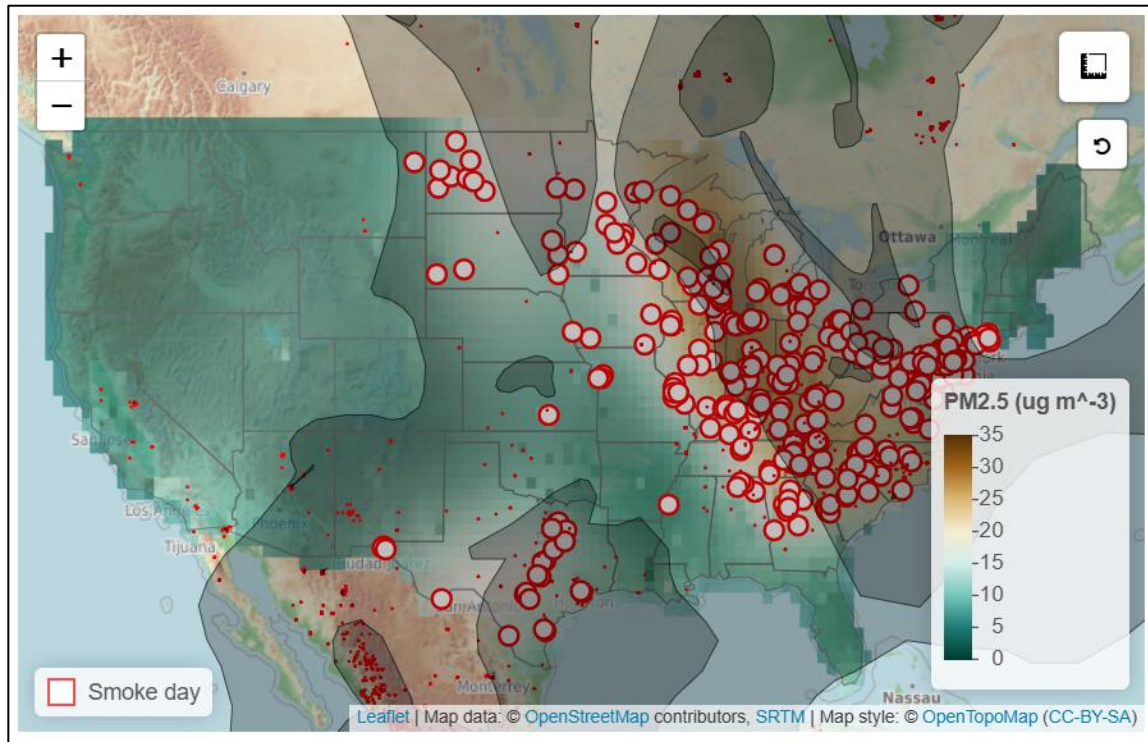
Numerous large wildfires scattered across portions of the southern half of Canada generally from northern British Columbia and the southwestern part of the Northwest Territories eastward over the southern tier of Canadian provinces to Quebec continued to result in a very large area of moderate to thick density smoke which covered parts of southern and central Canada. The southern part of the moderate to thick area of smoke also extended to the south into eastern Montana and the western Dakotas, and over the region from the Upper and Middle Mississippi Valley regions eastward to the Eastern U.S.

Thinner density smoke from these fires covered a sizable part of the Atlantic reaching as far east as Europe though an embedded area of moderate to thick density smoke was also seen over the northern Atlantic from the southern tip Greenland to Iceland. Across the south-central United States, it is likely that the Canadian wildfire smoke merged with smoke spreading to the north from the ongoing widespread seasonal fire activity occurring in Mexico and Central America.

June 18, 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	6/18/2023	22.8	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/18/2023	31.8	17.0
Elkhart - Prairie St	180390008	6/18/2023	30.2	16.3
New Albany	180430008	6/18/2023	27.0	20.9
Plummer	180550001	6/18/2023	27.4	14.7
Fishers	180570007	6/18/2023	23.8	13.8
Mechanicsburg	180650003	6/18/2023	29.0	15.5
Kokomo - E. Vaile Ave	180670004	6/18/2023	24.7	14.7
East Chicago - Marina	180890034	6/18/2023	29.6	18
Hammond-167th St	180890036	6/18/2023	29.6	16.3
Anderson - Eastside Elem	180950011	6/18/2023	30.9	15.4
Indianapolis - Washington Park	180970078	6/18/2023	33.5	17.8
Indianapolis - W. 18th St.	180970081	6/18/2023	39.3	20.9
Indianapolis- I-70 E	180970087	6/18/2023	36.2	20.5
Bloomington - Binford	181050003	6/18/2023	26.7	13.9
Ogden Dunes	181270024	6/18/2023	29.4	15.3
South Bend - Shields Dr.	181410015	6/18/2023	35.7	16.9
Lafayette - Greenbush St	181570008	6/18/2023	26.3	15.1
Evansville - Buena Vista	181630021	6/18/2023	23.7	15.1
Terre Haute - Lafayette Ave	181670018	6/18/2023	30.1	18.8
Larwill	181830003	6/18/2023	29.8	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 18, 2023**Satellite Imagery with MAIAC AOD – June 18, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 18, 2023**GAM PMO3 Smoke Output – June 18, 2023**

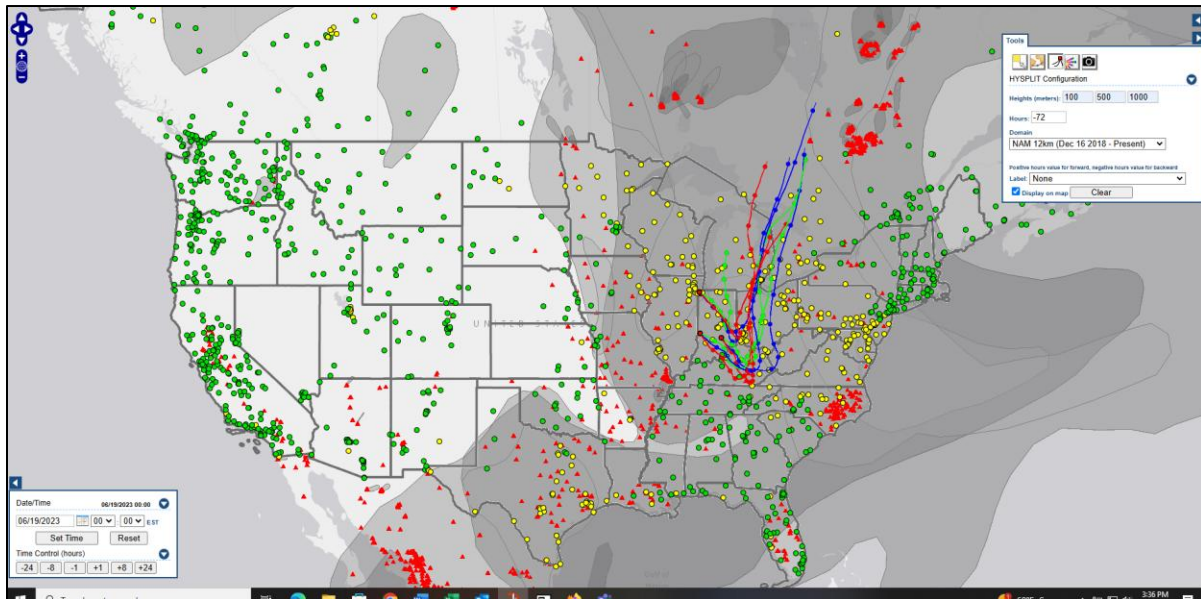
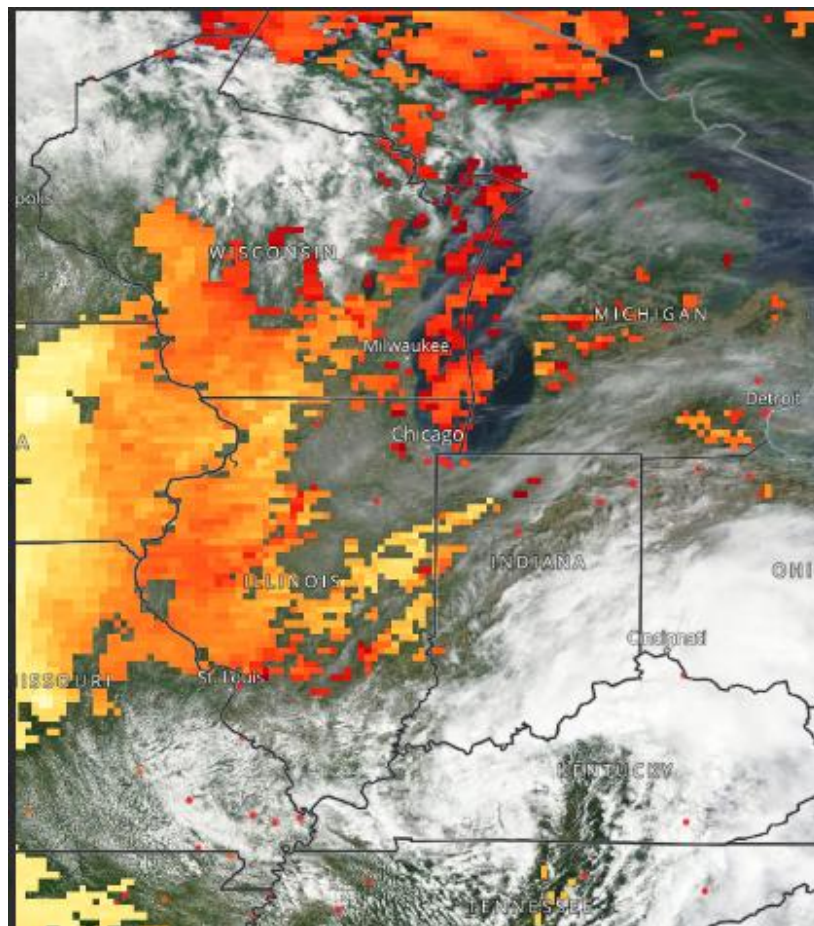
NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 18, 2023****SMOKE:**

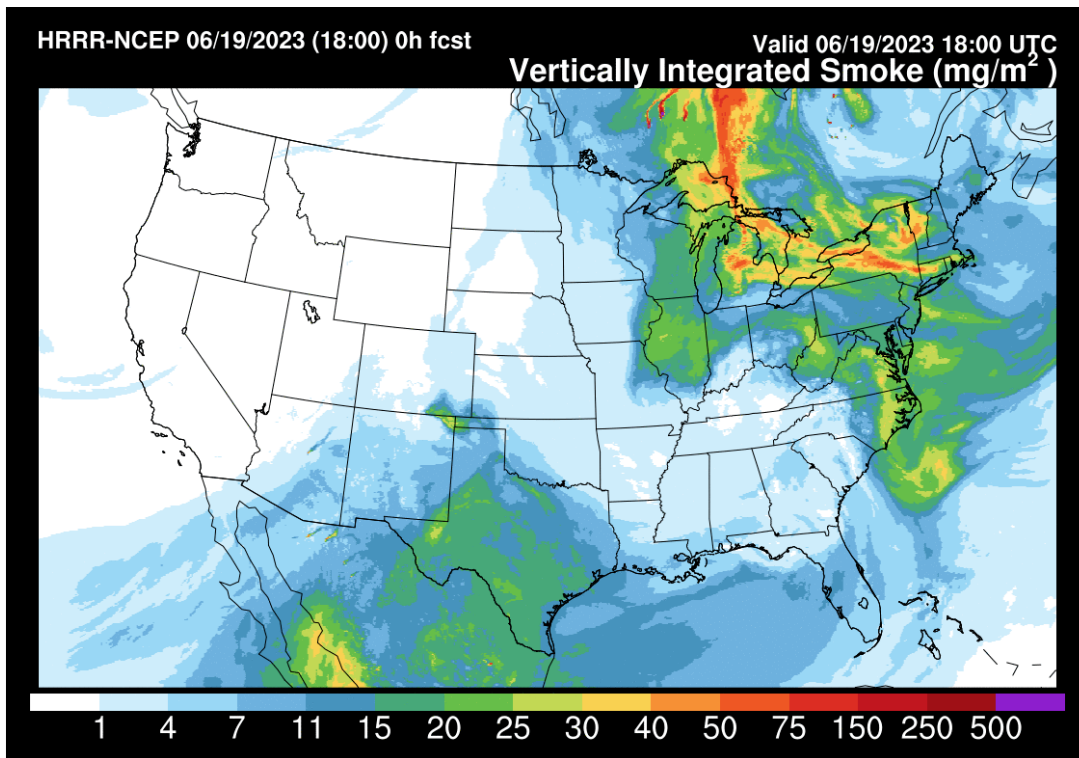
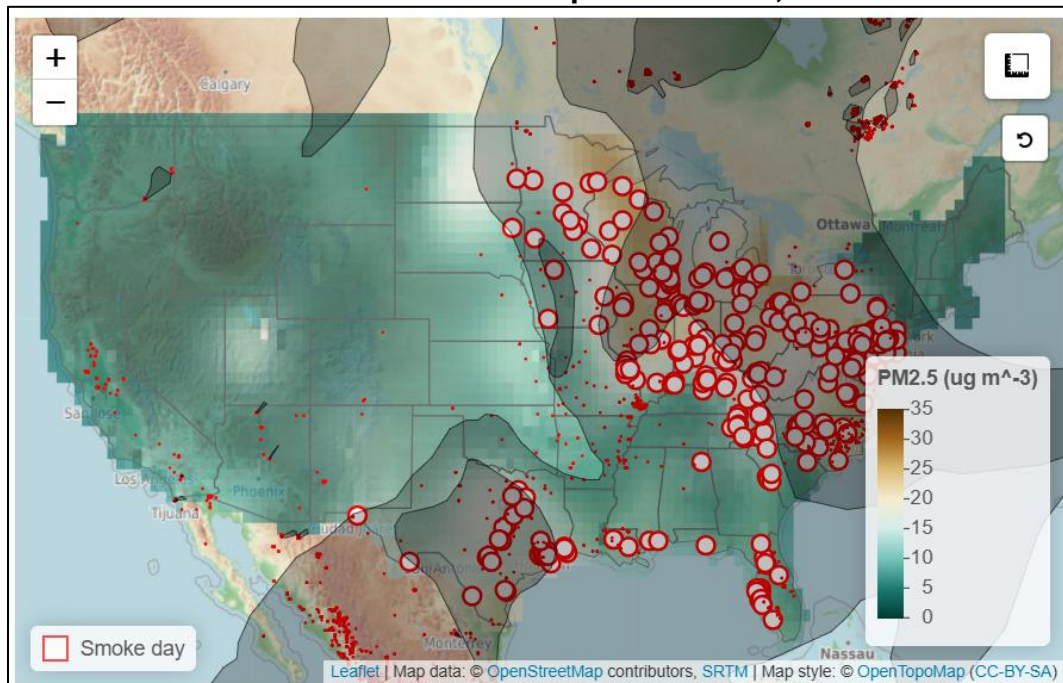
Canada/United States/Atlantic Ocean...

Cloudiness has spread over some of the wildfires in various spots across Canada which has affected both fire and smoke detection in satellite imagery. This was especially true over western and central Canada. The numerous large wildfires (some of which are still visible in satellite imagery), which have been scattered across portions of the southern half of Canada generally from northern British Columbia and the southwestern part of the Northwest Territories eastward over the southern tier of Canadian provinces to Quebec over the past number of weeks, continued to result in patches of moderate to thick density smoke which covered parts of Canada. Moderate to thick smoke also spread to the south and southeast from the Upper Mississippi Valley and Great Lakes regions to and off the Mid-Atlantic and southeastern U.S. coast. Thinner density smoke from these fires covered a sizable part of the Atlantic reaching as far east as Europe. Embedded relatively smaller areas of moderate to thick density smoke were also seen over the northern Atlantic. In addition, it is likely that the southern portion of the smoke from Canada merged with smoke spreading northward from Mexico somewhere over the south central and southeastern U.S.

June 19, 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	6/19/2023	16.2	13.7
Elkhart - Prairie St	180390008	6/19/2023	17.1	16.3
Plummer	180550001	6/19/2023	15.0	14.7
Fishers	180570007	6/19/2023	19.4	13.8
Mechanicsburg	180650003	6/19/2023	23.6	15.5
Kokomo - E. Vaile Ave	180670004	6/19/2023	20.7	14.7
East Chicago - Marina	180890034	6/19/2023	19.9	18
Hammond-167th St	180890036	6/19/2023	23.4	16.3
Anderson - Eastside Elem	180950011	6/19/2023	23.4	15.4
Indianapolis - Washington Park	180970078	6/19/2023	22.7	17.8
Indianapolis - W. 18th St.	180970081	6/19/2023	24.6	20.9
Indianapolis- I-70 E	180970087	6/19/2023	23.5	20.5
Bloomington - Binford	181050003	6/19/2023	14.1	13.9
Ogden Dunes	181270024	6/19/2023	19.1	15.3
South Bend - Shields Dr.	181410015	6/19/2023	18.9	16.9
Lafayette - Greenbush St	181570008	6/19/2023	21.6	15.1
Terre Haute - Lafayette Ave	181670018	6/19/2023	20.4	18.8
Larwill	181830003	6/19/2023	17.2	15

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

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

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1555Z June 19, 2023****SMOKE:**

Canada/United States/Atlantic Ocean...

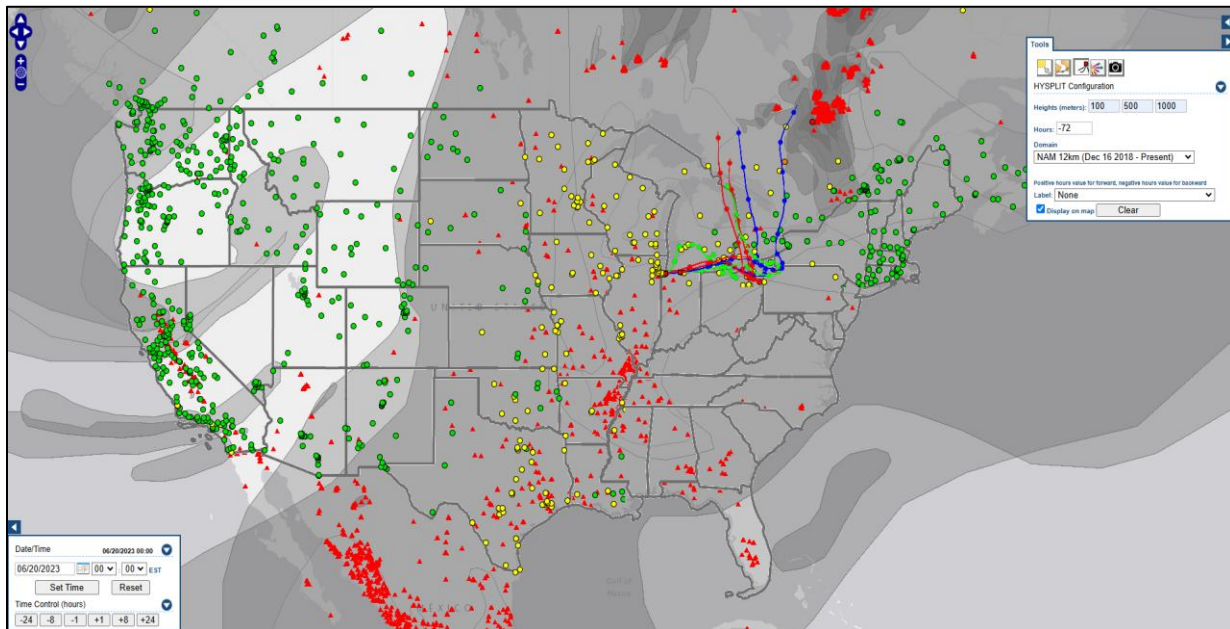
Wildfire activity in Canada was relatively less pronounced earlier this morning with large active clusters limited to central Quebec and central Ontario. Those areas coincide with the highest concentration of smoke in the satellite imagery. Despite the reduction in fire activity, moderate-density smoke continued to impact a large area extending from northeastern Manitoba, covering much of Ontario, western Quebec, descending into the Great Lakes and adjacent areas, and further into the Mid-Atlantic U.S. and over the Atlantic Ocean waters to the east. Lighter density smoke was observed over the areas above, and extended into most of northern Canada from the Northwestern Territories all the way to Newfoundland and the Labrador Sea, and over the eastern half and the U.S. Changes to the prevailing weather pattern are likely to help improve air quality conditions across the Mid-West and Mid-Atlantic U.S. states since the bulk of the smoke can now be seen moving away from those areas and towards the northeast and over the Atlantic Ocean.

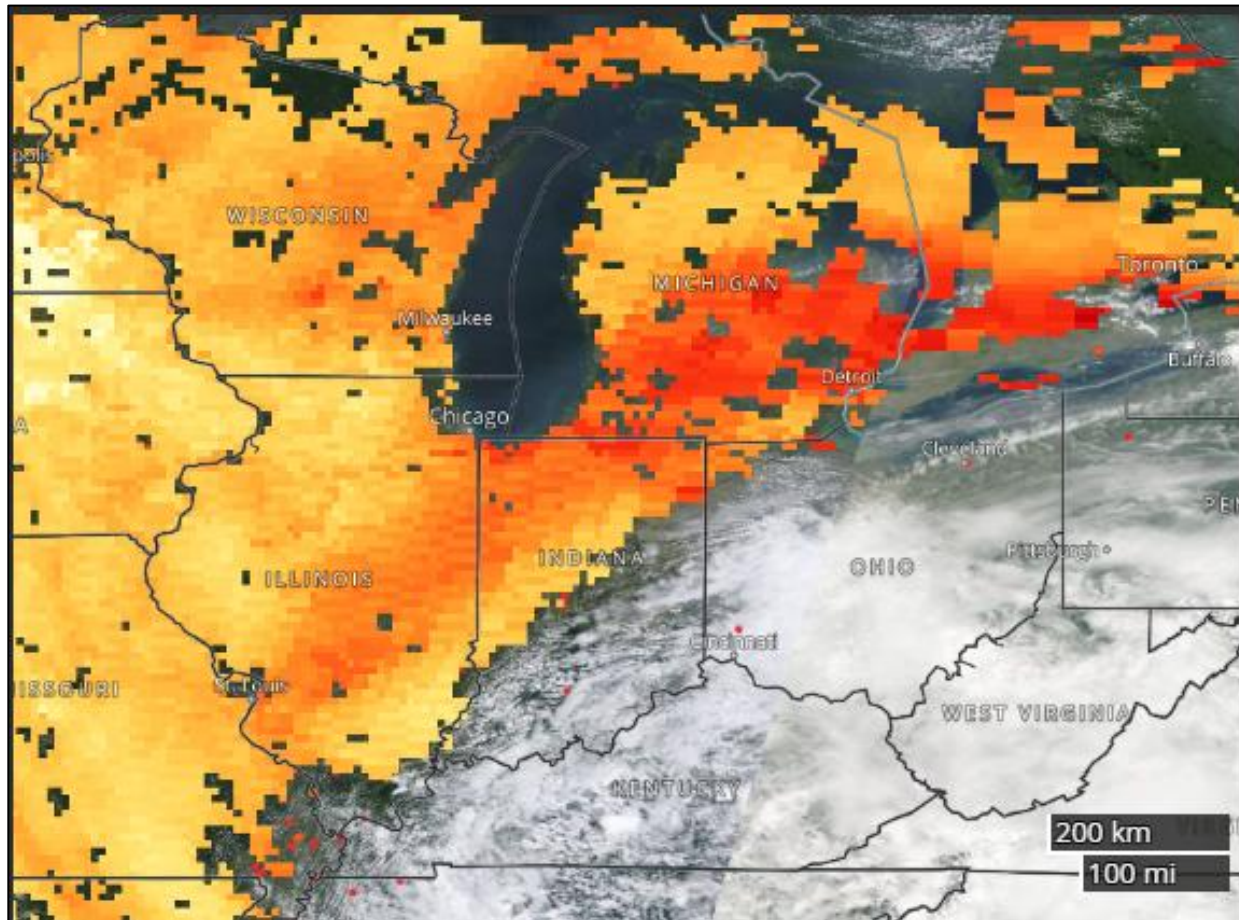
June 20, 2023

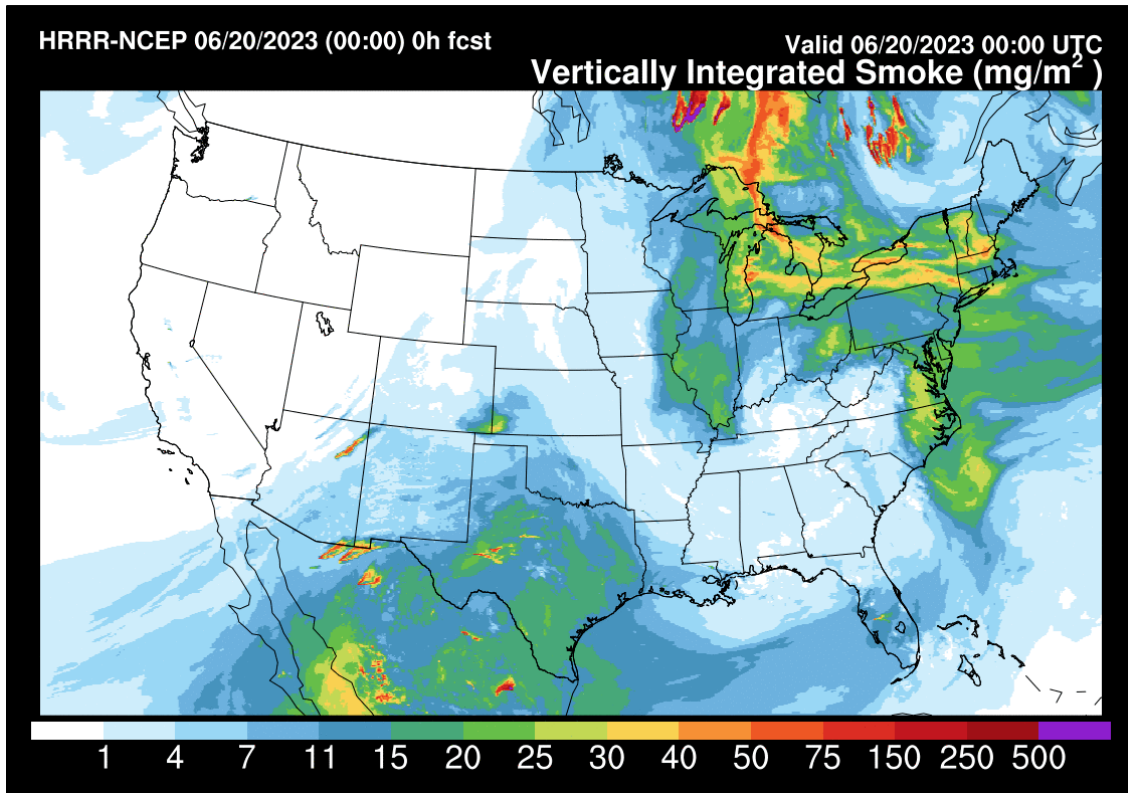
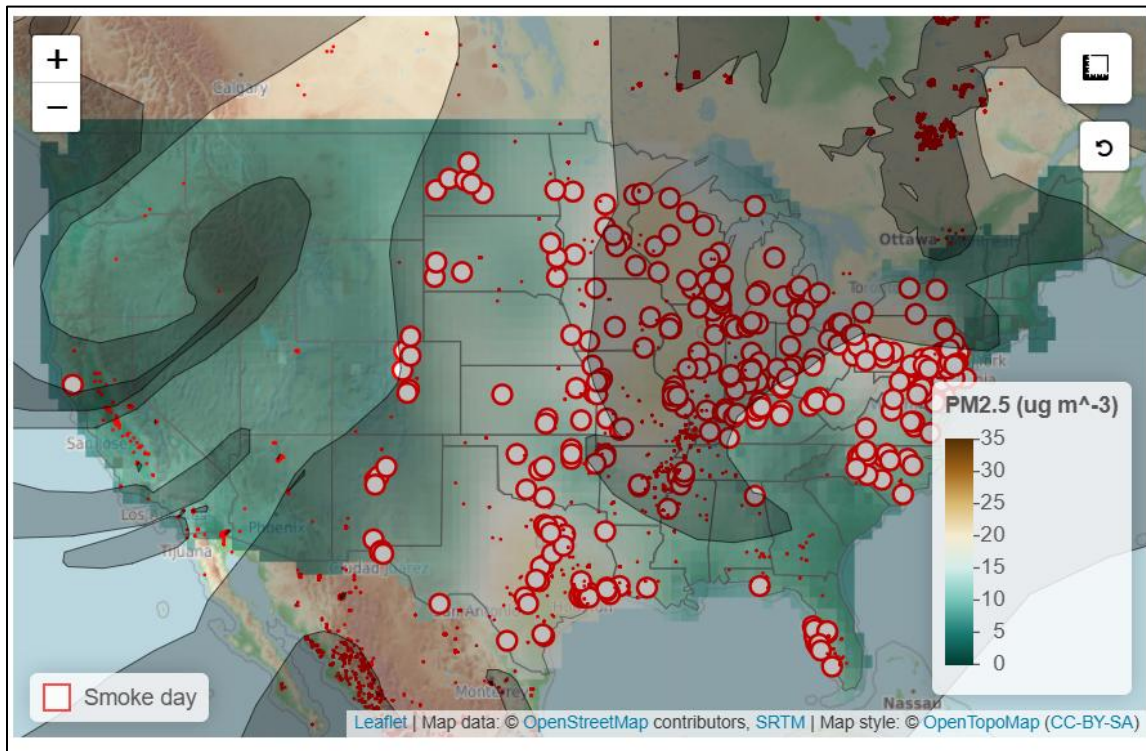
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Elkhart - Prairie St	180390008	6/20/2023	16.8	16.3
East Chicago - Franklin/Washington Sch	180890006	6/20/2023	19.9	16.1
East Chicago - Marina	180890034	6/20/2023	21.5	18
Hammond-167th St	180890036	6/20/2023	22.4	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/20/2023	18.1	15.9
Ogden Dunes	181270024	6/20/2023	20.3	15.3
South Bend - Shields Dr.	181410015	6/20/2023	18.4	16.9

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



Satellite Imagery with MAIAC AOD – June 20, 2023

HRRR Smoke - Vertically Integrated Smoke – June 20, 2023**GAM PMO3 Smoke Output – June 20, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 20, 2023****SMOKE:**

Canada/United States/Atlantic Ocean/Pacific Ocean off the West Coast of Southwestern Canada and the Western U.S...

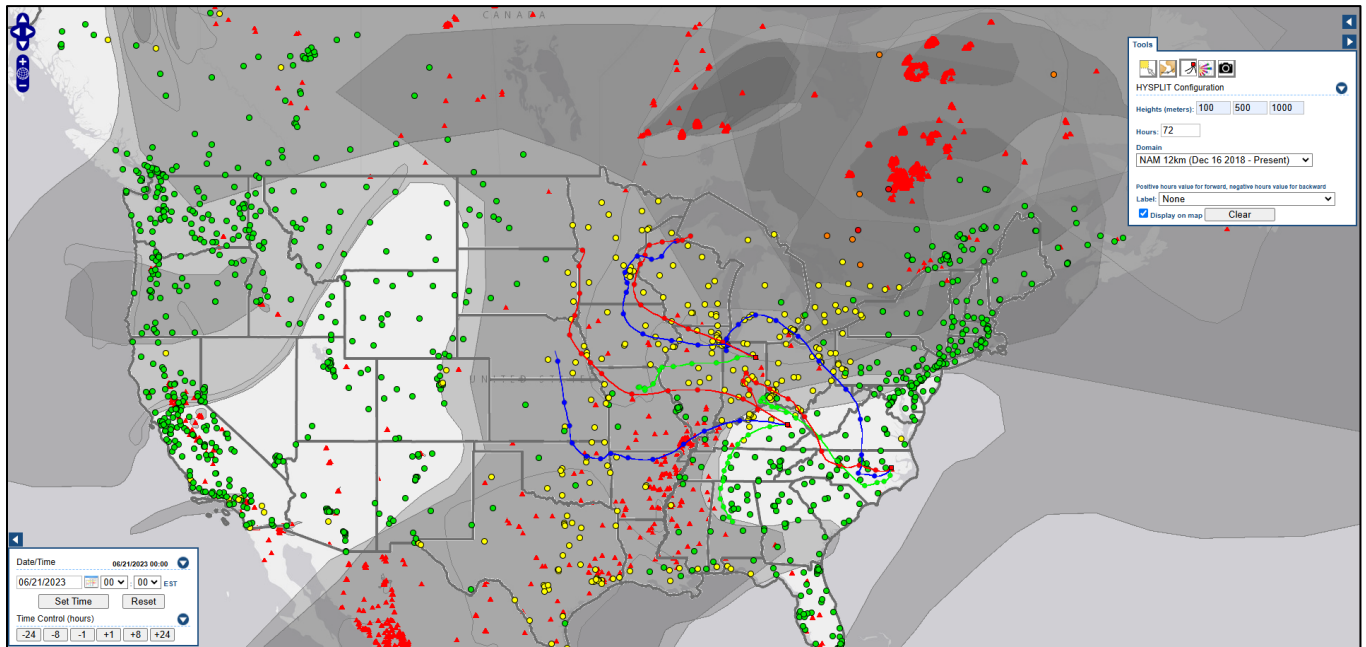
Despite some areas of cloud cover, significant wildfire activity was still noted scattered across the area stretching from the southwest part of the Northwest Territories and northeastern British Columbia eastward to central and southern Quebec. Visible smoke was also prevalent over a good portion of Canada and extending southward into much of the U.S. east of the Rockies. Additionally, the smoke stretched well offshore of eastern Canada and the eastern U.S. over the Atlantic likely reaching Europe. More smoke from these fires appeared to spread to the southwest and south from western Canada offshore over the Pacific Ocean and then back inland over portions of California. The thickest smoke was seen over central and southern Quebec as well as central and northern Ontario and the southern part of Hudson Bay. Smaller patches of thicker smoke were also seen across parts of British Columbia. Moderate smoke was visible across some of the central U.S. and extending to the east over the Great Lakes region and Northeast though significant cloud cover over the eastern and southeastern U.S. limited additional information on the extent and density of smoke in these regions from satellite imagery. It is also likely that the smoke from the Canadian fires merged with smoke from fires in Mexico somewhere over the south central and southeastern U.S.

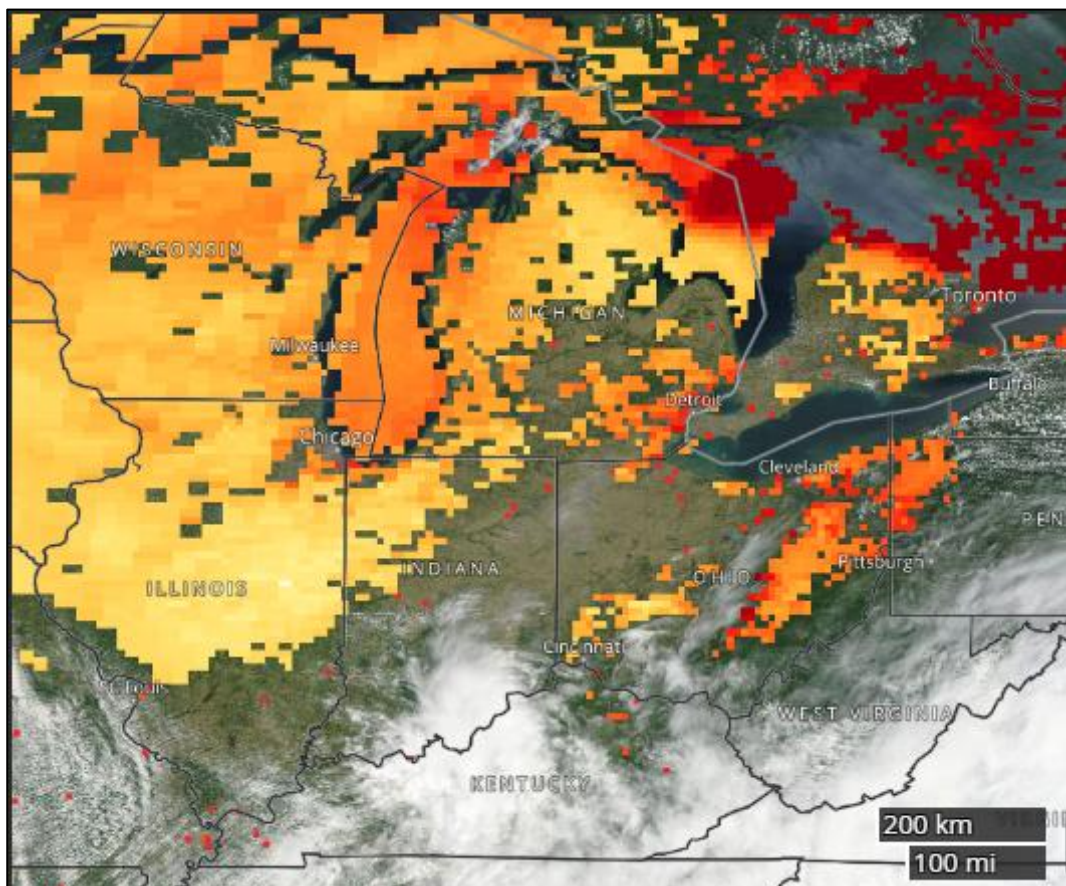
June 21, 2023

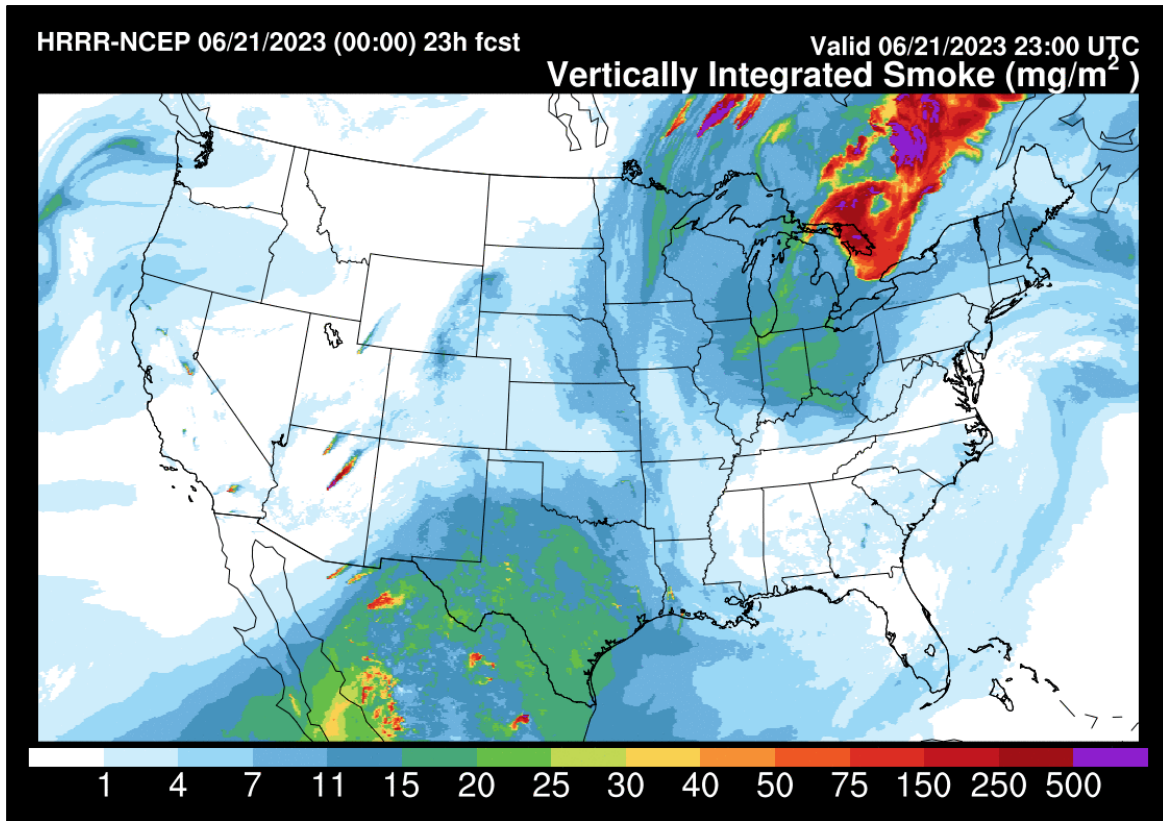
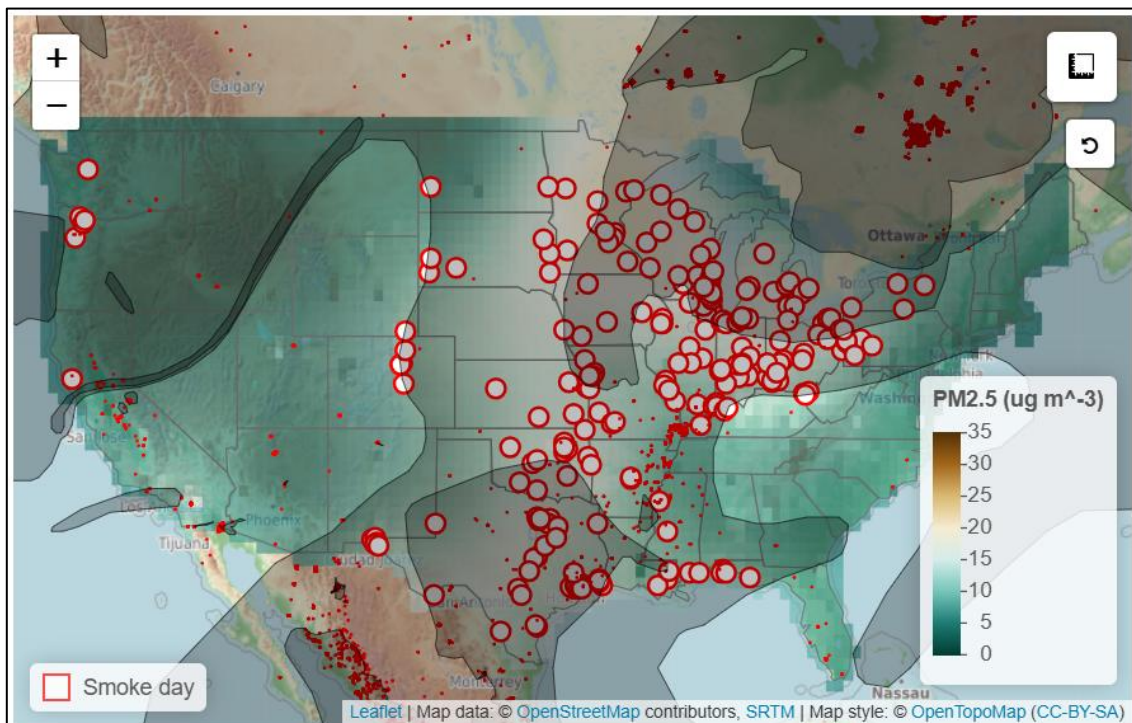
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Elkhart - Prairie St	180390008	6/21/2023	16.3	16.3
Mechanicsburg	180650004	6/21/2023	16.6	15.5
Kokomo - E Vaile Ave	180670004	6/21/2023	13.9	13.9
East Chicago - Marina	180890034	6/21/2023	19.2	18
Hammond-167th St	180890036	6/21/2023	22.6	16.3
Anderson - Eastside Elem	180950011	6/21/2023	16.3	15.4
Bloomington - Binford	181050003	6/21/2023	14.0	13.9
Ogden Dunes	181270024	6/21/2023	21.0	15.3
South Bend - Shields Dr.	181410015	6/21/2023	20.3	16.9
Larwill	181830003	6/21/2023	18.9	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 21, 2023



Satellite Imagery with MAIAC AOD – June 21, 2023

HRRR Smoke - Vertically Integrated Smoke – June 21, 2023**GAM PMO3 Smoke Output – June 21, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN
SATELLITE IMAGERY
THROUGH 1645Z June 21, 2023****SMOKE:**

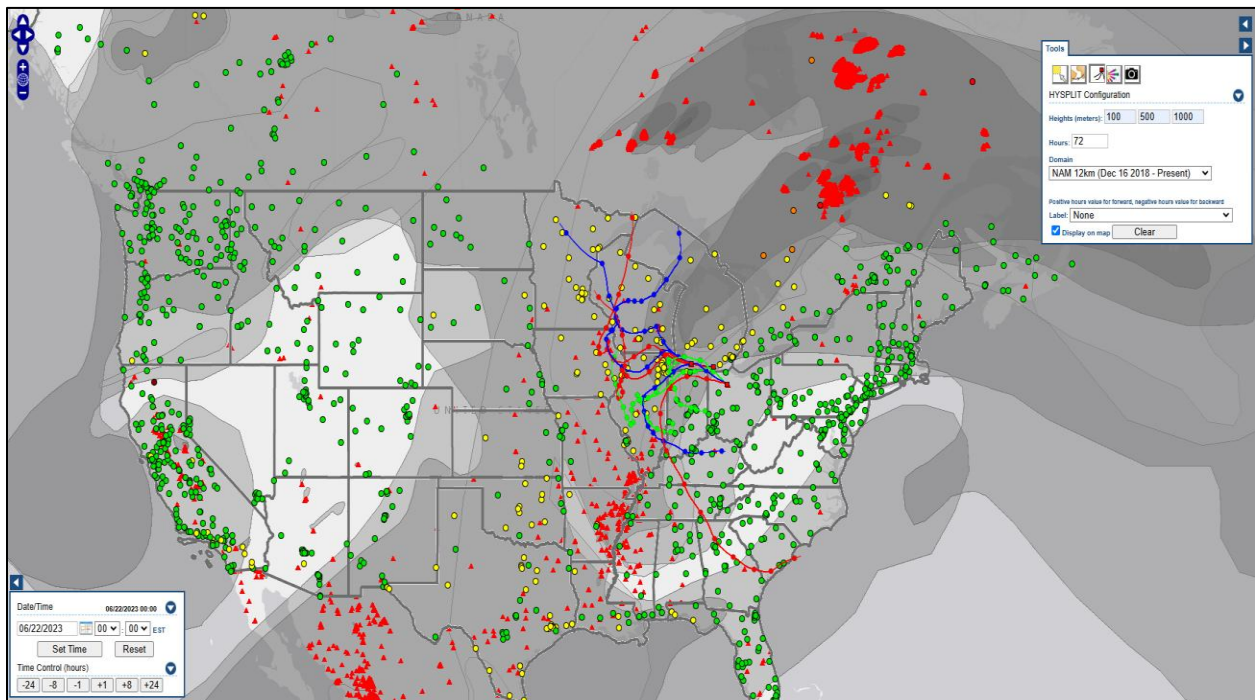
Canada/United States/Atlantic Ocean/Pacific Ocean off the West Coast of Southwestern Canada and the Western U.S...

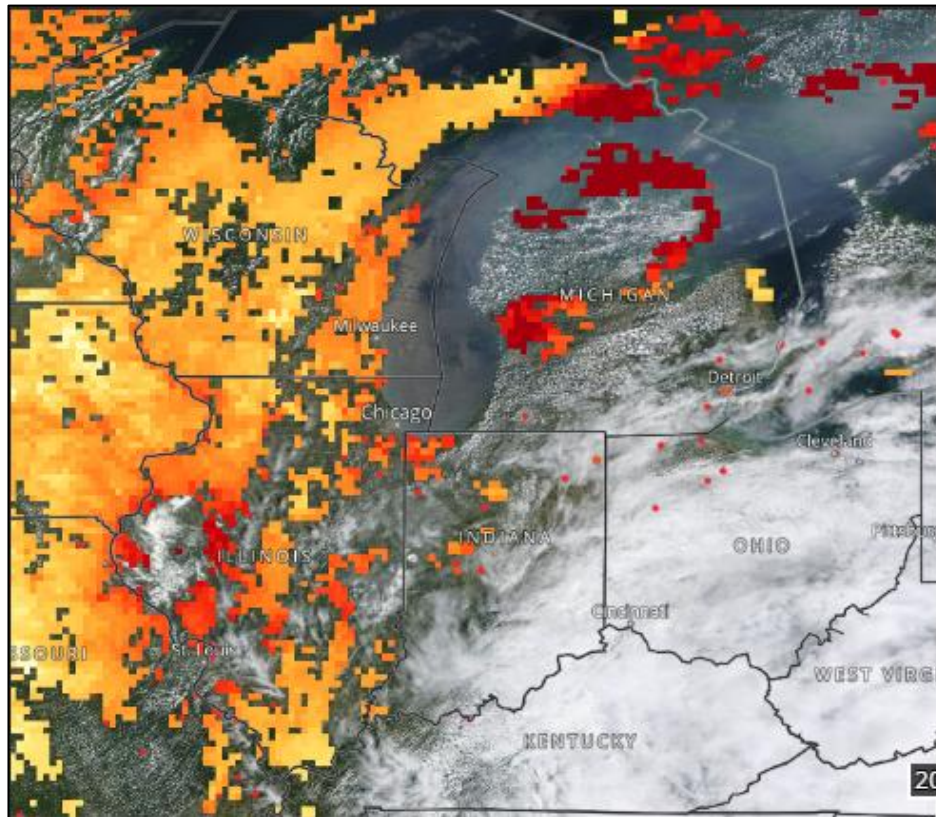
Significant wildfire activity continued especially over western Canada including northern and northeastern British Columbia, northern Alberta, and the southwest part of the northwest Territories as well as central and eastern Canada including west central Ontario and central and southern Quebec. Smoke from these fires covered virtually all of Canada and extended southward into some of the northwestern and western U.S. and the Pacific off the southwest coast of Canada and the U.S. west coast as well as most of the U.S. from the front range of the Rockies eastward to the east coast. The smoke also had spread out across much of the northern and central Atlantic, likely reaching Europe. The thickest smoke linked to the fires in Ontario and Quebec was seen over central and eastern Ontario and the central and southwestern part of Quebec with the edge of the thick smoke appearing to brush some of Lake Huron and the northern portion of New York state. A much larger surrounding area of moderate smoke mainly from the Ontario and Quebec fires affected a larger part of south central and southeastern Canada and the north central U.S. including the Great Lakes region. Farther to the west, patches of thicker density smoke were noted over central and eastern British Columbia, northern Alberta, and the southwest part of the Northwest Territories. Also, a very narrow curving band of possible moderate density smoke, attributed to the western Canada fires, was spreading from the far eastern Pacific inland over central California and extending to the northeast from there to central Montana. It is likely that the smoke from the Canadian fires merged with smoke from the fires in Mexico somewhere over the south central and southeastern U.S.

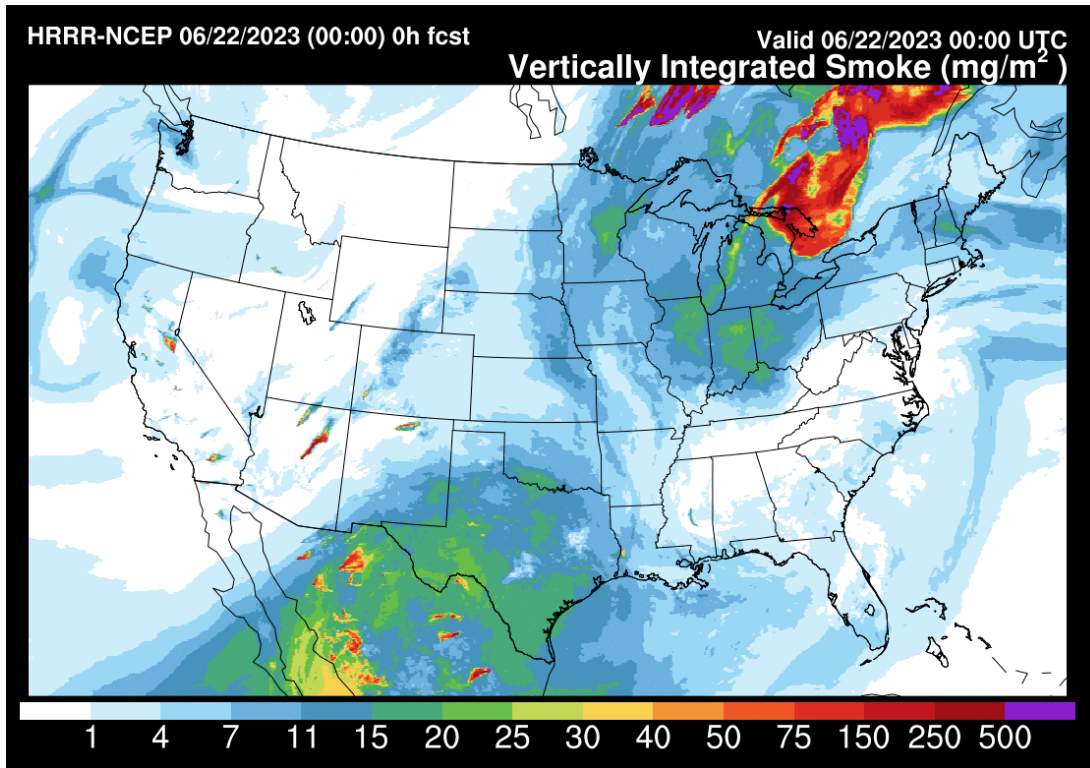
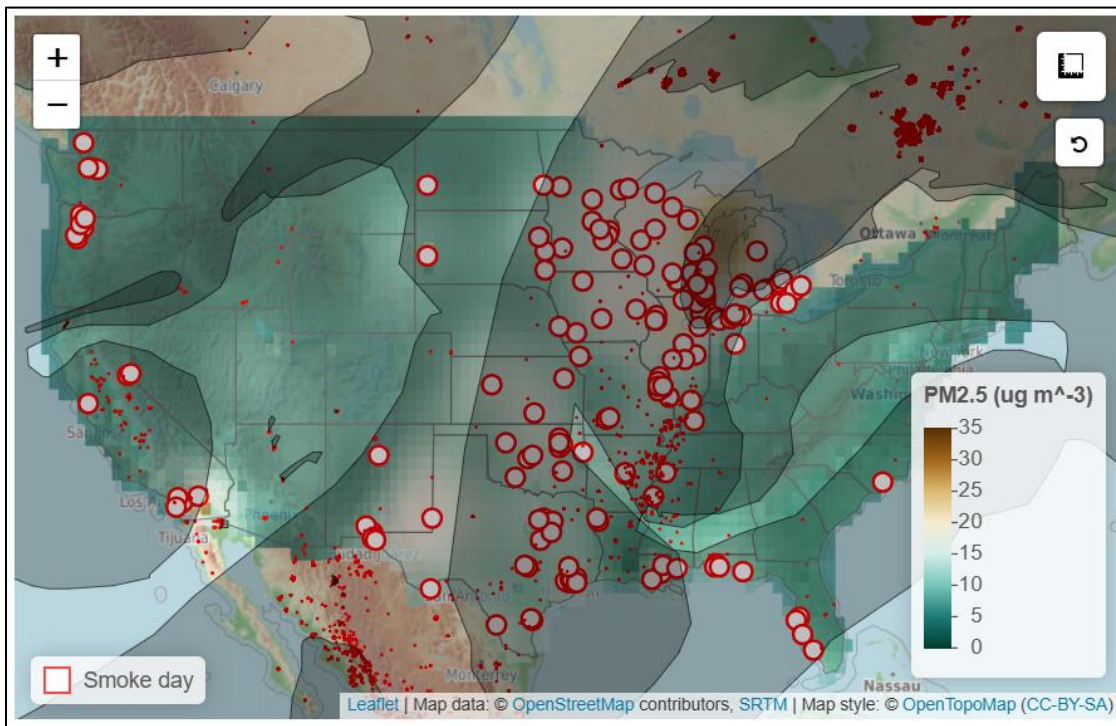
June 22, 2023

PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
East Chicago - Marina	180890034	6/22/2023	20.5	18
Hammond-167th St	180890036	6/22/2023	23.3	16.3
Ogden Dunes	181270024	6/22/2023	18.9	15.3

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 22, 2023

Satellite Imagery with MAIAC AOD – June 22, 2023

HRRR Smoke - Vertically Integrated Smoke – June 22, 2023**GAM PMO3 Smoke Output – June 22, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1645Z June 22, 2023

SMOKE:

Canada/U.S./Atlantic/Pacific...

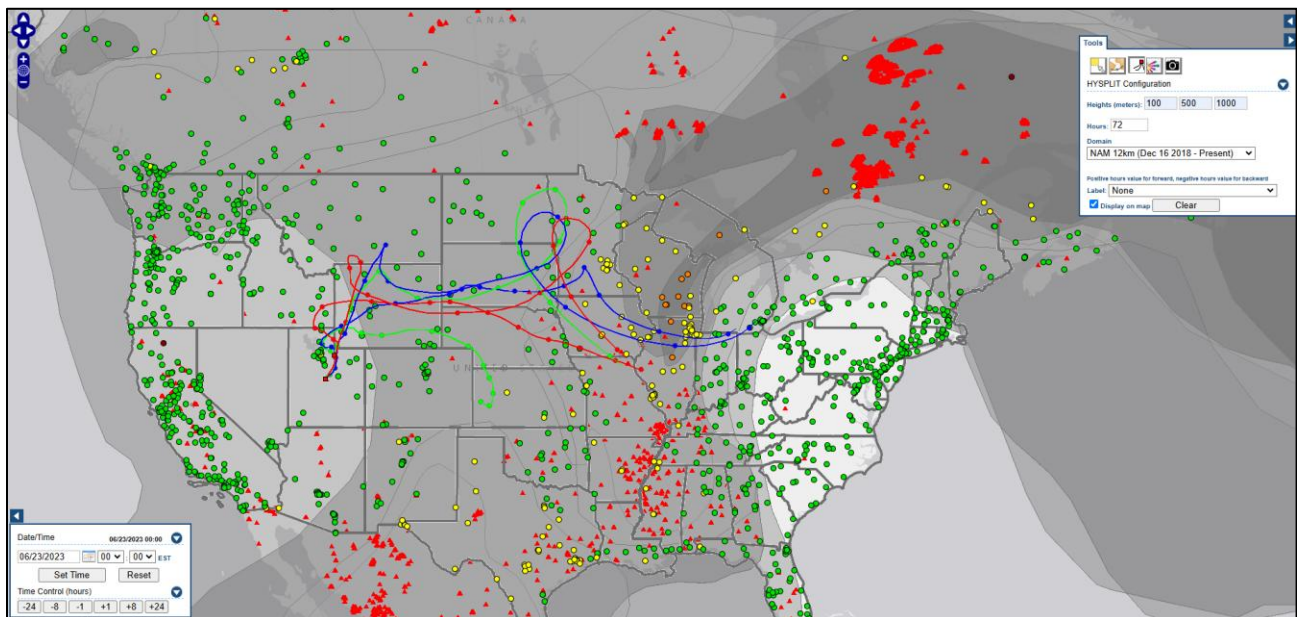
Significant wildfire activity continued especially over western Canada including northern and northeastern British Columbia, northern Alberta, and the southwest part of the Northwest Territories as well as central and eastern Canada including west-central Ontario and central and southern Quebec. Smoke from these fires covered a large part of Canada and extended southward into parts northwestern, central, and northeastern U.S. The smoke also had spread eastward across parts of the northern and central Atlantic likely reaching Europe. The thickest smoke linked to the wildfires in Ontario and Quebec was observed spreading to the east over central and eastern Ontario, the southern tip of Hudson Bay, and central and southern Quebec. A portion of the thicker smoke also appeared to impact the lower peninsula of Michigan and some of Lake Michigan and Lake Huron and far northern Maine. A larger surrounding area of moderate smoke mainly from the Ontario and Quebec fires affected parts of the north central and central U.S.

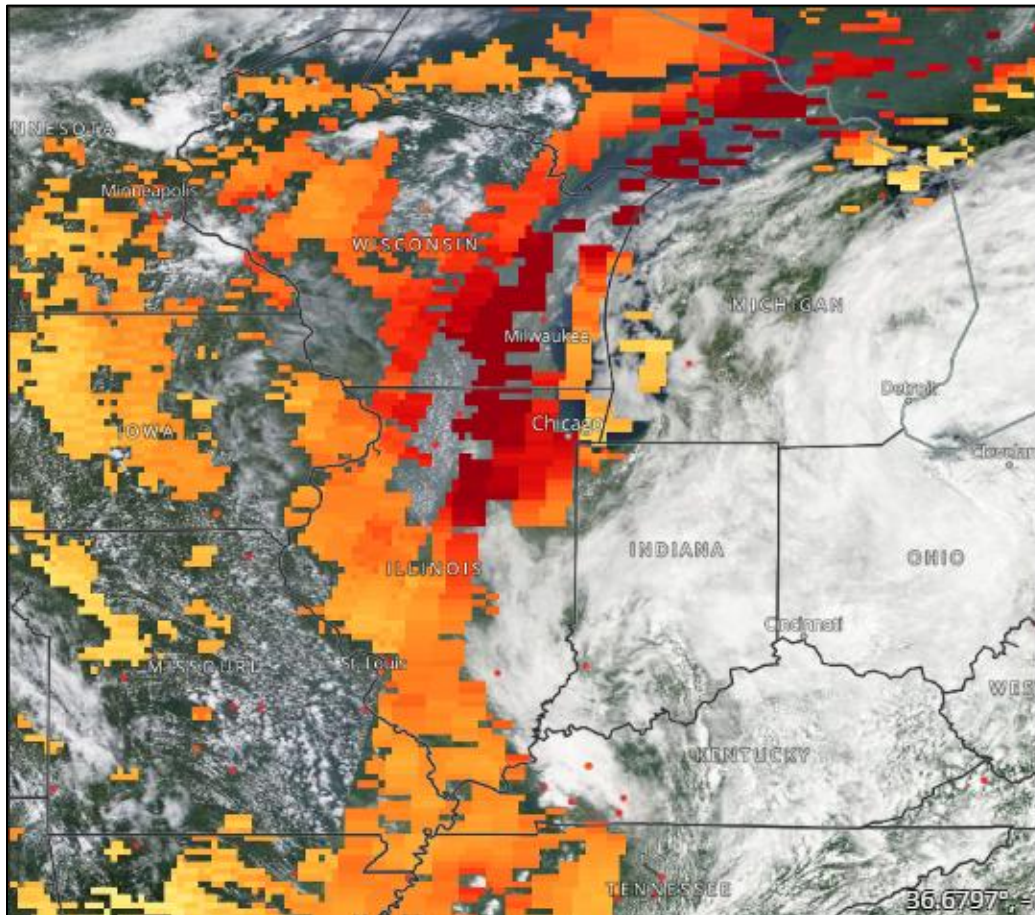
June 23, 2023

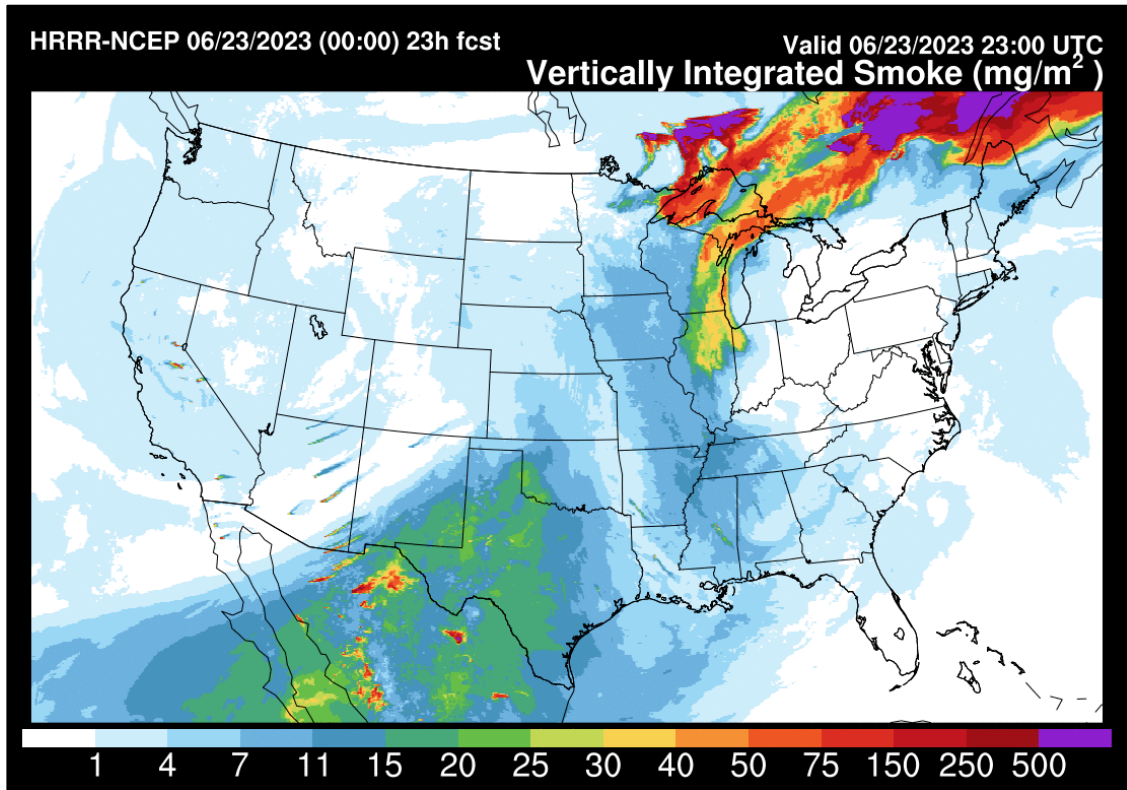
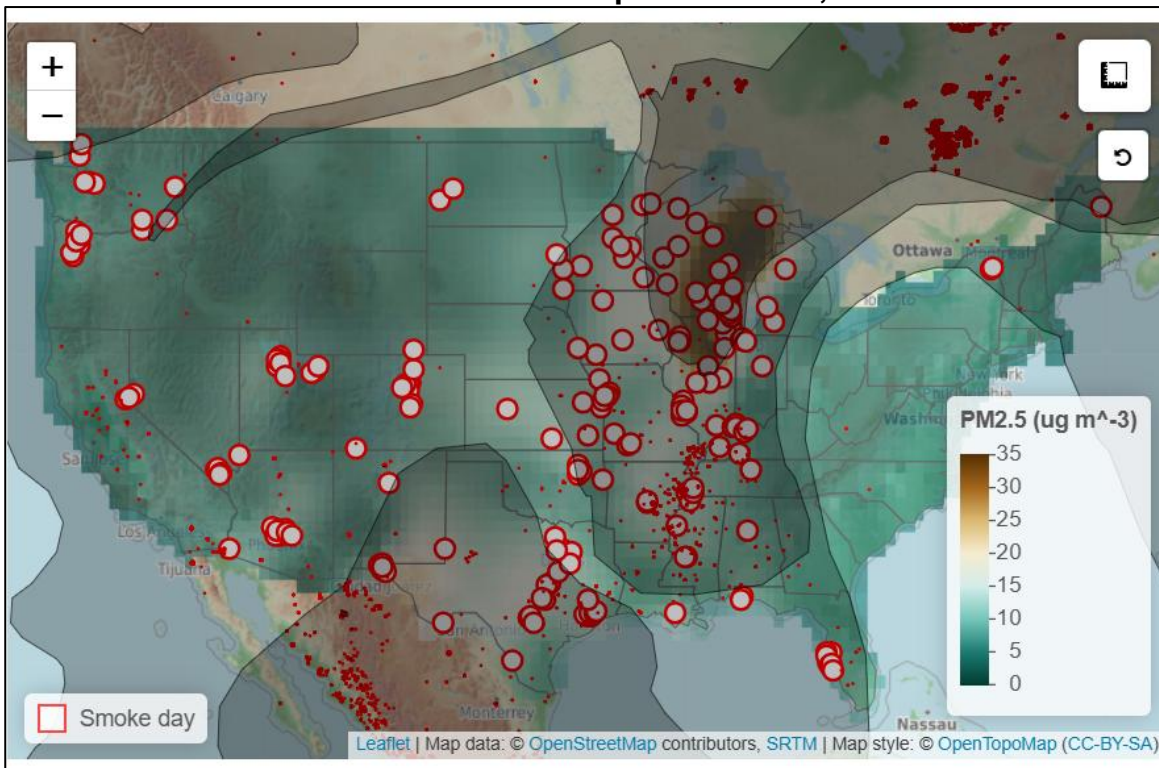
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
East Chicago - Franklin/Washington Sch	180890006	6/23/2023	23.2	16.1
Gary - Madison St	180890031	6/23/2023	31.9	16
East Chicago - Marina	180890034	6/23/2023	24.4	18
Hammond-167th St	180890036	6/23/2023	24.8	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/23/2023	20.2	15.9
Ogden Dunes	181270024	6/23/2023	23.1	15.3

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 23, 2023



Satellite Imagery with MAIAC AOD – June 23, 2023

HRRR Smoke - Vertically Integrated Smoke – June 23, 2023**GAM PMO3 Smoke Output – June 23, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1645Z June 23, 2023

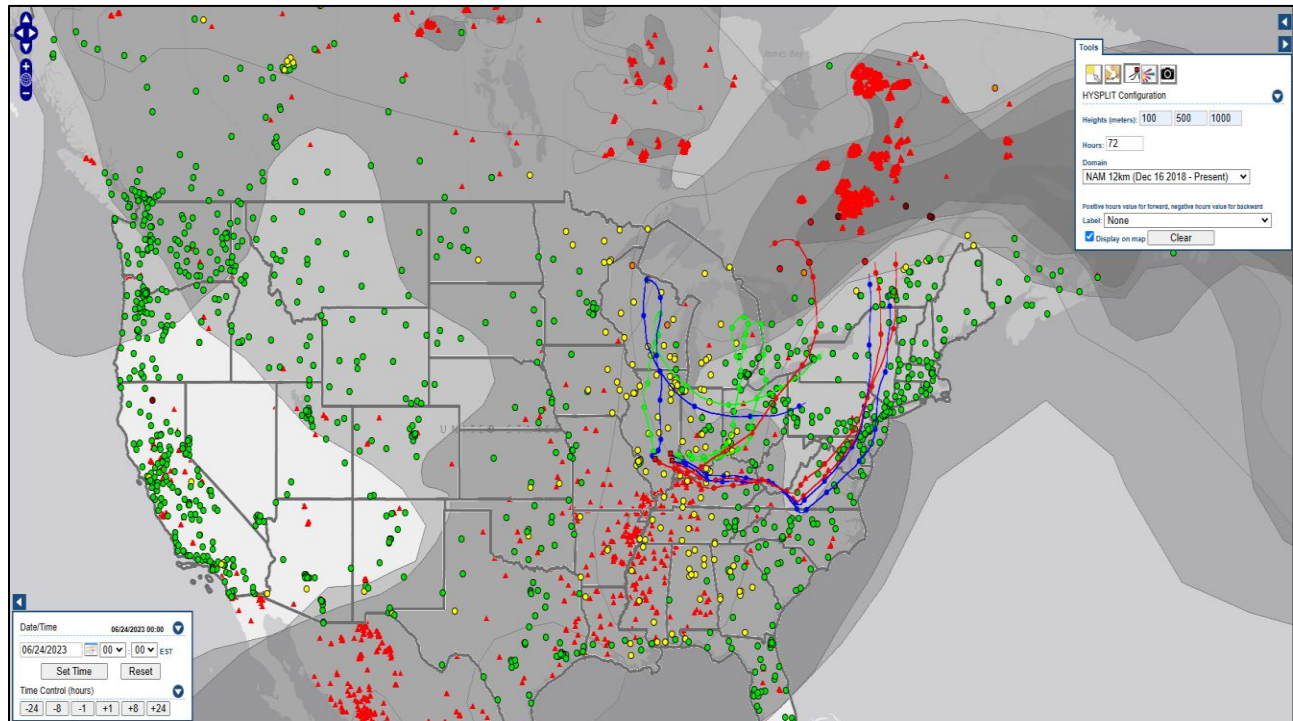
SMOKE:

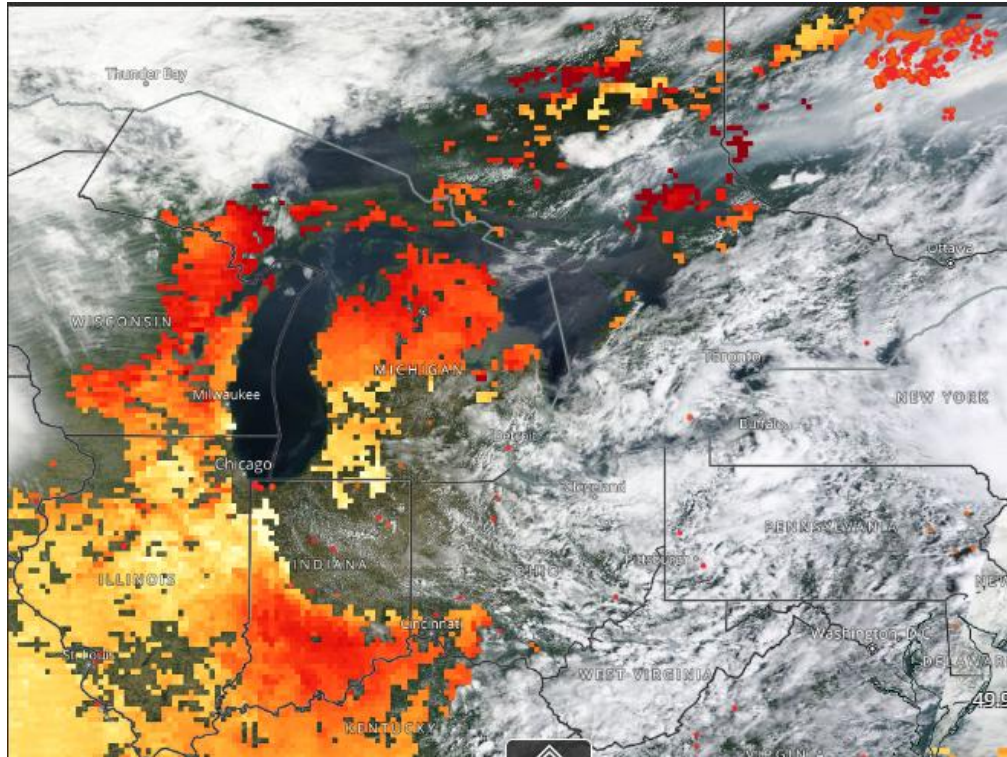
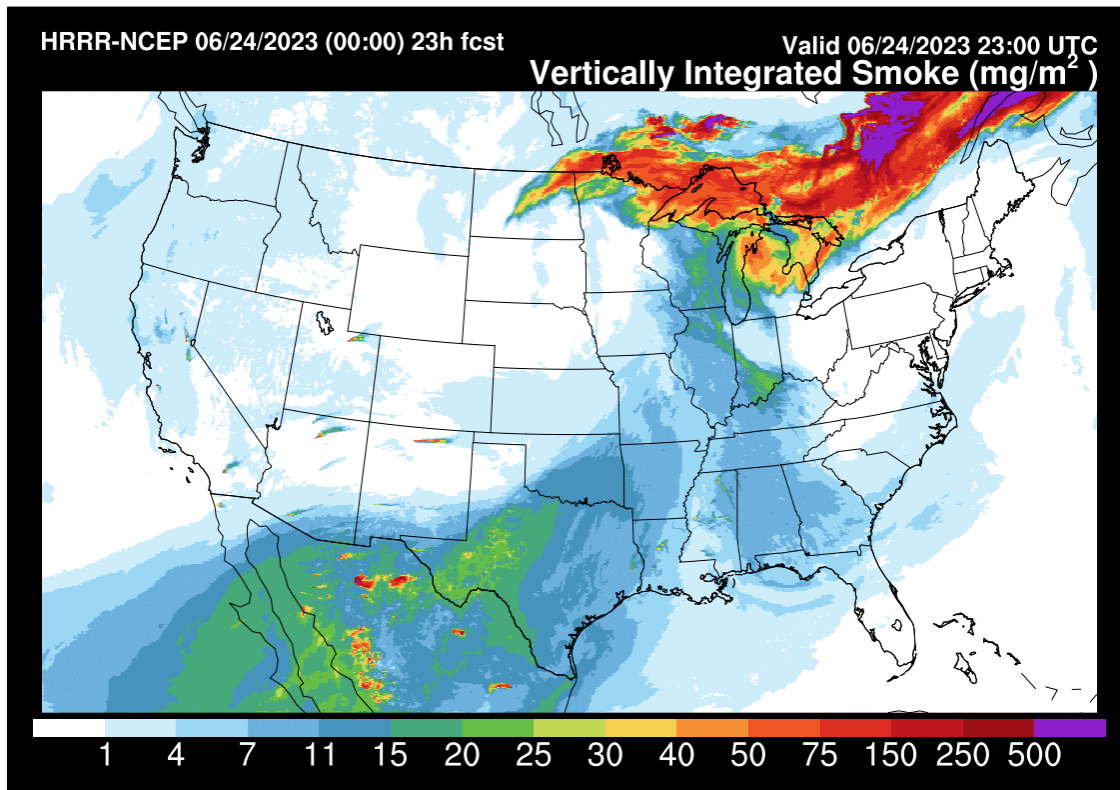
Canada/U.S./Atlantic Ocean/Pacific Ocean off the West Coast of Canada
and the U.S...

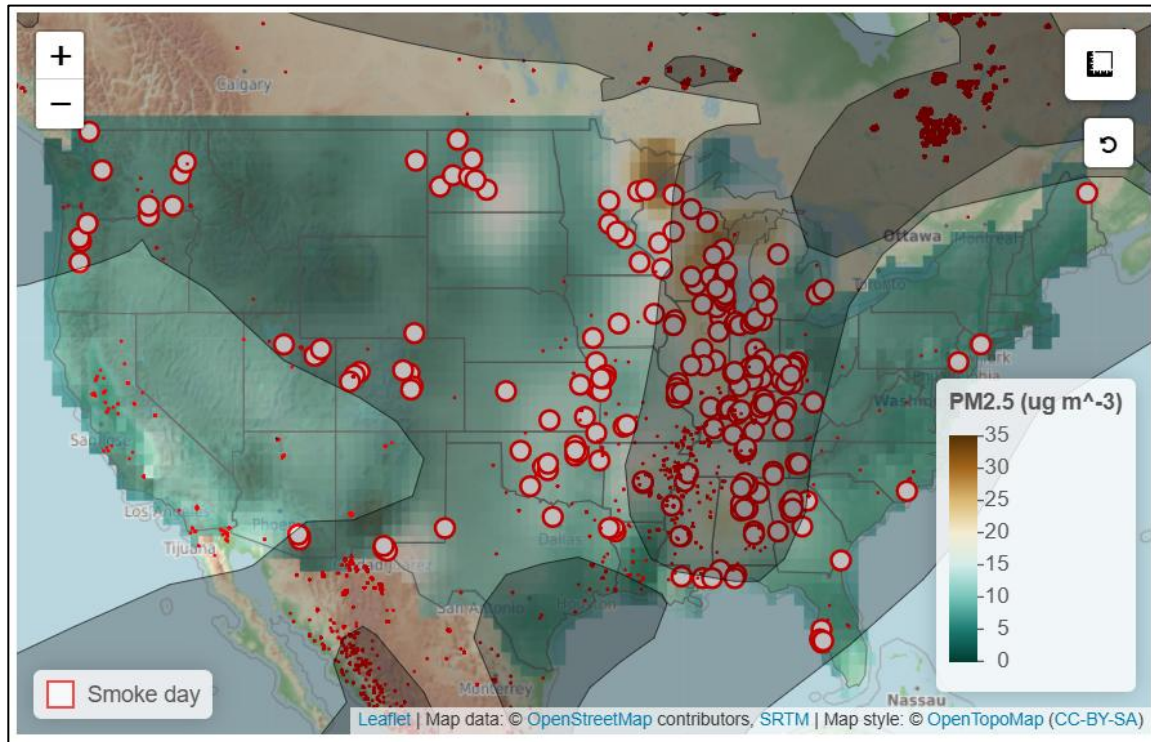
The major wildfire outbreak across portions of Canada continues with extensive smoke blanketing much of Canada and extending to the south over roughly the western two-thirds of the U.S. and the far northeastern part of the U.S. The smoke also stretched way off the east coasts of Canada and the U.S. over the northern and central Atlantic reaching Europe. To the west, some of the thinner density smoke had spread to the west and south off the southwestern coast of Canada over the far eastern Pacific and then moved to the east and northeast from there and back inland over the western U.S. The thickest smoke was emanating from massive wildfires in central and southern Quebec and moving to the east over southeastern Canada and far northern Maine before curving to the southeast as it moved well off the coast over the Atlantic. Other areas of thick smoke attributed to the Quebec fires as well as large fires in south central Ontario spread to the south and southwest reaching some of the western Great Lake's region..

June 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 ($\mu\text{g}/\text{m}^3$)
Columbus - Rocky Ford Drive	180050008	6/24/2023	18.9	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/24/2023	22.6	17.0
Plummer	180550001	6/24/2023	20.2	14.7
Hammond-167th St	180890036	6/24/2023	17.1	16.3
Bloomington - Binford	181050003	6/24/2023	20.1	13.9
Ogden Dunes	181270024	6/24/2023	15.3	15.3
Lafayette - Greenbush St	181570008	6/24/2023	18.9	15.1
Evansville - Buena Vista	181630021	6/24/2023	17.7	15.1
Terre Haute - Lafayette Ave	181670018	6/24/2023	20.5	18.8

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

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

GAM PMO3 Smoke Output – June 24, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1550Z June 24, 2023

SMOKE:

Canada, United States, Atlantic Ocean, Pacific Ocean off the Pacific
Northwest Coast of the United States...

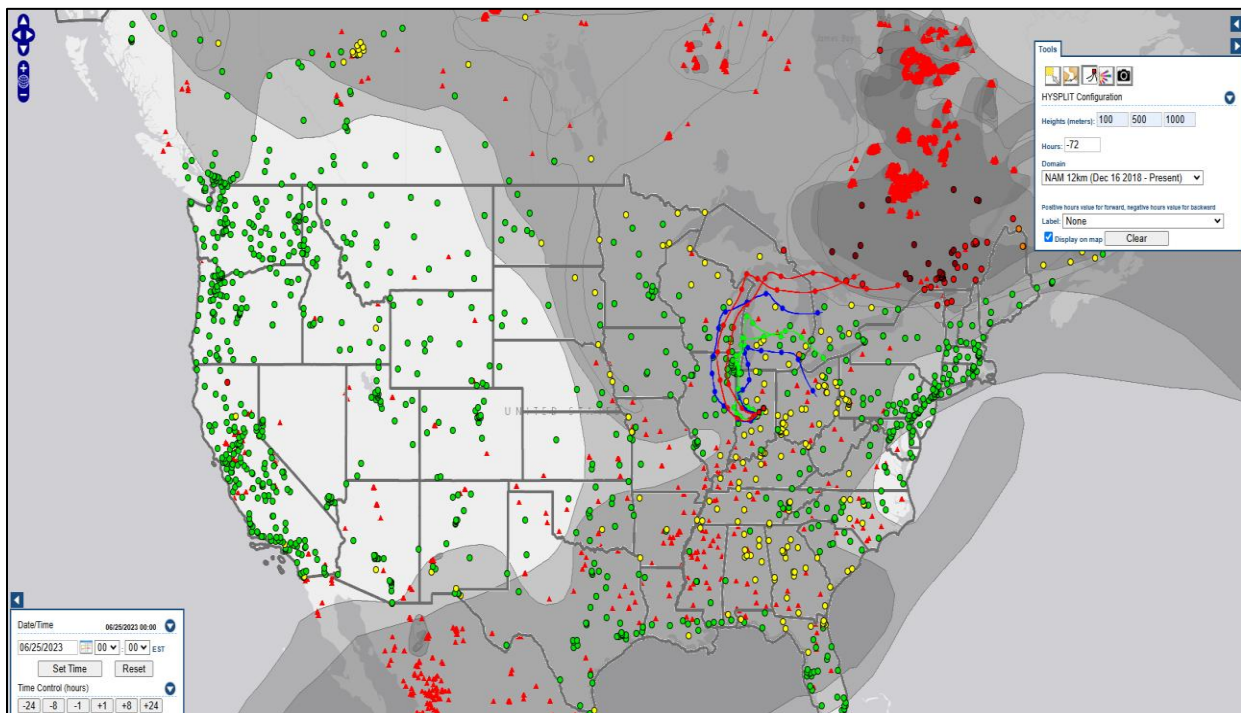
The major wildfires across portions of Canada continues with extensive smoke blanketing much of Canada and extending to the south over roughly the Central and Southeastern United States. The smoke also stretched way off the east coasts of Canada and the United States over the northern and central Atlantic to just off the west coast of Europe. To the west, some of the thinner density smoke had spread to the west and south off the southwestern coast of Canada and Pacific Northwest United States over the far northeastern Pacific. The thickest smoke was from wildfires in central and southern Quebec and moving to the east over southeastern Canada before extending to the southeast as it moved well off the coast over the Atlantic. Other areas of moderate density smoke attributed to the Quebec fires as well as large fires in south central Ontario spread to the south and southwest reaching the Upper Midwest and Midwestern United States.

June 25, 2023

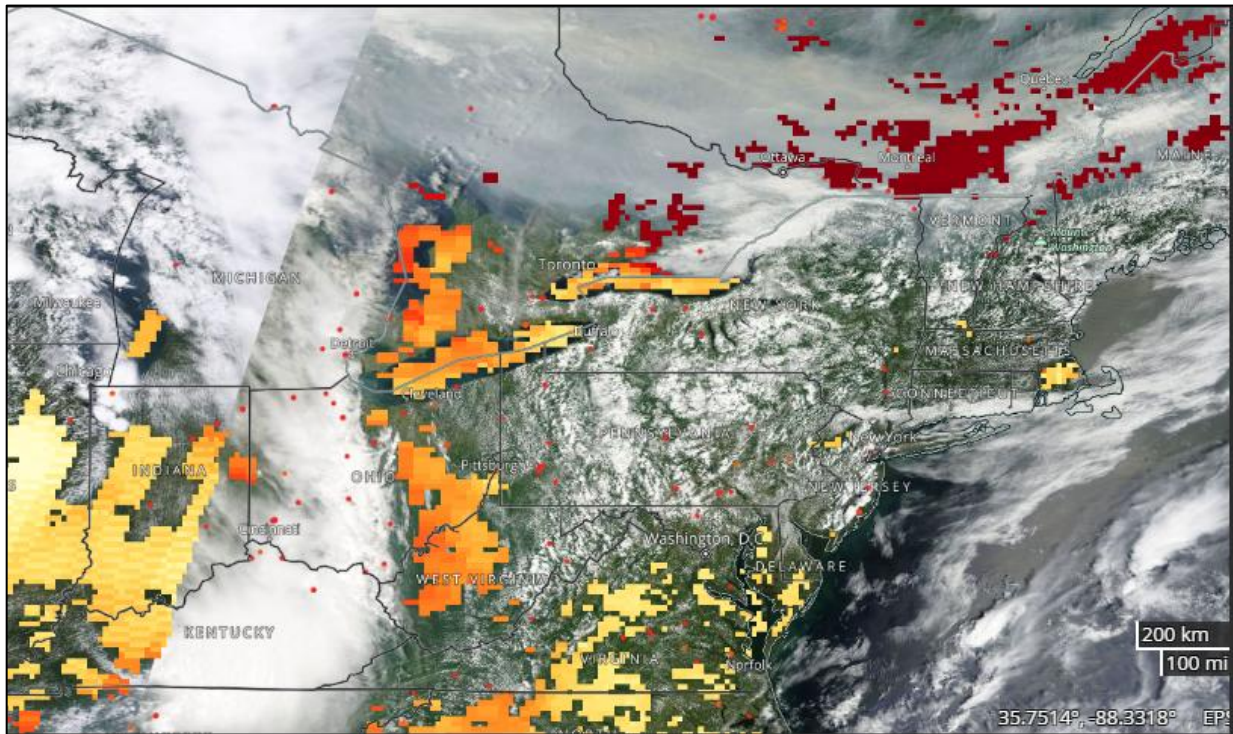
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Fishers	180570007	6/25/2023	16.8	13.8
Kokomo – E Vaile Ave	180670004	6/25/2023	14.5	13.9
Anderson - Eastside Elem	180950011	6/25/2023	15.6	15.4

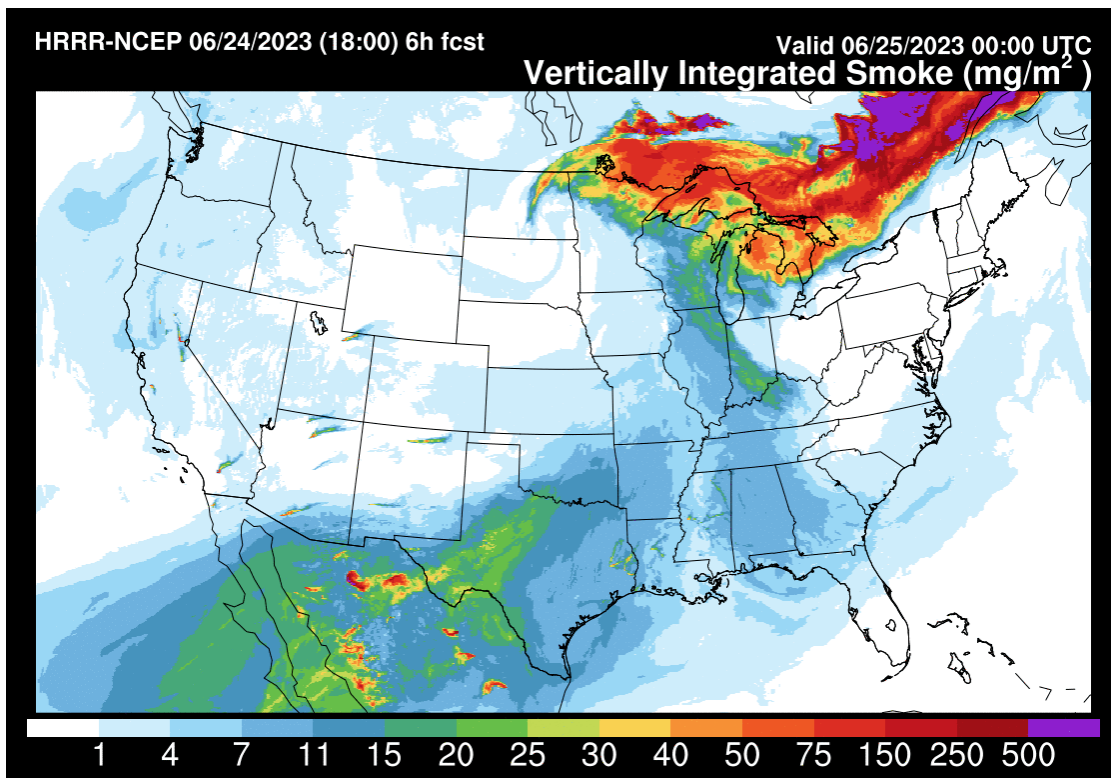
AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 25, 2023

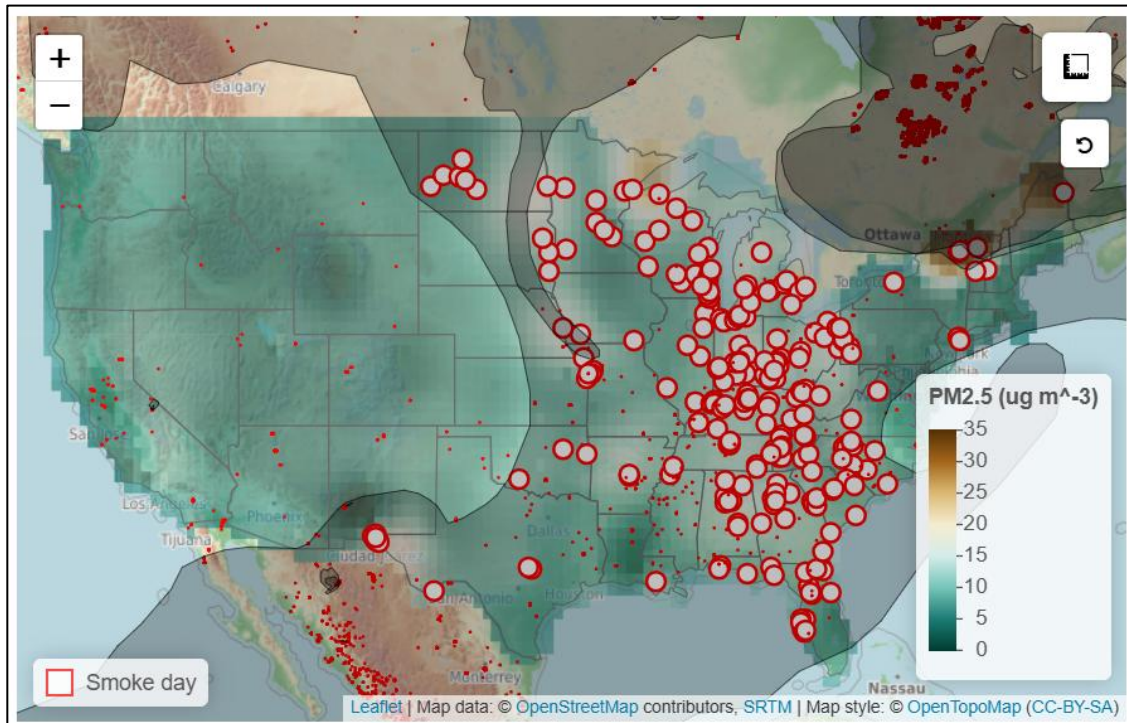


Satellite Imagery with MAIAC AOD – June 25, 2023



HRRR Smoke - Vertically Integrated Smoke – June 25, 2023



GAM PMO3 Smoke Output – June 25, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1650Z June 25, 2023

SMOKE:

Canada, Eastern United States, Atlantic Ocean...

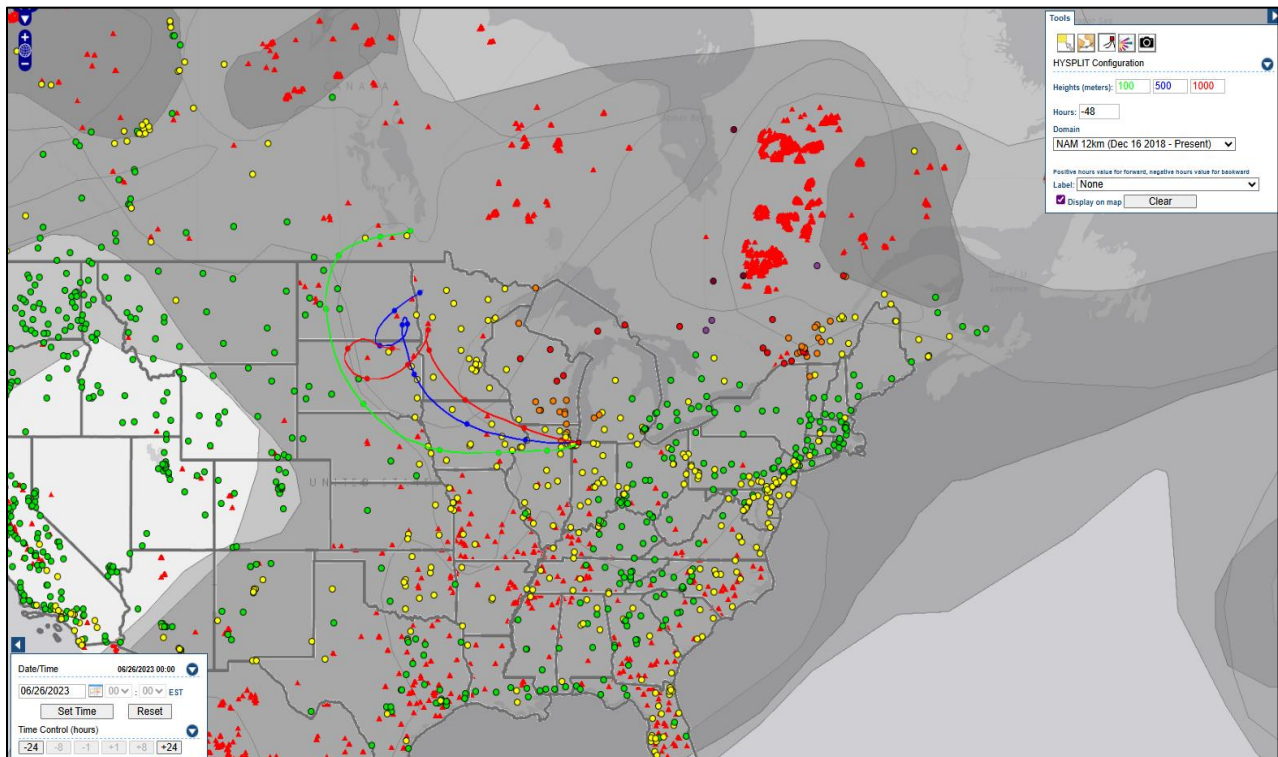
The major wildfires across portions of Canada continues with extensive smoke blanketing much of Canada and extending to the south over roughly the Central and Southeastern United States. The smoke also stretched way off the east coasts of Canada and the United States over the northern and central Atlantic to just off the west coast of Europe. Large areas of moderate density smoke were seen over in central Canada, most of Quebec, and extending throughout the northern Atlantic Ocean just off the coast of Europe

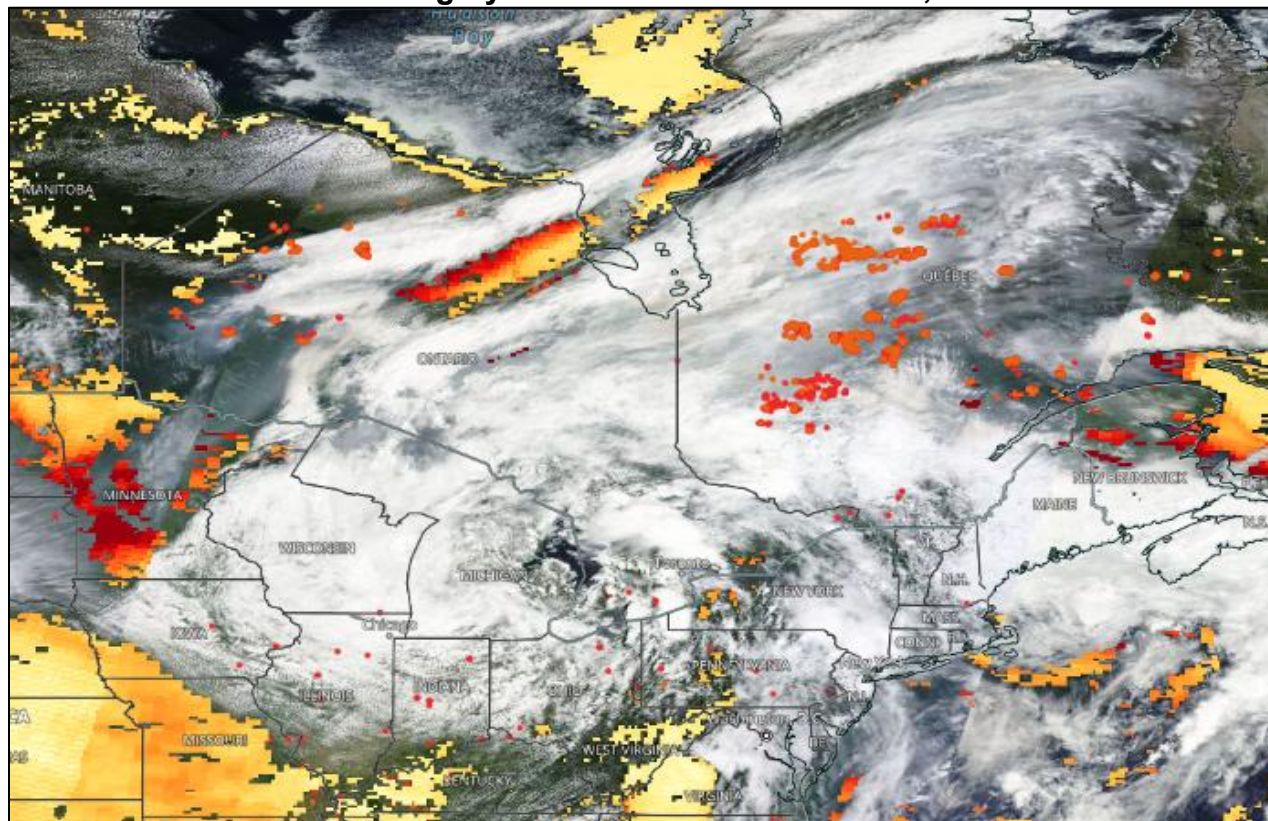
June 26, 2023

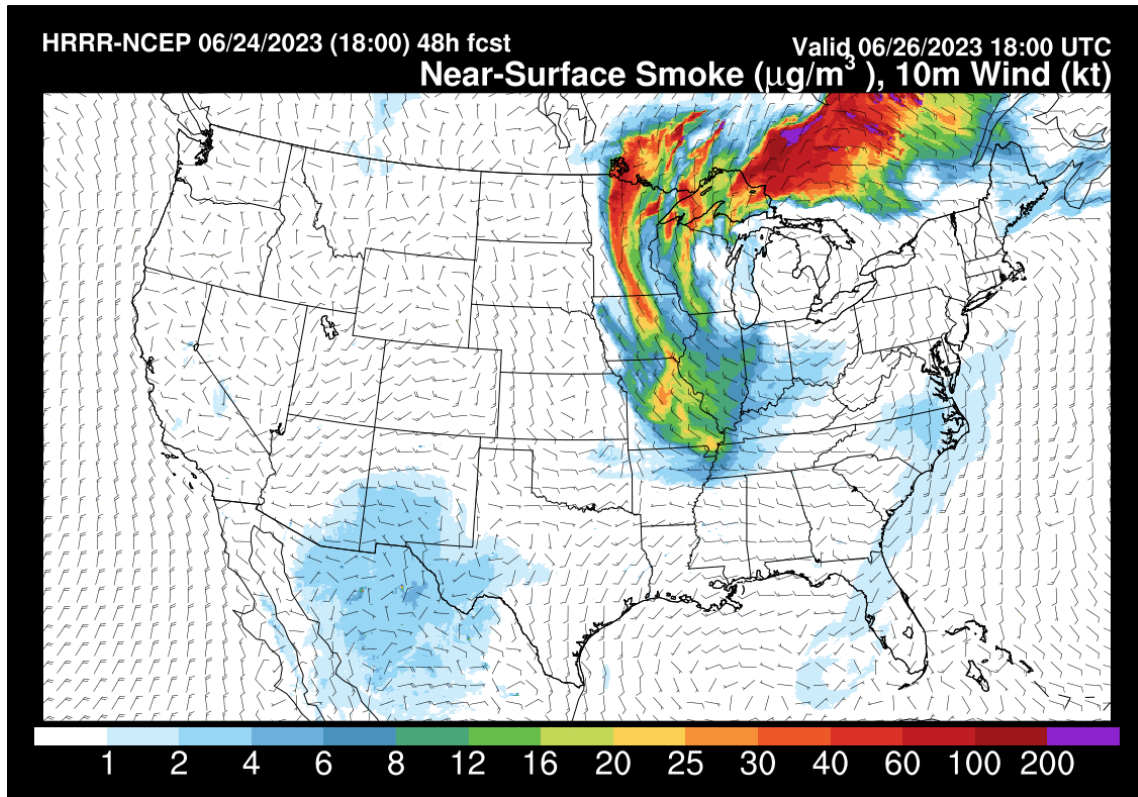
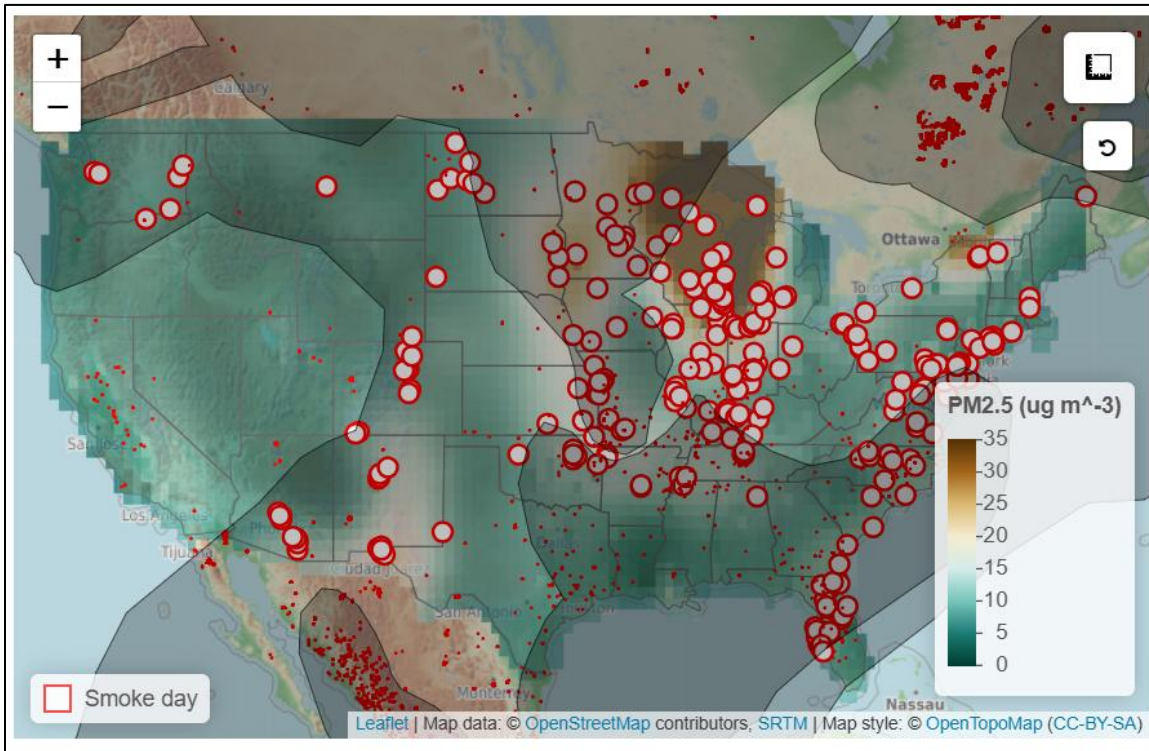
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Elkhart - Prairie St	180390008	6/26/2023	21.7	16.3
Kokomo - E. Vaile Ave	180670004	6/26/2023	17.3	14.7
East Chicago - Franklin/Washington Sch	180890006	6/26/2023	28.9	16.1
Gary - Madison St	180890031	6/26/2023	30.9	16
East Chicago - Marina	180890034	6/26/2023	32.3	18
Hammond-167th St	180890036	6/26/2023	33.6	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/26/2023	27.5	15.9
Ogden Dunes	181270024	6/26/2023	30.6	15.3
South Bend - Shields Dr.	181410015	6/26/2023	21.1	16.9
Lafayette - Greenbush St	181570008	6/26/2023	18.5	15.1
Larwill	181830003	6/26/2023	15.0	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 26, 2023



Satellite Imagery with MAIAC AOD – June 26, 2023

HRRR Smoke - Vertically Integrated Smoke – June 26, 2023**GAM PMO3 Smoke Output – June 26, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1654Z June 26, 2023

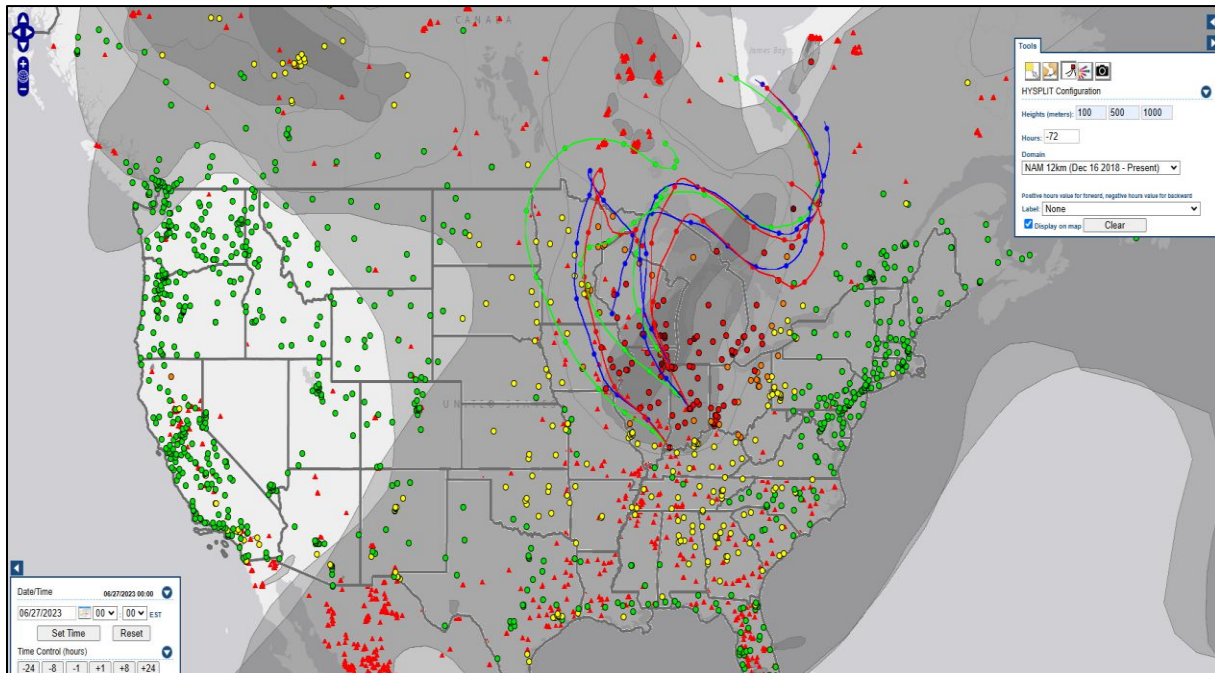
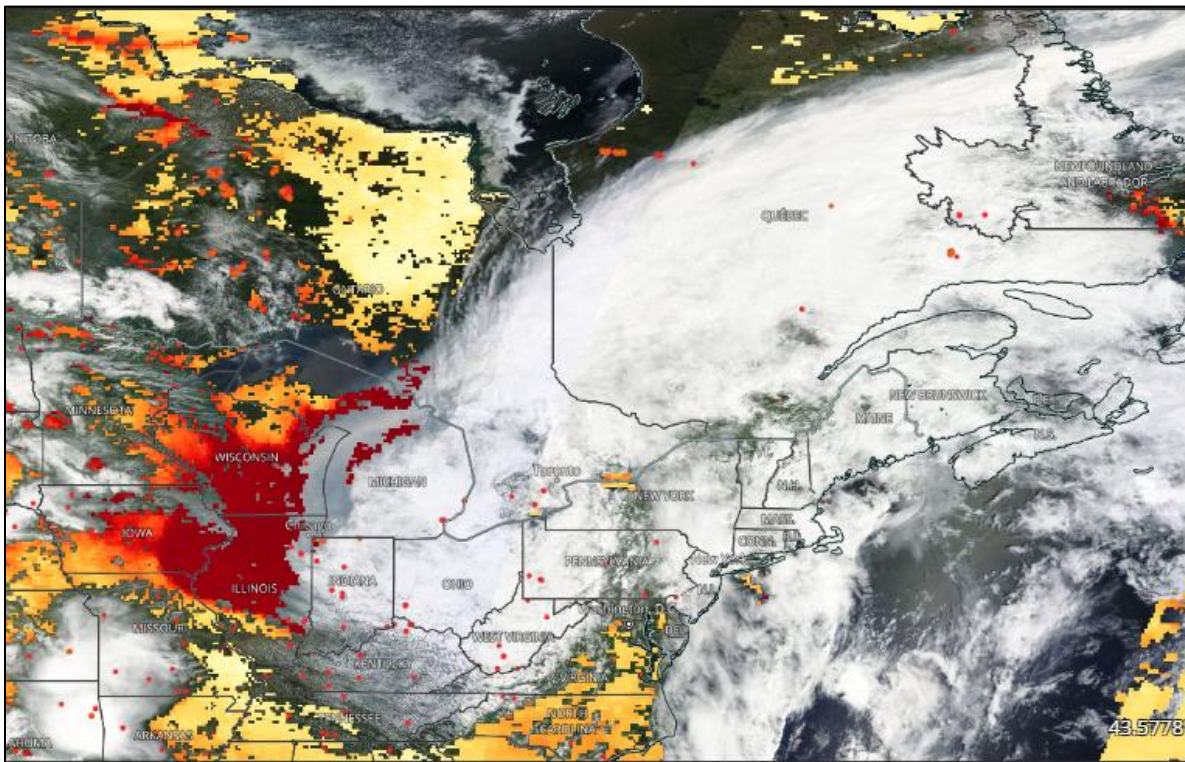
SMOKE:

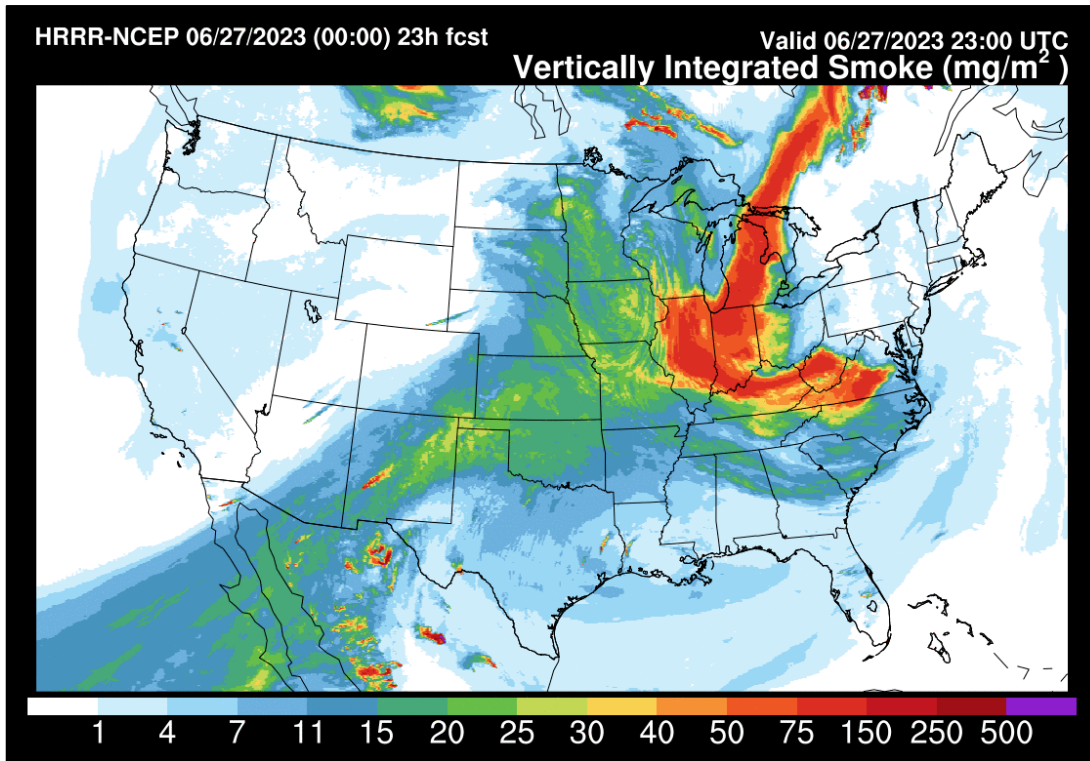
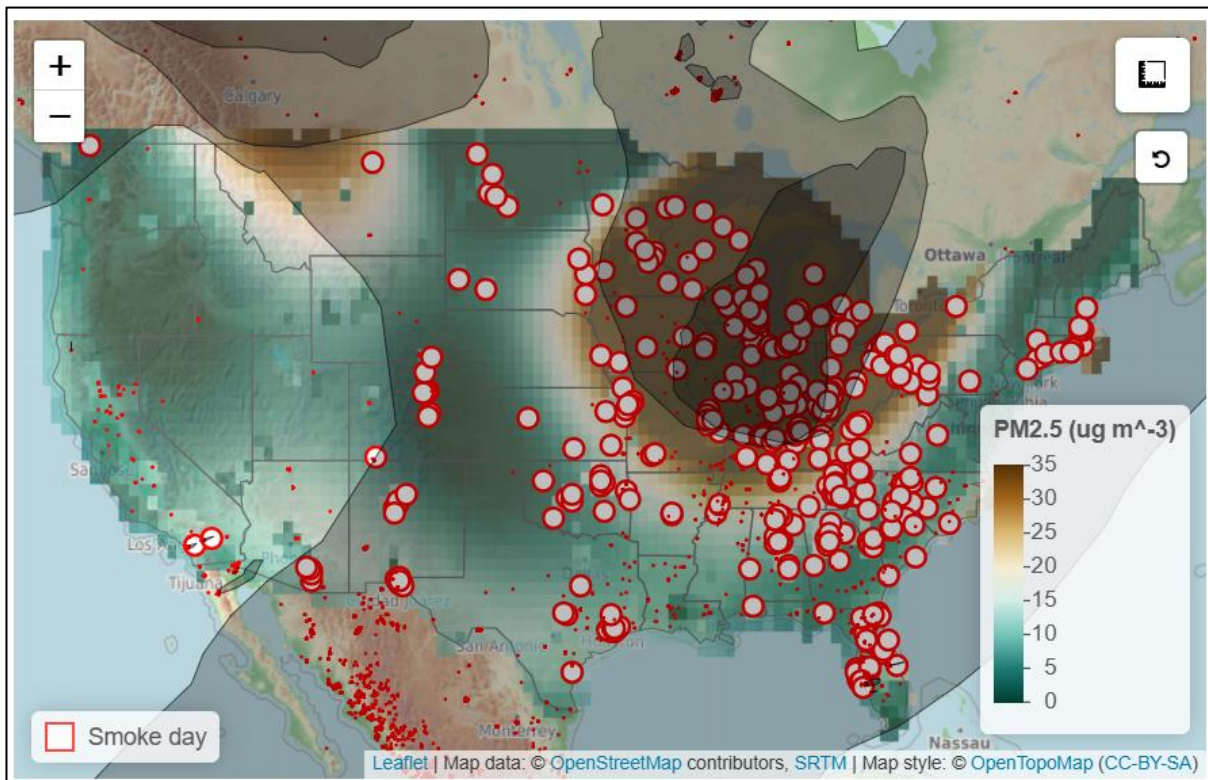
Canada, Eastern and Central United States, Atlantic Ocean...

Numerous wildfires continue to burn across Canada with smoke extending from British Columbia to Eastern Canada. Very large wildfires accompanied by medium density smoke could be seen northern and southern British Columbia, western Alberta, central Saskatchewan, parts of western Manitoba, northwestern Ontario extending south through the northern region of Central Plains U.S. and into Missouri, and across most of central Quebec. Quebec in particular, where the extreme wildfires are located, likely has thick density smoke closer to the source of the fires, but cloud cover over the region made it difficult to analyze for this morning's analysis... Additional light smoke was also found across most of the eastern U.S., extending southward over the northern Gulf of Mexico where it blended with light smoke originating from Mexico and Central America.

June 27, 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	6/27/2023	53.2	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/27/2023	35.8	17.0
Elkhart - Prairie St	180390008	6/27/2023	115.9	16.3
New Albany	180430008	6/27/2023	25.1	20.9
Plummer	180550001	6/27/2023	59.1	14.7
Fishers	180570007	6/27/2023	90.8	13.8
Mechanicsburg	180650003	6/27/2023	112.2	15.5
Kokomo - E. Vaile Ave	180670004	6/27/2023	114.6	14.7
East Chicago - Marina	180890034	6/27/2023	121.1	18
Hammond-167th St	180890036	6/27/2023	125.9	16.3
Anderson - Eastside Elem	180950011	6/27/2023	153.2	15.4
Indianapolis - Washington Park	180970078	6/27/2023	104.6	17.8
Indianapolis - W. 18th St.	180970081	6/27/2023	111.2	20.9
Indianapolis- I-70 E	180970087	6/27/2023	106.8	20.5
Bloomington - Binford	181050003	6/27/2023	62.1	13.9
Ogden Dunes	181270024	6/27/2023	97.0	15.3
South Bend - Shields Dr.	181410015	6/27/2023	145.4	16.9
Lafayette - Greenbush St	181570008	6/27/2023	117.5	15.1
Evansville - Buena Vista	181630021	6/27/2023	35.4	15.1
Terre Haute - Lafayette Ave	181670018	6/27/2023	74.3	18.8
Larwill	181830003	6/27/2023	146.3	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 27, 2023**Satellite Imagery with MAIAC AOD – June 27, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 27, 2023**GAM PMO3 Smoke Output – June 27, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1550Z June 27, 2023

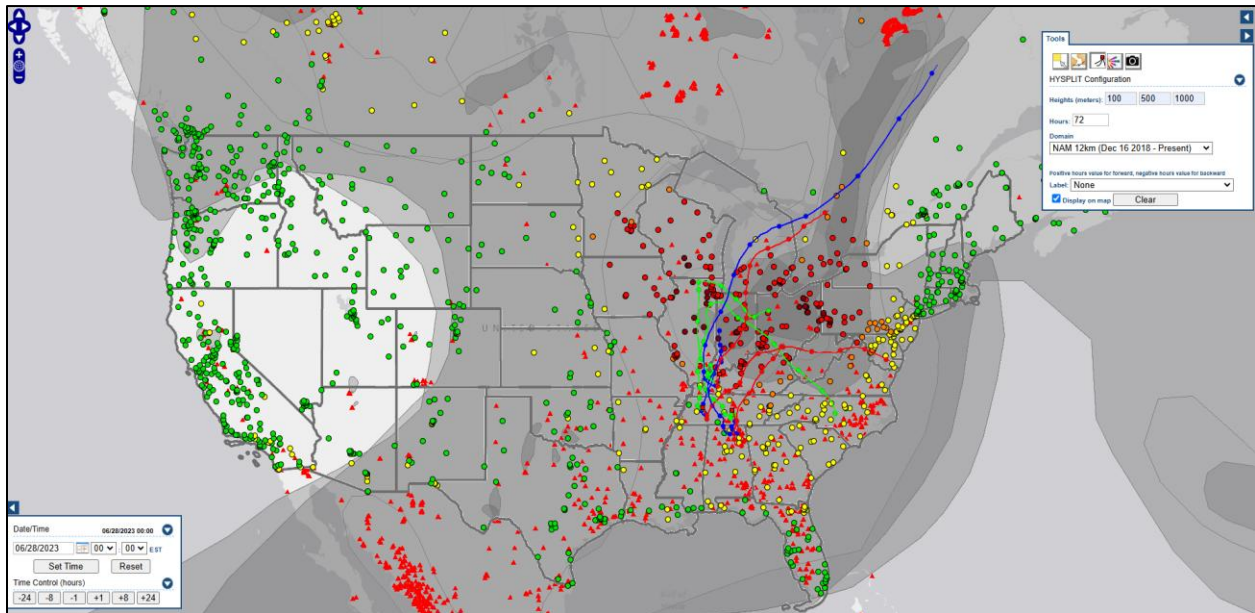
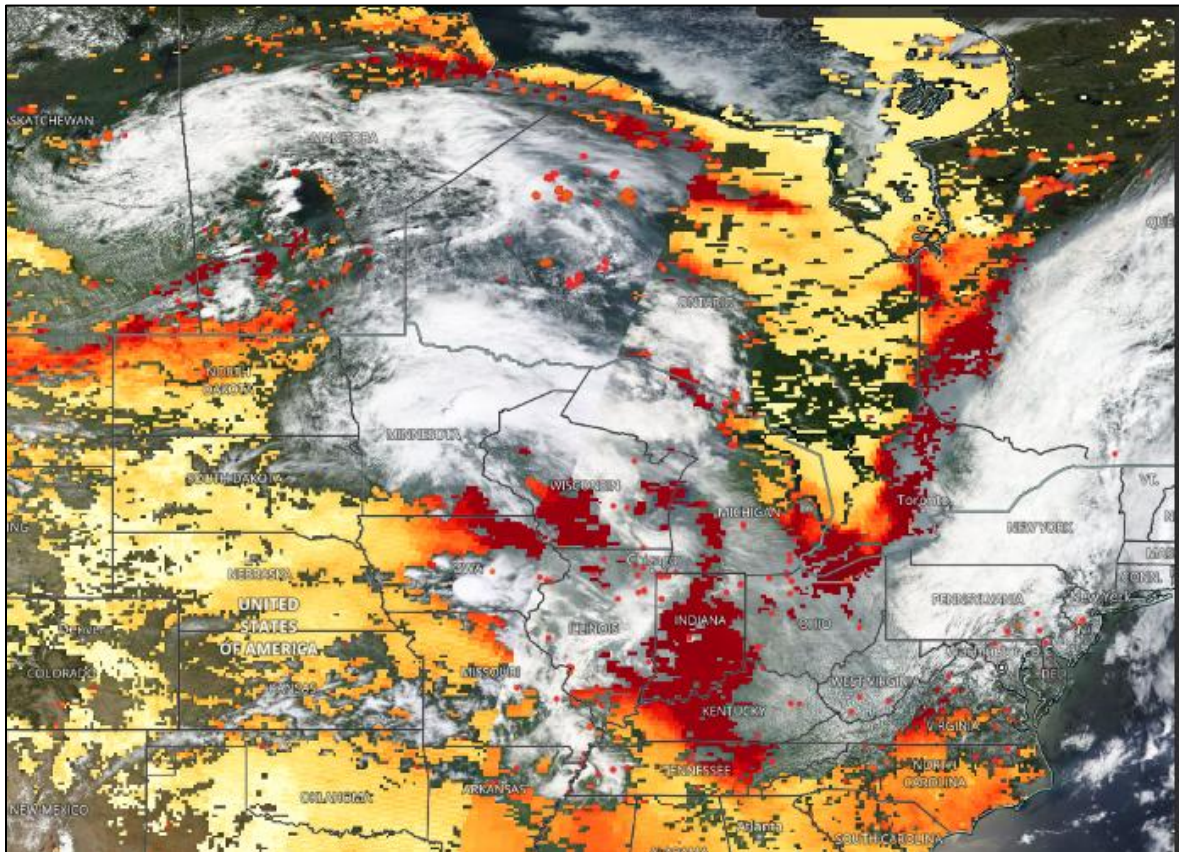
SMOKE:

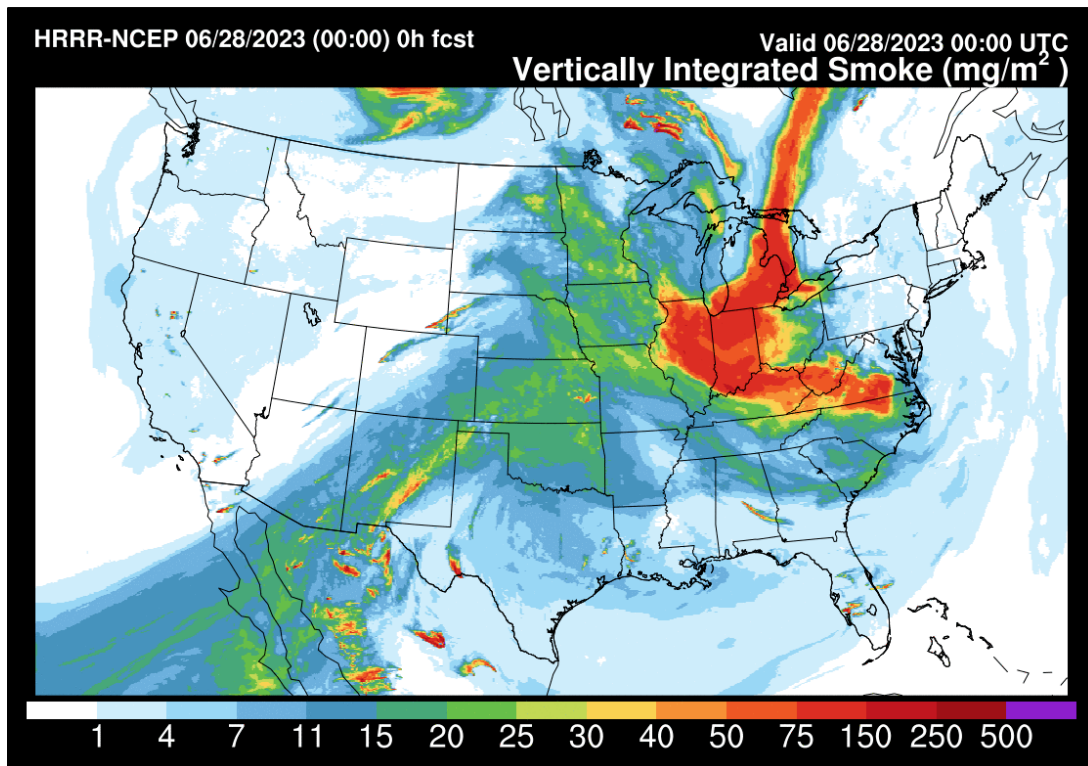
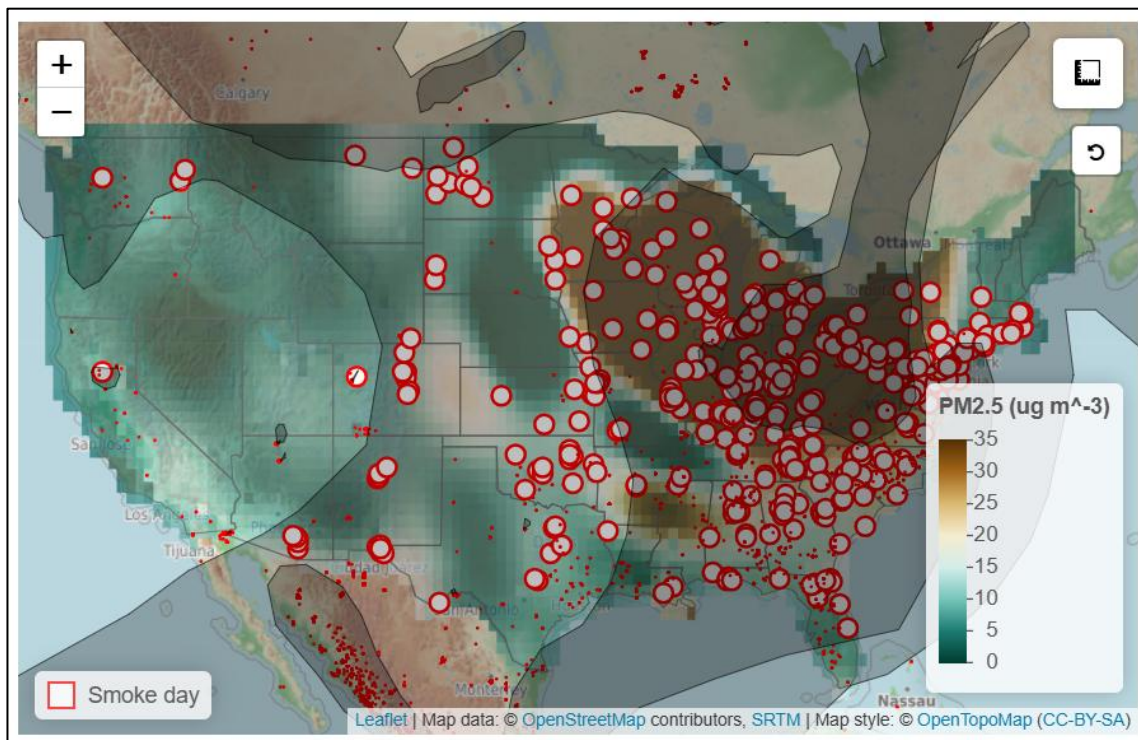
Canada, Eastern and Central United States, Atlantic Ocean...

The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States over the northern and central Atlantic to western portions of Europe. To the west, some of the thinner density smoke had spread to the west and south to just off the southwestern coast of Canada and the Pacific Northwest United States and into the far northeastern Pacific Ocean. Within this area, the thickest smoke was located over portions of Spain and Portugal and offshore in the far northeastern Atlantic Ocean, over the portions of the Midwestern and Upper Midwest of the United States and also over much of northern and central Alberta and extending into western Saskatchewan.

June 28, 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	6/28/2023	139.3	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/28/2023	98.9	17.0
Elkhart - Prairie St	180390008	6/28/2023	84.5	16.3
New Albany	180430008	6/28/2023	75.4	20.9
Plummer	180550001	6/28/2023	140.0	14.7
Fishers	180570007	6/28/2023	111.3	13.8
Mechanicsburg	180650003	6/28/2023	107.1	15.5
Kokomo - E. Vaile Ave	180670004	6/28/2023	119.0	14.7
East Chicago - Marina	180890034	6/28/2023	107.7	18
Hammond-167th St	180890036	6/28/2023	110.1	16.3
Anderson - Eastside Elem	180950011	6/28/2023	114.8	15.4
Indianapolis - Washington Park	180970078	6/28/2023	160.7	17.8
Indianapolis - W. 18th St.	180970081	6/28/2023	182.4	20.9
Indianapolis- I-70 E	180970087	6/28/2023	165.3	20.5
Bloomington - Binford	181050003	6/28/2023	153.1	13.9
Ogden Dunes	181270024	6/28/2023	84.8	15.3
South Bend - Shields Dr.	181410015	6/28/2023	114.1	16.9
Lafayette - Greenbush St	181570008	6/28/2023	130.6	15.1
Evansville - Buena Vista	181630021	6/28/2023	94.1	15.1
Terre Haute - Lafayette Ave	181670018	6/28/2023	156.8	18.8
Larwill	181830003	6/28/2023	121.0	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 28, 2023**Satellite Imagery with MAIAC AOD – June 28, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 28, 2023**GAM PMO3 Smoke Output – June 28, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1550Z June 28, 2023

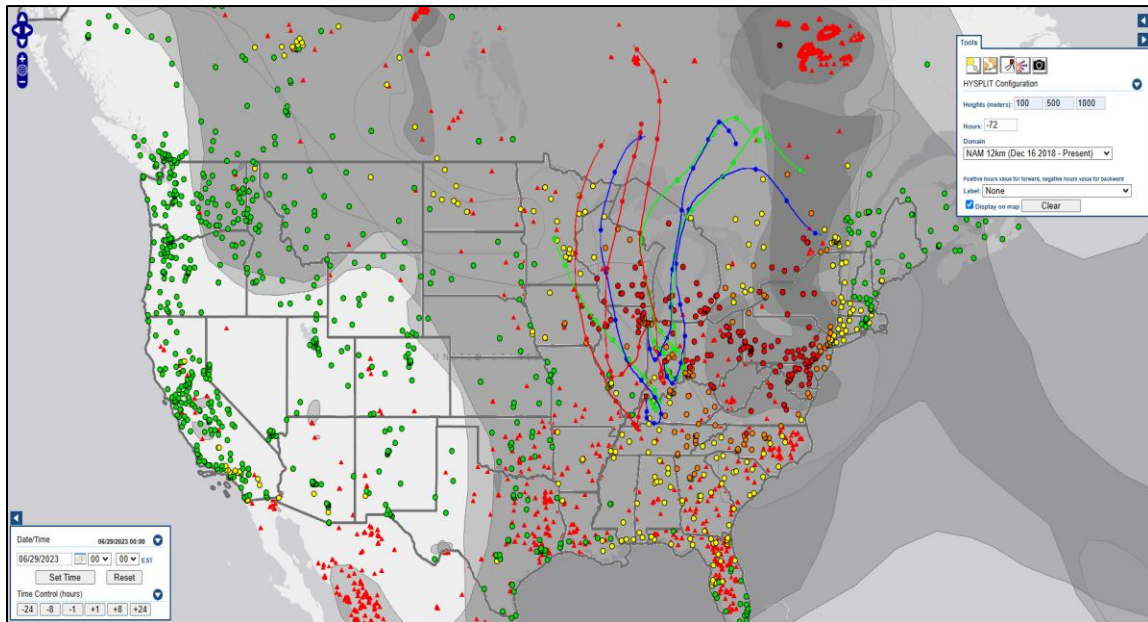
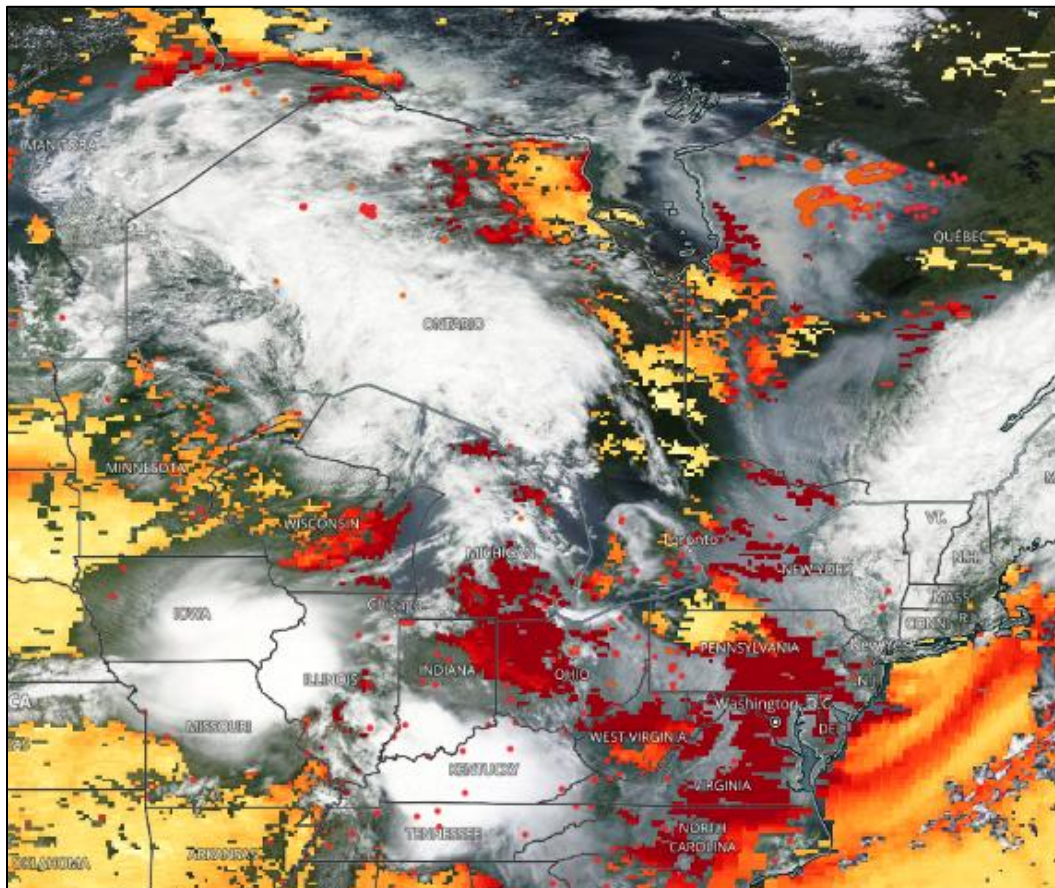
SMOKE:

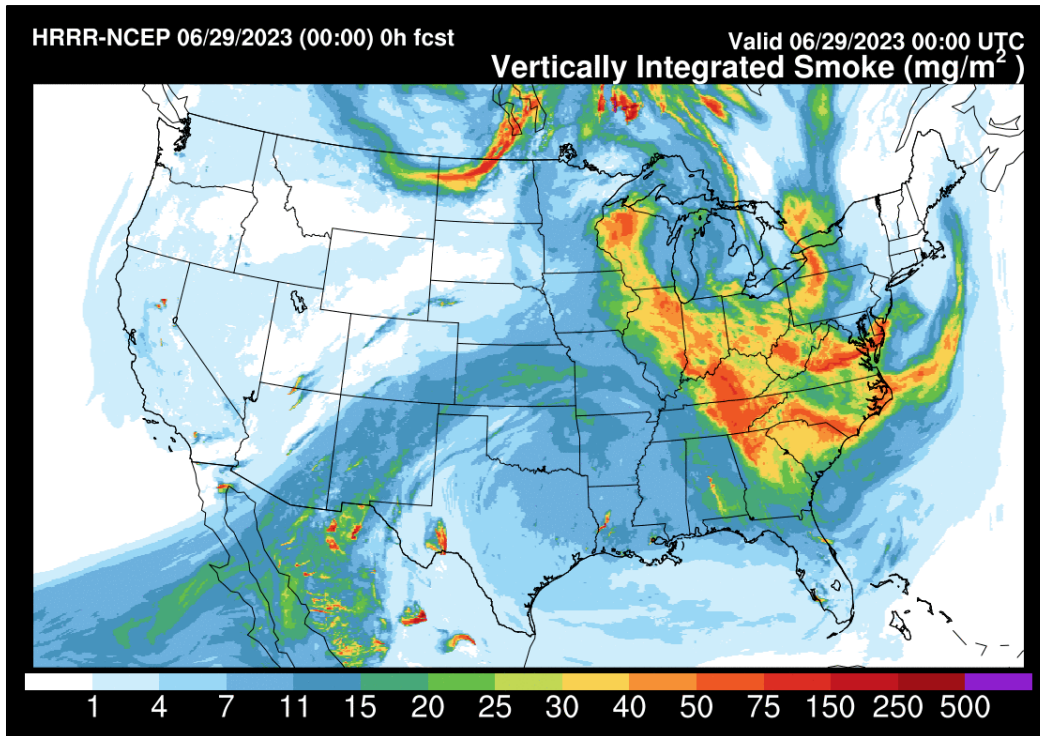
Canada, Eastern and Central United States, Atlantic Ocean...

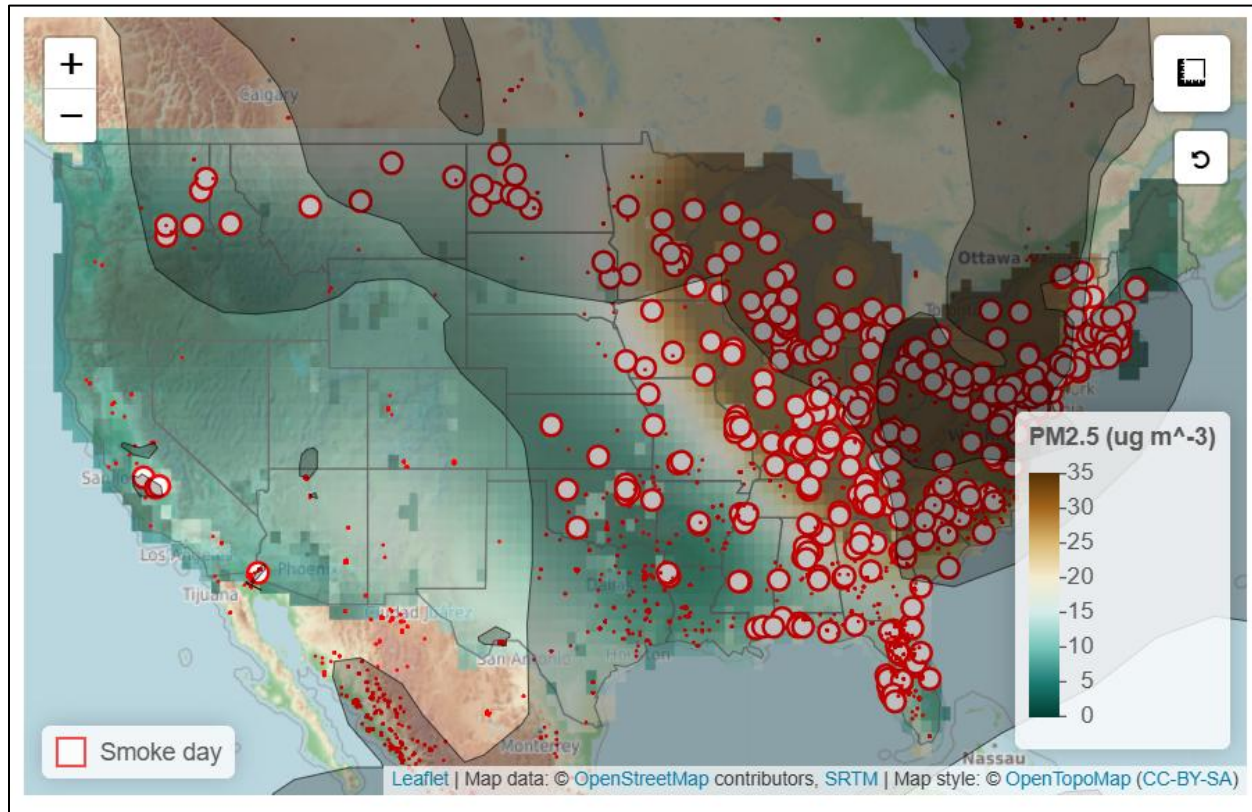
The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States over the northern and central Atlantic to western portions of Europe. To the west, some of the thinner density smoke had spread to the west and south to just off the southwestern coast of Canada and the Pacific Northwest United States and into the far northeastern Pacific Ocean. Within this area, the thickest smoke was located from western Quebec through southern Ontario and into portions of the Midwestern and Upper Midwest of the United States and also over northern Alberta, the southern Northwest Territories and northern British Columbia.

June 29, 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	6/29/2023	43.7	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	6/29/2023	36.2	17.0
Muncie - Central HS	180350006	6/29/2023	43.7	13.2
Jasper - Post Office	180372001	6/29/2023	22.7	15.7
Elkhart - Prairie St	180390008	6/29/2023	54.8	16.3
New Albany	180430008	6/29/2023	33.8	20.9
Plummer	180550001	6/29/2023	27.7	14.7
Fishers	180570007	6/29/2023	47.3	13.8
Carmel - Hazel Dell Parkway	180570008	6/29/2023	49.7	16.5
Mechanicsburg	180650003	6/29/2023	42.3	15.5
Kokomo - E. Vaile Ave	180670004	6/29/2023	47.0	14.7
East Chicago - Franklin/Washington Sch	180890006	6/29/2023	43.6	16.1
Gary - Madison St	180890031	6/29/2023	44.2	16
East Chicago - Marina	180890034	6/29/2023	43.3	18
Hammond-167th St	180890036	6/29/2023	47.9	16.3
Michigan City - Marsh Elem. Sch.	180910011	6/29/2023	43.5	15.9
Anderson - Eastside Elem	180950011	6/29/2023	51.0	15.4
Indianapolis - Washington Park	180970078	6/29/2023	60.4	17.8
Indianapolis - W. 18th St.	180970081	6/29/2023	53.3	20.9
Indianapolis - School 21	180970084	6/29/2023	48.3	15.5
Indianapolis- I-70 E	180970087	6/29/2023	97.6	20.5
Bloomington - Binford	181050003	6/29/2023	35.7	13.9
Ogden Dunes	181270024	6/29/2023	47.2	15.3
South Bend - Shields Dr.	181410015	6/29/2023	52.2	16.9
Dale	181470009	6/29/2023	19.8	13.9
Lafayette - Greenbush St	181570008	6/29/2023	44.7	15.1
Evansville - Buena Vista	181630021	6/29/2023	27.8	15.1
Terre Haute - Lafayette Ave	181670018	6/29/2023	28.6	18.8
Larwill	181830003	6/29/2023	50.8	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – June 29, 2023**Satellite Imagery with MAIAC AOD – June 29, 2023**

HRRR Smoke - Vertically Integrated Smoke – June 29, 2023

GAM PMO3 Smoke Output – June 29, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1640Z June 29, 2023

SMOKE:

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

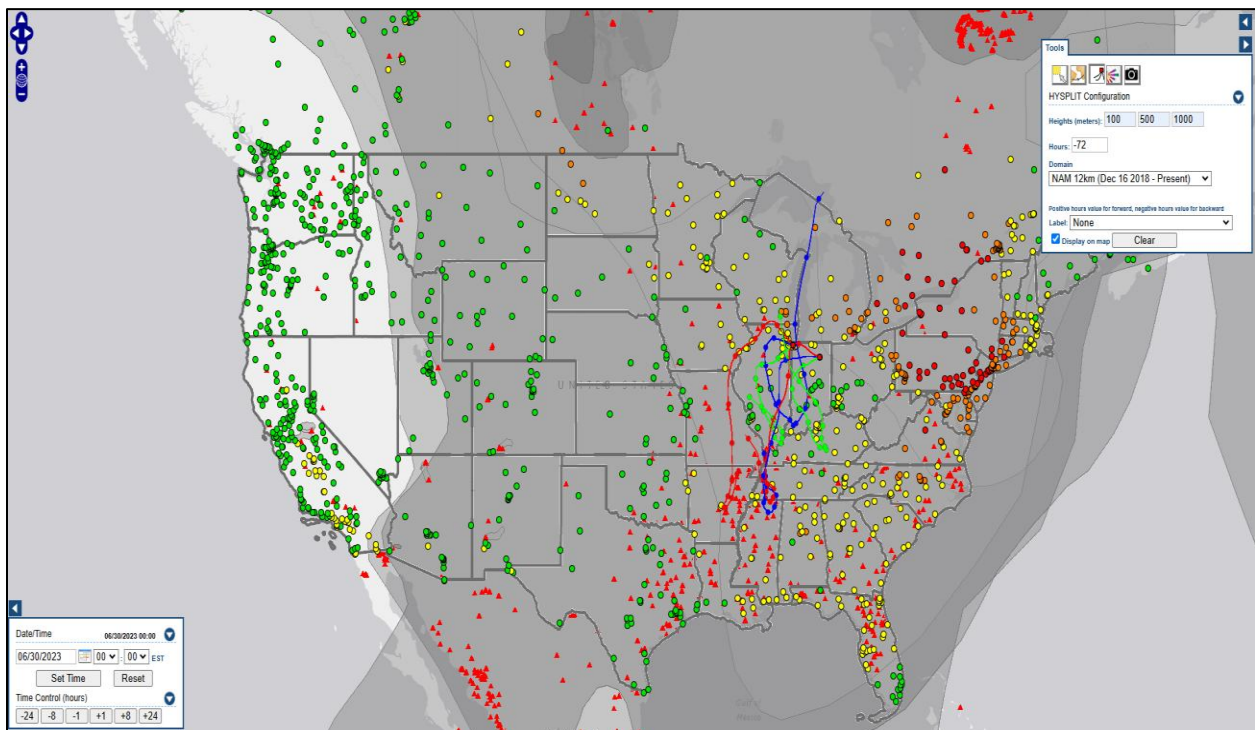
The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States over the northern and central Atlantic. To the west, some of the thinner density smoke had spread to the west and south to just off parts of the Pacific Northwest United States. Within this area, the thickest smoke was located mostly over western Quebec through southern Ontario and into portions of Northeast U.S while moderate density smoke engulfed most of Canada, Northeast U.S, and parts of northern U.S within Montana and the Dakotas.

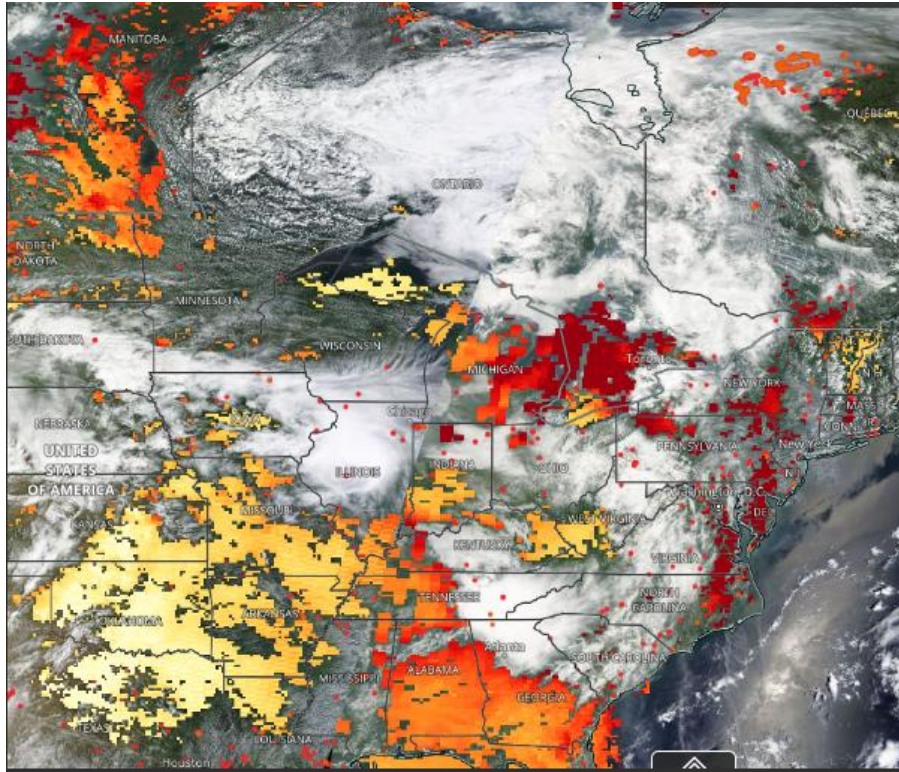
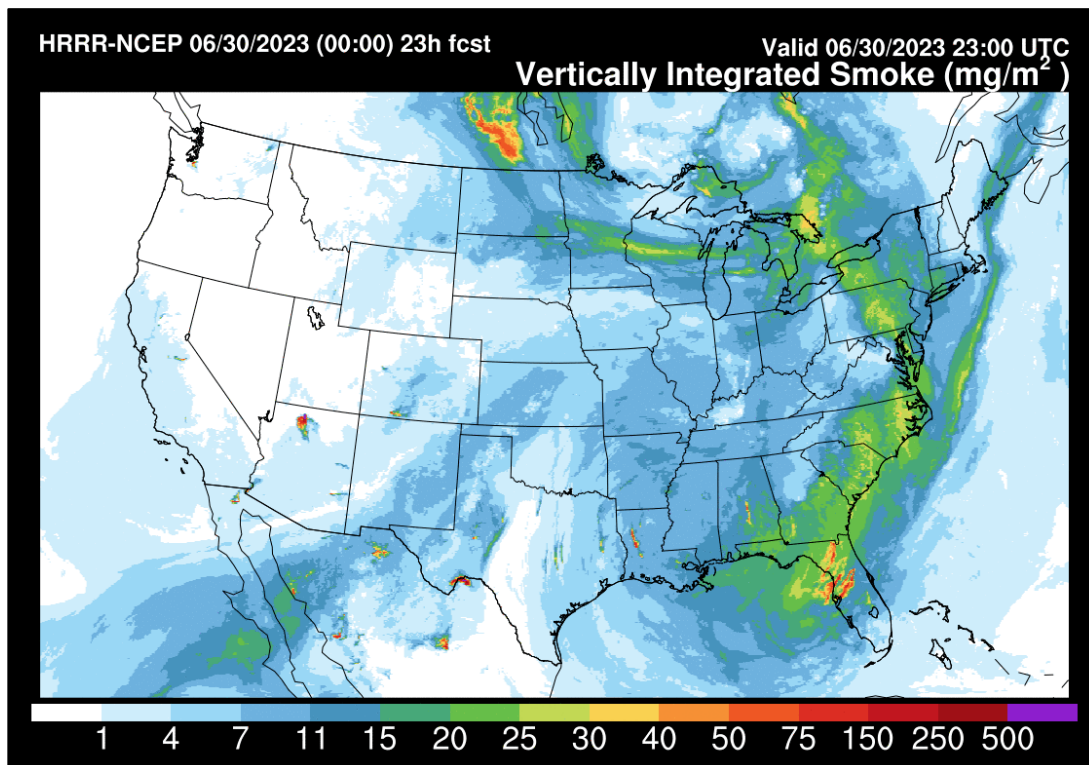
June 30, 2023

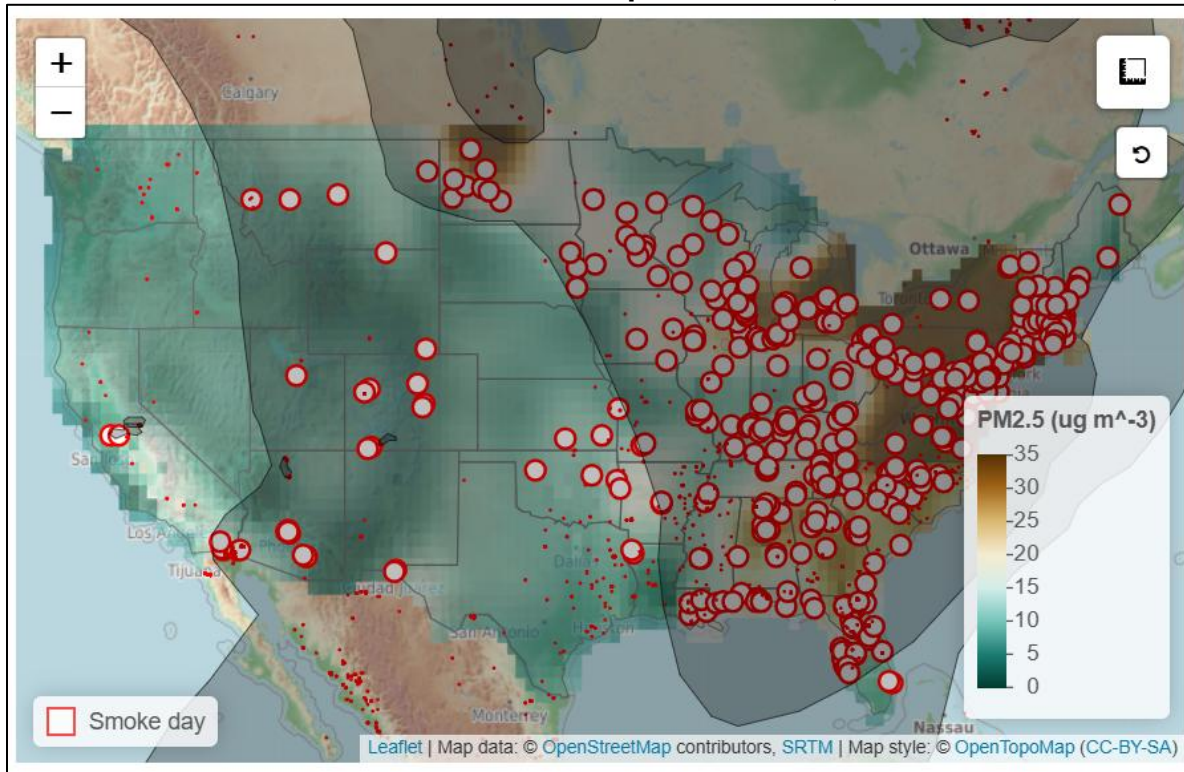
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Elkhart - Prairie St	180390008	6/30/2023	26.1	16.3
Kokomo – E Vaile Ave	180670004	6/30/2023	14	13.9
East Chicago - Marina	180890034	6/30/2023	25.9	18
Hammond-167th St	180890036	6/30/2023	24.6	16.3
Ogden Dunes	181270024	6/30/2023	30.4	15.3
South Bend - Shields Dr.	181410015	6/30/2023	31.3	16.9
Larwill	181830003	6/30/2023	23.0	15

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



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

GAM PMO3 Smoke Output – June 30, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1635Z June 30, 2023

SMOKE:

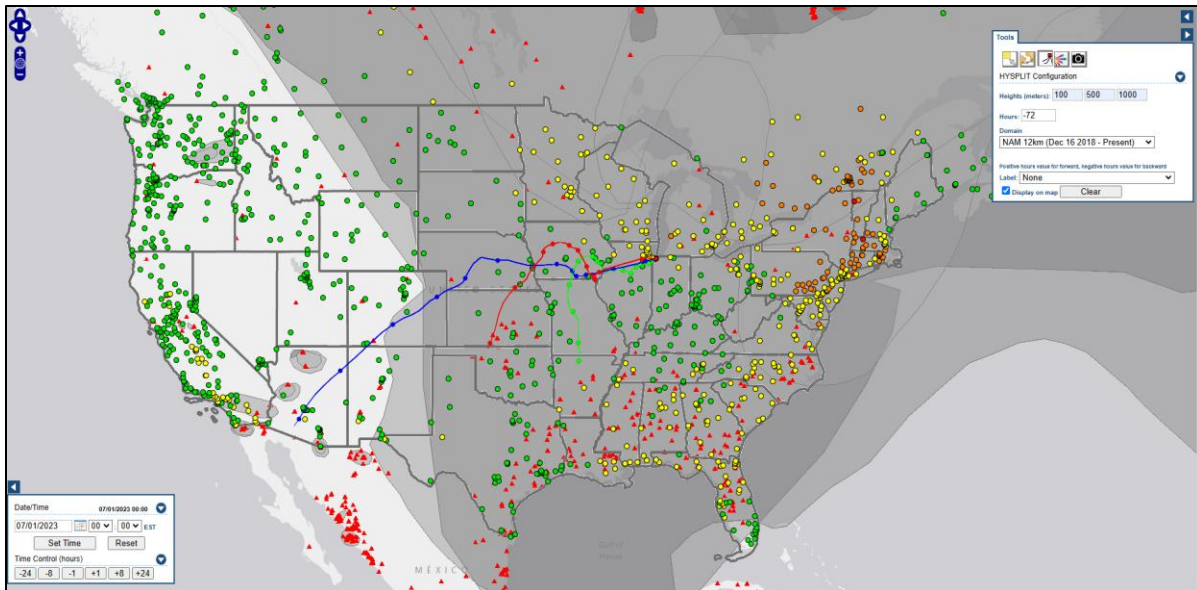
Canada, Eastern and Central United States, Atlantic Ocean...
The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States as well as the Atlantic Ocean along the eastern U.S coast and north-central region. To the west, some of the thinner density smoke had spread to the west and south over parts of the southwestern United States. Within this area, the thickest smoke was located mostly over Western Canada, northern Quebec, and parts of Hudson Bay while moderate density smoke engulfed most of Canada, Northeast U.S, and parts of northern U.S within Montana and the Dakotas. Cloud cover over eastern Canada made it difficult to determine to the full extent of the thick density smoke from the Quebec fires.

July 1, 2023

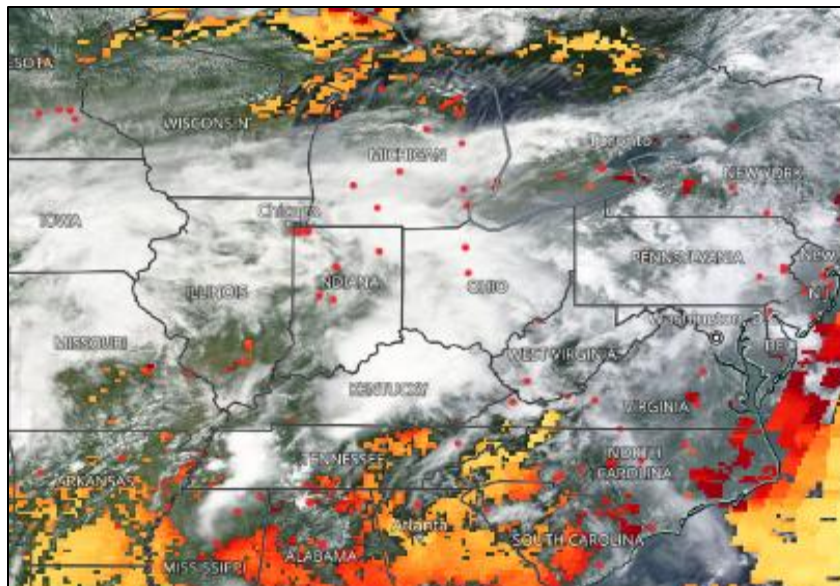
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

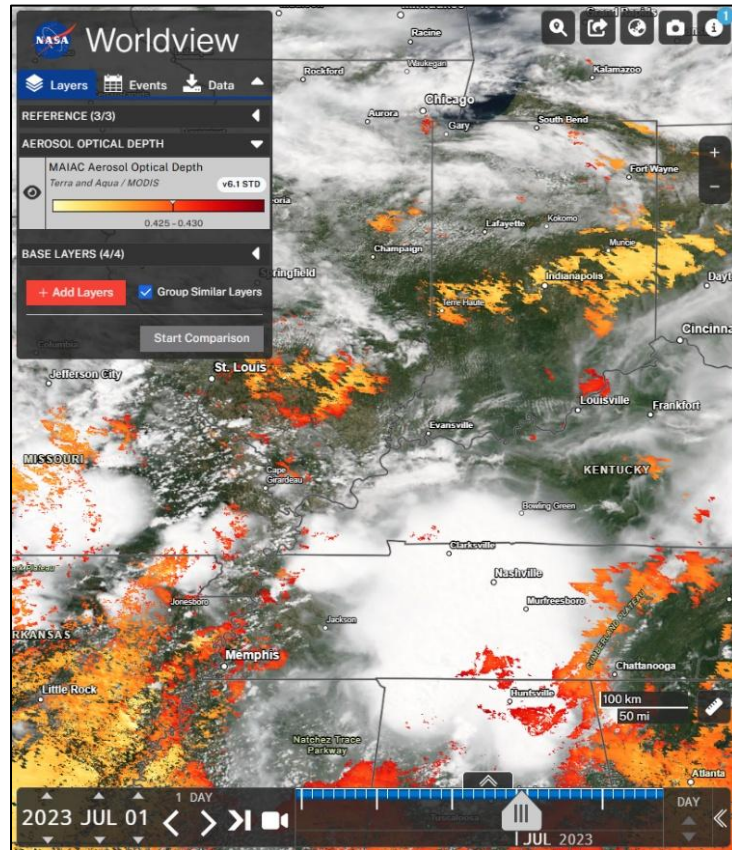
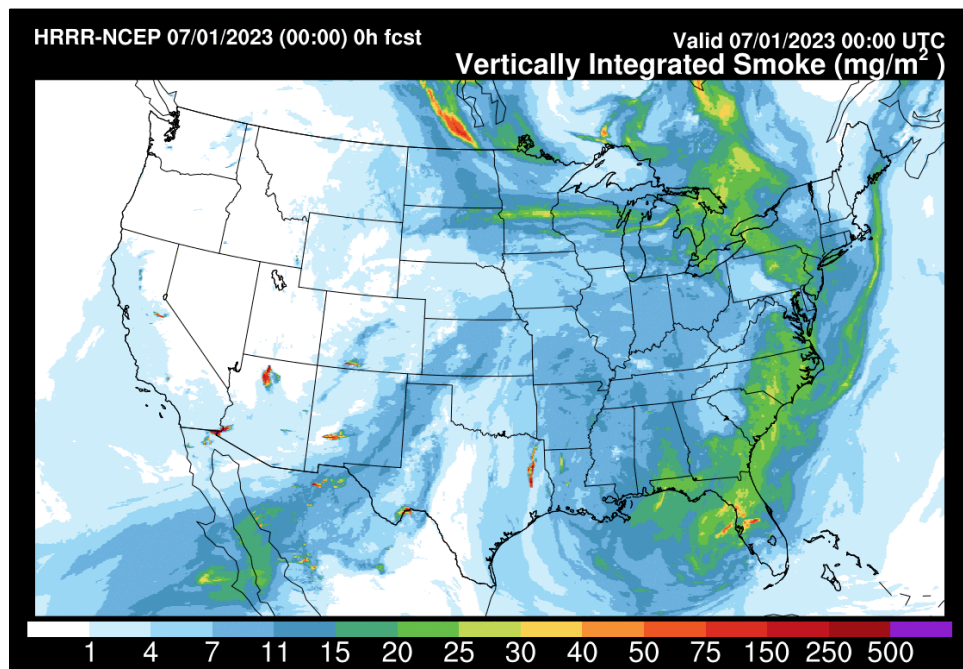
Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Ogden Dunes	181270024	7/1/2023	22.3	15.3

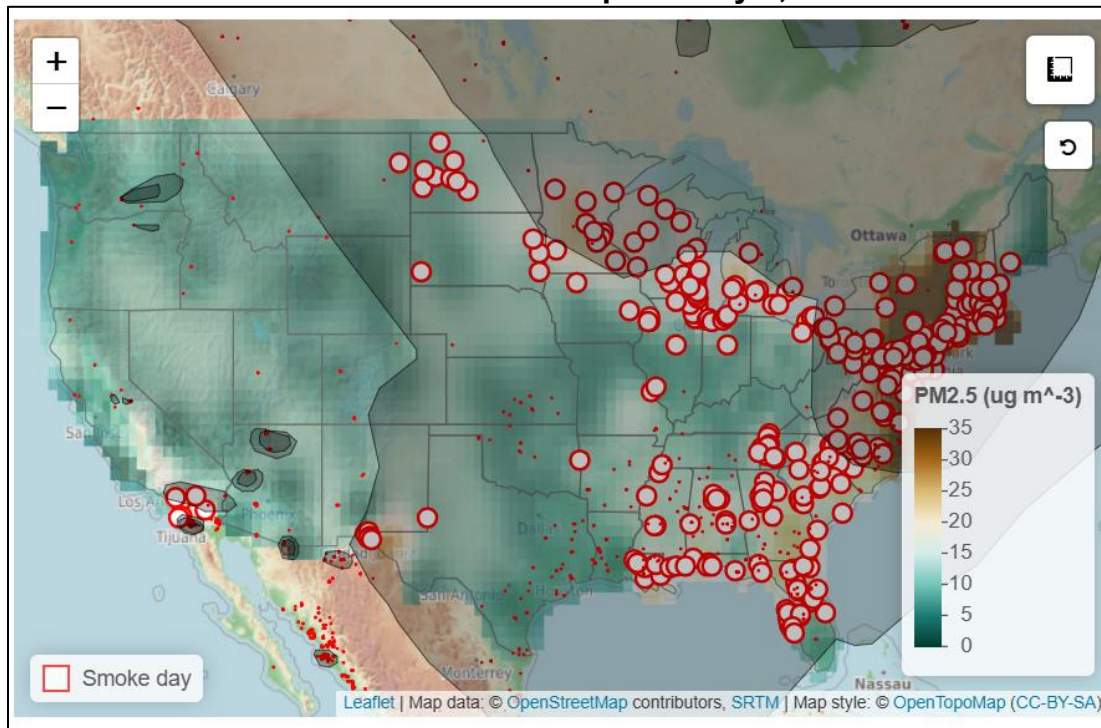
AirNow Tech Fire/HMS Smoke Map with Backward Trajectories - July 1, 2023



Satellite Imagery with MAIAC AOD – July 1, 2023



Satellite Imagery with MAIAC AOD – July 1, 2023**HRRR Smoke - Vertically Integrated Smoke – July 1, 2023**

GAM PMO3 Smoke Output – July 1, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1648Z July 01, 2023

SMOKE:

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

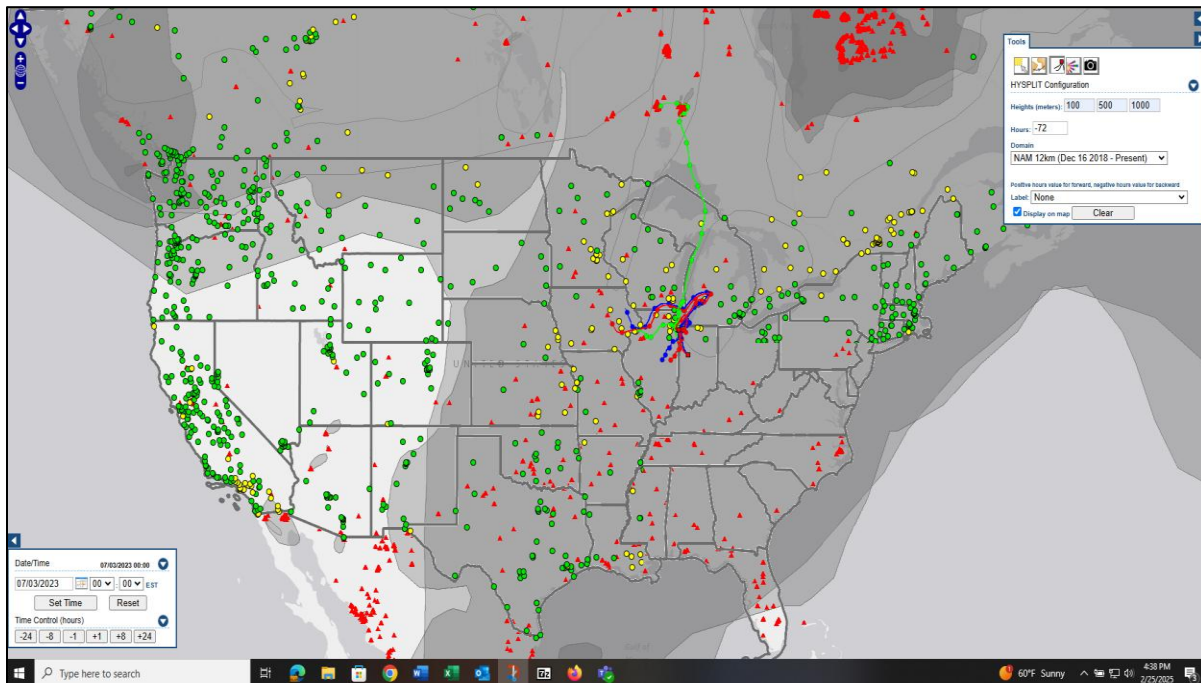
The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States as well as the Atlantic Ocean along the eastern U.S coast and north-central region.

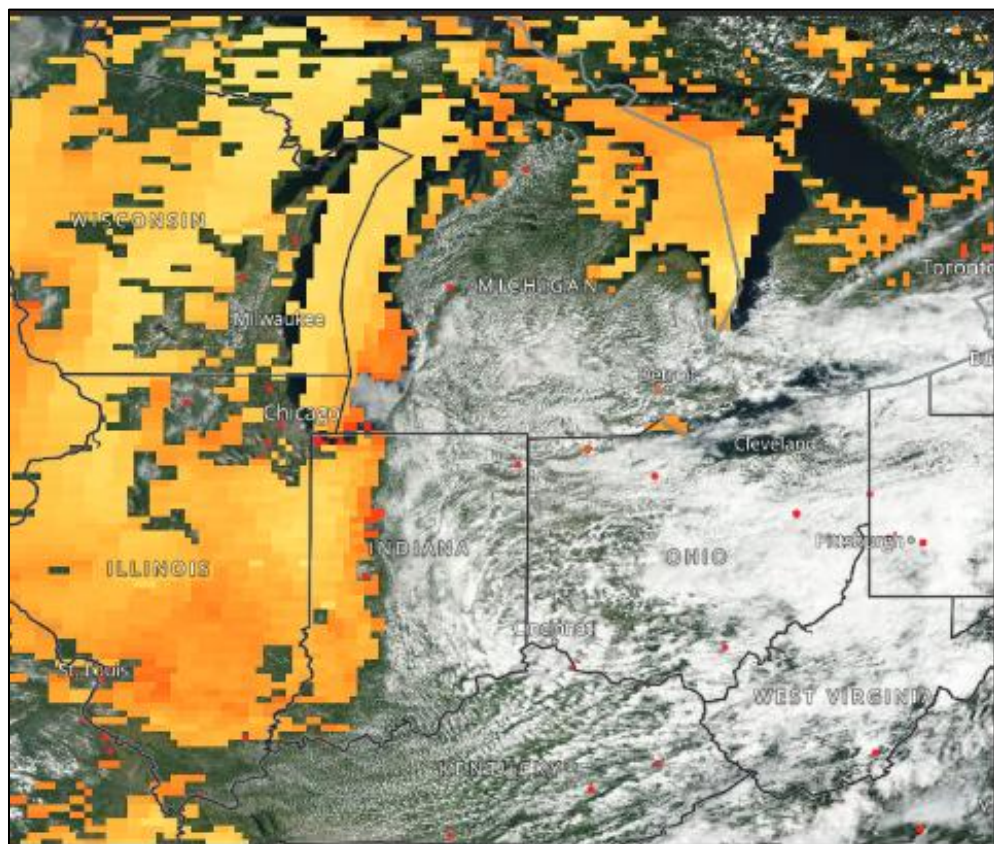
July 3, 2023

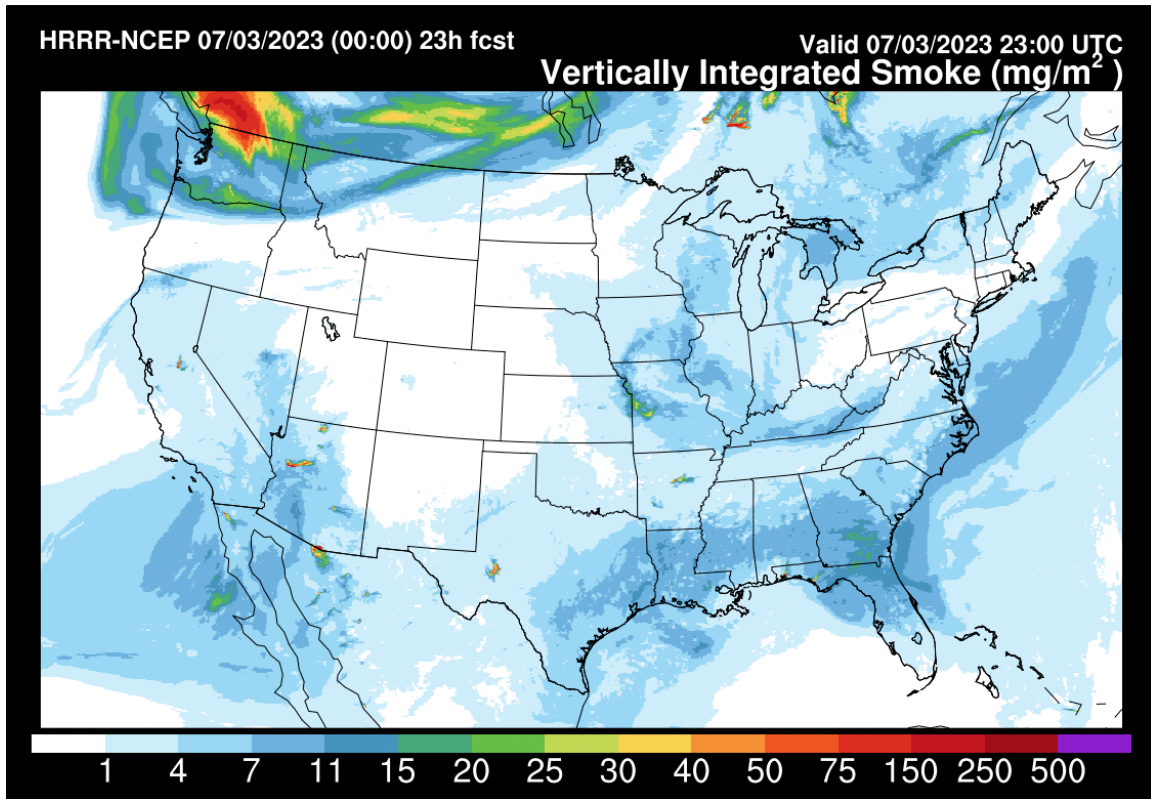
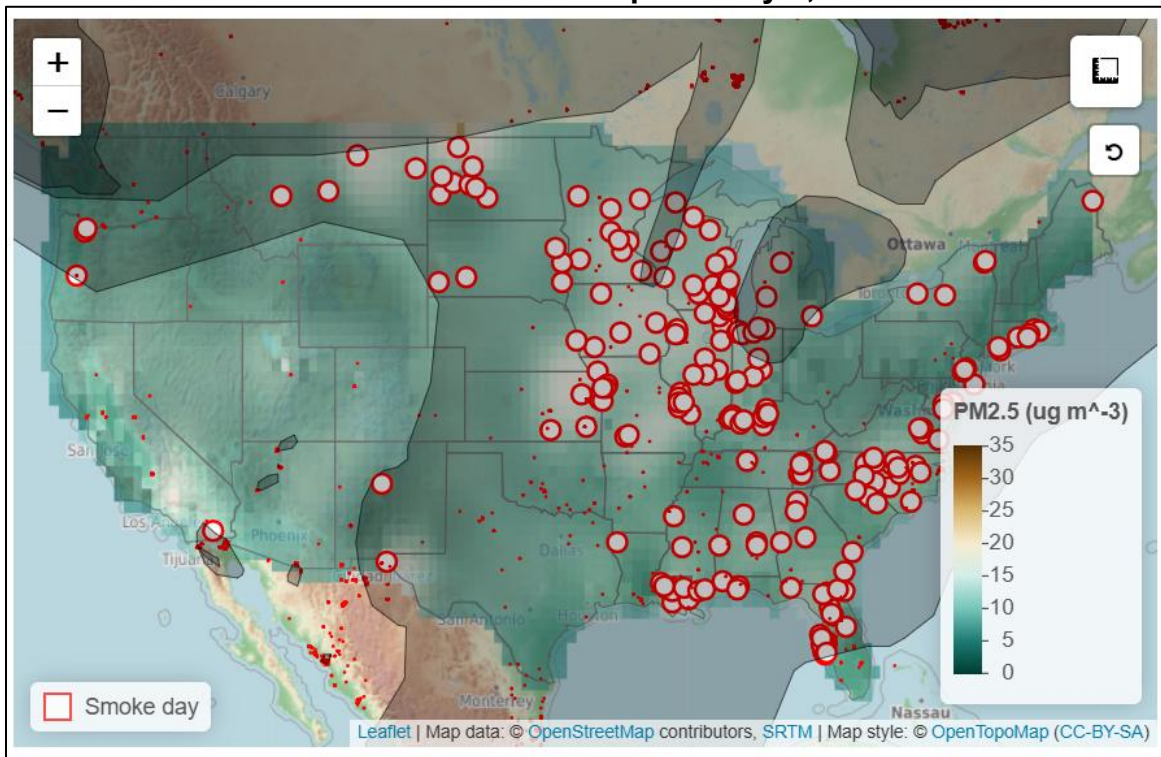
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Hammond-167th St	180890036	7/3/2023	17.3	16.3
Lafayette - Greenbush St	181570008	7/3/2023	19.0	15.1

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



Satellite Imagery with MAIAC AOD – July 3, 2023

HRRR Smoke - Vertically Integrated Smoke – July 3, 2023**GAM PMO3 Smoke Output – July 3, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1700Z July 3, 2023

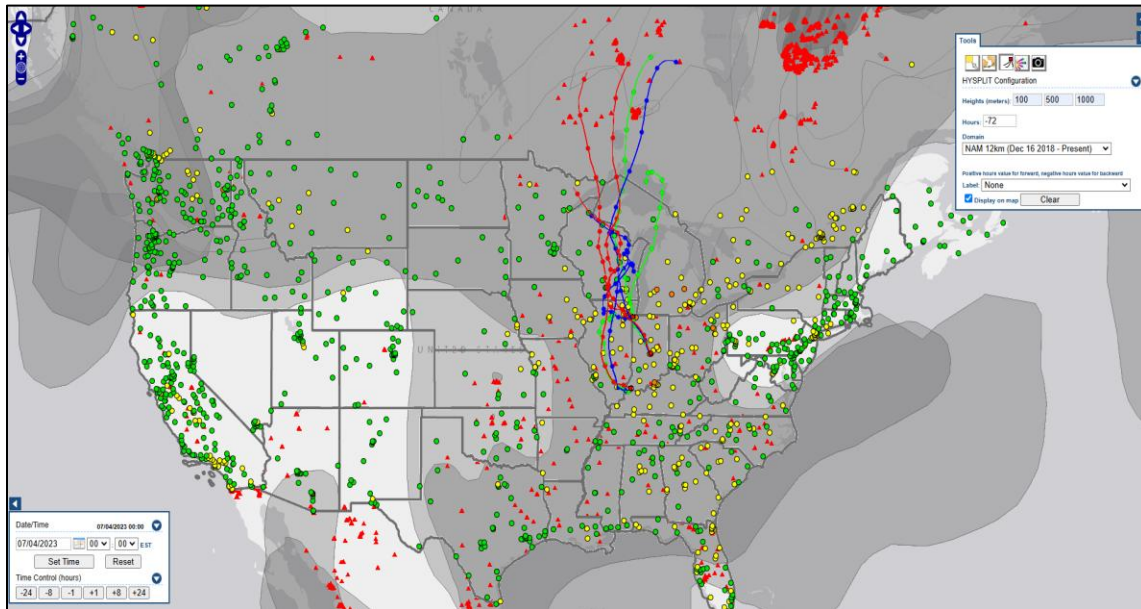
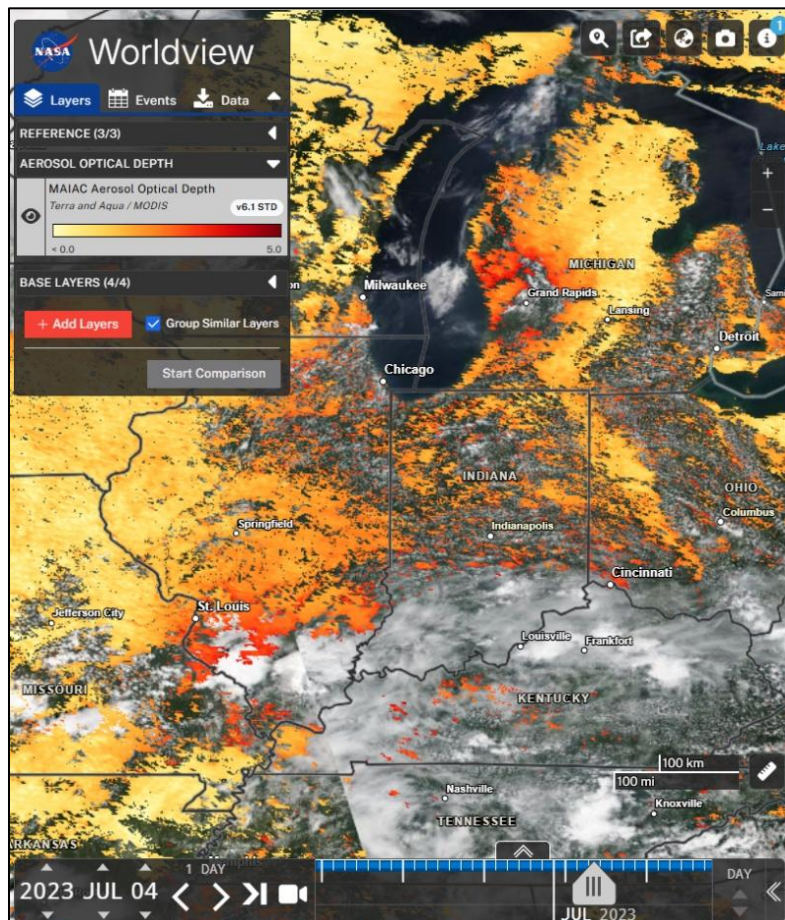
SMOKE:

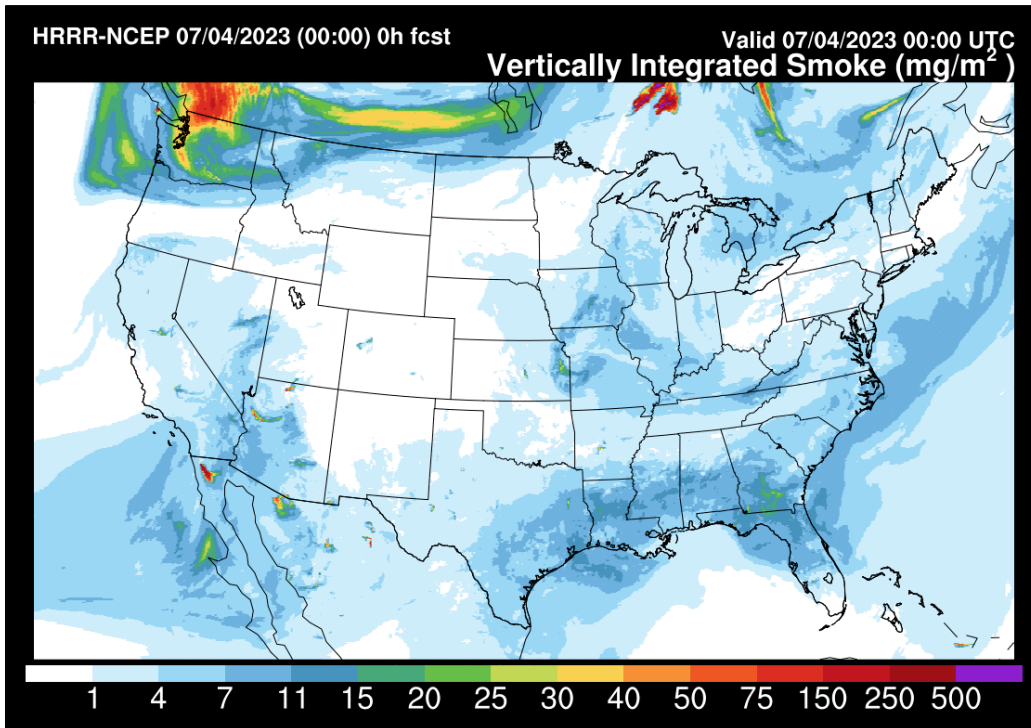
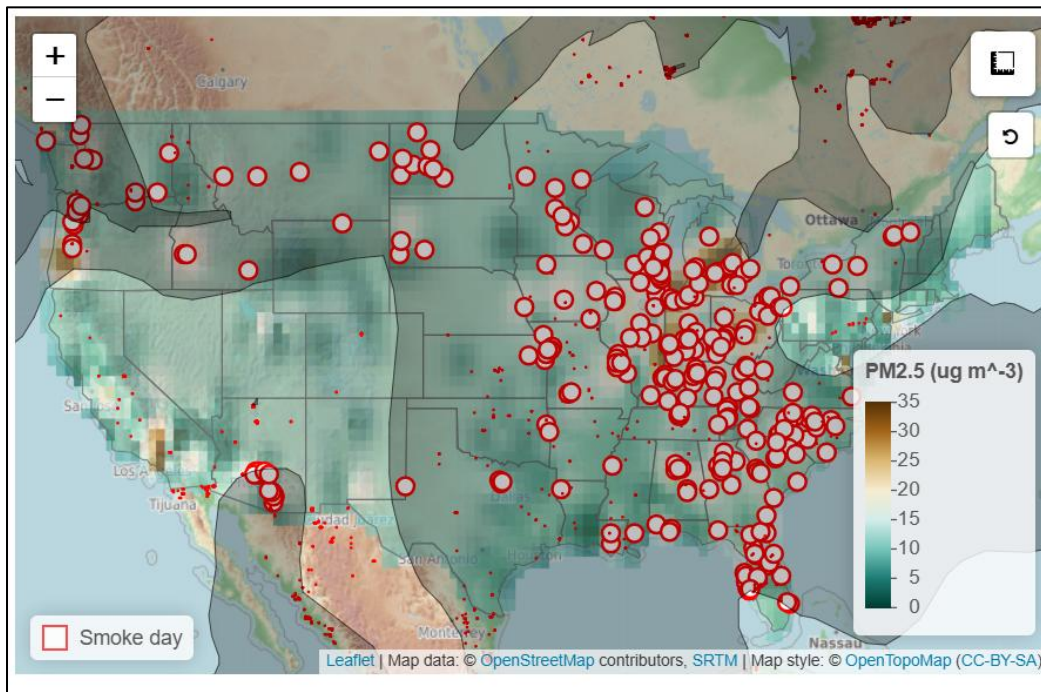
Canada/U.S./Atlantic...

Wildfire activity persists across Canada, continuing to feed an expansive area of varying density smoke that blankets an area covering nearly all of Canada, the eastern 3/5 of the CONUS, much of the North Atlantic, and parts of Greenland. Light smoke from a combination of wildfire and agricultural fire sources across Mexico and Central America, perhaps with some minor amounts of industrially produced aerosol included, was also observed across much of Mexico and the Gulf of Mexico and extending out into the tropical Pacific. The smoke from this activity was merging with the Canadian wildfire smoke across the southeastern CONUS.

July 4, 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	180050009	7/4/2023	14.8	13.7
Jeffersonville - Bates-Bowyer Ave	180190010	7/4/2023	27.1	17.0
Elkhart - Prairie St	180390008	7/4/2023	27.6	16.3
New Albany	180430008	7/4/2023	40.7	20.9
Fishers	180570007	7/4/2023	18.0	13.8
Kokomo - E. Vaile Ave	180670004	7/4/2023	16.6	14.7
East Chicago - Marina	180890034	7/4/2023	31.3	18
Hammond-167th St	180890036	7/4/2023	28.7	16.3
Anderson - Eastside Elem	180950011	7/4/2023	15.6	15.4
Indianapolis - Washington Park	180970078	7/4/2023	34.2	17.8
Indianapolis - W. 18th St.	180970081	7/4/2023	43.4	20.9
Indianapolis- I-70 E	180970087	7/4/2023	34.5	20.5
Bloomington - Binford	181050003	7/4/2023	17.3	13.9
Ogden Dunes	181270024	7/4/2023	39.4	15.3
South Bend - Shields Dr.	181410015	7/4/2023	27.9	16.9
Lafayette - Greenbush St	181570008	7/4/2023	19.2	15.1
Evansville - Buena Vista	181630021	7/4/2023	27.2	15.1
Terre Haute - Lafayette Ave	181670018	7/4/2023	33.1	18.8

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 4, 2023**Satellite Imagery with MAIAC AOD – July 4, 2023**

HRRR Smoke - Vertically Integrated Smoke – July 4, 2023**GAM PMO3 Smoke Output – July 4, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1545Z July 4, 2023

SMOKE:

Canada/U.S./Atlantic...

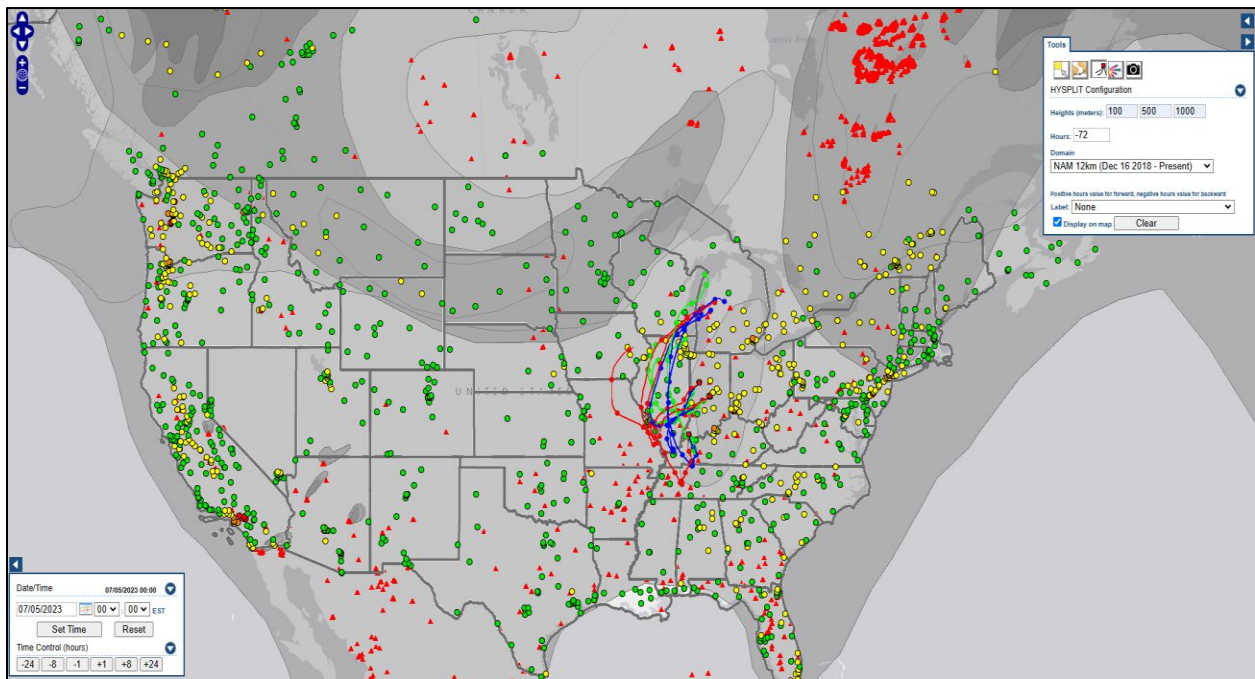
Wildfire activity persists across Canada, especially in central-northern British Columbia, northwestern-northern Alberta, northwestern Ontario, and central Quebec. Emissions from those wildfires continued to feed a large plume of predominantly light density smoke covering nearly all of Canada, the northern and eastern 2/3 of the CONUS, and parts of the northwestern Atlantic.

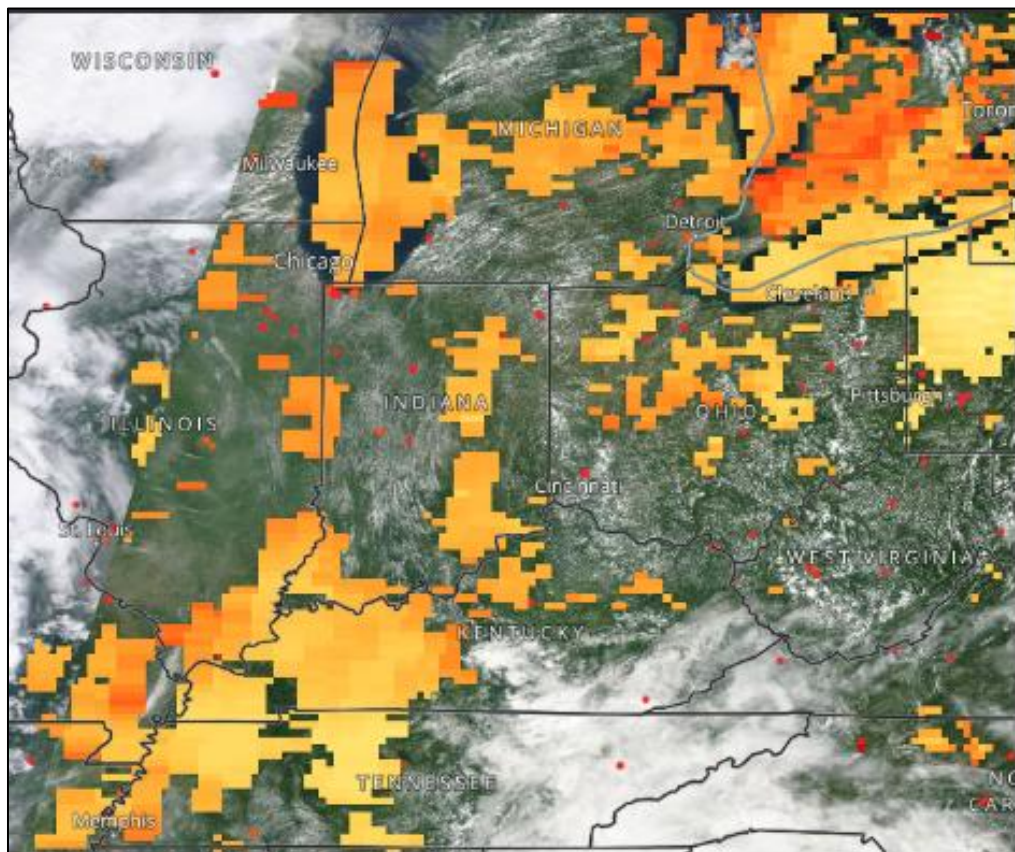
July 5, 2023

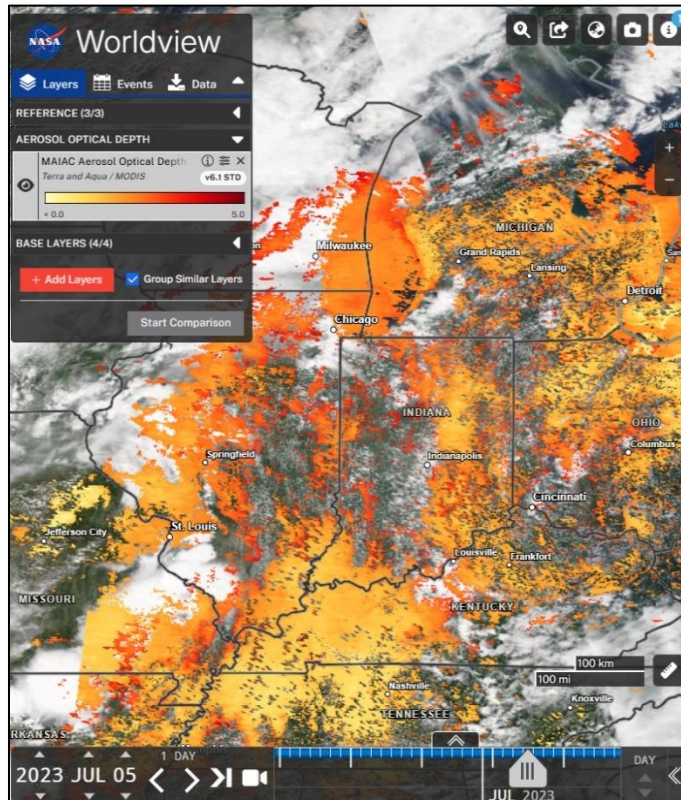
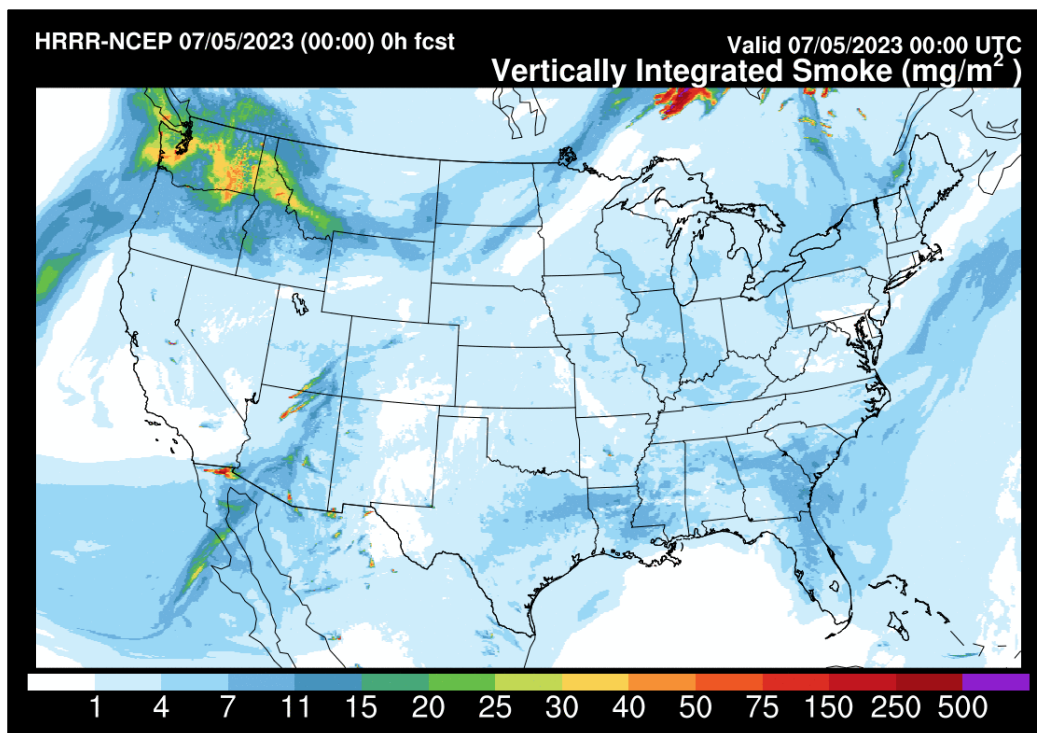
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

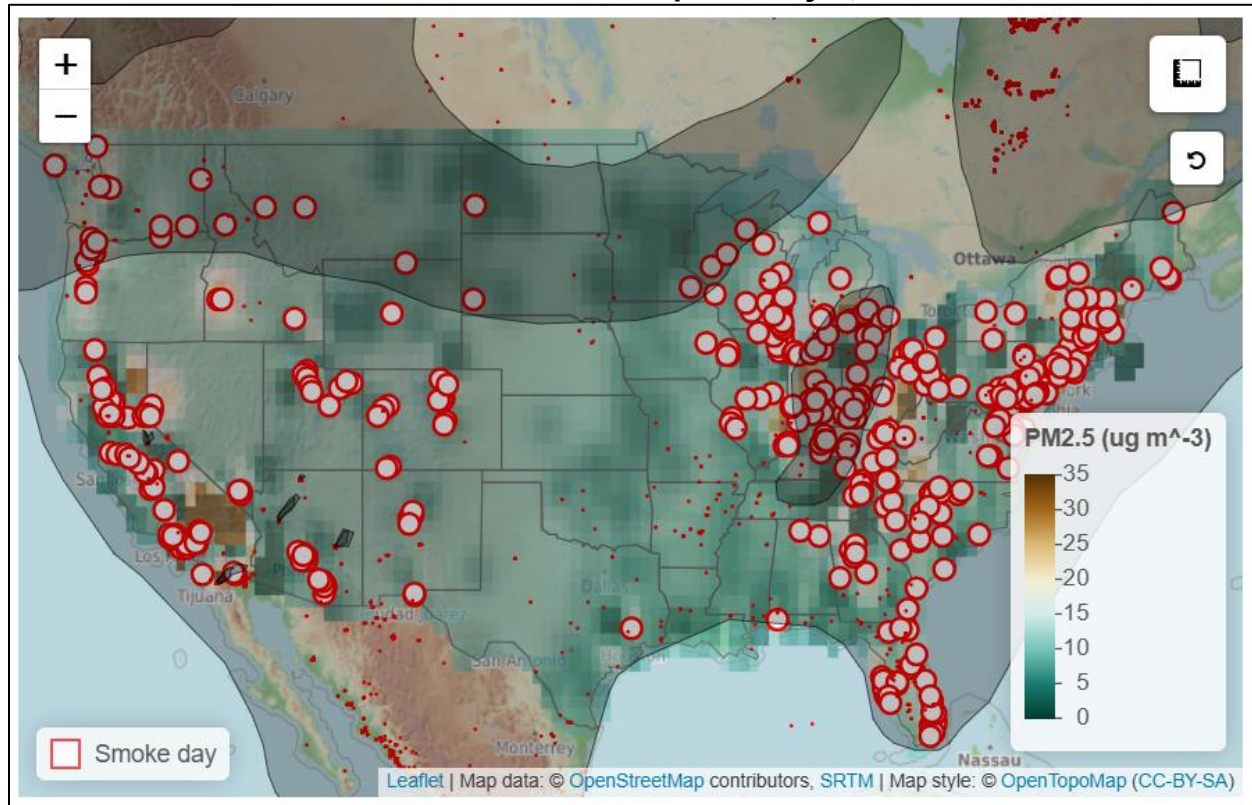
Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Jeffersonville - Bates-Bowyer Ave	180190010	7/5/2023	28.9	17.0
Muncie - Central HS	180350006	7/5/2023	15.0	13.2
New Albany	180430008	7/5/2023	32.4	20.9
Fishers	180570007	7/5/2023	17.8	13.8
Carmel - Hazel Dell Parkway	180570008	7/5/2023	35.9	16.5
Kokomo - E. Vaile Ave	180670004	7/5/2023	19.0	14.7
Anderson - Eastside Elem	180950011	7/5/2023	15.4	15.4
Indianapolis - Washington Park	180970078	7/5/2023	28.3	17.8
Indianapolis - W. 18th St.	180970081	7/5/2023	25.2	20.9
Indianapolis - School 21	180970084	7/5/2023	29.2	15.5
Indianapolis- I-70 E	180970087	7/5/2023	29.5	20.5
Bloomington - Binford	181050003	7/5/2023	15.2	13.9
Lafayette - Greenbush St	181570008	7/5/2023	15.1	15.1
Evansville - Buena Vista	181630021	7/5/2023	16.4	15.1

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 5, 2023



Satellite Imagery with MAIAC AOD – July 5, 2023

Satellite Imagery with MAIAC AOD – July 5, 2023**HRRR Smoke - Vertically Integrated Smoke – July 5, 2023**

GAM PMO3 Smoke Output – July 5, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1500Z July 5, 2023

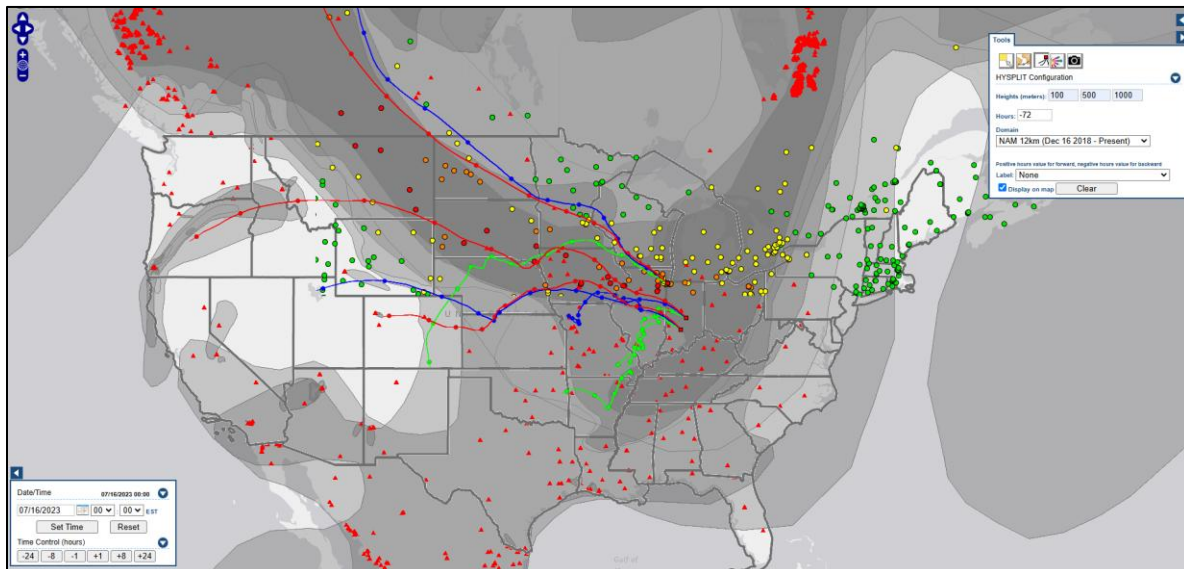
SMOKE:

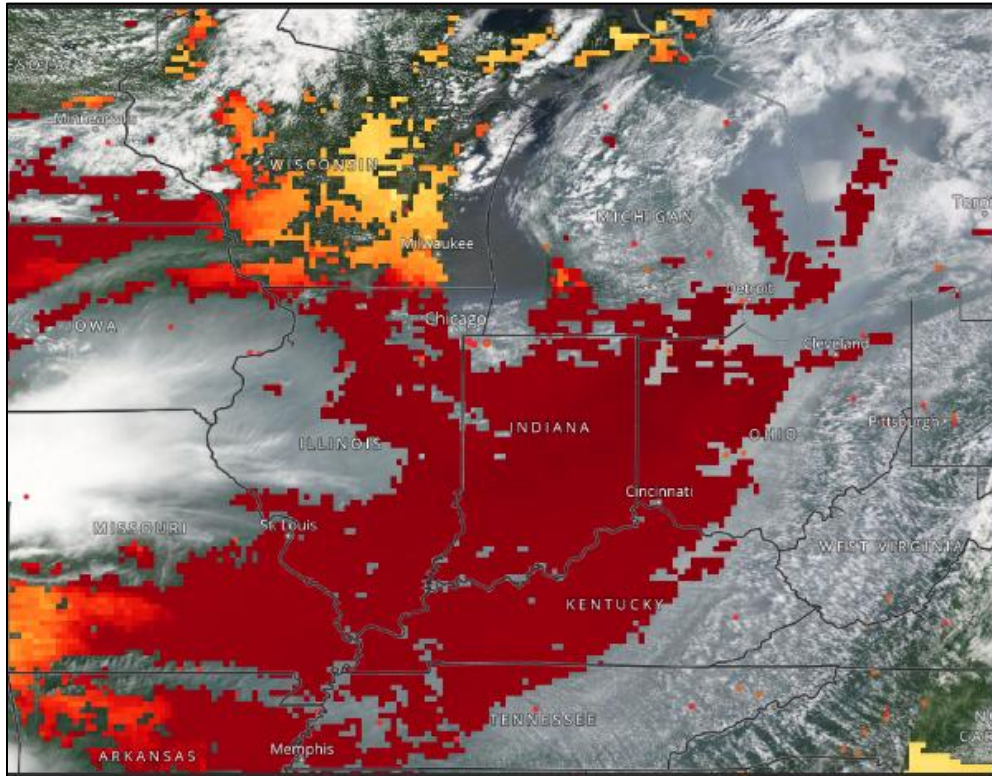
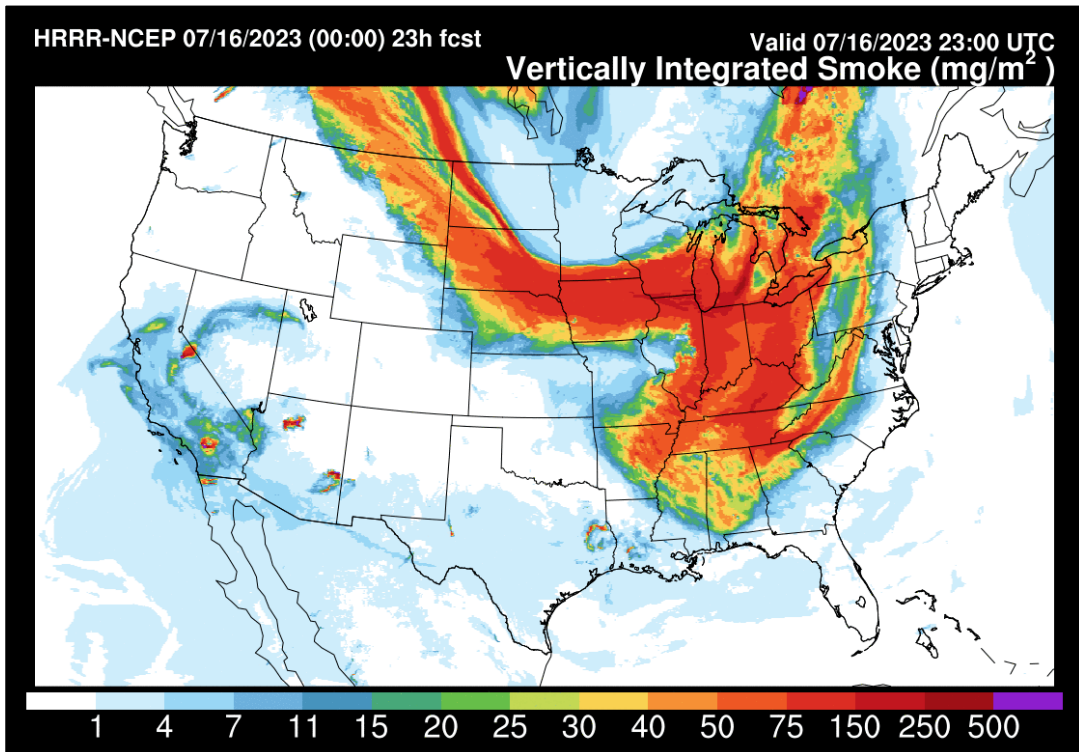
Canada/U.S./Atlantic...

Wildfire activity persists across Canada, with activity throughout west-central and northwestern Canada, northwestern Ontario, and Quebec. The thickest smoke continues to emanate from the wildfire activity in Quebec, where very thick smoke is being drawn northeastward across northern Quebec then east across northern Labrador, Davis Strait, and Labrador Sea. Some of this smoke is then being picked up by a trough over the St. Lawrence River Valley and moved west then southwest across southern Labrador and southern Quebec into southeastern Ontario and into the northeastern CONUS. Smoke emanating from the activity across northwestern Ontario also was moving northeastward across Hudson Bay. Emitted smoke from fire activity throughout western Canada was moving mainly eastward to southeastward, with the exception being smoke from fires across the Northwestern Territory that was moving northwestward. One ribbon of light to moderate smoke was observed over the Yukon/Northwest Territory border across British Columbia and into eastern Washington State and northern Idaho, extending eastward across the Northern Plains and over Ontario.

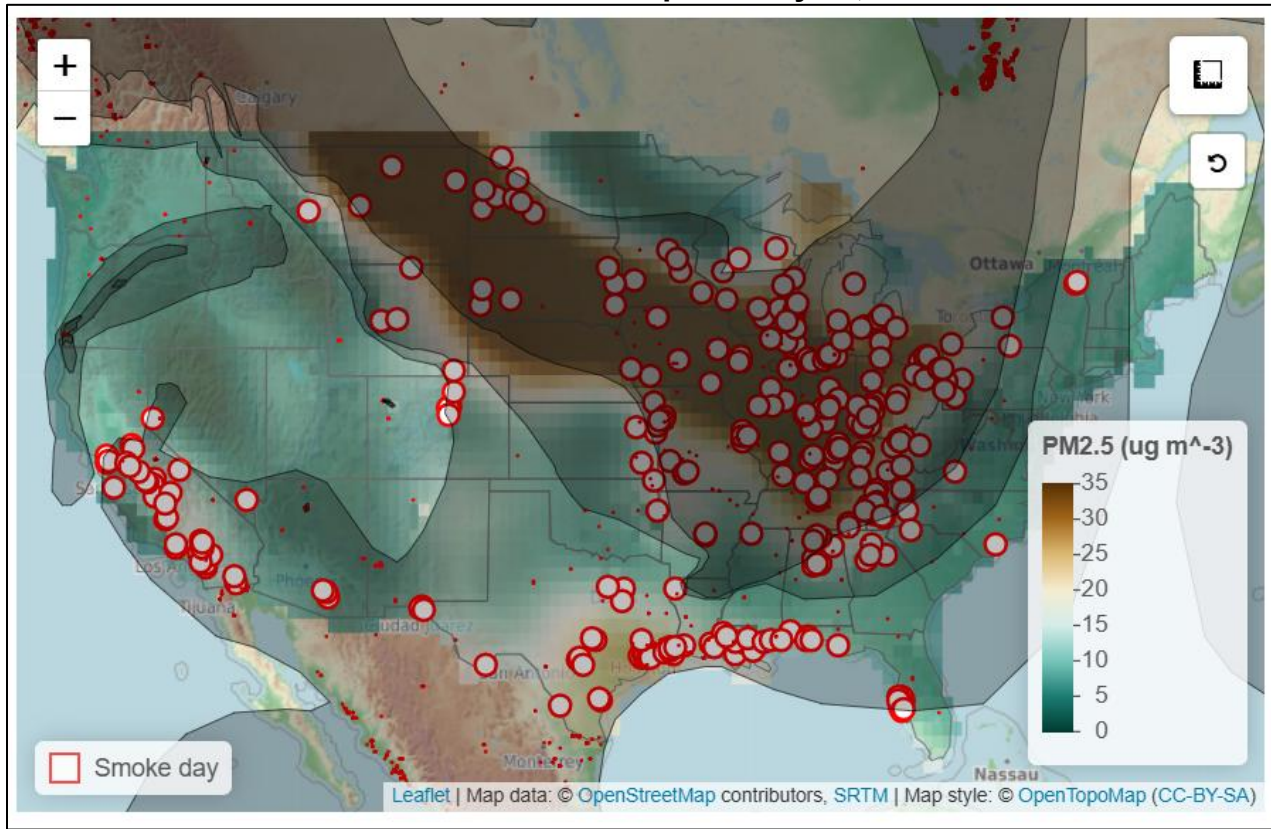
July 16, 2023**PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke**

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Jeffersonville - Bates-Bowyer Ave	180190010	7/16/2023	43.9	17.0
Jasper - Post Office	180372001	7/16/2023	47.2	15.7
Elkhart - Prairie St	180390008	7/16/2023	32.0	16.3
Plummer	180550001	7/16/2023	44.7	14.7
Fishers	180570007	7/16/2023	38.7	13.8
Mechanicsburg	180650003	7/16/2023	46.2	15.5
Kokomo - E. Vaile Ave	180670004	7/16/2023	43.4	14.7
East Chicago - Marina	180890034	7/16/2023	51.9	18
Hammond-167th St	180890036	7/16/2023	49.4	16.3
Anderson - Eastside Elem	180950011	7/16/2023	45.5	15.4
Indianapolis - Washington Park	180970078	7/16/2023	43.5	17.8
Indianapolis - W. 18th St.	180970081	7/16/2023	48.9	20.9
Indianapolis- I-70 E	180970087	7/16/2023	46.0	20.5
Bloomington - Binford	181050003	7/16/2023	42.8	13.9
Ogden Dunes	181270024	7/16/2023	39.6	15.3
South Bend - Shields Dr.	181410015	7/16/2023	39.6	16.9
Lafayette - Greenbush St	181570008	7/16/2023	47.9	15.1
Terre Haute - Lafayette Ave	181670018	7/16/2023	42.5	18.8
Larwill	181830003	7/16/2023	55.1	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 16, 2023

Satellite Imagery with MAIAC AOD – July 16, 2023**HRRR Smoke - Vertically Integrated Smoke – July 16, 2023**

GAM PMO3 Smoke Output – July 16, 2023



NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1645Z July 16, 2023

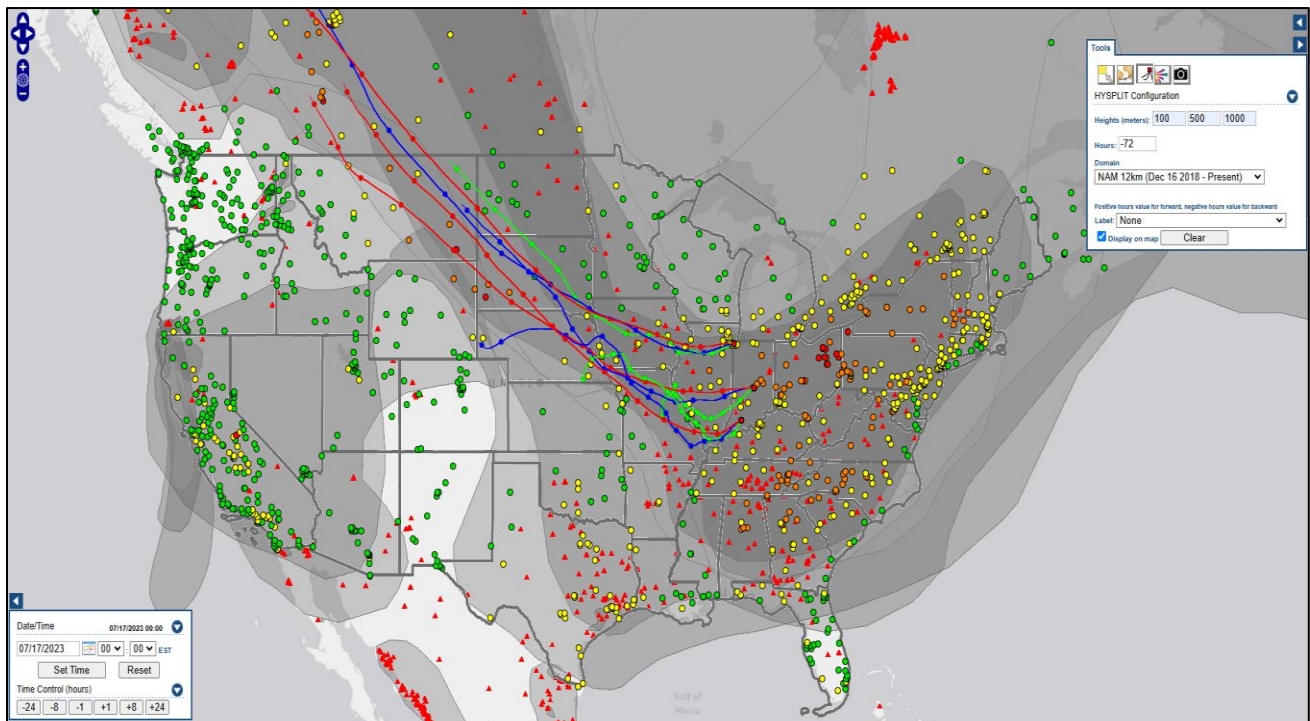
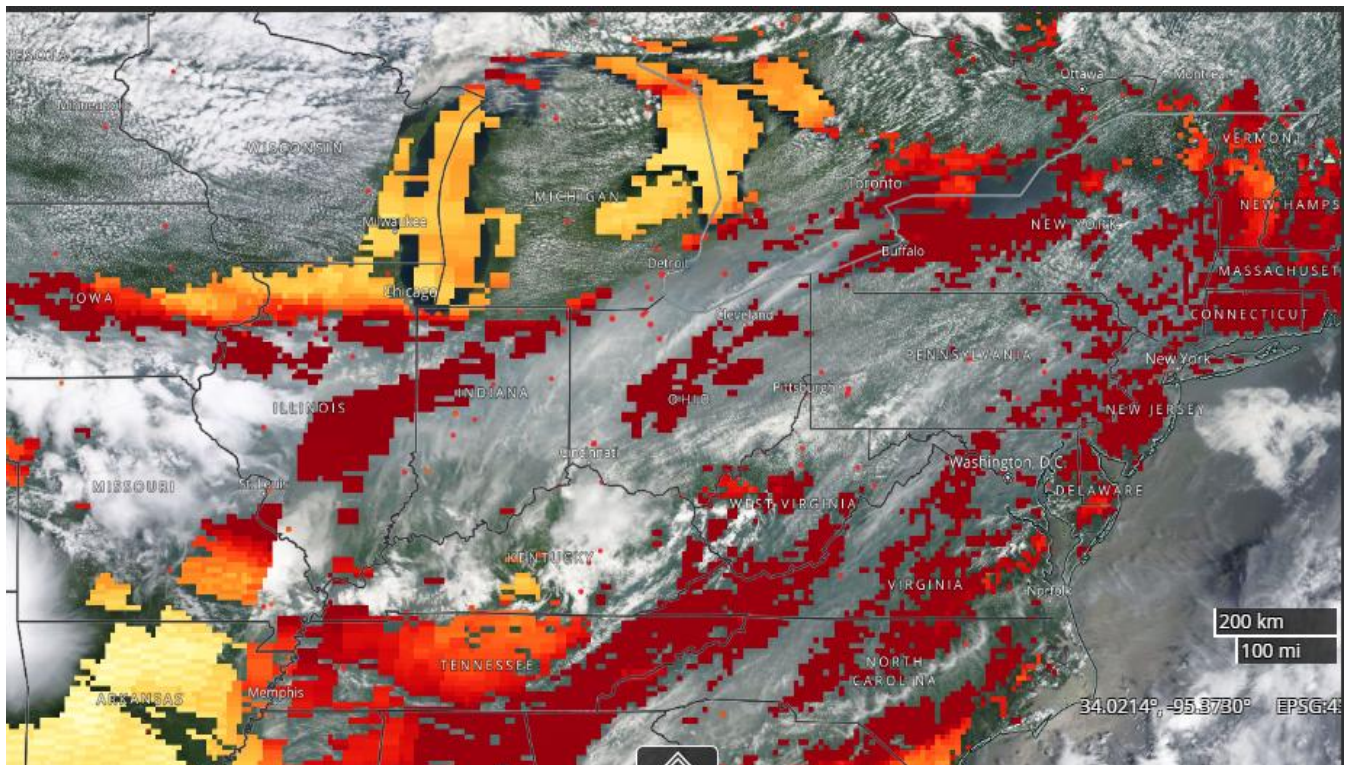
SMOKE:

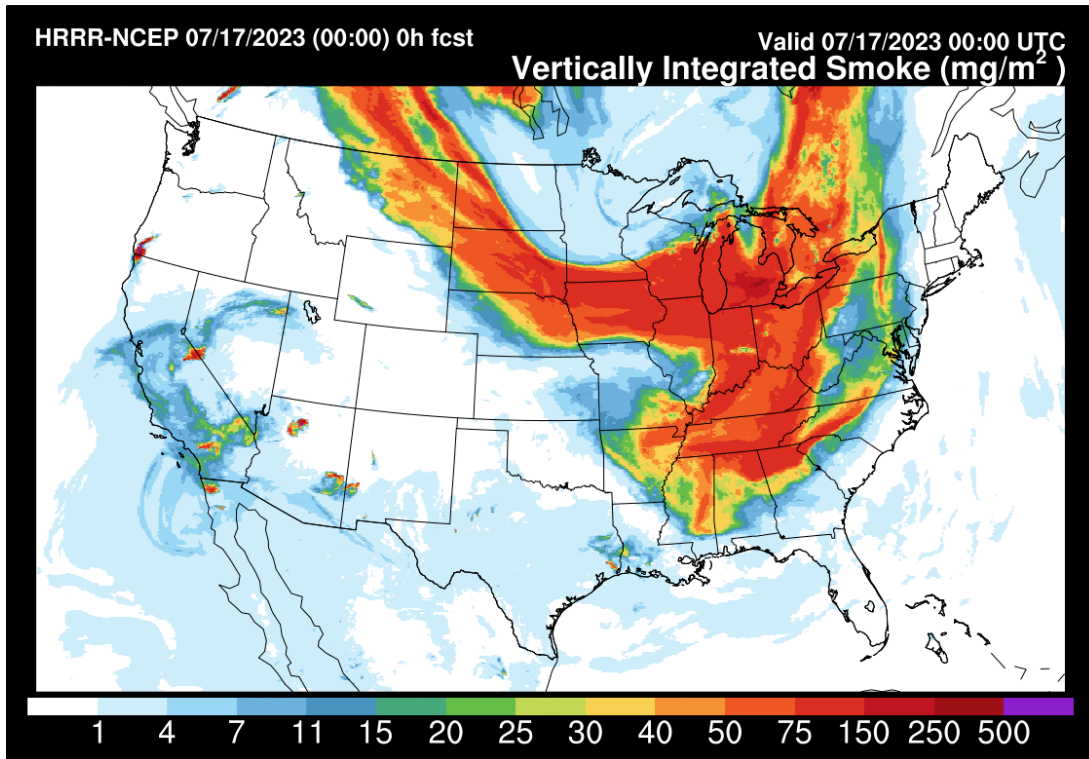
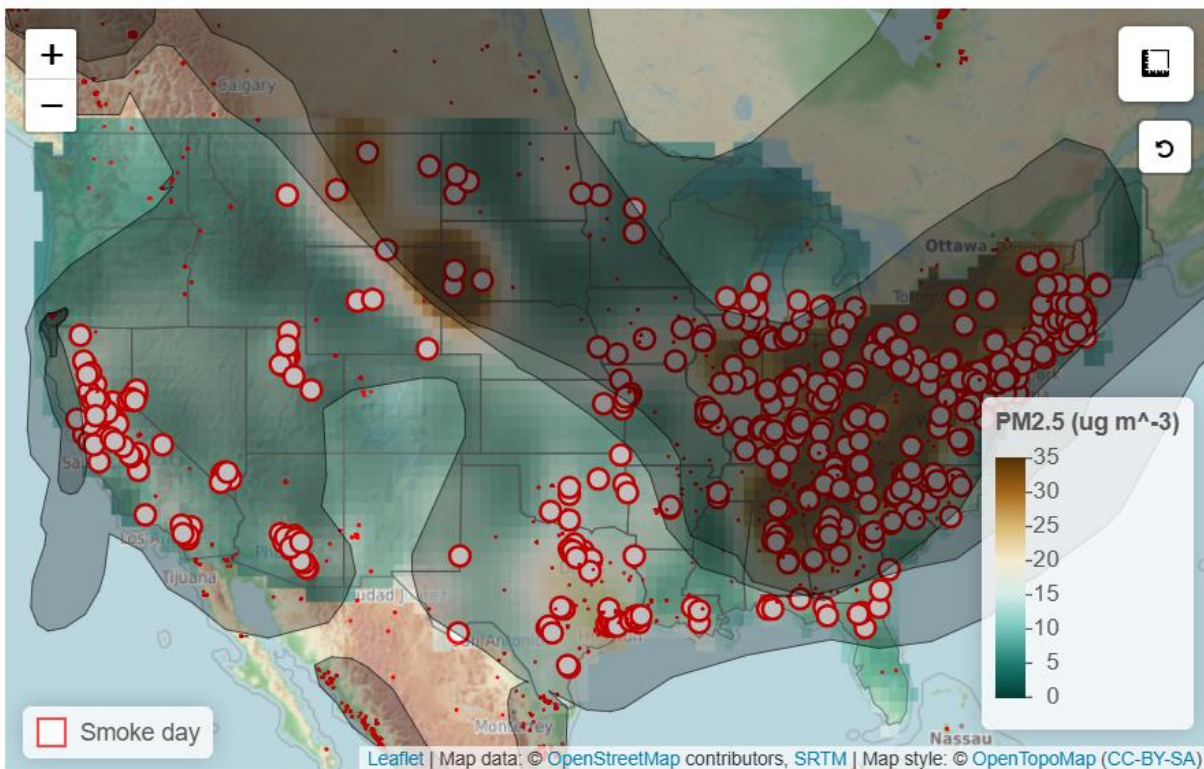
Canada/United States/Atlantic Ocean/Eastern Pacific Ocean/Mexico...

Numerous large wildfires continue to burn especially in portions of western and northwestern Canada as well as in southeastern Canada in western Quebec to the southeast of Hudson Bay. A huge area of thin density smoke primarily from the significant wildfires in Canada continued to be seen this morning covering virtually all of Canada and a sizable portion of the U.S. with the possible exception of some of the western and eastern portions of the U.S. The smoke also extended well offshore of eastern Canada and the eastern U.S. over the Atlantic and off the western coast of Canada over the northeastern Pacific. Large areas of much thicker smoke were present over much of western and northwestern Canada, as well as some of central and eastern Canada and the Labrador Sea. In addition, the batch of thick smoke from the wildfire activity in western and northwestern Canada spread to the southeast and over much of the north central and central U.S., the Ohio Valley region, the central Great Lakes region, and the northern part of the southeastern U.S.

July 17, 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	7/17/2023	26.1	17.0
Jasper - Post Office	180372001	7/17/2023	18.6	15.7
Elkhart - Prairie St	180390008	7/17/2023	25.1	16.3
New Albany	180430008	7/17/2023	25.8	20.9
Plummer	180550001	7/17/2023	18.4	14.7
Fishers	180570007	7/17/2023	36.5	13.8
Carmel - Hazel Dell Parkway	180570008	7/17/2023	35.2	16.5
Mechanicsburg	180650003	7/17/2023	47.8	15.5
East Chicago - Franklin/Washington Sch	180890006	7/17/2023	19.3	16.1
East Chicago - Marina	180890034	7/17/2023	18.9	18
Hammond-167th St	180890036	7/17/2023	23.8	16.3
Michigan City - Marsh Elem. Sch.	180910011	7/17/2023	17.5	15.9
Anderson - Eastside Elem	180950011	7/17/2023	46.7	15.4
Indianapolis - Washington Park	180970078	7/17/2023	36.9	17.8
Indianapolis - W. 18th St.	180970081	7/17/2023	32.0	20.9
Indianapolis- I-70 E	180970087	7/17/2023	38.1	20.5
Bloomington - Binford	181050003	7/17/2023	22.2	13.9
Ogden Dunes	181270024	7/17/2023	21.2	15.3
South Bend - Shields Dr.	181410015	7/17/2023	23.7	16.9
Dale	181470009	7/17/2023	18.3	13.9
Evansville - U of E	181630016	7/17/2023	15.8	15.5
Terre Haute - Lafayette Ave	181670018	7/17/2023	22.0	18.8
Larwill	181830003	7/17/2023	36.2	15

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 17, 2023**Satellite Imagery with MAIAC AOD – July 17, 2023**

HRRR Smoke - Vertically Integrated Smoke – July 17, 2023**GAM PMO3 Smoke Output – July 17, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1720Z July 17, 2023

SMOKE:

Canada/United States/Atlantic Ocean...

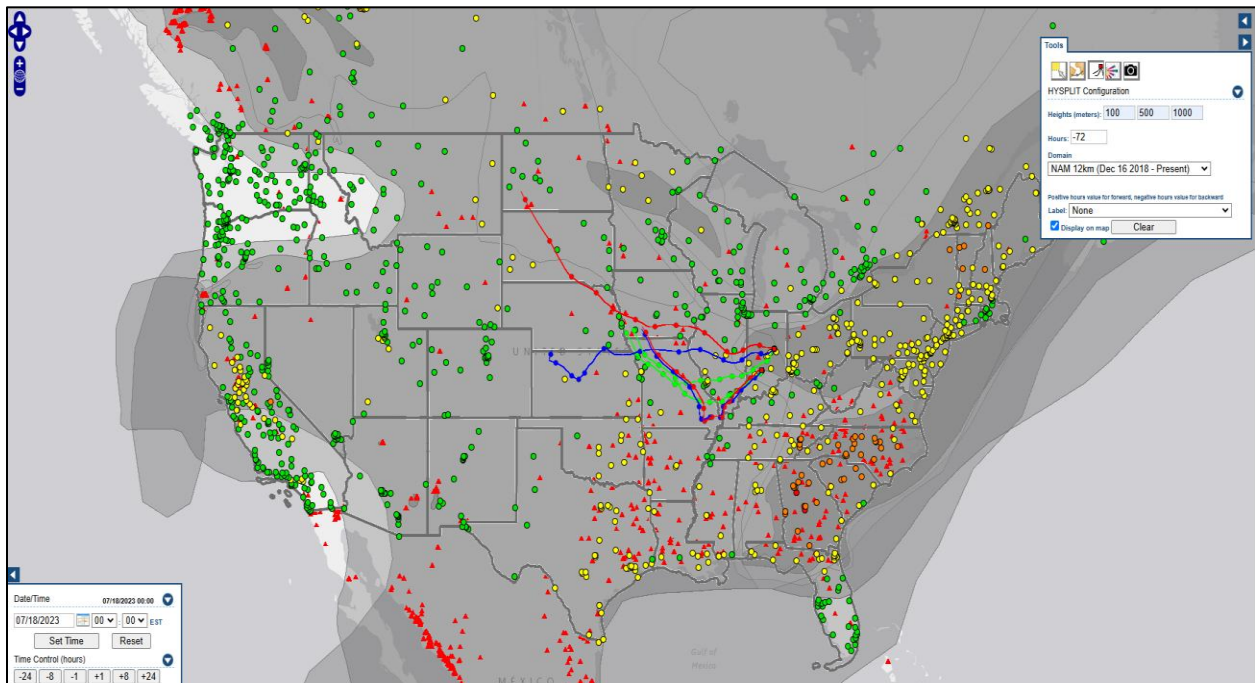
Numerous large wildfires continue to burn especially in portions of western and northwestern Canada as well as in southeastern Canada in western Quebec to the southeast of Hudson Bay. A huge area of thin density smoke primarily from the significant wildfires in Canada was seen covering all of Canada and most of the U.S with the exception of Washington state and portions of the Western U.S. The smoke also extended well offshore of eastern Canada and the eastern U.S. over the Atlantic and northwest into Eastern Alaska. Large areas of much thicker smoke were present over much of western and northwestern Canada, as well as some of central and eastern Canada and the Labrador Sea, though cloud cover over eastern Canada made it difficult to distinguish between moderate and thick density. In addition, the batch of thick smoke from the wildfire activity in western and northwestern Canada extended southeast over much of the north central and eastern U.S.

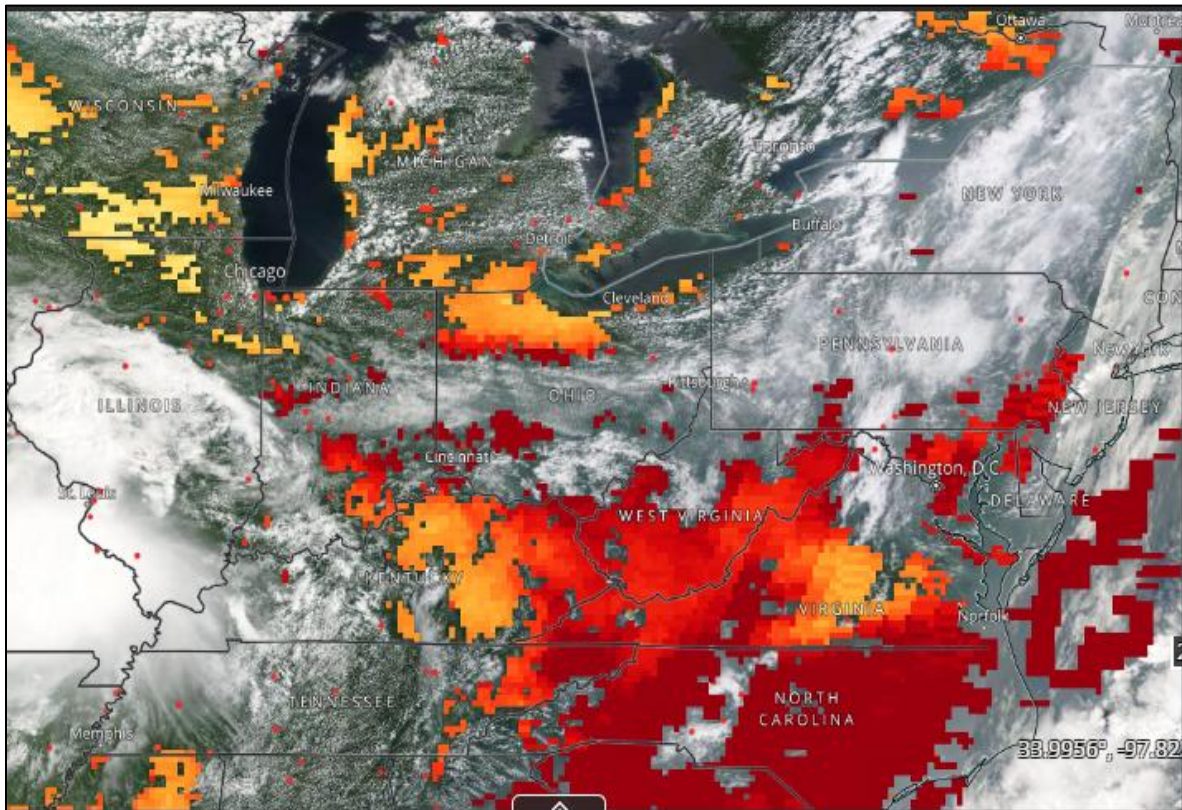
July 18, 2023

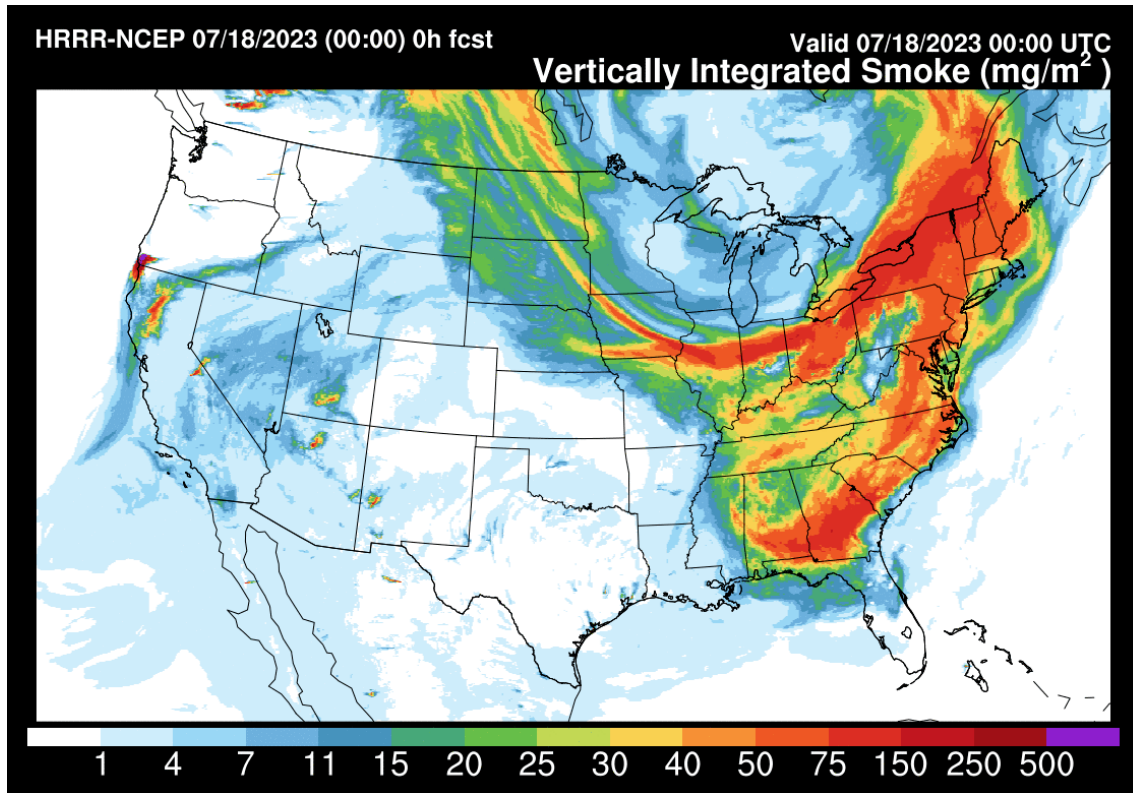
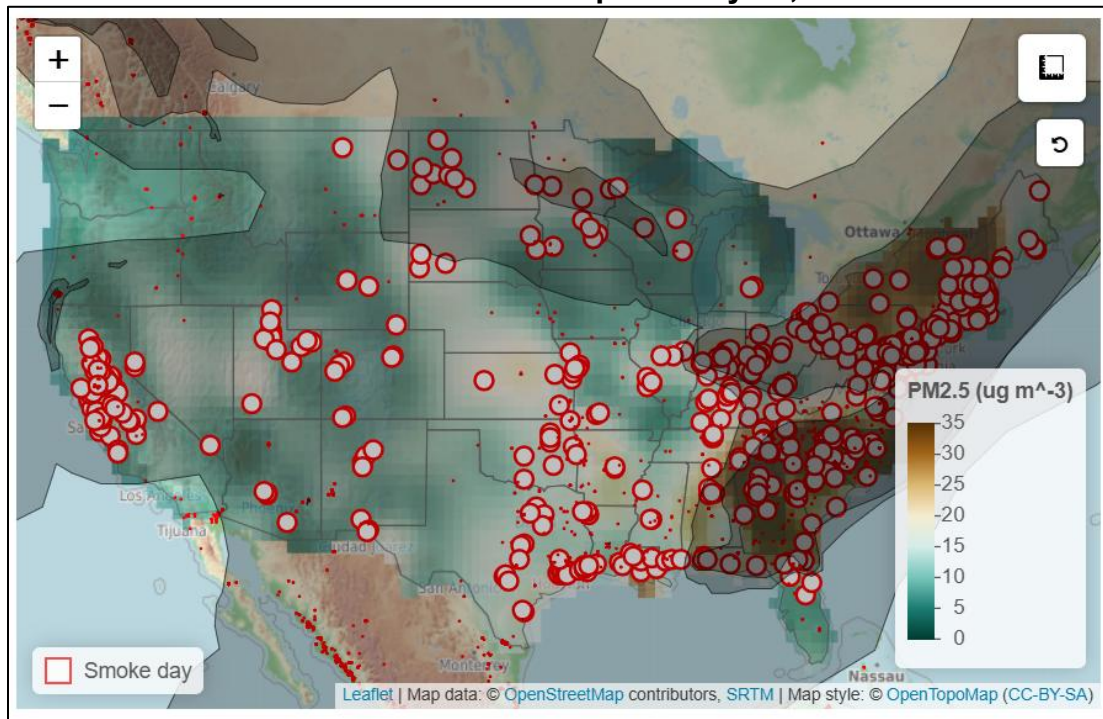
PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average (µg/m ³)	Tier 2 Threshold (µg/m ³)
Columbus - Rocky Ford Drive	180050008	7/18/2023	16.6	13.7
Plummer	180550001	7/18/2023	16.4	14.7
Fishers	180570007	7/18/2023	18.2	13.8
Mechanicsburg	180650003	7/18/2023	21.2	15.5
Anderson - Eastside Elem	180950011	7/18/2023	20.3	15.4
Indianapolis - Washington Park	180970078	7/18/2023	21.0	17.8
Indianapolis - W. 18th St.	180970081	7/18/2023	24.3	20.9
Indianapolis- I-70 E	180970087	7/18/2023	21.7	20.5
Bloomington - Binford	181050003	7/18/2023	16.0	13.9
Terre Haute - Lafayette Ave	181670018	7/18/2023	23.7	18.8

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 18, 2023



Satellite Imagery with MAIAC AOD – July 18, 2023

HRRR Smoke - Vertically Integrated Smoke – July 18, 2023**GAM PMO3 Smoke Output – July 18, 2023**

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE
IMAGERY

THROUGH 1645Z July 18, 2023

SMOKE:

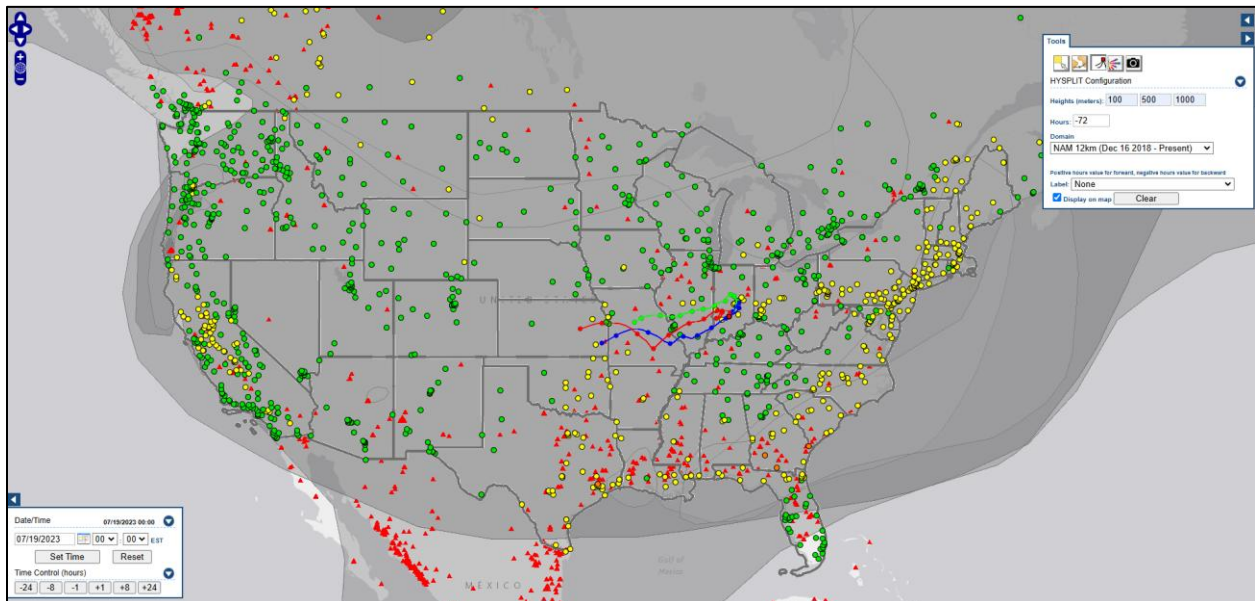
Canada/United States/Atlantic Ocean...

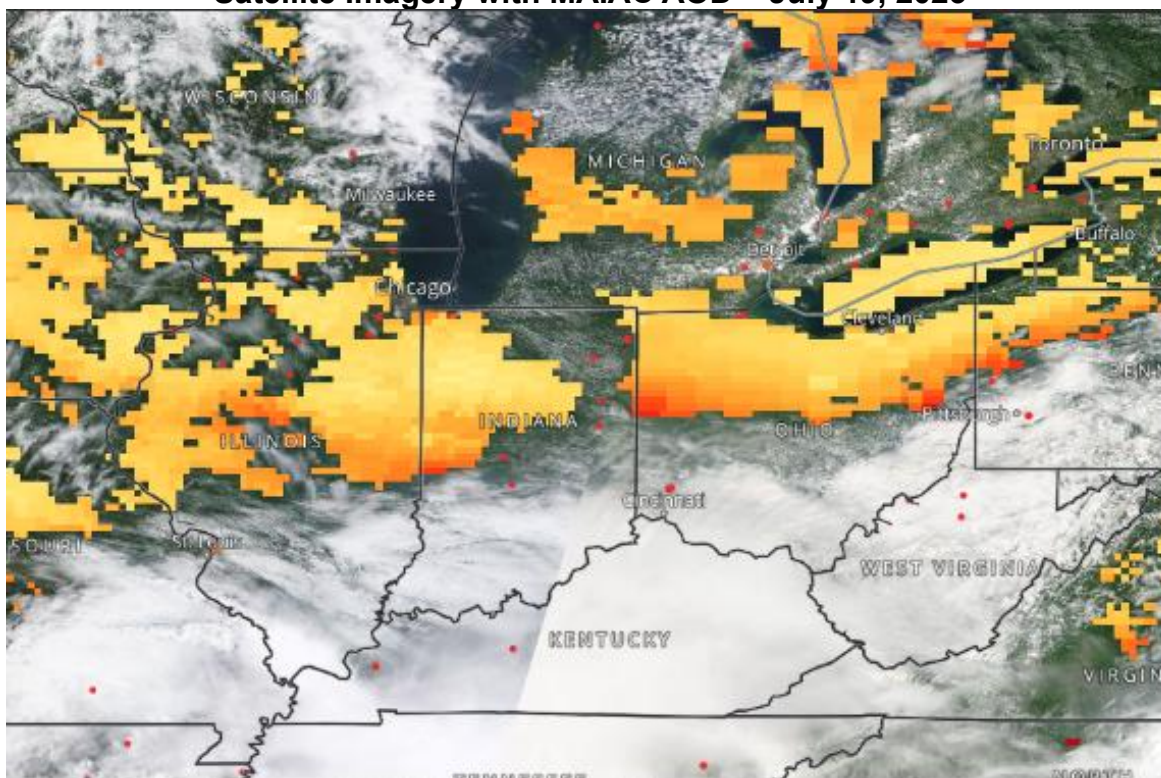
A significant cloud cover was present over western Quebec which prevented the detection of the intense fire activity which had been occurring in that region. Smoke detection also was not possible with satellite imagery due to the cloud cover. A swath of moderately dense smoke was barely visible around the cloud cover across southern Hudson Bay and northern Quebec. Over western and northwestern Canada, major wildfires continue to burn though some cloudiness also was present in that region which prevented the detection of some of the wildfires which had been burning. Dense smoke was visible from northeastern Alaska and extending to the east and southeast over much of northwestern Canada and some of western Canada to central Canada reaching as far east as western Hudson Bay. More moderate to thick density smoke from the western Canadian fires could be seen over the north central U.S. and western Great Lakes region. Farther to the east and southeast, a large batch of moderate to thick density smoke also from the western Canadian wildfires was present over much of the eastern U.S. and extending to the northeast over southeastern Canada and the Canadian Maritimes. The larger surrounding mass of thinner density smoke from the Canadian wildfires covered much of Canada, Alaska and the lower 48, northern and central Mexico, and the northern Atlantic.

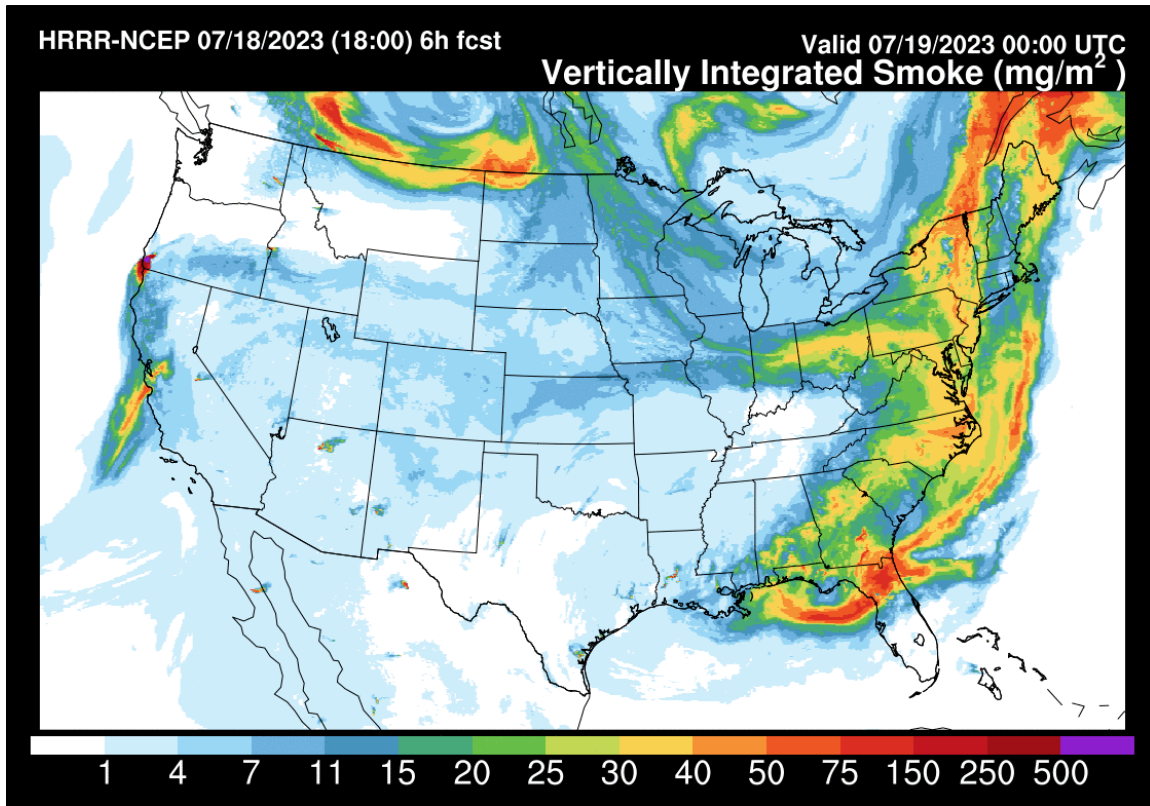
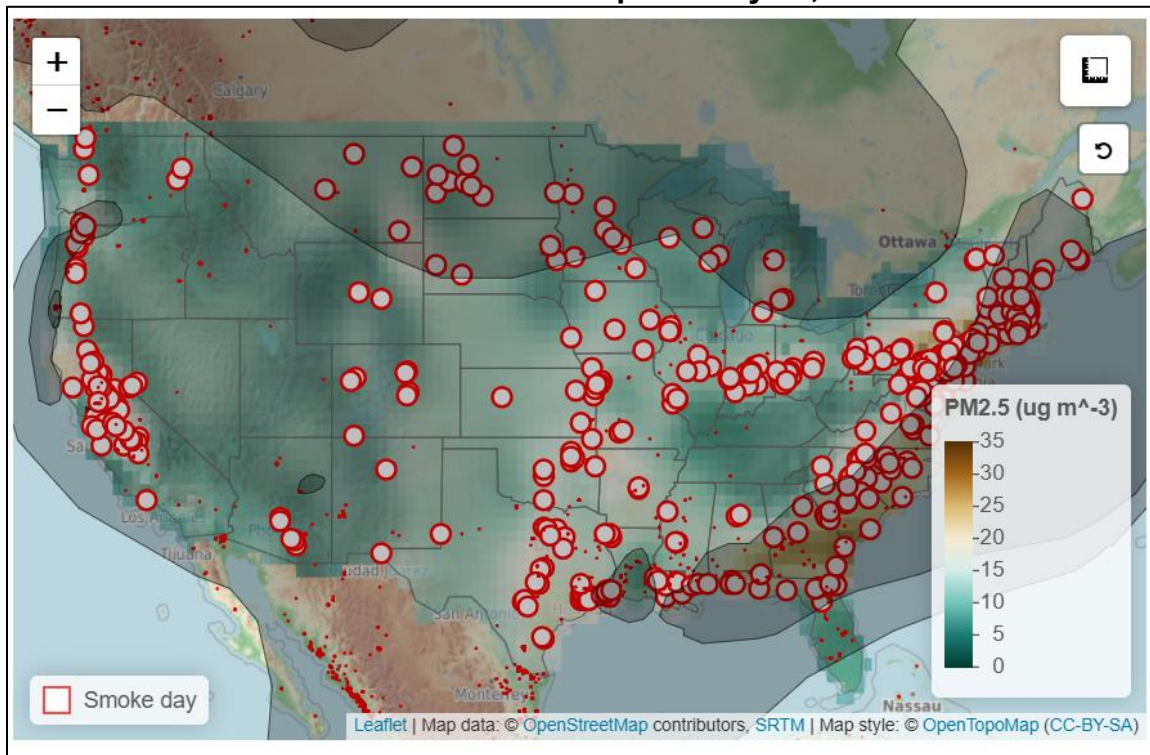
July 19, 2023

PM_{2.5} Monitoring Sites Impacted by Wildfire Smoke

Monitor name	AQS	Date	Daily average ($\mu\text{g}/\text{m}^3$)	Tier 2 Threshold ($\mu\text{g}/\text{m}^3$)
Bloomington - Binford	181050003	7/19/2023	14.5	13.9

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 19, 2023

Satellite Imagery with MAIAC AOD – July 19, 2023

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

NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE
IMAGERY

THROUGH 1750Z July 19, 2023

SMOKE:

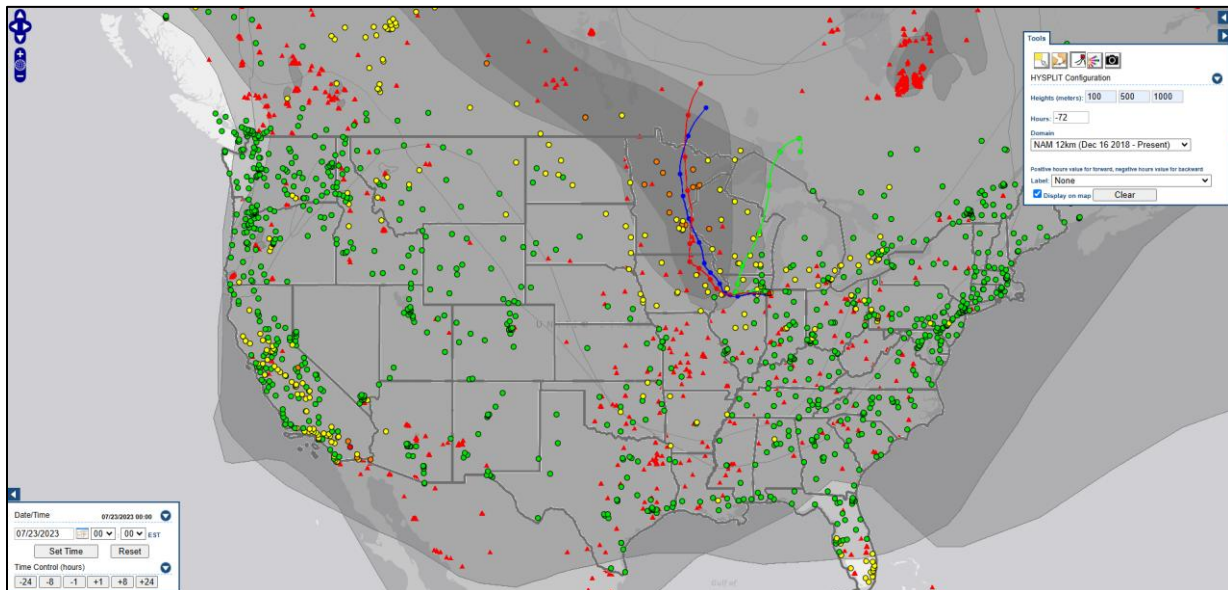
Canada/United States/Atlantic Ocean...

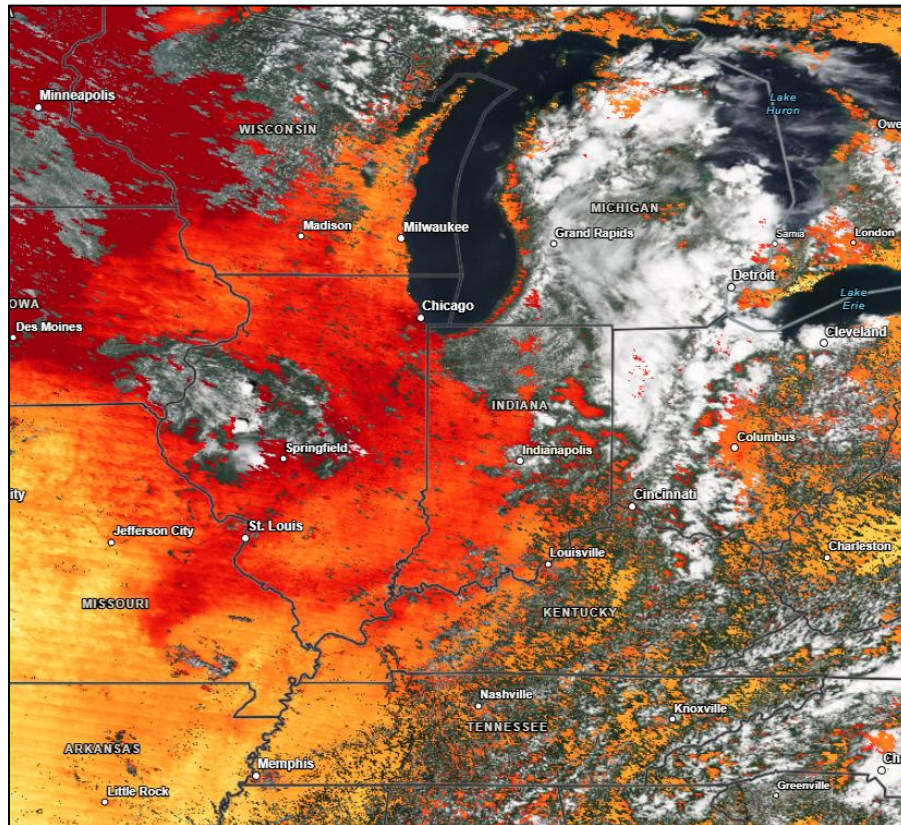
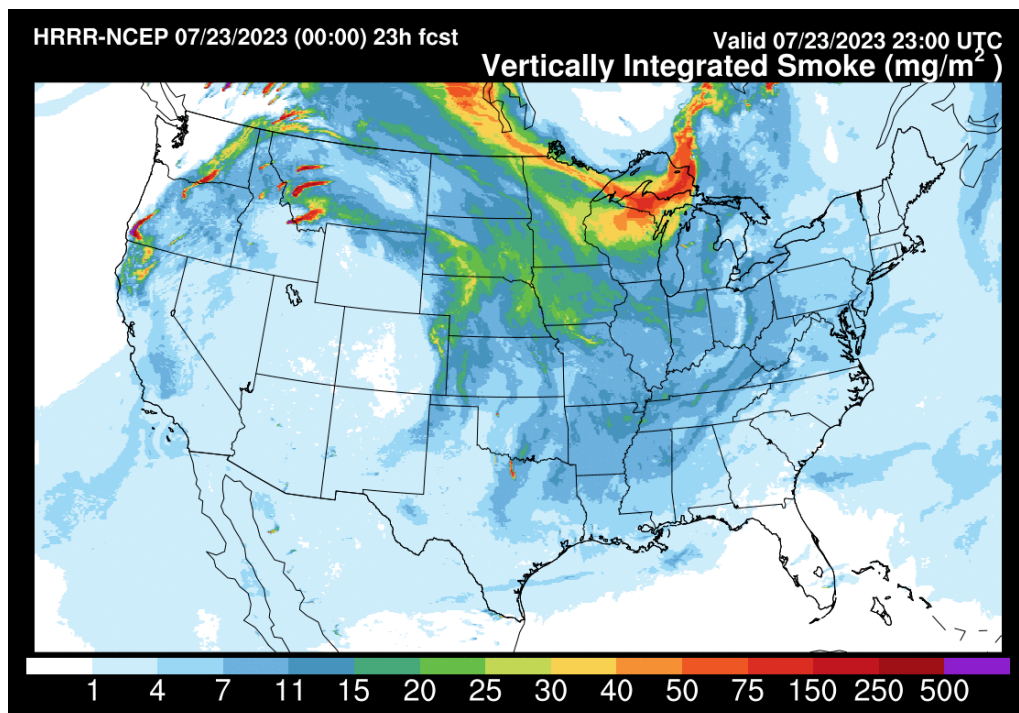
A significant cloud cover was present over western Quebec which prevented the detection of the intense fire and smoke activity which had been occurring in that region. Moderate dense smoke was visible from northeastern Alaska and extending to the east and southeast over much of northwestern Canada and some of western Canada to central Canada reaching as far east as western Hudson Bay. More moderate to thick density smoke from the western Canadian fires could be seen over the north central U.S. and western Great Lakes region. Thick density smoke was visible engulfing most of northern and central Canada, while extending northeast into Eastern Alaska. Farther to the east and southeast, a large batch of moderate density smoke also from the western Canadian wildfires was present over much of the eastern U.S. and the Atlantic Ocean along the coast of the eastern U.S. The larger surrounding mass of thinner density smoke from the Canadian wildfires covered much of Canada, Alaska and the lower 48, and the northern Atlantic.

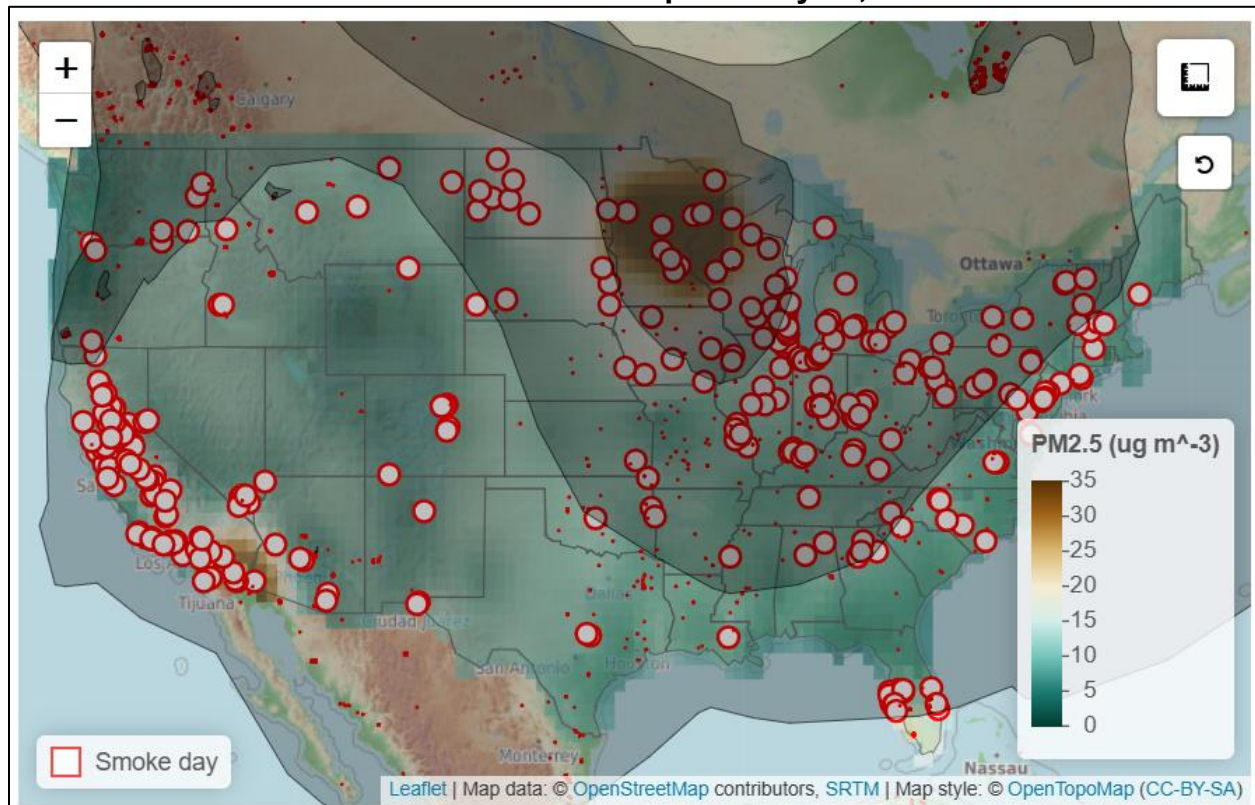
July 23, 2023

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	7/23/2023	16.3	16

AirNow Tech Fire/HMS Smoke Map with Backward Trajectories – July 23, 2023

Satellite Imagery with MAIAC AOD – July 23, 2023**HRRR Smoke - Vertically Integrated Smoke – July 23, 2023**

GAM PMO3 Smoke Output – July 23, 2023**NOAA Satellite Smoke – 2023 Satellite Smoke Text Excerpts**

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE
IMAGERY
THROUGH 1600Z July 23, 2023

SMOKE:

Canada/United States/Atlantic Ocean/Northern Mexico/Pacific Ocean off the
U.S. West Coast and south Mexico/Northern Gulf of Mexico...

The enormous area of smoke primarily from the Canadian wildfires continues to be seen covering virtually all of Canada and most of the U.S. including the eastern half of Alaska, along with the northern half of Mexico, much of the central and northern Atlantic, and parts of the northeastern Pacific off the southwest coast of Canada. Within this larger area of thin density smoke were batches of moderate to thick density smoke. The thick to very thick smoke that covered much of northern Canada within the Northwestern Territories and extending southeast through central Canada and into the Midwestern states of Minnesota and Wisconsin was associated from numerous wildfires in western and northwestern Canada. Some of this moderate smoke from these fires had moved to the southeast/east over eastern Canada, where fires in Quebec were also seen producing localized moderate to thick smoke, as well the northwestern and north central U.S., covering much of Mid-west and Mississippi valley region. Light smoke also spread into southern and northern Mexico and parts of the northern Gulf of Mexico.