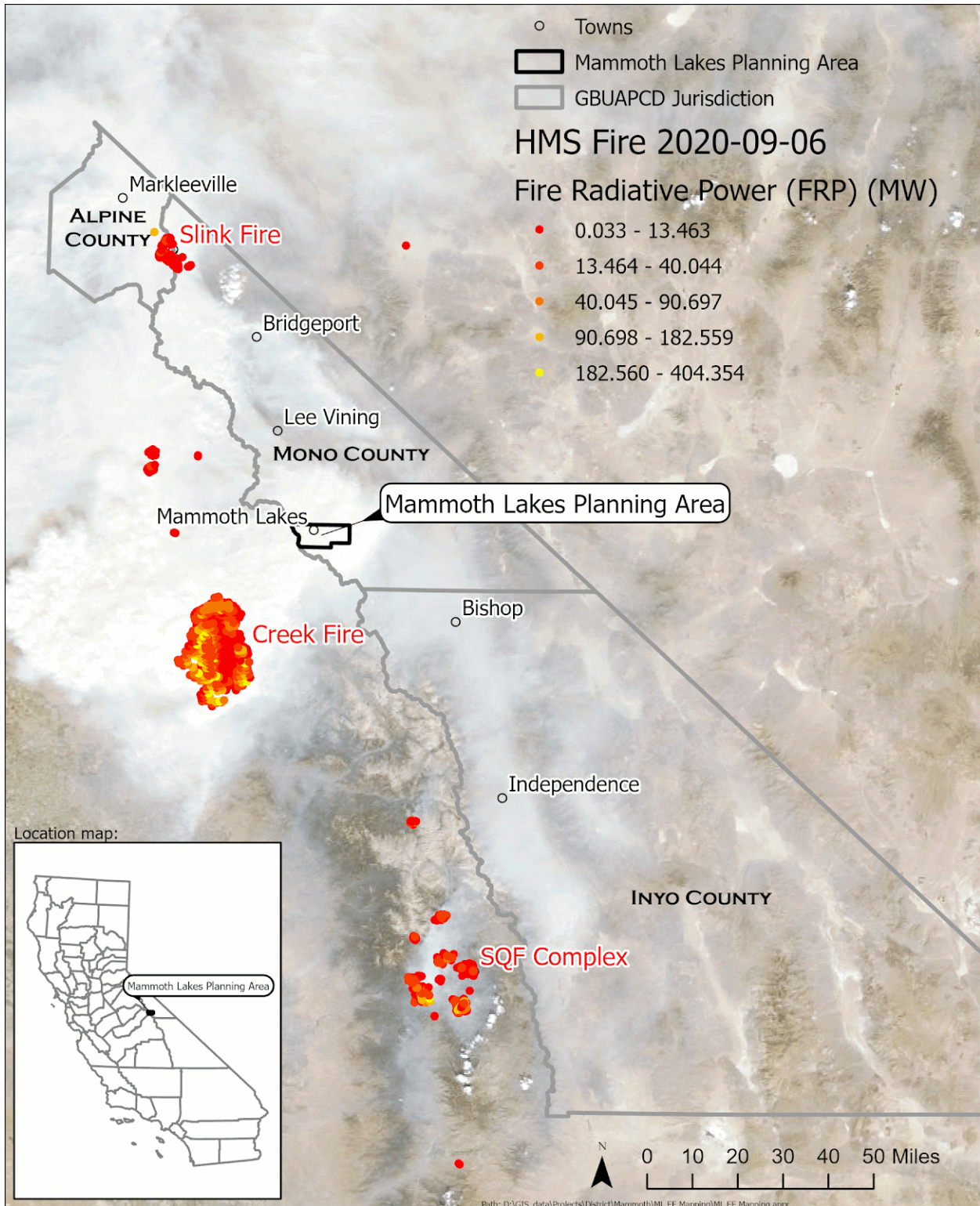


Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in September and October 2020



September 2023

Great Basin Unified Air Pollution Control District

On the Cover: Terra/MODIS (True Color) Satellite image
from September 6, 2020 courtesy of NASA WorldView.
Satellite image shows the extent of the smoke plumes
generated by the Creek Fire, Slink Fire, and SQF Complex Wildfires.

Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in September and October 2020

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Executive Summary

The Great Basin Unified Air Pollution Control District (GBUAPCD) has determined that wildfire smoke impacts resulted in forty (40) exceedances of the federal 24-hour PM10 National Ambient Air Quality Standard (NAAQS) at GBUAPCD's Mammoth Lakes PM10 monitoring station in September and October 2020, primarily caused by wildfires burning in California, notably the Creek Fire.

The Mammoth Lakes PM10 Planning Area (see map in Figure 1.1) was redesignated from nonattainment to attainment for the PM10 NAAQS in 2015 based on the 2012-2014 dataset and had met the federal regulatory deadline. Concurrently, the first 10-year Maintenance Plan was adopted. The required second 10-year Maintenance Plan is prepared in tandem with this Exceptional Event (EE) demonstration based on a 2020-2022 design value. GBUAPCD staff evaluated data from the forty (40) PM10 exceedances impacted by wildfire smoke in September and October 2020, seven (7) exceedances via POC 5 and thirty-three (33) exceedances via POC 6, and have determined the events to be of regulatory significance. The inclusion of these PM10 exceedances in the dataset would adversely affect Mammoth Lakes' compliance with the PM10 NAAQS, resulting in 2020-2022 three-year design values of 7.4 and 13.0 for POC 5 and POC 6, respectively. This document presents information demonstrating the monitored PM10 data on the exceedance days requested for exclusion were affected by wildfire smoke intrusions into the Mammoth Lakes PM10 Planning Area. GBUAPCD requests EPA's concurrence with GBUAPCD staff's determination that these wildfire events were exceptional in nature and meet US EPA's criteria as described in the Exceptional Event Rule (EER) and, therefore, should not be considered in the calculation of the three-year design values for the Mammoth Lakes PM10 Planning Area.

In GBUAPCD's analysis, all the elements of the EER were utilized to analyze the causal relationship, apply the conceptual model, and determine the effect on air quality caused by these wildfire events. In addition, GBUAPCD staff continued to show that the exceedances of the standard were not reasonably controllable or preventable and that the exceedances were natural events unlikely to recur.

The analysis that follows shows the PM10 exceedances requested for exclusion in September and October 2020 were unambiguously caused by wildfire smoke.

Smoke from multiple large-scale wildfires in California in September and October 2020 had the potential to affect the Mammoth Lakes PM10 monitoring site. The closest fire was most responsible for the wildfire smoke in Mammoth Lakes, the Creek Fire, located to the southwest of Mammoth Lakes in the Sierra National Forest. The Creek Fire ignited on September 4, 2020 and grew to 45,500 acres by September 6, 2020, the date of the first of forty (40) PM10 exceedances at Mammoth Lakes caused by Creek Fire and other wildfire smoke. Over the course of the next two months, the Creek Fire grew in size and advanced to within 11 miles of Mammoth Lakes. The cause of the Creek Fire is still under investigation as of this writing.

In addition to the Creek Fire, other smoke-producing wildfires burning during the September and October 2020 exceedances which had the potential to impact Mammoth Lakes include the SQF Complex and the Slink Fire. The SQF Complex ignited August 19, 2020 and was located south of Mammoth Lakes in the Sequoia National Forest. It was a lightning-caused and a natural event. The

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Slink Fire was located in northern Mono County, ignited on August 29, 2020, the cause still under investigation.

Tinder dry fuels, warmer than typical conditions, and lack of precipitation, caused 2020 to be one of the worst wildfire years in recorded California history. Indeed, the Creek Fire presently ranks as California’s all-time 5th largest wildfire at 379,895 acres (see Appendix A).

The GBUAPCD is requesting concurrence on exclusion of the NAAQS exceedances and monitored PM10 values listed in Table 1.1 in that they meet the criteria in the EER as summarized in Table 1.2.

Table 1.1: Mammoth Lakes (06-051-0001) PM10 concentrations for the EEs requested for exclusion. All values from AQS AMP300: Violation Day Count Report.

September 2020 Exceedances			October 2020 Exceedances		
Date	POC 5	POC 6	Date	POC 5	POC 6
9/6/2020	168 µg/m ³	296 µg/m ³	10/5/2020		282 µg/m ³
9/10/2020		890 µg/m ³	10/6/2020		259 µg/m ³
9/11/2020		424 µg/m ³	10/7/2020		237 µg/m ³
9/12/2020		191 µg/m ³	10/8/2020		251 µg/m ³
9/13/2020		486 µg/m ³	10/12/2020	192 µg/m ³	412 µg/m ³
9/14/2020		1001 µg/m ³	10/13/2020		673 µg/m ³
9/15/2020	334 µg/m ³	1146 µg/m ³	10/15/2020		253 µg/m ³
9/16/2020		1030 µg/m ³	10/17/2020		808 µg/m ³
9/17/2020		896 µg/m ³	10/18/2020	284 µg/m ³	781 µg/m ³
9/18/2020		243 µg/m ³	10/19/2020		771 µg/m ³
9/19/2020		508 µg/m ³	10/21/2020		291 µg/m ³
9/20/2020		350 µg/m ³	10/22/2020		525 µg/m ³
9/21/2020	174 µg/m ³	351 µg/m ³	10/23/2020		514 µg/m ³
9/22/2020		400 µg/m ³	10/24/2020	182 µg/m ³	417 µg/m ³
9/23/2020		444 µg/m ³	10/25/2020		303 µg/m ³
9/24/2020	198 µg/m ³	464 µg/m ³			
9/25/2020		390 µg/m ³			
9/26/2020		215 µg/m ³			

1. INTRODUCTION

Statement of Purpose / Action Requested

The GBUAPCD identified that wildfires caused forty (40) PM10 exceedances on thirty-three (33) days in the Mammoth Lakes PM10 Planning Area in September and October 2020. These exceedances were caused by smoke from wildfires on the west slope of the Sierra Nevada of California, from which winds transported the smoke toward Mammoth Lakes resulting in increased PM10 concentrations at the Mammoth Lakes monitoring station (AQS site ID 06-051-0001). Under the Clean Air Act (CAA), the Exceptional Events Rule (EER) allows the exclusion of air quality monitoring data influenced by Exceptional Events from use in determinations of exceedances of the National Ambient Air Quality Standards (NAAQS). This document provides a description of the events, an overview of the EER, and the regulatory significance of this demonstration. In addition, the information presented in this document satisfies all of the EER criteria, as summarized in Table 1.2.

Table 1.2: Summary of GBUAPCD demonstration based on Exceptional Event Rule (EER) Requirements.

EER Requirement	Section	Summary
Narrative conceptual model	3	The narrative conceptual model describes the affected area, meteorological conditions of the region and the source causing the violations. It includes a discussion of how emissions from the wildfires led to the violations at the Mammoth Lakes monitors.
Clear Causal Relationship	3	The wildfire events affected air quality in such a way that there exists a clear causal relationship between the wildfires and the monitored violations. Evidence includes satellite images of wildfire smoke drifting toward Mammoth Lakes; backward and forward trajectories linking wildfires with the Mammoth Lakes monitor; wind roses and other meteorological data showing the direction and impact to the monitor, and; a comparison of PM10 data requested for exclusion against historical PM10 concentrations at Mammoth Lakes.
Natural event or caused by human activity that is unlikely to recur	4	The natural event or human activity that is unlikely to recur requirement is met by demonstrating that the events meet the EER definition of wildfire. GBUAPCD provides evidence that the wildfires were natural events, none of the wildfires were confirmed to be caused by human activity, and they occurred on wildland.
Not Reasonably Controllable or Preventable	5	The not-reasonably-controllable-or-preventable requirement is met by demonstrating that the wildfires were natural, lightning-caused events, or occurred on wildland.
Procedural requirements	6	GBUAPCD met EER procedural requirements for flagging, initial notification, demonstration, and public comment.

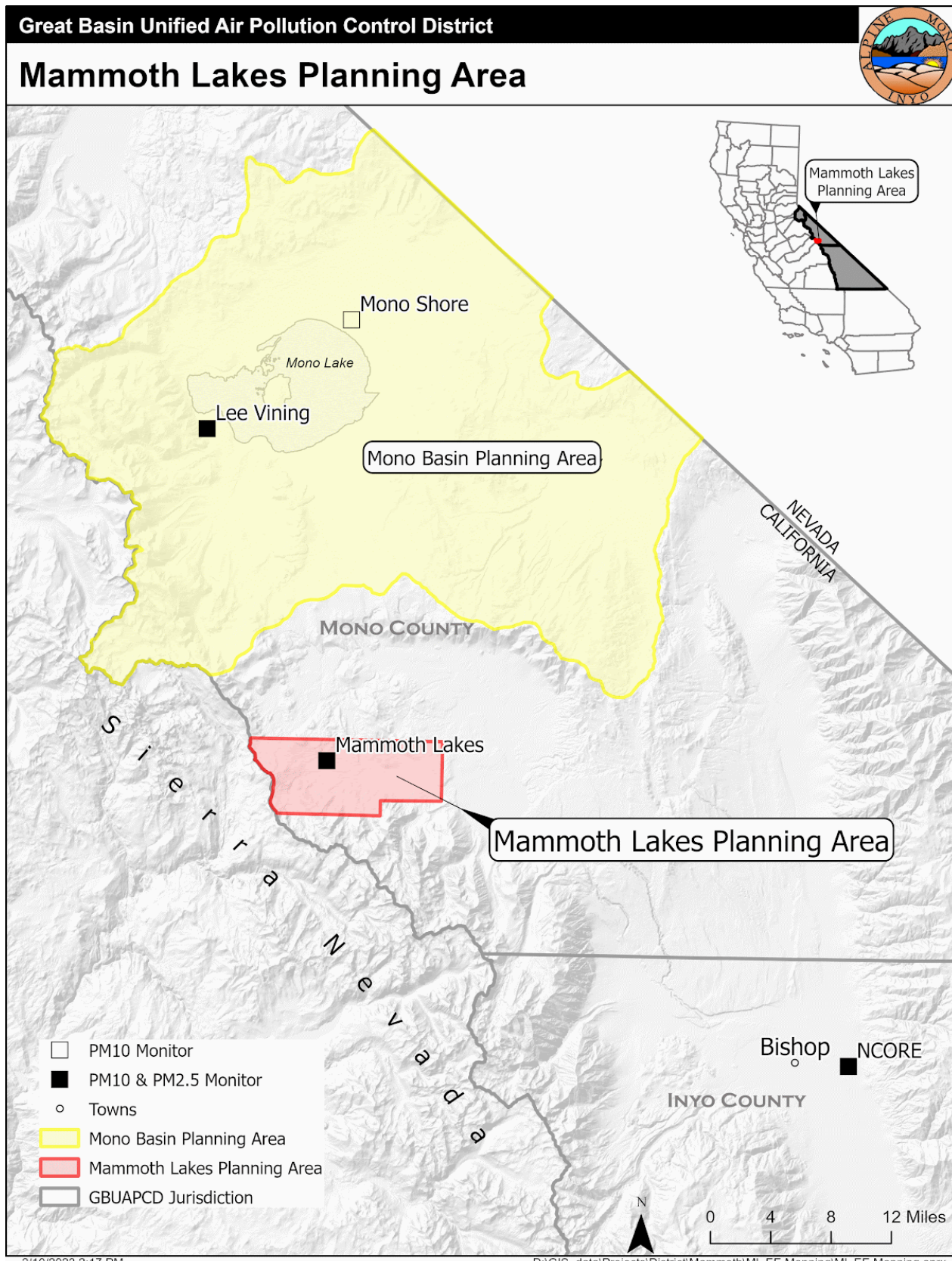


Figure 1.1: Map showing the Mammoth Lakes Planning Area (red), the Mono Basin Planning Area to the north (yellow), and the jurisdiction of the GBUAPCD (shaded on location map).

Attainment Status

The Mammoth Lakes PM10 Planning Area status was redesignated as attainment for the PM10 NAAQS by the US EPA on November 4, 2015¹. The primary source of the PM10 impacts in the area has historically been residential wood combustion and resuspended road dirt and cinders. The Town of Mammoth Lakes adopted numerous measures to control emissions from these sources². These permanent and enforceable emission reductions resulted in the redesignation of the Mammoth Lakes PM10 Planning Area. Concurrent with redesignation, the US EPA approved the first 10-year Mammoth Lakes PM10 Maintenance Plan, which expires in 2025.

The Mammoth Lakes PM10 Planning Area Second 10-Year PM10 Maintenance Plan is presented in tandem with this Exceptional Event documentation, and together, fulfill the Clean Air Act requirements to demonstrate continued maintenance of the NAAQS for the 10-year period following the expiration of the first maintenance plan. EPA's concurrence with September and October 2020 wildfire smoke exclusions from the NAAQS is required to continue the attainment designation status for the Mammoth Lakes PM10 Planning Area. Appendix B shows the 2020-2022 Mammoth Lakes PM10 design values both including and excluding the requested Exceptional Events.

Exceptional Events Definition and Demonstration Criteria

EPA promulgated the EER in 40 CFR Parts 50 and 51 on March 22, 2007 (72 FR 13560), pursuant to the 2005 amendment of CAA section 319(b), which allows for the exclusion of air quality monitoring data influenced by exceptional events from use in determinations of exceedances or violations of NAAQS, provided that the following criteria are met:

1. The occurrence of an exceptional event must be demonstrated by reliable, accurate data that is promptly produced and provided by Federal, State, or local government agencies;
2. A clear causal relationship must exist between the measured exceedances of a national ambient air quality standard and the exceptional event to demonstrate that the exceptional event caused a specific air pollution concentration at a particular air quality monitoring location;
3. There is a public process for determining whether an event is exceptional; and,
4. There are criteria and procedures to petition the Administrator to exclude air quality monitoring data that is directly due to exceptional events from use in determinations by the Administrator with respect to exceedances or violations of the national ambient air quality standards.

The 2016 EER revisions added sections 40 CFR 50.1(j)-(r), 50.14, and 51.930. The EER as defined in 40 CFR 50.14 states that "...a State that has flagged data as being flagged due to an exceptional event and is requesting exclusion of the affected measurement data shall, after notice and opportunity for public comment, submit a demonstration to justify data exclusion to the Administrator according to the schedule established under paragraph (c)(2)(i)(B)." Per 40 CFR 50.14(c)(3)(iv)(A)-(E), the demonstration to justify data exclusion must include:

¹ Federal Register: Air Plan Approval; California; Mammoth Lakes; Redesignation; PM10:
<https://www.federalregister.gov/documents/2015/10/05/2015-25165/air-plan-approval-california-mammoth-lakes-redesignation-pm10>

² Town of Mammoth Lakes Municipal Code Chapter 8.30; Particulate Emissions Regulations:
https://www.townofmammothlakes.ca.gov/DocumentCenter/View/4520/MC8-30_Final-5-14-14?bidId=

1. A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);
2. A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;
3. Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the requirement at paragraph (c)(3)(iv)(B) of this section. The Administrator shall not require a State to prove a specific percentile point in the distribution of data;
4. A demonstration that the event was both not reasonably controllable and not reasonably preventable; and
5. A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.

With respect to wildfires, 40 CFR 50.14(b)(4) states that “The Administrator shall exclude data from use in determinations of exceedances and violations where a State demonstrates to the Administrator’s satisfaction that emissions from wildfires caused a specific air pollution concentration in excess of one or more national ambient air quality standard at a particular air quality monitoring location and otherwise satisfies the requirements of this section. Provided the Administrator determines that there is no compelling evidence to the contrary in the record, the Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements identified in paragraph (c)(3)(iv)(D) of this section regarding the, “not reasonably controllable or preventable,” criterion. In addition, the air agency must meet several procedural requirements, including:

1. Submission of an Initial Notification of Potential Exceptional Event and flagging of the affected data in EPA’s Air Quality System (AQS) as described in 40 CFR 50.14(c)(2)(i); and
2. Completion and documentation of the public comment process described in 40 CFR 50.14(c)(3)(v).

The GBUAPCD has determined that PM10 concentrations exceeding the NAAQS in September and October 2020 qualify as Exceptional Events under Title 40, Part 50 of the Code of Federal Regulations (CFR), the revised EER. The purpose of this document is to provide technical documentation to support a concurrence and petition the Regional Administrator for Region 9 of the U.S. Environmental Protection Agency (EPA) to exclude air quality monitoring data for PM10 from the normal planning and regulatory requirements under the CAA in accordance with the EER. This Exceptional Event demonstration was published for public review and comment on August 2, 2023 (see Section 6). Comments were submitted to ann@gbuapcd.org and were accepted through the GBUAPCD Governing Board meeting on September 7, 2023.

2. BACKGROUND

Regional Description

The Mammoth Lakes PM10 Planning Area is located in the southwest corner of Mono County, California, as shown on the map in Figure 1.1. Mammoth Lakes is nestled in a significant north-south trending mountain range, the Sierra Nevada, and often receives more winter snowfall than any other location in California, and is a well known recreation destination. The Mammoth Lakes PM10 Planning Area covers 54 square miles and is located entirely within the jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD). The Mammoth Lakes PM10 Planning Area currently has one active PM10 monitoring site, Mammoth Lakes (06-051-0001), located within the Town of Mammoth Lakes, the only incorporated community in the Planning Area.

The elevation of the Mammoth Lakes monitoring site is 7,831 feet MSL and the Planning Area itself spans 7,050 to 11,053 feet MSL. The western edge of the Planning Area follows the crest of the Sierra Nevada. A gap in the crest, Mammoth Pass, allows passage of winter storms from the Pacific through the Sierra Nevada, contributing to the large snowfall accumulation.

Climate

The temperature at Mammoth Lakes is cold in winter and relatively cool in summer with the majority of precipitation falling as snow in winter months, as shown in Table 2.1.

Table 2.1: Mammoth Lakes Monthly Normal Temperature (1997-2022) and Precipitation (1993-2012).

Month	Temperature Mean (°C)	Temperature Minimum (°C)	Temperature Maximum (°C)	Precipitation Mean (inches) ³
January	-1.2	-16.9	7.4	4.60
February	-1.3	-12.1	9.2	3.77
March	1.4	-10.0	11.7	2.40
April	4.0	-8.6	14.3	1.54
May	8.6	-4.4	19.2	1.17
June	14.3	1.4	22.4	0.56
July	18.1	9.0	23.7	0.51
August	17.4	7.2	22.7	0.31
September	13.5	0.4	22.5	0.37
October	7.3	-6.7	17.4	1.51
November	2.2	-11.4	12.5	2.09
December	-1.4	-13.6	10.4	4.13

Wind Patterns

Typical winds at the Mammoth Lakes monitoring site are light, due to its location in a well-forested and well-protected basin. Wind speeds in Mammoth Lakes are some of the lightest recorded at all sites

³Precipitation from the Mammoth Lakes Ranger Station via the Western Regional Climate Center:
<https://wrcc.dri.edu/cgi-bin/cliGCStP.pl?ca5280>

operated by GBUAPCD. Occasionally, elevated wind speeds occur when thunderstorms move through the area or a regional front passes through. Elevated wind speeds in winter are typically from the west, through Mammoth Pass. High wind events caused by regional-scale weather fronts with wide-ranging impacts are uncommon.

Overview of Monitoring Network

The following parameters and associated POCs are presently recorded at the intervals specified at the Mammoth Lakes monitoring site (06-051-0001) and uploaded to AQS. For reference, the AQS parameter codes are also listed. All parameters are designated as part of the SLAMS⁴ network, unless otherwise noted:

- 61101-1 Hourly Horizontal Wind Speed - Scalar (average)
- 61103-1 Hourly Vector Wind Speed - Resultant (average)
- 61104-1 Hourly Wind Direction - Resultant (average)
- 61105-1 Hourly Peak Wind Gust
- 61106-1 Hourly Standard Deviation of Horizontal Wind Direction (average)
- 62101-1 Hourly Outdoor Temperature (average)
- 81102-5 Daily PM10 Standard Conditions (average)
- 81102-6 Hourly PM10 Standard Conditions (average)
 - SLAMS - TEOM (method 079) - 10/24/2008-9/20/2018, 4/25/2022-present
 - Special Purpose Monitor - T640x (method 239) - 9/21/2018-4/15/2022
- 85101-5 Daily PM10 Local Conditions (average) - Partisol
- 85101-6 Hourly PM10 Local Conditions (average) - TEOM
 - SLAMS - TEOM (method 079)- 10/24/2008-9/20/2018, 4/25/2022-present
 - Special Purpose Monitor - T640x (method 239) - 9/21/2018-4/15/2022
- 88101-5 Daily PM2.5 Local Conditions (average) - Partisol
- 88101-6 Hourly PM2.5 Local Conditions (average)
 - Special Purpose Monitor - T640x (method 238) - 9/21/2018-4/15/2022

PM10 Monitoring in Mammoth Lakes

The Mammoth Lakes Monitoring Site was established and has been monitoring and reporting PM10 (AQS Parameter 81102) since 1980. The PM10 SLAMS monitor in operation during the 2020 exceptional event period was a filter-based FRM Partisol monitor operating on a 1-in-3 day schedule (POC 5). The District also operated a continuous Special Purpose Monitor (SPM) during 2020, a FEM Teledyne API T640x, reporting both PM10 (POC 6) and PM2.5 (POC 6). The T640x was installed as a test and collocated with the Partisol to assess the correlation between the two monitoring instruments. The T640x recorded PM10 with method code 239, prior to the release of the 2023 “Network Data Alignment” firmware, and was found to report values much higher, often 2X or 3X, when compared to the FRM Partisol. It was removed from operation in April 2022 due to lack of confidence in the accuracy of the monitor. Although the T640x monitor was designated in AQS as a SPM and operated only with the intention of determining comparability with the FRM, the District inadvertently continued to operate the monitor beyond the allowable 2-year SPM term and the EPA has deemed the T640x data applicable to the NAAQS. Hence, the POC 6 SPM T640x PM10 exceedances are presented in this demonstration with a request for exclusion from the NAAQS.

⁴ State or Local Air Monitoring Stations Network

Characteristics of Non-event PM10 Concentrations

Air quality at Mammoth Lakes is generally very good, with clean air and unobstructed views of the Sierra crest to the west and all the way to the White Mountains 40 miles to the east. PM10 concentrations in September and October are typically very low. In contrast to the wildfire impacted conditions in September and October 2020, the PM10 and meteorological conditions in 2022 are considered reflective of non-event conditions, as it was a period without notable local or regional PM10 influences, particularly wildfire smoke.

The upper graph in Figure 2.1 illustrates the POC 5 daily average PM10 conditions during the Exceptional Event period in 2020 (red squares) and non-event period 2022 (gray squares). POC 6 daily averages are displayed in Figure 2.4 and Figure 2.5.1 through Figure 2.5.9. As shown in Figure 2.1 top graph, during non-event conditions daily average PM10 is well below 25 $\mu\text{g}/\text{m}^3$. The top graph also shows wind speed conditions were similar between the two periods as shown by the event period with the red line (2020) and the non-event period with the gray line (2022). Hourly wind speeds in 2020 (event) and 2022 (non-event) rarely exceeded 4 m/s (approximately 9 miles per hour (mph)).

The lower graph in Figure 2.1 shows wind direction during the Exceptional Event period in 2020 (red dots) compared with wind direction during the non-event period in 2022 (hollow gray circles). The graph demonstrates that wind direction was similar between the two periods, with significant focus on a wind direction between 240 degrees and 300 degrees in both years, a cone centered on due west. This focus is corroborated by the wind roses in Figure 2.2 and Figure 2.3. Importantly, the predominant wind direction is from the west, in the direction of Mammoth Pass, the low point in the Sierra crest facilitating flow of smoke from the Creek Fire into Mammoth Lakes.

A tabular listing of all Mammoth Lakes monitored daily average PM10 concentrations during the Exceptional Event period of September and October 2020, alongside PM10 values during the non-event period of September and October 2022, is shown in Table 3.5, all derived from AQS⁵ AMP300 Violation Day Count Report. The table shows that non-event PM10 concentrations are typically 10-20 $\mu\text{g}/\text{m}^3$ and occasionally 20-40 $\mu\text{g}/\text{m}^3$. The bolded PM10 values in Table 3.5 are requested for exclusion.

Due to its isolated location away from large-scale industrial development and urban centers and nestled in its own topographic basin, the Mammoth Lakes area is not significantly impacted by sources from outside the Planning Area with the notable exception of wildfire smoke. Local particulate sources, including residential wood burning and road cinders, have historically been the source of PM10 impacting the Mammoth Lakes PM10 Planning Area, much reduced in recent years.

⁵ AQS is the Environmental Protection Agency Air Quality System, <https://www.epa.gov/aqs>. Data was obtained through an AQS AMP501 Extract Raw Data report.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

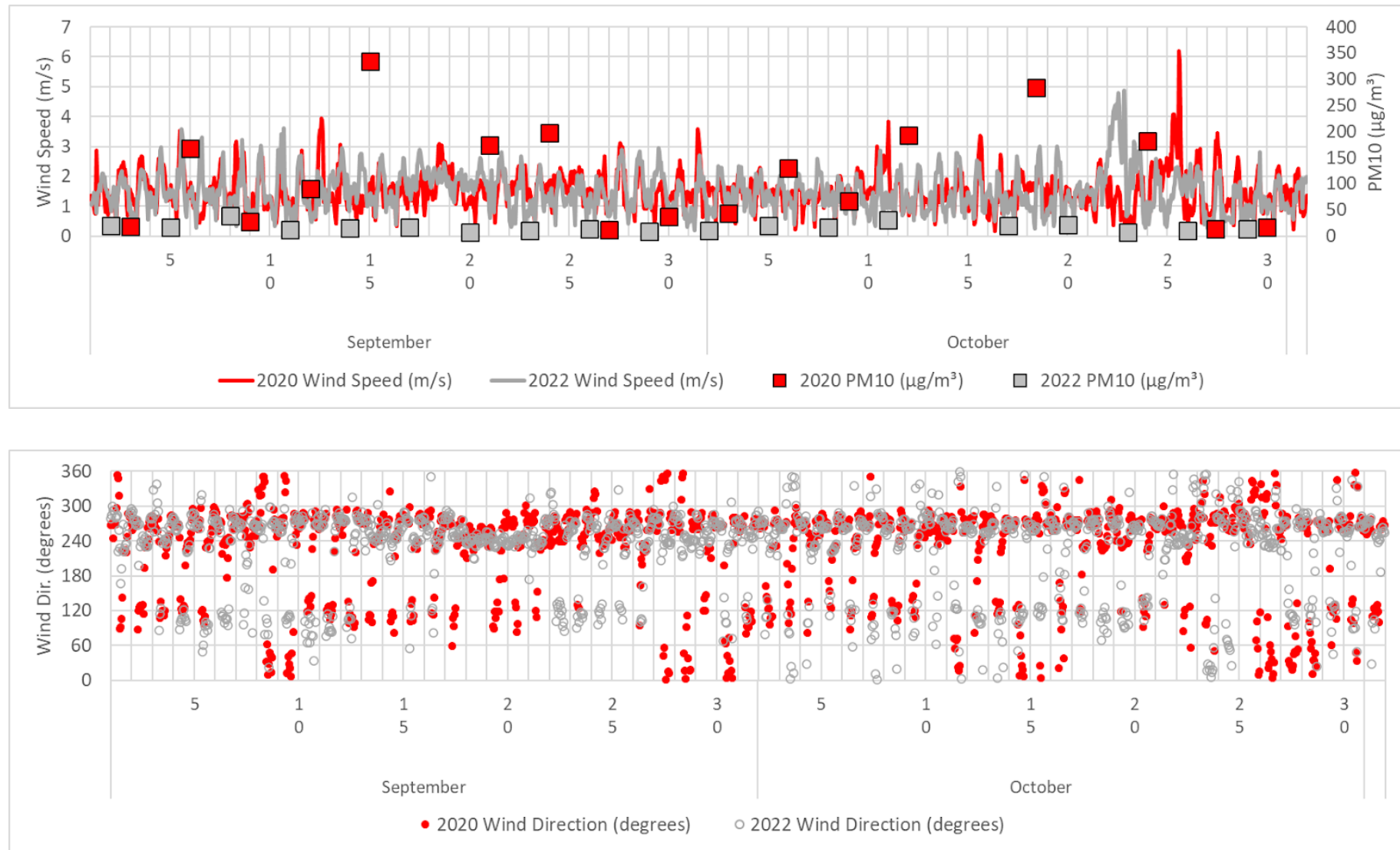


Figure 2.1: The top graph shows non-event wind speed conditions (2022), plotted alongside event wind speed conditions, and POC 5 PM10 wildfire smoke event conditions (2020) and POC 5 PM10 non-event conditions (2022). The lower graph shows non-event and event wind directions.

The wind rose plot in Figure 2.2 shows the Mammoth Lakes scalar wind speed and direction recorded during a non-event period. The plot graphically demonstrates the light winds typically encountered during non-event periods, such as the data shown recorded in September and October 2022.

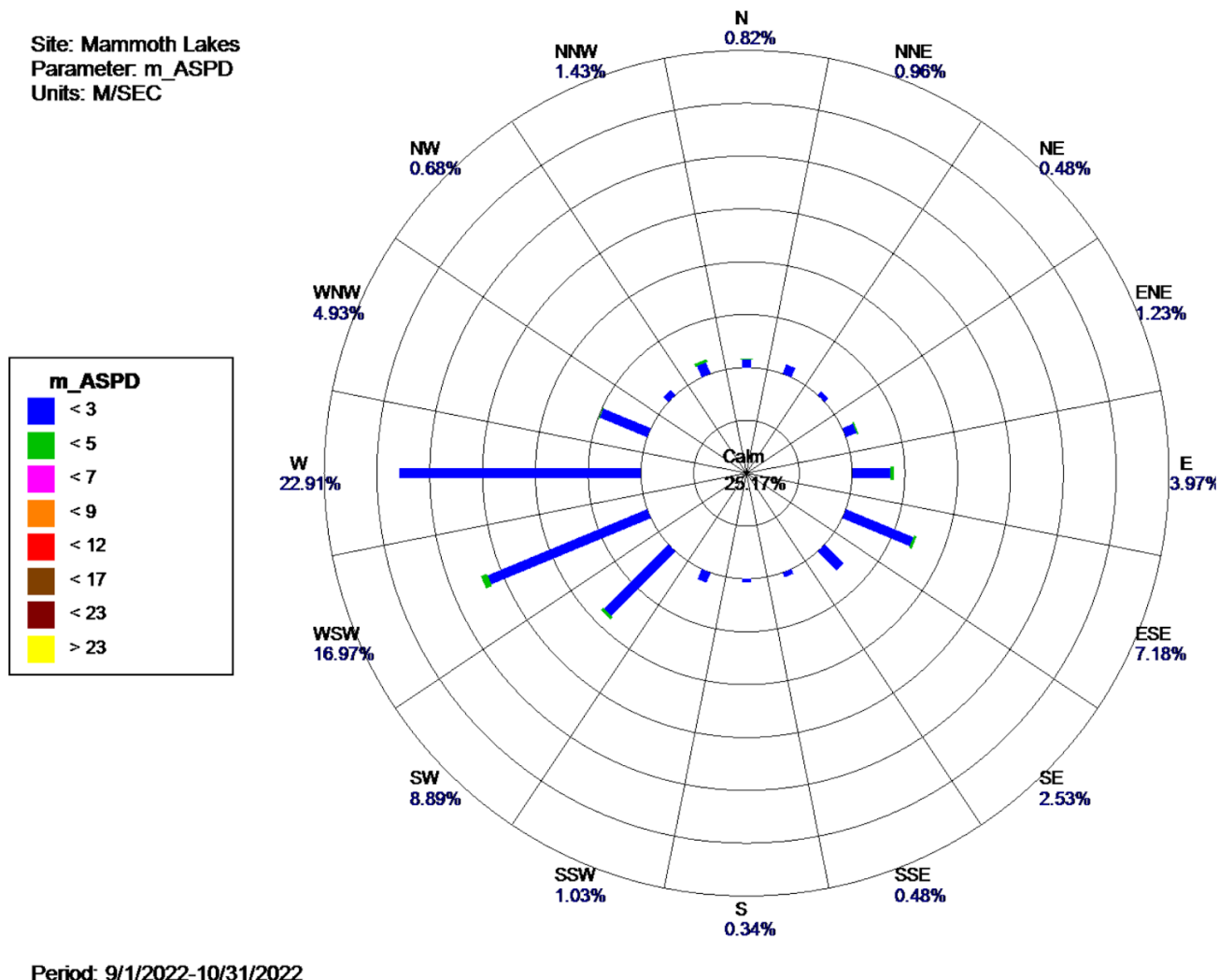


Figure 2.2: Non-event wind rose at Mammoth Lakes showing hourly average wind speeds and direction recorded in September and October 2022.

Characteristics of Wildfire Event PM10 Concentrations

In September and October 2020, there were thirty-three (33) days exceeding the PM10 NAAQS at the Mammoth Lakes monitoring site, consisting of forty (40) monitored exceedances, all caused by wildfire smoke which traveled from wildfires burning throughout the state of California to Mammoth Lakes, notably the Creek Fire which advanced to within 11 miles of Mammoth Lakes.

The upper graph in Figure 2.1 illustrates the wildfire smoke impacts on the Mammoth Lakes PM10 FRM (POC 5) monitor during both the event period (2020) and non-event period (2022). The red squares

represent the elevated PM10 concentrations caused by wildfire smoke in 2020, compared with the non-event conditions in 2022 as shown with gray squares. The Creek Fire started September 4, 2020, and registered its first PM10 exceedance on the Mammoth Lakes POC 5 Partisol on September 6, 2020, the first 1:3 monitored day after the ignition. The POC 6 SPM T640x also registered its first exceedance on September 6, 2020. As shown in the upper graph in Figure 2.1, throughout the Exceptional Event period in 2020, POC 5 PM10 was elevated on nearly all monitored days when compared with those monitored conditions on non-event conditions in 2022. During event conditions, PM10 is frequently above $50 \mu\text{g}/\text{m}^3$, while typically $10\text{-}20 \mu\text{g}/\text{m}^3$ during non-event conditions.

The upper graph in Figure 2.1 also compares hourly wind speeds during event conditions (red line) with non-event conditions (gray line). Wind speed conditions were similar between the event conditions and the non-event conditions with speeds reducing below 1 m/s and diurnally rising to $\sim 3 \text{ m/s}$, occasionally rising to $\sim 6 \text{ m/s}$ (approximately 7 to 13 mph).

The wind rose plot in Figure 2.3 shows the Mammoth Lakes scalar wind speed and direction during September and October 2020, the months containing the exceptional events being requested for exclusion. The plot graphically demonstrates the wind conditions, both speed and direction, were consistent with those found during non-event periods shown in the wind rose plot in Figure 2.2, both represented by light winds with a westerly bias.

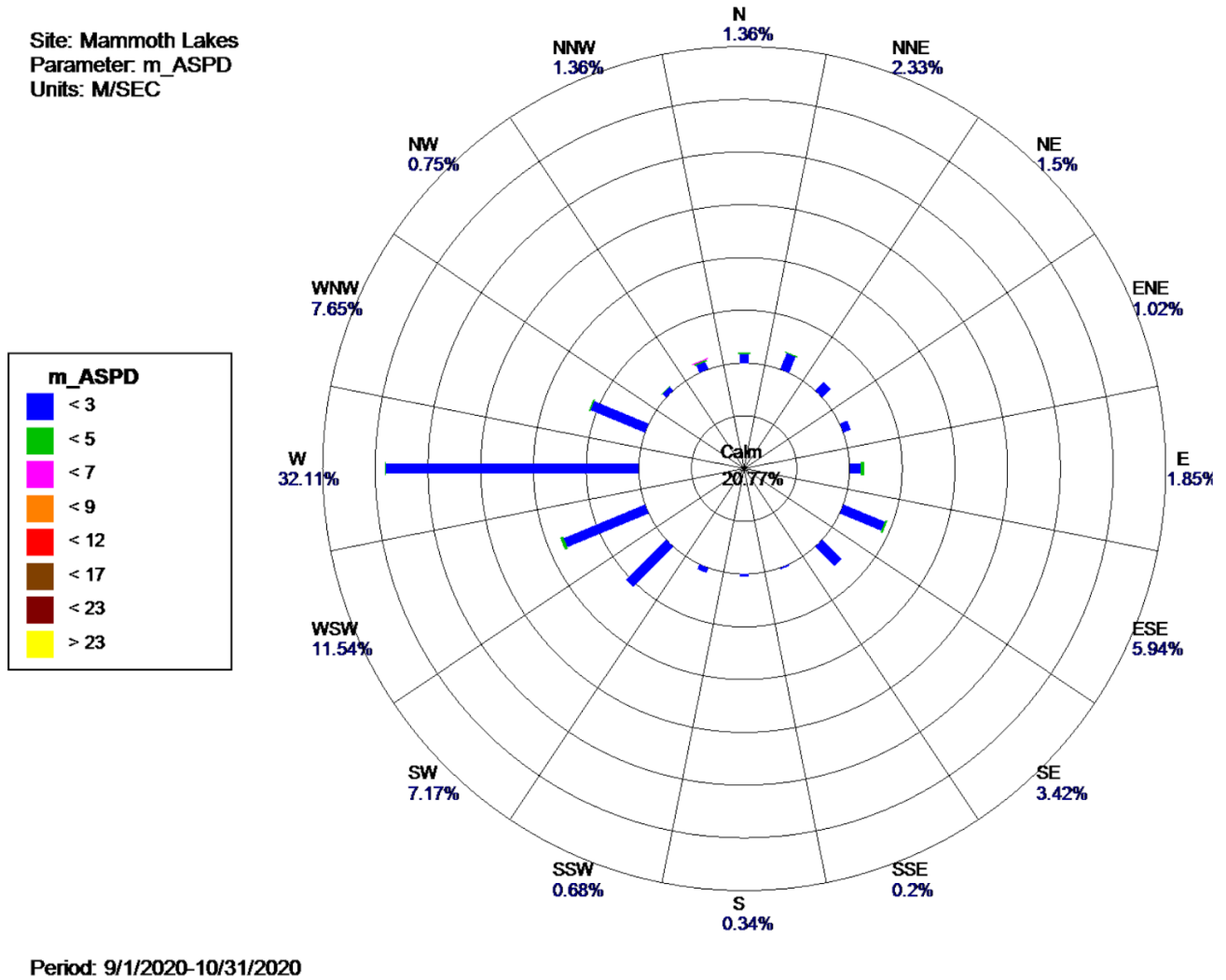


Figure 2.3: Wildfire smoke event wind conditions - Wind rose plot at Mammoth Lakes showing hourly average wind speeds and direction recorded in September and October 2020.

The graph in Figure 2.4 shows POC 5 daily average Mammoth Lakes PM10 during the September and October event window in years 2010 through 2022 with a comparison of 2020 POC 5 and POC 6 daily averages. The forty (40) monitored exceedances in 2020 requested for exclusion from the NAAQS, and the focus of this demonstration, are shown as the data points with black squares above the 150 $\mu\text{g}/\text{m}^3$ daily PM10 NAAQS standard dashed line. The graph shows that no other year between 2010 and 2022 experienced conditions which caused such significant PM10 impacts as 2020.

Table 3.5 lists the daily average NAAQS PM10 exceedances for the requested Exceptional Events in bold font, including both the POC 5 Partisol FRM monitor and the POC 6 SPM T640x monitor. Note that three (3) POC 5 Partisol runs during the Exceptional Event period were invalid (9/18/2020, 10/15/2020, and 10/21/2020) due to heavy filter loading from smoke and associated machine malfunction.

The graphs in Figure 2.5.1 through Figure 2.5.9 are weekly time series graphs of every week during the September 2020 through October 2020 Exceptional Event (EE) period showing hourly POC 6 SPM T640x PM10 and PM2.5 concentrations, combined with daily POC 5 Partisol and POC 6 SPM T640x daily average PM10 concentrations. The graphs clearly show elevated PM10 concentrations throughout the Exceptional Event period. Combined with the PM2.5 concentrations, the graphs demonstrate the variability in smoke concentrations resulting from pulses of smoke as it is lofted over the Sierra crest. The graphs also show the exaggerated nature of the POC 6 SPM T640x monitor when compared with the POC 5 FRM Partisol. To facilitate comparison between the weeks, all the graphs have a fixed Y-axis scale ($3,000 \mu\text{g}/\text{m}^3$) to accommodate the high hourly POC 6 SPM T640x PM10 concentrations. Of note in these graphs is the absence of elevated particulate concentrations the week prior to the EE period before the Creek Fire started in Figure 2.5.1, and the arrival of the first smoke-related impacts and exceedances on 9/6/2020 shown in Figure 2.5.2 once Creek Fire smoke arrived. Elevated PM10 concentrations continue each week until 9/27/2020 through 10/3/2020 as shown by the relatively low PM10 concentrations in Figure 2.5.5. Smoke returns the week of 10/4/2020 as shown in Figure 2.5.6 and returns with especially significant concentrations the week of 10/18/2020 as shown in Figure 2.5.8. PM10 concentrations finally diminish the week following the final exceedance requested for exclusion on 10/25/2020, as shown in Figure 2.5.9.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

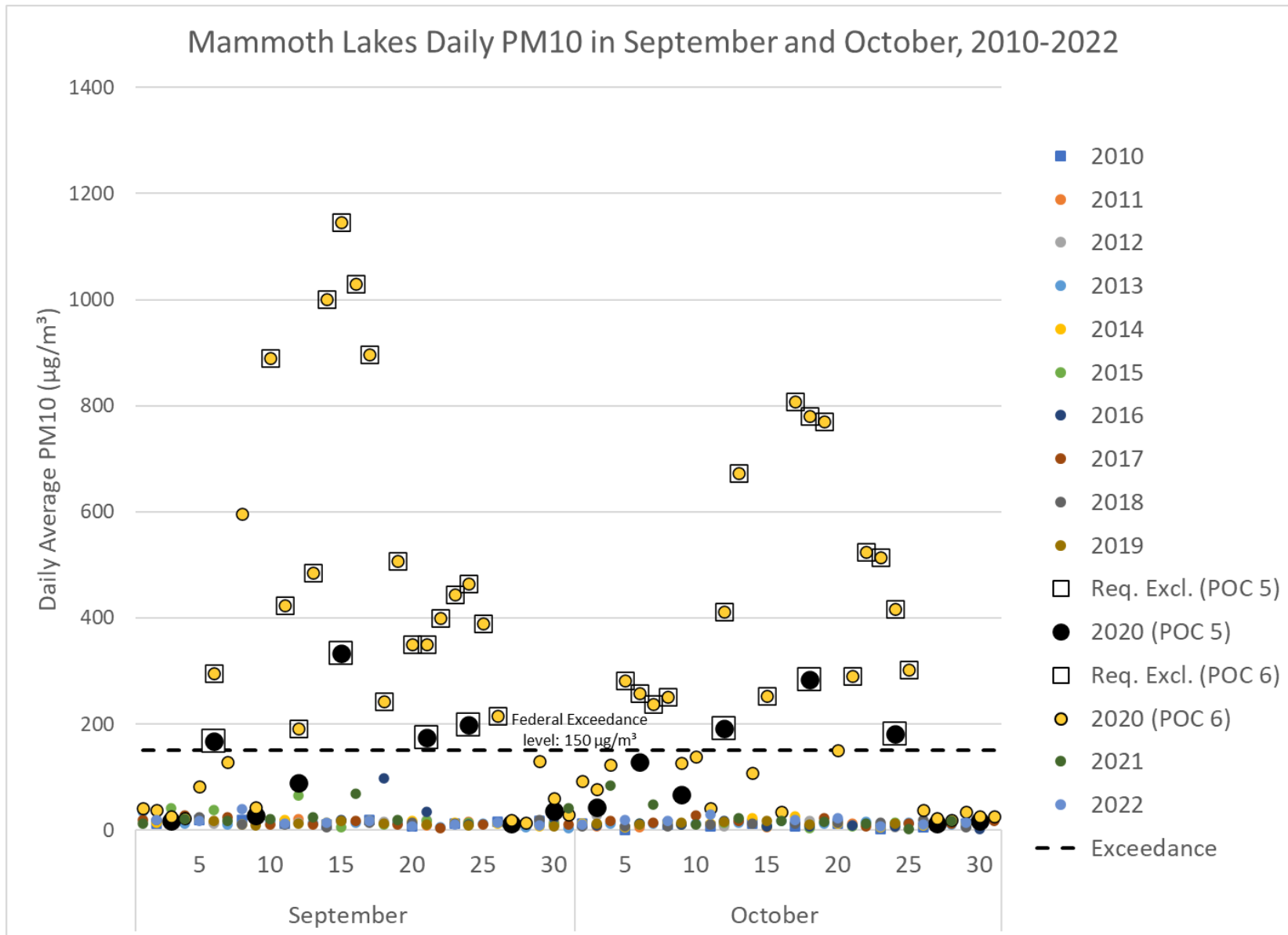


Figure 2.4: Comparison of Mammoth Lakes FRM daily average PM10 NAAQS values in September and October, 2010 through 2022 with 2020 POC 5 and POC 6 daily average PM10. Excludes exceedances in 2013 and 2018 previously requested for exclusion from the NAAQS.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

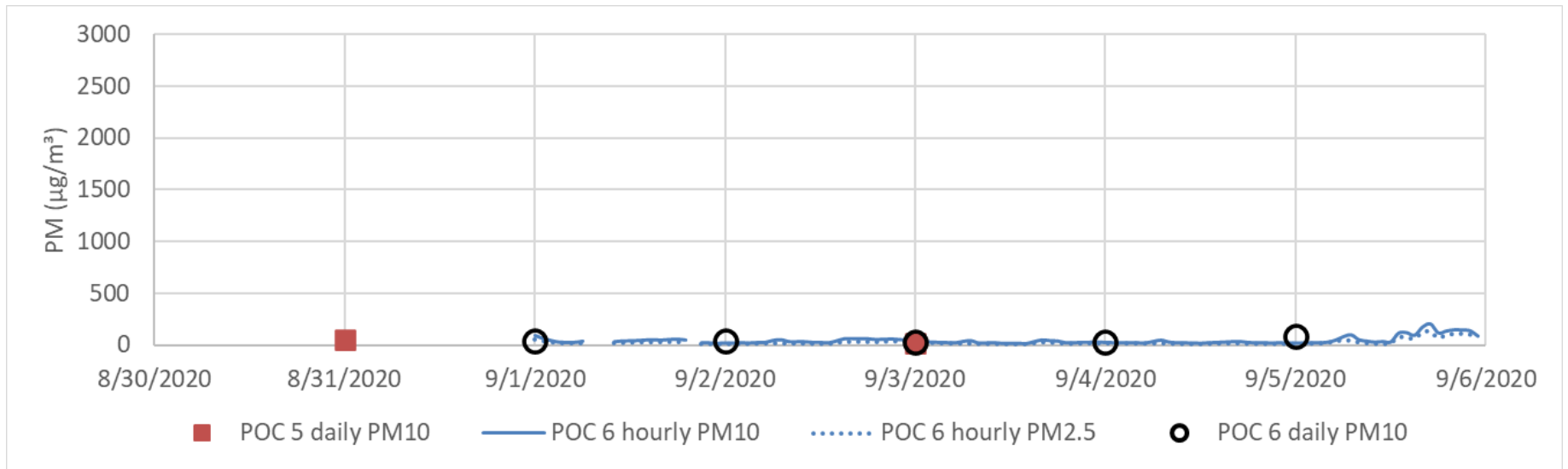


Figure 2.5.1: Week #1 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

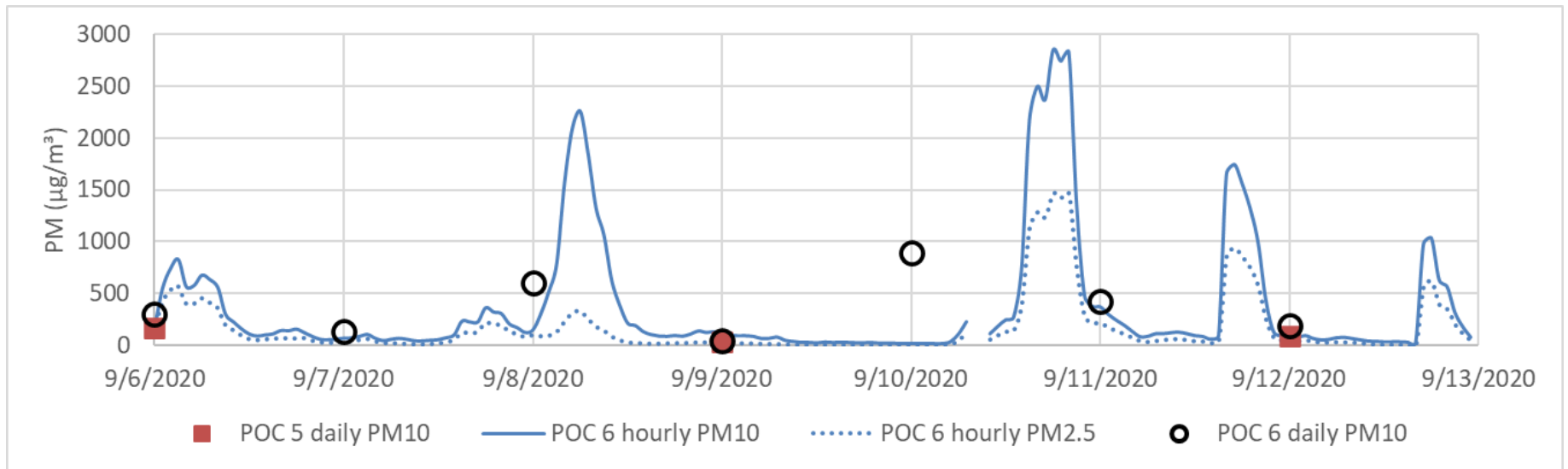


Figure 2.5.2: Week #2 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

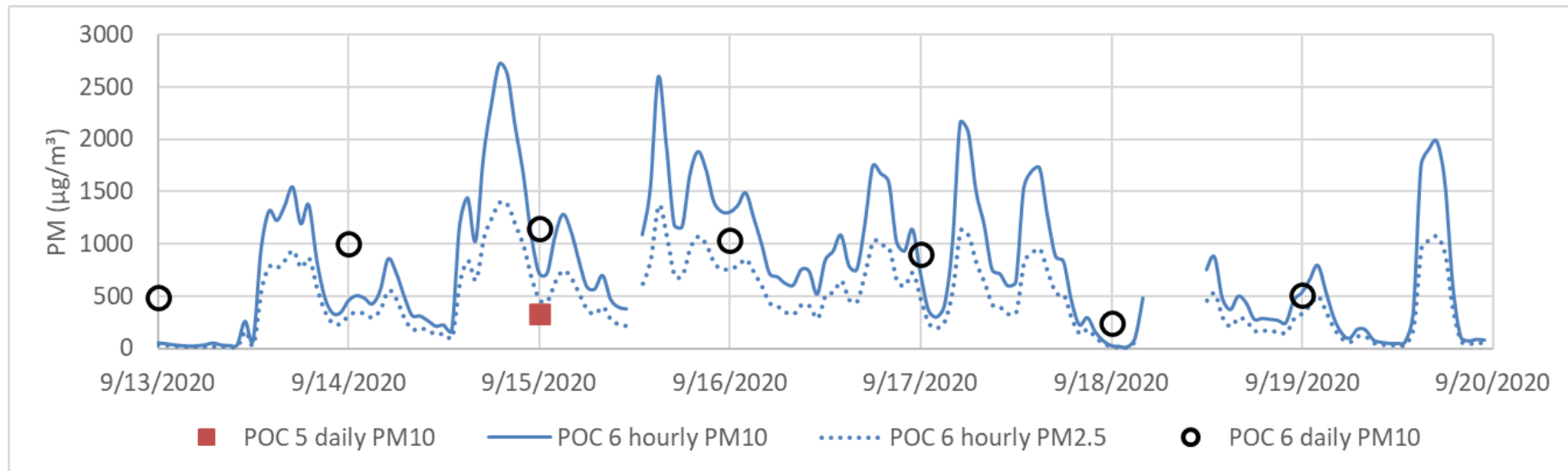


Figure 2.5.3: Week #3 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

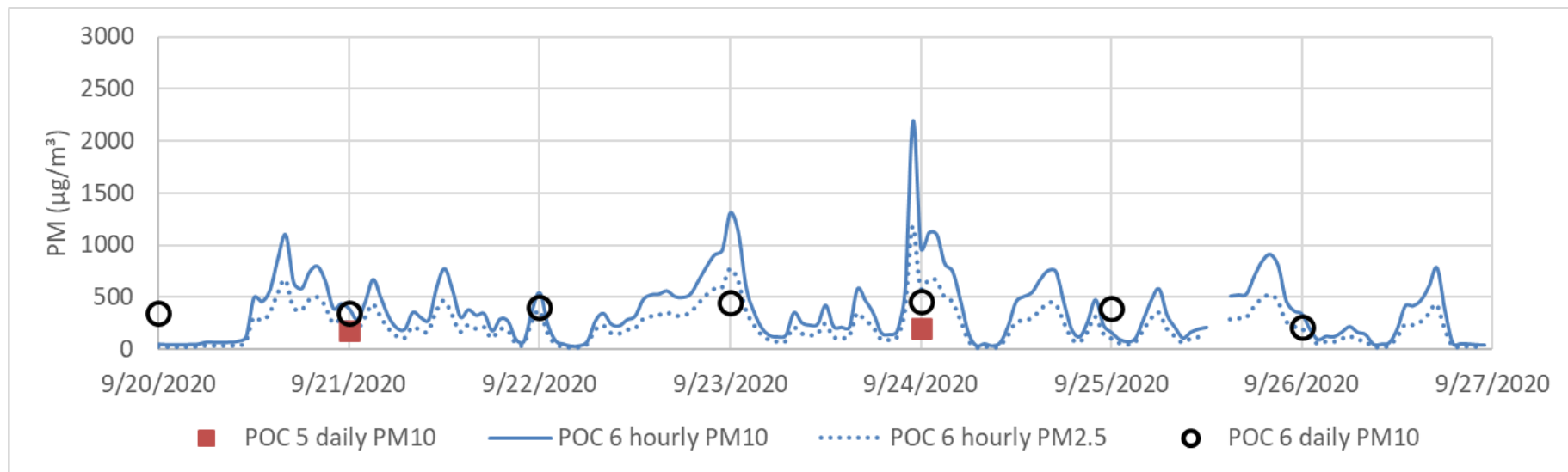


Figure 2.5.4: Week #4 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

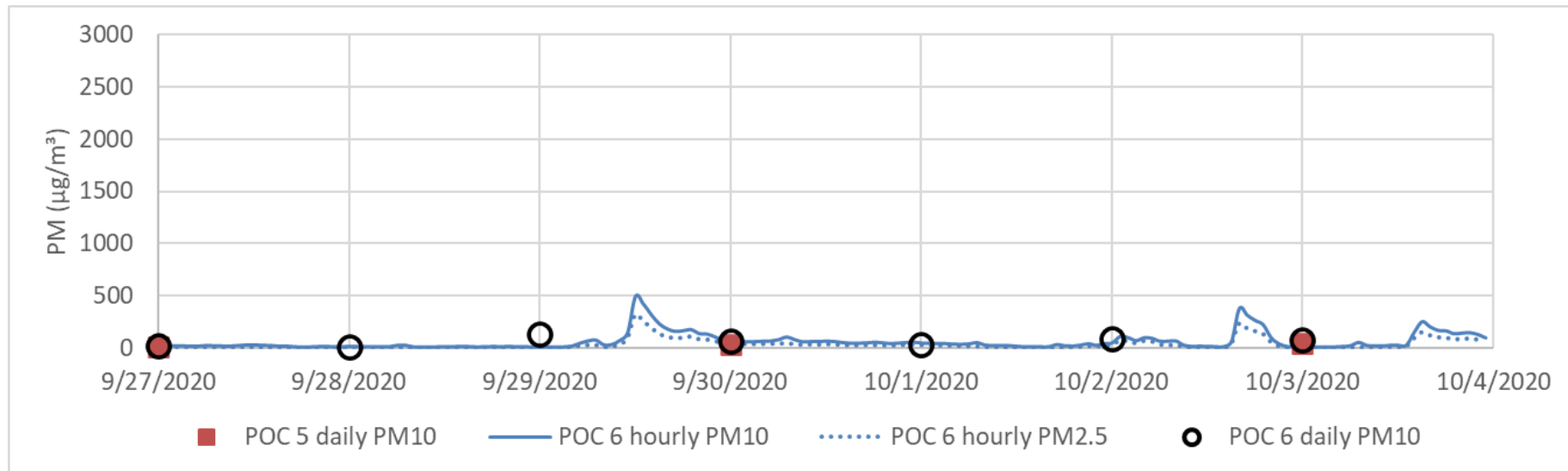


Figure 2.5.5: Week #5 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

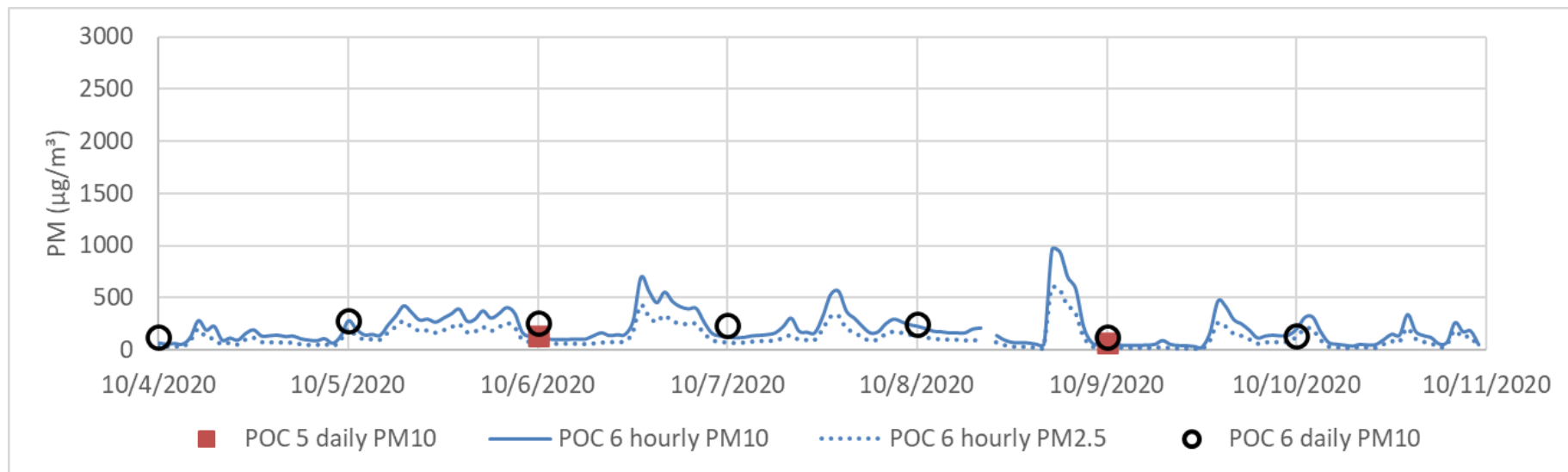


Figure 2.5.6: Week #6 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

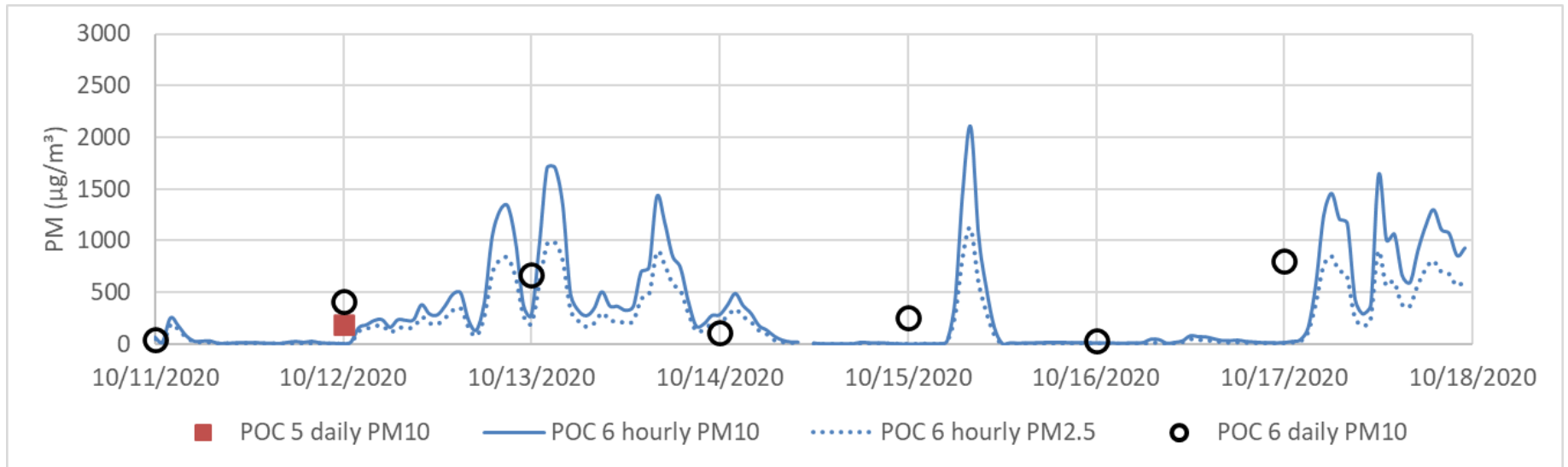


Figure 2.5.7: Week #7 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

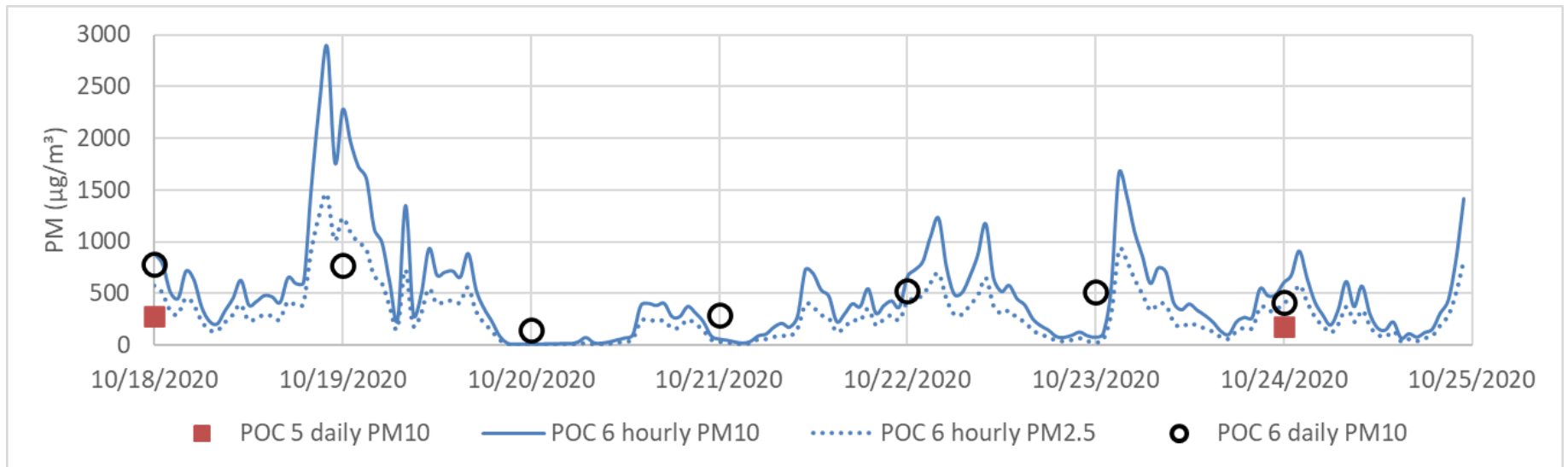


Figure 2.5.8: Week #8 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

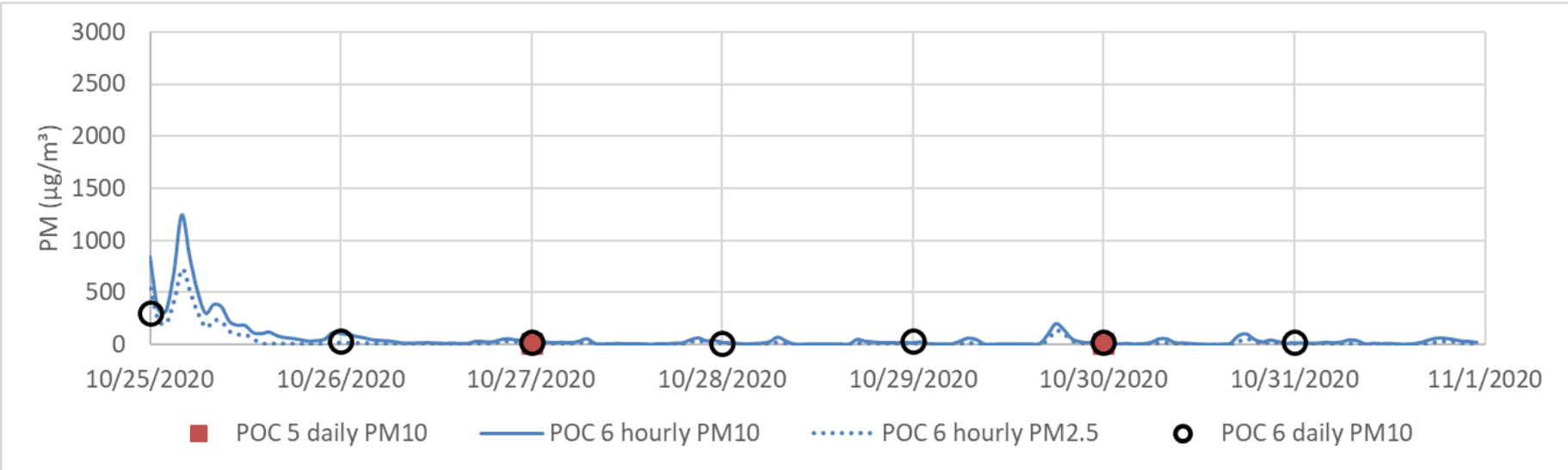


Figure 2.5.9: Week #9 hourly POC 6 PM10 and PM2.5 concentrations with daily POC 6 and POC 5 average PM10 concentrations.

3. EXCEPTIONAL EVENT DEMONSTRATION

The GBUAPCD is requesting exclusion of forty (40) monitored PM10 exceedances at Mammoth Lakes (06-051-0001) between September 6, 2020, and October 25, 2020, violating the 1987 150 µg/m³ 24-hour PM10 NAAQS. The daily average PM10 concentrations are listed in Table 1.1. These elevated concentrations were the result of smoke from California wildfires that was transported over the Sierra crest to the Mammoth Lakes PM10 Planning Area. Although several large wildfires were actively burning in California during this time period, the Creek Fire was most proximate and considered to be the primary source. The following sections contain detailed information on the wildfires causing the exceedances, the specific circumstances leading to the exceedances, comparisons between conditions on non-event days and event days, regional PM10 impacts beyond Mammoth Lakes, and a clear causal relationship between the wildfires and the monitored exceedances.

Conceptual Model / Summary of Events

The Creek Fire wildfire and other wildfires burning in California were responsible for the smoke impacts causing forty (40) PM10 NAAQS violations at Mammoth Lakes between September 6, 2020, and October 25, 2020. The map in Figure 3.1 shows the Terra / MODIS satellite image⁶ and HMS Fire Locations⁷ on September 6, 2020, clearly showing the smoke plume dispersion from the Creek Fire wildfire traversing east into the Mammoth Lakes PM10 Planning Area.

The Creek Fire started on September 4, 2020, near Shaver Lake, California. It grew in size and smoke-production quickly. Moderate smoke impacts were monitored in Mammoth Lakes on September 5, 2020, and significant impacts arrived on September 6, 2020. The POC 5 1:3 PM10 Partisol FRM monitor recorded its first of seven (7) exceedances attributed to wildfire smoke on September 6, 2020, and the POC 6 SPM T640x FEM also registered its first of thirty-three (33) exceedances on this day. While the Creek Fire gained momentum and smoke production, the SQF Complex wildfire was also increasing in size. The Slink Fire ignited on August 29, 2020 and was located north of Mammoth Lakes. It generally had a smoke plume directed northeast away from Mammoth Lakes, but when winds shifted to the northwest, it contributed to the September 6, 2020 PM10 exceedance recorded at Mammoth Lakes. All three fires, the SQF Complex, the Creek Fire, and the Slink Fire, were large fires, with many personnel involved with their control and monitoring, all of which is well documented in this demonstration. This conceptual model is supported by the fire managers' assessments, the air quality managers' assessments, photos, satellite images, and observed and modeled smoke plumes, each presented below.

The wildfire statistics in Table 3.1 show details of the SQF Complex, Creek Fire, and Slink Fire, including the size, ignition and containment dates, distance from the Mammoth Lakes monitor, ranked size, ignition source, and latitude/longitude. Links to websites containing further information on these fires are in the Table 3.1 footnotes and screenshots are shown in Appendix E.

⁶ Terra/MODIS imagery acquired from NASA's WorldView website at <https://worldview.earthdata.nasa.gov/?v=-125.78104244639056,34.38594963790762,-112.25867677446726,40.703079917538254&t=2020-09-06-T18%3A33%3A06Z>

⁷ Hazard Mapping System (HMS) Fire Locations from <https://www.ospo.noaa.gov/Products/land/hms.html>

Other very large wildfires also burned in California during the weeks these Exceptional Events took place. The fire statistics for those wildfires are listed in Table 3.2, also including the size, ignition date, distance and direction from Mammoth Lakes, ranked size, ignition source, and general location.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

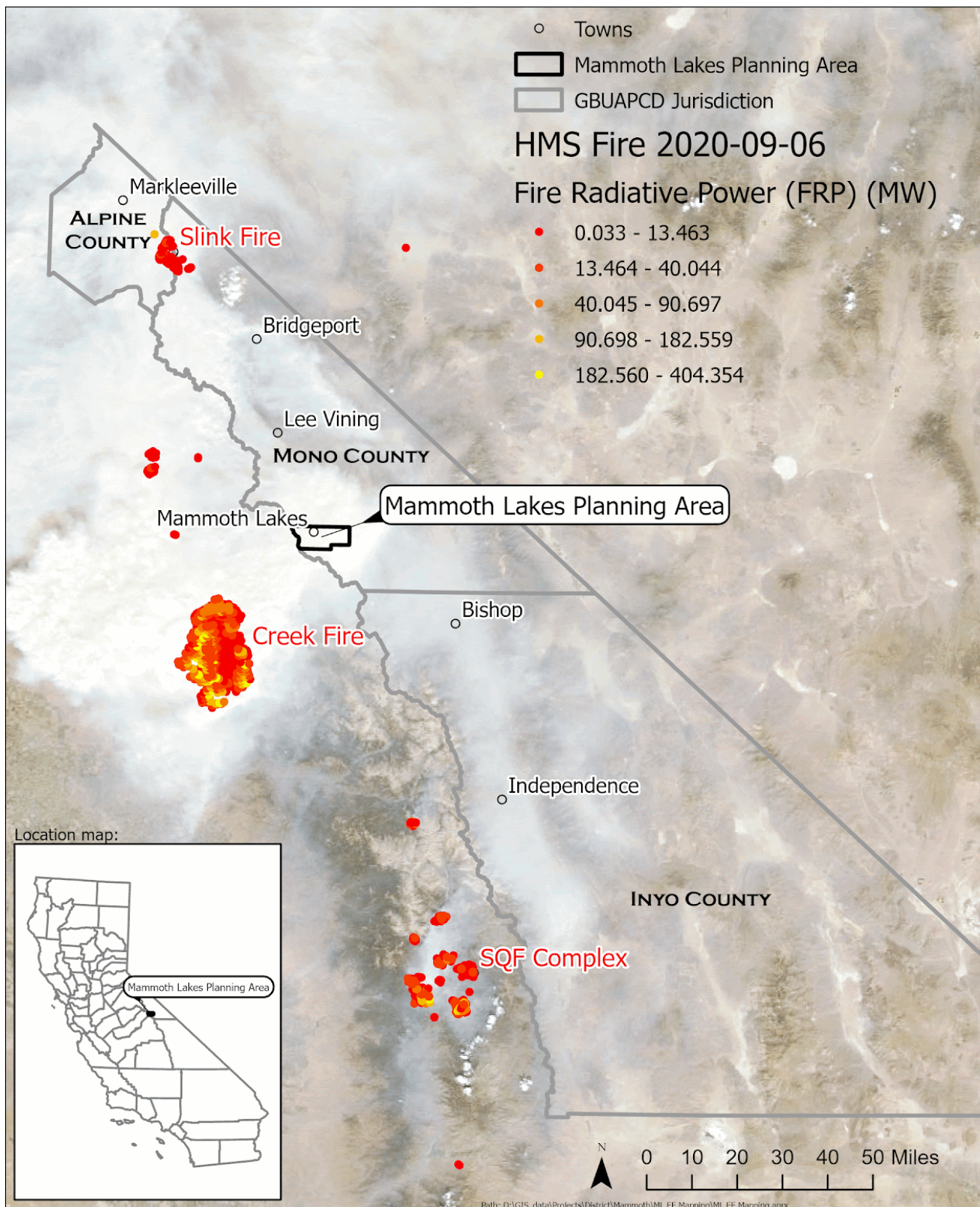


Figure 3.1: September 6, 2020, satellite image showing smoke from the Creek Fire entering the Mammoth Lakes PM10 Planning area.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.1: Statistics of three of the most prominent wildfires affecting the September and October 2020 PM10 exceedances at Mammoth Lakes.

Wildfire Name	Final Size (acres)	Ignition Date	Containment Date	Distance from Mammoth Lakes (miles)	Direction Cone from Mammoth Lakes (degrees)	Ranked Size in California by acreage	Ignition Source	Latitude	Longitude
SQF Complex ⁸	174,178	8/19/2020	1/5/2021	103	160 (SSE)	>20th	Lightning	36.255	-118.497
Creek Fire ⁹	379,895	9/4/2020	12/24/2020	11-35	168-232 (S-SW)	5th	Under investigation	37.201	-119.272
Slink Fire ¹⁰	26,759	8/29/2020	11/8/2020	71	335 (NNW)	N/A	Lightning	38.568	-119.568

⁸ SQF Complex: https://en.wikipedia.org/wiki/SQF_Complex

⁹ Creek Fire: [https://en.wikipedia.org/wiki/Creek_Fire_\(2020\)](https://en.wikipedia.org/wiki/Creek_Fire_(2020))

¹⁰ Slink Fire: https://en.wikipedia.org/wiki/2020_California_wildfires

Table 3.2: Statistics of additional significant California wildfires >100,000 acres or within 200 miles of Mammoth Lakes active during the September and October 2020 Exceptional Events.

Wildfire Name	Final Size (acres)	Ignition Date	Distance from Mammoth Lakes (miles)	Direction Cone from Mammoth Lakes (degrees)	Ranked Size in California by acreage	Ignition Source	General Location
August Complex ¹¹	1,032,648	8/16/2020	248	309 (NW)	1st	Lightning	Mendocino, Shasta-Trinity and Six Rivers National Forests
SCU Lightning Complex ¹²	396,624	8/16/2020	130	266 (W)	4th	Lightning	Santa Clara, Alameda, Contra Costa, San Joaquin, Merced, and Stanislaus Counties
LNU Lightning Complex ¹³	363,220	8/17/2020	183	291 (WNW)	6th	Lightning	Napa - Wine Country
North Complex ¹⁴	318,935	8/17/2020	186	327 (NNW)	7th	Lightning	Plumas National Forest
Dolan Fire ¹⁵	124,924	8/18/2020	180	236 (SW)	N/A	Suspected Arson	Los Padres National Forest

¹¹ August Complex: https://en.wikipedia.org/wiki/August_Complex_fire

¹² SCU Lightning Complex CalFire: https://en.wikipedia.org/wiki/SCU_Lightning_Complex_fires

¹³ LNU Lightning Complex: https://en.wikipedia.org/wiki/LNU_Lightning_Complex_fires

¹⁴ North Complex: https://en.wikipedia.org/wiki/North_Complex_Fire

¹⁵ Dolan Fire: https://en.wikipedia.org/wiki/Dolan_Fire

The satellite image in Figure 3.2 labels several of the numerous wildfires burning in California on September 6, 2020, the day of the first of forty (40) PM10 Exceptional Events in September and October 2020 at the Mammoth Lakes monitoring site, as well as their associated smoke plumes. The fire producing the most visible smoke plume in the image is the Creek Fire, featuring a massive pyrocumulus cloud (see full-page photo in Figure 3.55). The SQF Complex smoke plume is also shown, west of the Owens Valley and southeast of the Creek Fire, although its smoke plume is less obvious when compared to the Creek Fire smoke plume. The Slink Fire smoke plume is visible north of Mammoth Lakes, though nearly engulfed by the smoke plume from the Creek Fire. Although the image shows other wildfires were actively burning in California, as listed in Table 3.2, the Creek Fire (primarily), SQF Complex, and Slink Fire are deemed to be the main factors in the Mammoth Lakes PM10 exceedances in September and October 2020 based on 1) their proximity to Mammoth Lakes, 2) HYSPLIT trajectories, 3) Air Resource Advisor reports, and 4) visible smoke plume dispersion in satellite imagery (see Figure 3.16 through Figure 3.22 and Appendix J). Based on the evidence, the smoke from the numerous wildfires burning in California on the Mammoth Lakes PM10 Exceptional Events in September and October 2020 undoubtedly played a role in the exceedances, though by far, the primary influencers causing the exceedance were the Creek Fire, and to a lesser degree, the SQF Complex and Slink Fire.



Figure 3.2: Satellite image of wildfires and their smoke plumes in California on September 6, 2020. (Source: <http://californiasmokeinfo.blogspot.com/2020/09/sunday-september-6-2020-snapshot-of.html>)

The Slink Fire

The Slink Fire was ignited by a lightning strike on August 29, 2020. It was located 71 miles north of Mammoth Lakes on the eastern flank of the Sierra Nevada above Antelope Valley. Communities in the immediate downwind vicinity were Walker and Coleville. Smoke impacts from this wildfire was well documented¹⁶. The majority of the smoke impacts were observed well to the north of Mammoth Lakes in northern Mono County. An Air Resource Advisor was deployed to the Slink Fire and the first Smoke Outlook was issued on September 3, 2020, as shown in Figure 3.3. The map on the figure focuses on communities north of Mammoth Lakes, indicating Mammoth Lakes was not one of the communities forecasted to be significantly impacted by smoke from the Slink Fire. The ARA report indicates that:

- Heavy smoke impacts were seen overnight in Antelope Valley.
- We expect similar fire and smoke behavior over the next several days with Antelope Valley seeing the most smoke impacts.

The ARA report on the region covering the Slink Fire on September 6, 2020, as shown in Figure 3.8, had an expanded map to the south to include Bridgeport and Lee Vining, communities to the north of Mammoth Lakes, indicating impacts from the Slink Fire were being observed further south. This ARA report indicates that:

- Smoke from the Creek Fire halted operations on the Slink Fire
- There were heavy smoke impacts south of the Slink Fire in Bridgeport and Lee Vining.
- Monday is expected to have northwesterly flow.
- Lee Vining, to the north of Mammoth, will experience northwest winds.

The ARA forecast of wind direction changing to coming from the northwest is consistent with the HYSPLIT trajectories shown in Figure 3.43a for conditions on September 6, 2020. The ARA statement and modeled trajectories suggest the Slink Fire, with contributions from the Creek Fire, was responsible for impacts to Mammoth Lakes PM10 on September 6, 2020.

Figure 3.4 shows the last ARA report on the Slink Fire, issued September 16, 2020. The report indicates the Slink Fire was largely contained to 71% by mid-September 2020 and no longer a significant smoke producer. The ARA was taken off Slink Fire reporting duties on September 16, 2020. The September 6, 2020 PM10 EE is the only exceedance considered to have been influenced by the Slink Fire.

¹⁶ Slink Fire news report:

<https://www.foxnews.com/us/california-wildfire-slink-fire-whirl-tornado-weather-mono-county-blaze-forest-service>



Smoke Outlook for 9/03 - 9/04
Humboldt-Toiyabe NF - Slink Fire
Issued at: 2020-09-03 08:45 PDT

Special Statement

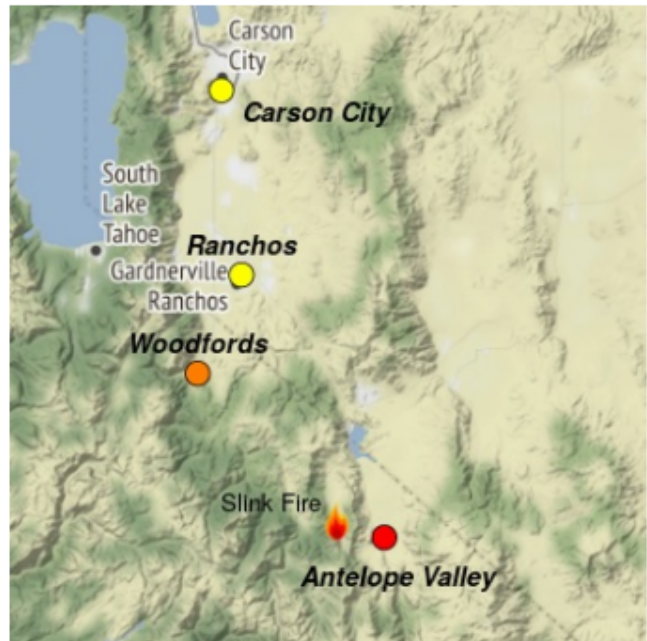
This is the first smoke outlook for the Slink Fire. Additional PM2.5 monitors will be added to the forecast over the next few days. The fire was started by lightning on August 29 in the Slinkard Valley, directly west of Coleville, CA in the Humboldt-Toiyabe National Forest. Please go to Inciweb for the most up-to-date fire information (link below)

Fire:

The Slink Fire is reported to be 14,700 acres, up 500 acres from yesterday, but remains at 10% containment. Evacuations for the cities of Coleville and Walker were lifted on 9/1 and HWY 395 is back open. However, the fire is still active on the southern and western fronts creating heavy smoke that may impact fire behavior. We expect more high fire activity over the next several days due to the hot and dry weather conditions.

Smoke:

Heavy smoke impacts were seen overnight and into Wednesday morning in Antelope Valley and the 395 corridor- the smoke lifted by late afternoon and into the evening. We expect the inversion to break earlier today which will help lift some smoke out of the 395 corridor. We expect similar fire and smoke behavior over the next several days with Antelope Valley seeing the most smoke impacts; Woodfords and Ranchos are likely to see less severe impacts. Carson City may see some smoke from the Slink Fire but it is also being influenced by regional smoke from other fires in California.



Station	Yesterday hourly	Wed 9/02	Forecast* Comment for Today -- Thu, Sep 03	Thu	Fri
				9/03	9/04
Carson City			Moderate throughout the day, not expected to see impacts from the Slink Fire		
Ranchos			Moderate to USG for the day, periods of Unhealthy are possible		
Woodfords			Moderate to USG for the day, periods of Unhealthy likely		
Antelope Valley			USG to Unhealthy, periods of Very Unhealthy are possible due to proximity to the fire		

Issued 2020-09-03 08:45 PDT by Ali Kamal, ARA (SlinkFireARA@gmail.com)

Figure 3.3. ARA Smoke Outlook covering the Slink Fire, issued September 3, 2020.



Smoke Outlook for 9/16 - 9/17
Humboldt-Toiyabe NF - Slink Fire
Issued at: 2020-09-16 06:53 PDT

Special Statement

Please view the links at the bottom of this page to learn how to protect yourself from wildfire smoke.

Fire:

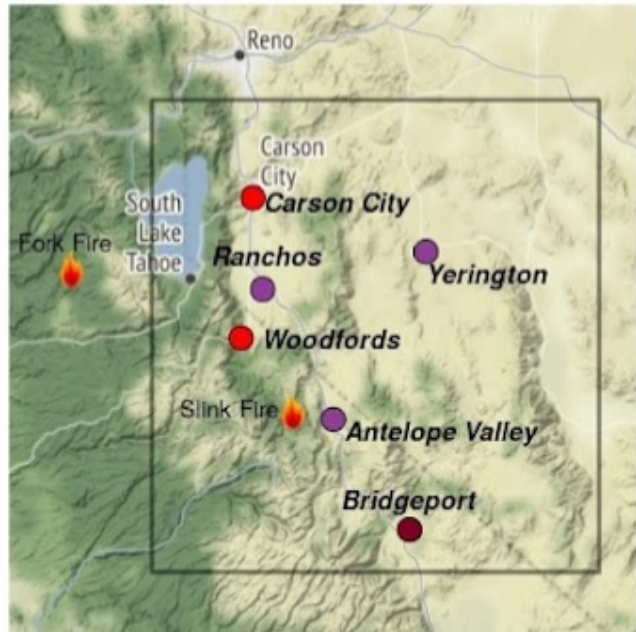
Today, the incoming Type 3 Team will take command of the Slink Fire. There is now 71% containment and the fire is holding at 26,700 acres. For the last few days, there has been minimal activity on the fire which has given crews opportunities to better secure the lines, especially on the western perimeter of the fire. With similar weather and smoky conditions in the forecast, we expect similar fire behavior today and Thursday.

Smoke:

Fires to the south of us will continue to be very active and smoke will continue to impact the reporting area for the rest of the week. We may see a little less smoke today, but we still expect Very Unhealthy to Hazardous conditions in the area. On Friday, winds will begin to shift more from the west and sites will start to see improved air quality.

More Information:

This will be the last smoke outlook for the Slink Fire. Please visit <https://wildlandfiresmoke.net/outlooks> for additional outlooks for the surrounding area.



Daily AQI Forecast* for Sep 16, 2020


Station	Yesterday			Tue 9/15	Forecast*	Wed Thu	
	hourly					9/16 9/17	
	6a	noon	6p				
Carson City	[Bar chart showing AQI levels]			●	Mostly Unhealthy for today, may see some improvement in air quality on Thursday afternoon and into Friday	●	●
Yerington	[Bar chart showing AQI levels]			●	Smoke impacts expected today, perhaps not as severe as yesterday. Hazardous still likely, some improvement possible on Thursday	●	●
Ranchos	[Bar chart showing AQI levels]			●	Very Unhealthy smoke expected overnight and in the morning hours, expect Unhealthy air quality for most of the day	●	●
Woodfords	[Bar chart showing AQI levels]			●	Mostly Unhealthy, periods of Very Unhealthy possible this morning and overnight	●	●
Antelope Valley	[Bar chart showing AQI levels]			●	Very Unhealthy, expecting less Hazardous conditions today than yesterday	●	●
Bridgeport	[Bar chart showing AQI levels]			●	Continued direct smoke impacts today and tomorrow, Hazardous for most of the day, some slight improvement on Thursday and into Friday	●	●

Issued 2020-09-16 06:53 PDT by Ali Kamal, Air Resource Advisor (SlinkFireARA@gmail.com)

Figure 3.4: The last ARA report on the Slink Fire, September 16, 2020.

The Creek Fire

The Creek Fire ignited on September 4, 2020 and continued to burn into October and through the conclusion of the EE period, as depicted in the growth figures in Table 3.4. The Creek Fire Incident Update for September 6, 2020 (see Figure 3.5) shows this wildland fire located in the Sierra National Forest had grown 45,500 acres in the two days since ignition and had already required the deployment of 800 firefighting personnel. On this day, the Mammoth Lakes POC 5 PM10 monitor recorded its first of seven (7) exceedances and the POC 6 SPM PM10 monitor recorded its first of thirty-three (33) exceedances. On September 7, 2020, the Creek Fire Incident Update in Figure 3.6 shows the fire had grown to 78,790 acres, a massive daily growth of 33,290 acres.



Creek Fire

Incident Update Sheet

Date	Time	Information Officer	Information #
09-6-20	8:20 A.M.	Alex Olow	559-269-2259






Incident Details			
Start Date	09-4-20	Cause	Under Investigation
Start Time	6:00 P.M.	Acres	45,500
Incident Type	Vegetation Fire	% Containment	0
Jurisdiction	Sierra N.F.	Date of Containment	-
Location: Both sides of San Joaquin River near Mammoth Pool and the communities of Shaver Lake, Big Creek and Huntington Lake.		Latitude	37.19574°
		Longitude	-119.2638°

Resources				
Engines	Hand Crews	Dozers	Helicopters	Air Tankers
25	5	3	2	3
Total Personnel: 800				
Assisting Agencies: CAL FIRE, Fresno County Fire, Fresno Sheriff, Caltrans, Southern California Edison, PG&E, Madera County Sheriff, CHP.				

Structures		
Threatened	Damaged	Destroyed
3000	0	0


Current Situation:	The Creek Fire a fast-moving fire burning on both Districts of the Forest. The fire which started near the communities of Big Creek and Huntington Lake, moved very quickly prompting several evacuations. Early Saturday afternoon the fire crossed the San Joaquin River and made a run into the Mammoth Pool area. Prompting some members of the public to shelter in place near Wagner's Store and Campground. With assistance the California Army National Guard, 207 people were safely evacuated and assessed for medical needs. The fire burned actively overnight. Crews will be challenged today by steep rugged terrain, heavy fuel loading and high temperatures. Additional resources have been ordered including a Type 1 Incident Management Team. Evacuations and closures remain in effect.
Evacuations:	Mandatory Evacuations in place for the communities of Big Creek, Huntington Lake, Shaver Lake and Cascadel Woods.
Road Closures:	Hwy 168 is closed 2.7 miles east of Prather below the four lanes. Visitors are advised that there is no access to the Shaver Lake area.


Figure 3.5: Creek Fire Incident Update, issued September 6, 2020.









CREEK FIRE INCIDENT UPDATE

Date: 09/07/2020 Time: 7:00 a.m.


@CAL_FIRE


@CALFIRE


@SierraNF


@SierraNF

Information/Media Line: (844) -668-3473
 Incident Email: creekfire2020@gmail.com
 Incident Websites: <http://inciweb.nwcg.gov>
www.fire.ca.gov

INCIDENT FACTS

Incident Start Date: 09/04/2020		Incident Start Time: 6:33 p.m.	
Incident Type: Wildland Fire		Cause: Under Investigation	
Incident Location: Both sides of the San Joaquin River near Mammoth Pool, Shaver Lake, Big Creek and Huntington Lake.			
Forest/CAL FIRE Units: Sierra National Forest, CAL FIRE Units Fresno-Kings and Madera-Mariposa-Merced			
Unified Command Agencies: US Forest Service, Fresno County Sheriff, Madera County Sheriff			
Size: 78,790 acres	Containment: 0%	Expected Full Containment: 10/15/2020	
Civilian Injuries/Fatalities: 0		Firefighter Injuries/Fatalities: 0	
Structures Threatened: 5,296	Structures Destroyed: 0	Structures Damaged: 0	

Figure 3.6: Creek Fire Incident Update, issued September 7, 2020.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

The Creek Fire progression map produced on September 10, 2020 in Figure 3.7 shows the rapid advancement of the fire perimeter from the date of origin. It indicates the fire grew 36,169 acres on September 6, 2020, and an additional 43,996 acres on September 7, 2020. The acreage discrepancies with the Incident Updates in Figure 3.5 and Figure 3.6 likely reflect more refined mapping of the perimeter on this later date.

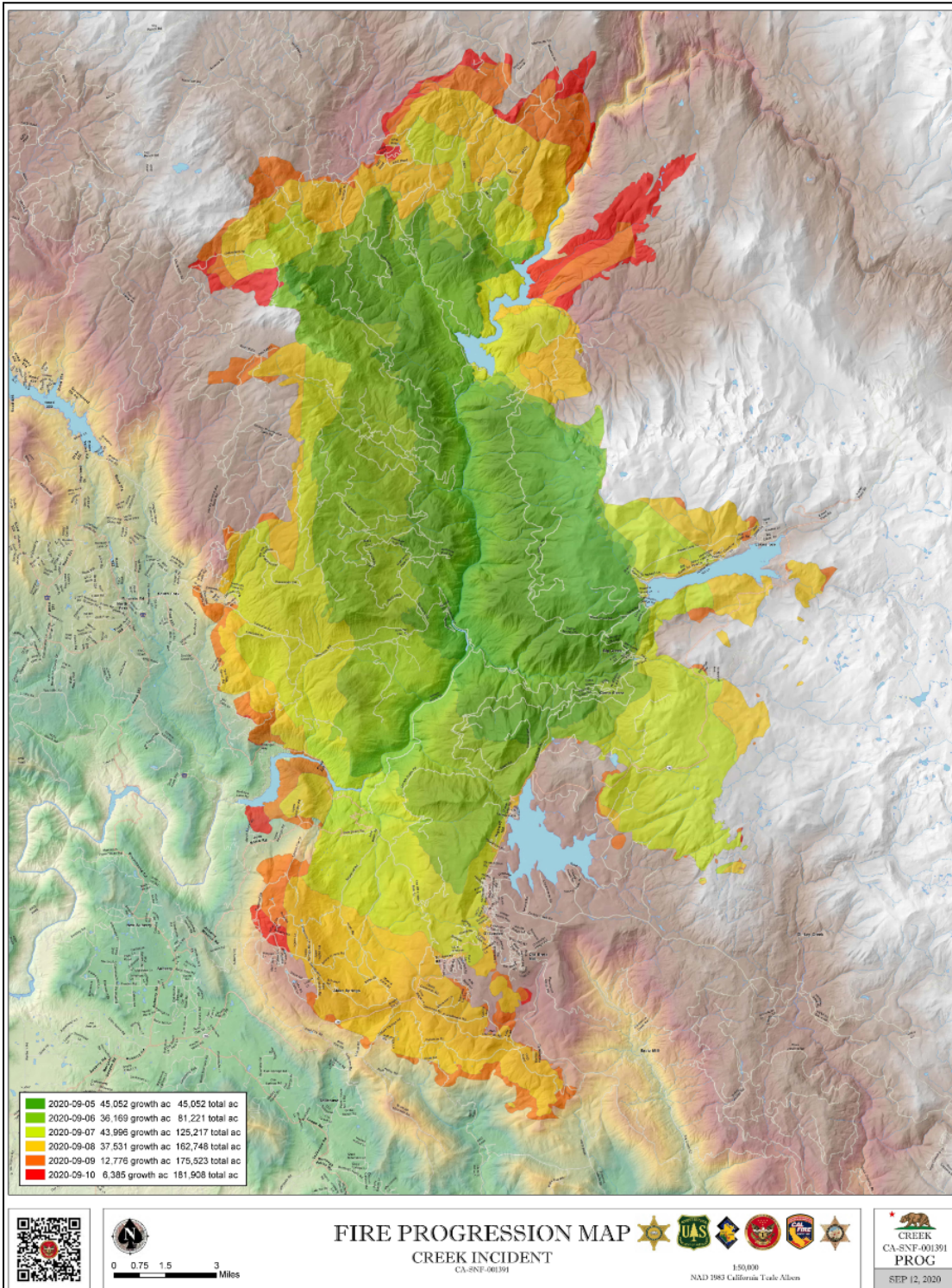


Figure 3.7: Map showing Creek Fire progression, through September 10, 2020.

To illustrate the magnitude of the Creek Fire conflagration between September 4, 2020, and September 7, 2020, a dedicated Air Resource Advisor (ARA) arrived September 8, 2020 tasked with reporting conditions and predicting PM concentrations at nearby communities. Prior to the assignment of a dedicated ARA to the Creek Fire on September 8, the Humboldt-Toiyabe National Forest ARA covered the smaller Slink Fire and other fires burning in northern Mono County, north of Mammoth Lakes, and produced a Smoke Outlook on September 6, 2020, as shown in Figure 3.8, referencing the Creek Fire. The September 6th ARA reported that:

- The Creek Fire in Sierra National Forest grew 36,000 acres and inundated the area with smoke - much of that smoke stayed aloft and dispersed, but impacts were still seen throughout the area, especially south of the Slink Fire.
- Smoke from the Creek Fire halted aerial operations on the Slink Fire on the evening of 9/5/2020.
- Lee Vining [north of Mammoth Lakes] was heavily impacted by smoke from the Creek Fire last night [9/5/2020] and into this morning [9/6/2020].

The observations and predictions by the Humboldt-Toiyabe ARA on September 6, 2020 for Lee Vining are consistent with the observations and measurements obtained by the GBUAPCD at Mammoth Lakes.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

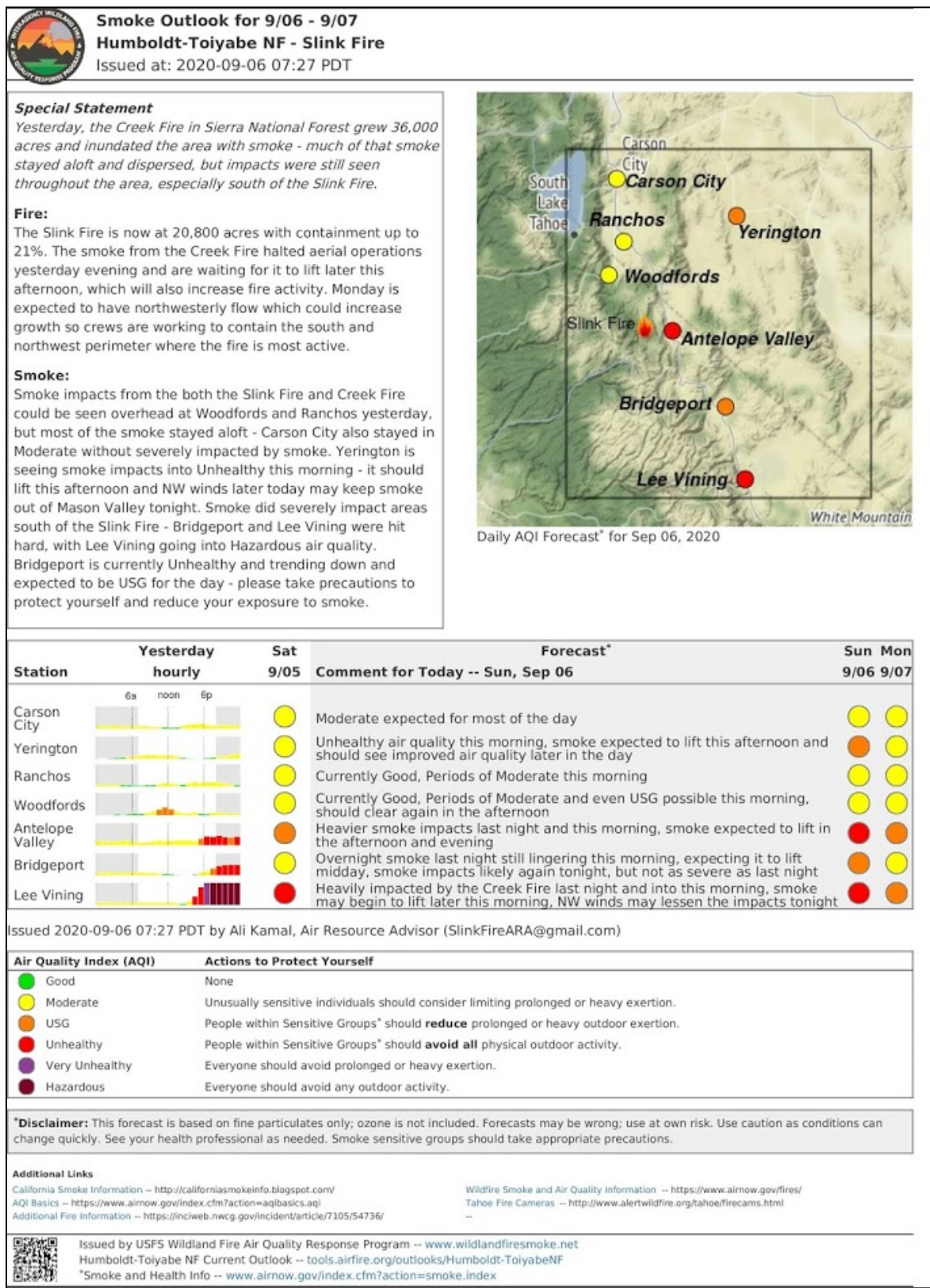


Figure 3.8: Air Resource Advisor Smoke Outlook for the Humboldt-Toiyabe National Forest, issued September 6, 2020.

Figure 3.9 shows the September 8, 2020 ARA Smoke Outlook for the San Joaquin-Yosemite Area (Creek Fire) indicating that as of September 7, the Creek Fire had burned 135,000 acres with 50,000 acres burned on September 7, 2020 alone. The Smoke Outlook further states:

- Smoke impacts to Mammoth Lakes in the Very Unhealthy range (purple) on September 7, 2020 and Unhealthy range (red) in the following days.
- Forecast for poor visibility, potentially less than ¼ mile.

The Creek Fire smoke transport to the east observed and predicted by the ARA is consistent with conditions observed and monitored by the GBUAPCD, including the degraded visibility as forecasted by the ARA. With this eastward transport, smoke flowed over the Sierra crest into Mammoth Lakes with direct impact to the PM10 monitors.

The Creek Fire ARA continued to issue Smoke Outlooks for the area including Mammoth Lakes throughout September and October 2020, due to the prolonged and heavy smoke production from the fire affecting neighboring communities such as Mammoth Lakes. All thirty-three (33) Creek Fire ARA Smoke Outlooks issued during the September 2020 to October 2020 EE period are included in Appendix G. The ARA AQI conditions report and AQI predictions for Mammoth Lakes are consistently in the hazardous range, more than any other community adjacent to the Creek Fire. Table 3.3 is a summary of the ARA predicted AQI conditions caused by wildfire smoke at Mammoth Lakes during the POC 5 Exceptional Event Days, as well as the identified source, and a relevant excerpt from the report. The additional ARA reports in Appendix G list conditions which are very similar to those in Table 3.3 on POC 6 exceedance days, listing Mammoth Lakes as being heavily affected by smoke from the Creek Fire.

Table 3.3. Air Resource Advisor (ARA) AQI forecasts at Mammoth Lakes on POC 5 Exceptional Event days, as excerpted from Smoke Outlooks included in Appendix G.

POC 5 EE Date	ARA Predicted AQI	Source	Excerpt
9/6/2020	Unhealthy (at Lee Vining, Mammoth not in forecast)	Creek Fire	“Heavily impacted by the Creek Fire”
9/15/2020	Hazardous	Creek Fire	“Likely Hazardous/Very Unhealthy all day”
9/21/2020	Hazardous	Creek Fire	Very Unhealthy to Hazardous throughout the day”
9/24/2020	Very Unhealthy	Creek Fire	“Communities to the east, such as Mammoth Lakes, are expected to remain in heavy smoke”
10/12/2020	Hazardous	Creek Fire	“Expect heaviest smoke impacts in Mammoth Lakes”
10/18/2020	Hazardous	Creek Fire	“Mammoth Lakes will see the heaviest smoke”
10/24/2020	Very Unhealthy	Creek Fire	“Heavy smoke continues in Mammoth Lakes”

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/08 - 9/09 San Joaquin-Yosemite Area (Creek Fire) Issued at: 2020-09-08 11:28 PDT

Fire

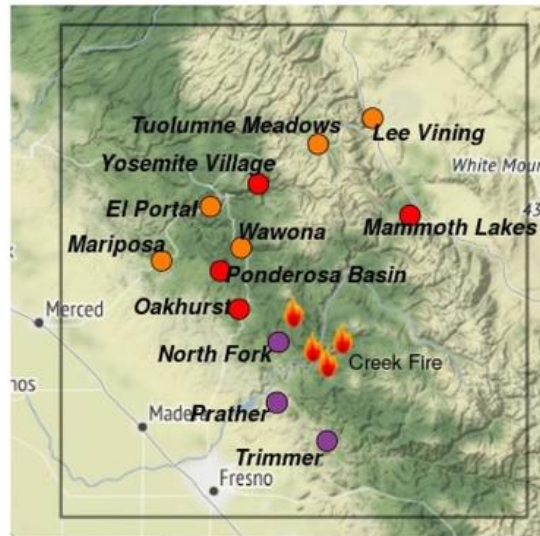
As of last night, the Creek Fire has burned over 135,000 acres, much of it in heavy mixed conifer fuels, with over 50,000 acres of that burning in the last 24 hrs. Potential for extreme fire behavior and large-scale growth continues.

Smoke

NW transport winds are blowing smoke to the SE from the Creek Fire this morning, and there is a lot of residual smoke from yesterday trapped in the canyons and lower terrain. Some of this may mix out in the afternoon, however continued large-scale emissions are likely to worsen air quality tonight and tomorrow, throughout the forecast area.

Notes

Forecasts reflect particulate matter only - not ozone. Poor visibility, potentially less than 1/4 mile, may occur on roads to the south and/or west of the fire and may also hinder aircraft flight operations.



Daily AQI Forecast* for Sep 08, 2020

Station	Yesterday	Mon 9/07	Forecast*	Tue Wed 9/08 9/09
	hourly			
Lee Vining			Possible moderate range this afternoon	
Tuolumne Meadows			Possible moderate range this afternoon	
Mammoth Lakes			Possible moderate range this afternoon	
Yosemite Village			Possible moderate range this afternoon	
El Portal			Possible moderate range this afternoon	
Wawona			Possible moderate range this afternoon	
Mariposa			Possible moderate range this afternoon	
Ponderosa Basin			Some afternoon improvement; worsening again likely late afternoon/evening	
Oakhurst	No hourly data		Some afternoon improvement; worsening again likely late afternoon/evening	
North Fork			Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	
Trimmer			Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	
Prather	No hourly data		Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	

Issued 2020-09-08 11:28 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbupcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD -- <http://www.valleyair.org>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Figure 3.9: Smoke Outlook for the San Joaquin-Yosemite Area, issued September 8, 2020.

The Creek Fire aggressively burned throughout the September 2020 and October 2020 Exceptional Event period, increasing in growth most days and reaching only 61% containment by the end of the Exceptional Event period on 10/25/2020. Table 3.4 shows the number of acres burned by the Creek Fire, the containment percentage, and the daily growth.

Table 3.4: Creek Fire acreage increase throughout the 2020 EE period.¹⁷

Date	Acea burned (acres)	Containment	Growth increase (acres)
Sep 5	36,000	0%	
Sep 6	73,278	0%	37,278
Sep 7	78,790	0%	5,512
Sep 8	152,833	0%	74,043
Sep 9	163,138	0%	10,305
Sep 10	175,893	0%	12,755
Sep 11	182,225	6%	6,332
Sep 12	196,667	8%	14,442
Sep 13	201,908	10%	5,241
Sep 14	212,744	16%	10,836
Sep 15	228,025	18%	15,281
Sep 16	244,746	18%	16,721
Sep 17	246,756	20%	2,010
Sep 18	248,256	20%	1,500
Sep 19	271,938	25%	23,682
Sep 20	278,368	27%	6,430
Sep 21	280,425	30%	2,057
Sep 22	283,724	30%	3,299
Sep 23	289,695	32%	5,971
Sep 24	291,426	34%	1,731
Sep 25	291,426	36%	0
Sep 26	292,172	39%	746
Sep 27	302,870	39%	10,698
Sep 28	304,604	39%	1,734
Sep 29	306,240	44%	1,636
Sep 30	307,051	44%	811
Oct 1	309,033	44%	1,982

¹⁷ Source: [https://en.wikipedia.org/wiki/Creek_Fire_\(2020\)](https://en.wikipedia.org/wiki/Creek_Fire_(2020)) courtesy of Inciweb (data now removed).

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Date	Acea burned (acres)	Containment	Growth increase (acres)
Oct 2	311,703	45%	2,670
Oct 3	313,044	49%	1,341
Oct 4	316,673	49%	3,629
Oct 5	322,089	48%	5,416
Oct 6	326,706	49%	4,617
Oct 7	328,595	49%	1,889
Oct 8	330,899	49%	2,304
Oct 9	331,954	49%	1,055
Oct 10	333,350	49%	1,396
Oct 11	333,350	55%	0
Oct 12	333,350	55%	0
Oct 13	337,655	55%	4,305
Oct 14	337,655	55%	0
Oct 15	341,722	55%	4,067
Oct 16	344,042	60%	2,320
Oct 19	350,331	61%	6,289
Oct 20	352,339	61%	2,008
Oct 22	357,656	61%	5,317
Oct 25	360,834	61%	3,178


The SQF Complex

The SQF Complex wildfire was ignited by a lightning strike on August 19, 2020 and the size of the fire had grown to 55,961 acres by September 7, 2020 (see map in Figure 3.12). The SQF Complex produced significant amounts of smoke throughout the EE period, and GBUAPCD continued to issue Health Advisories as late as October 23, 2020. Although smoke waned in November 2020, the SQF Complex wasn't fully contained until winter storms arrived.

The SQF Complex was a wildland fire in the Sequoia and Inyo National Forests. The SQF Complex consisted of two fires managed together: the larger Castle Fire, and the smaller Shotgun Fire. Due to the distance from Mammoth Lakes and location, the SQF Complex generally emitted smoke to the east, away from Mammoth Lakes. Occasionally, during the Exceptional Event period, the prevailing wind shifted to southerly and lofted smoke from the SQF Complex toward the Creek Fire and Mammoth Lakes. In general, though, it was the Creek Fire which had smoke lofted toward the SQF Complex. Such was the case on September 8, 2020. The SQF Complex Fire Update dated September 8, 2020 in Figure 3.10 indicates that:


- In the afternoon, as winds become more westerly, the Creek Fire smoke could shift north of the Sequoia (SQF) Complex.

Indeed, this prediction is consistent with the observations and ambient measurements made by the GBUAPCD. Measurements and satellite images confirmed Creek Fire smoke was transported southeast to north of the SQF Complex.



Sequoia Complex (#SQFComplex) Fire Update

Sequoia and Inyo National Forests
September 8, 2020
Northern Rockies Incident Management Team 1
Mike Goicoechea, Incident Commander



Fire Information: 559-697-5148, 8 AM-8 PM
Email: sqfcomplex2020@gmail.com
Website: inciweb.nwrcg.gov/incident/7048/
Facebook: www.facebook.com/SequoiaNF www.facebook.com/inyonf
Facebook: www.facebook.com/TulareCountyFireDepartment
Twitter: [@sequoiaforest](https://twitter.com/sequoiaforest) and [@Inyo_NF](https://twitter.com/Inyo_NF)

Virtual Community Meeting 6 PM tonight
 Broadcast via **Facebook Live** at: www.facebook.com/SequoiaNF

Operational video briefings are posted to the Sequoia NF Facebook site daily.

On 9/7/2020, The USDA Forest Service issued **emergency forest closures** and emergency fire restrictions for the Pacific Southwest Region. These orders affect eight National Forests, including the Sequoia and Inyo National Forests.

Sequoia (#SQF) Complex: The complex includes the **62,389 acre Castle fire** and the **498 acre Shotgun fire**.

Castle Fire: On Monday afternoon, northwest winds pushed active fire on the eastern flank of the fire towards Little Horse Meadows. Structure protection groups remained ready through the night at Beach Meadows. Along the southern edge, fire was held along the Kern River towards Lion Meadows. Due to the fire being pushed on the southeast corner, direct firefighting tactics on the ground and retardant from air resources were used in this area. On the western flank of the fire, operations personnel began the work of scouting the fire's edge that reached into Freeman Grove. A new fire start in Pierpoint diverted five fire engines. The fire was 100% contained at 1/10th of an acre.

Today: Scouting on the western flank will continue to assess how far the fire has progressed into the Freeman Grove area and form a tactical plan for successful firefighting activity. Direct fireline in this area is not possible due to steep, rugged terrain and the risk of firefighters' safety. Personnel are working to assess how to tie indirect fire containment lines together from the north and south on the western edge of the fire. The western edge of the fire remains the highest priority for the incident management team due to the values at risk in nearby communities.

The southeast side of the fire will be tested with winds continuing from the northwest bringing the potential of spotting. Backcountry structure protection groups on the east side in the Inyo National Forest will continue their work with fuels mitigation to protect area values at risk, including structures. On the northeast flank, resources will work to limit impacts to local resources within the Golden Trout Wilderness area.

Shotgun Fire: Continues to hold at 498 acres, slowly burning in a rocky drainage and being monitored by aircraft.

Weather: Weather conditions today will be slightly more favorable for firefighters with temperatures 7-9 degrees cooler and relative humidity levels up 2-3%. Morning winds in the drainages will become south to southwest in the early afternoon with speeds gusting to 14 miles per hour. Winds will continue to be heavily impacted by local terrain and shading from the Creek Fire smoke.

Smoke: Northwest winds on Tuesday will allow smoke from the Creek Fire to shade the Sequoia Complex. **In the afternoon**, as winds become more westerly, the Creek Fire smoke could shift north of the Sequoia Complex area.

Incident Statistics

Location: 25 miles N of Kernville, CA
 Date of origin: 8/19/20 Cause: **Lightning**
 Size: **62,887 acres** Containment: 7%
 Cost: \$13.5 million Injuries: 11
 Civilians evacuated: 1,433
 Structures threatened: 838

Resources

Hand Crews: 13	Engines: 49
Water-tenders: 19	Dozers: 8
Helicopters: 8	Personnel: 792

Figure 3.10: Sequoia and Inyo National Forest Sequoia (SQF) Complex Fire Update from September 8, 2020.

The Air Resource Advisor (ARA) Smoke Outlook Report for the Southern Sierra-Sequoia SQF Complex on September 7, 2020 is shown in Figure 3.11. Notably, it states:

- Yesterday was an active fire day for the SQF Complex. Significant growth was experienced.
- The outlook area will be under a blanket of smoke due to the SQF and Creek Fire.
- Today's air quality will be much impaired for the Outlook area.
- Very Unhealthy or worse levels are expected for Owens Valley.
- During this period [9/7-9/8] smoke from Creek Fire will affect the area. It will combine with SQF Complex smoke and contribute to very poor air quality.

All these bulleted predictions and observations by the SQF Complex ARA in Figure 3.11 are consistent with the observations and ambient air quality measurements made by the GBUAPCD, as demonstrated in the sections below. While the SQF Complex ARA reporting area is beyond the geographic scope of the Mammoth Lakes area, smoke from this fire had the potential to impact the Mammoth Lakes monitors.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

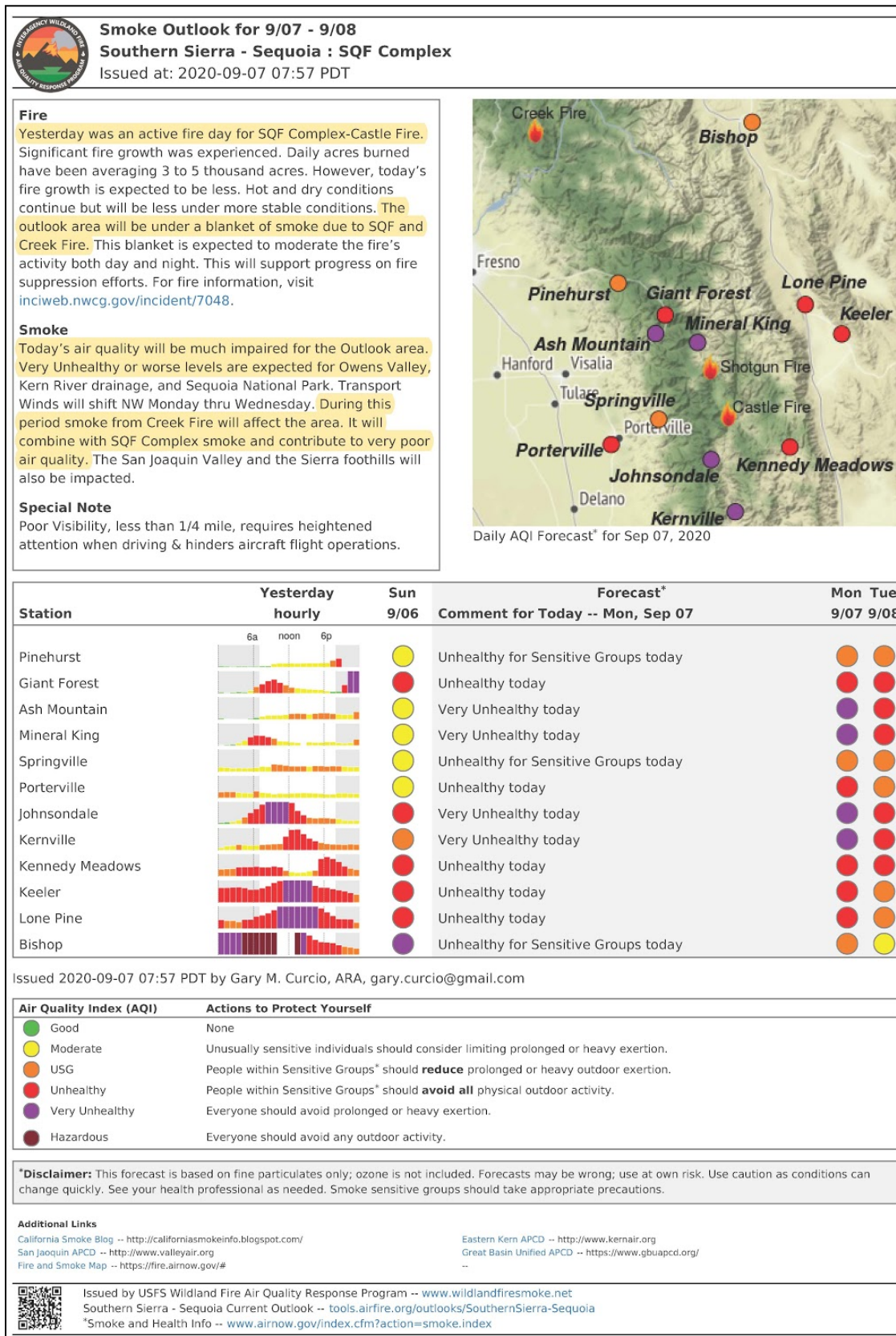


Figure 3.11Y: Air Resource Advisor Smoke Outlook for the Southern Sierra, September 7, 2020.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

The SQF (Sequoia) Complex progression map in Figure 3.12 shows that the fire grew 5,523 acres on September 6, 2020 and grew an additional 6,641 acres on September 7, 2020.

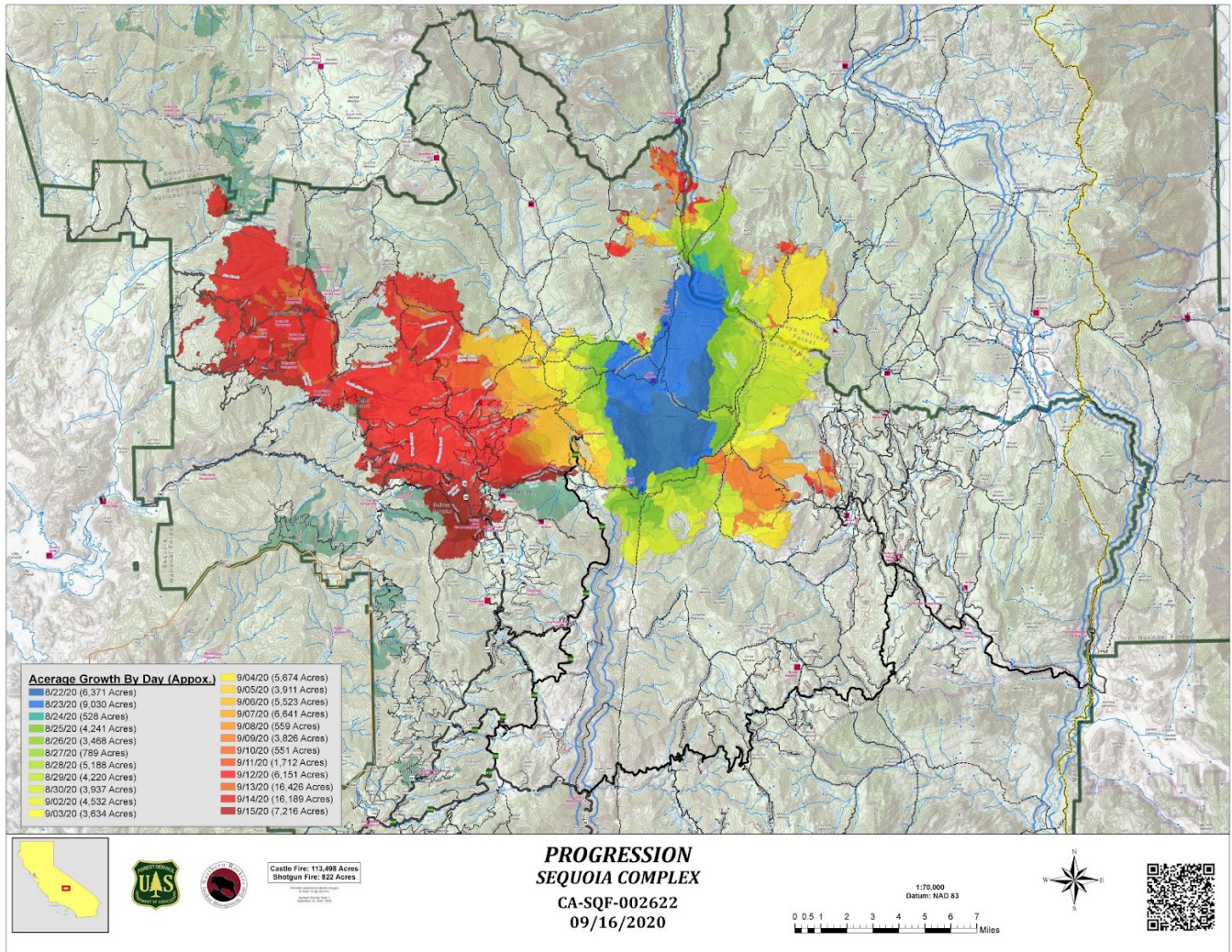


Figure 3.12: Map showing SQF Complex progression, through September 15, 2020.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

The map in Figure 3.13 shows the SQF Complex extent on September 7, 2020 with the Castle Fire component mapped at 55,523 acres, and the Shotgun Fire component mapped at 438 acres.

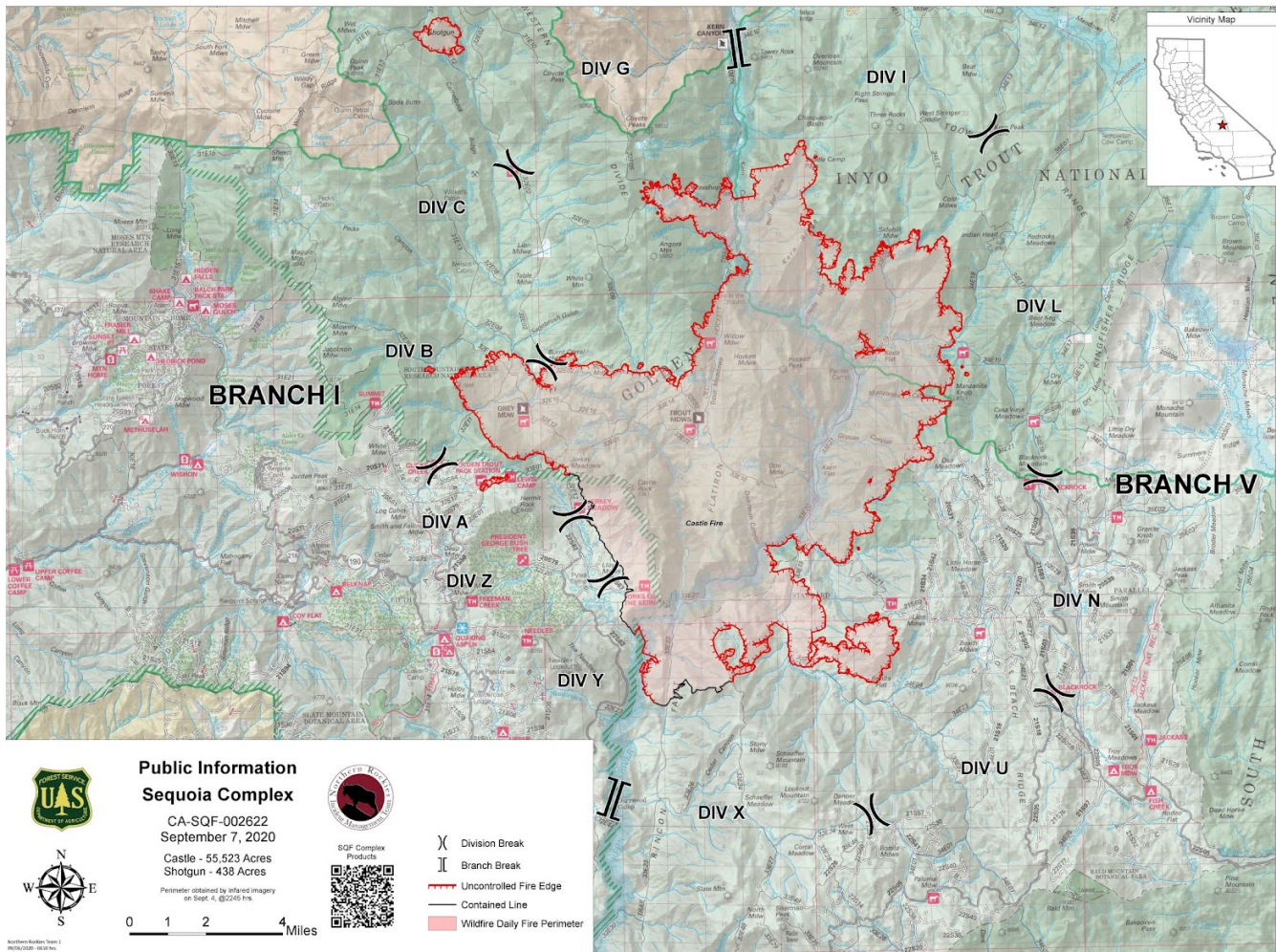


Figure 3.13: Map showing SQF Complex extent on September 7, 2020.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

The map in Figure 3.14 shows the SQF Complex the following day, on September 8, 2020, when the acreage of the Castle Fire component had grown to 62,389 acres, an increase of 6,866 acres. Both maps in Figure 3.13 and Figure 3.14 show the relative location of the SQF Complex in the inset map in the upper-right corner.

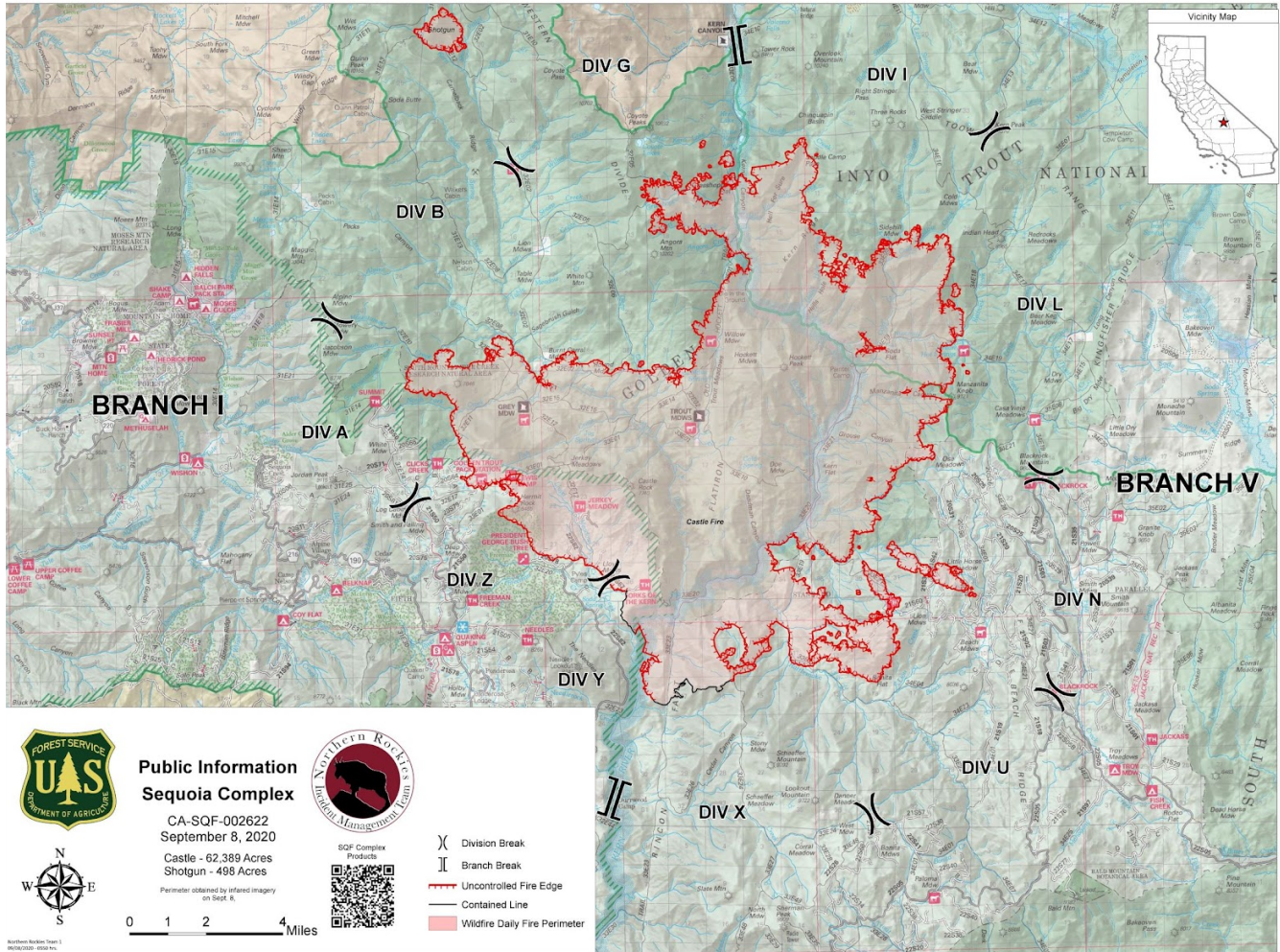


Figure 3.14: Map showing SQF Complex extent on September 8, 2020

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Visible Satellite Smoke Plumes, Detected Hotspots, and HMS Smoke Layers

The map in Figure 3.15 presents Worldview satellite imagery on September 6, 2020, showing wildfire hotspots as orange dots. Prominent in this image is the massive pyrocumulus emitting from the Creek Fire with smoke plumes heading over the Sierra crest and directly into Mammoth Lakes.

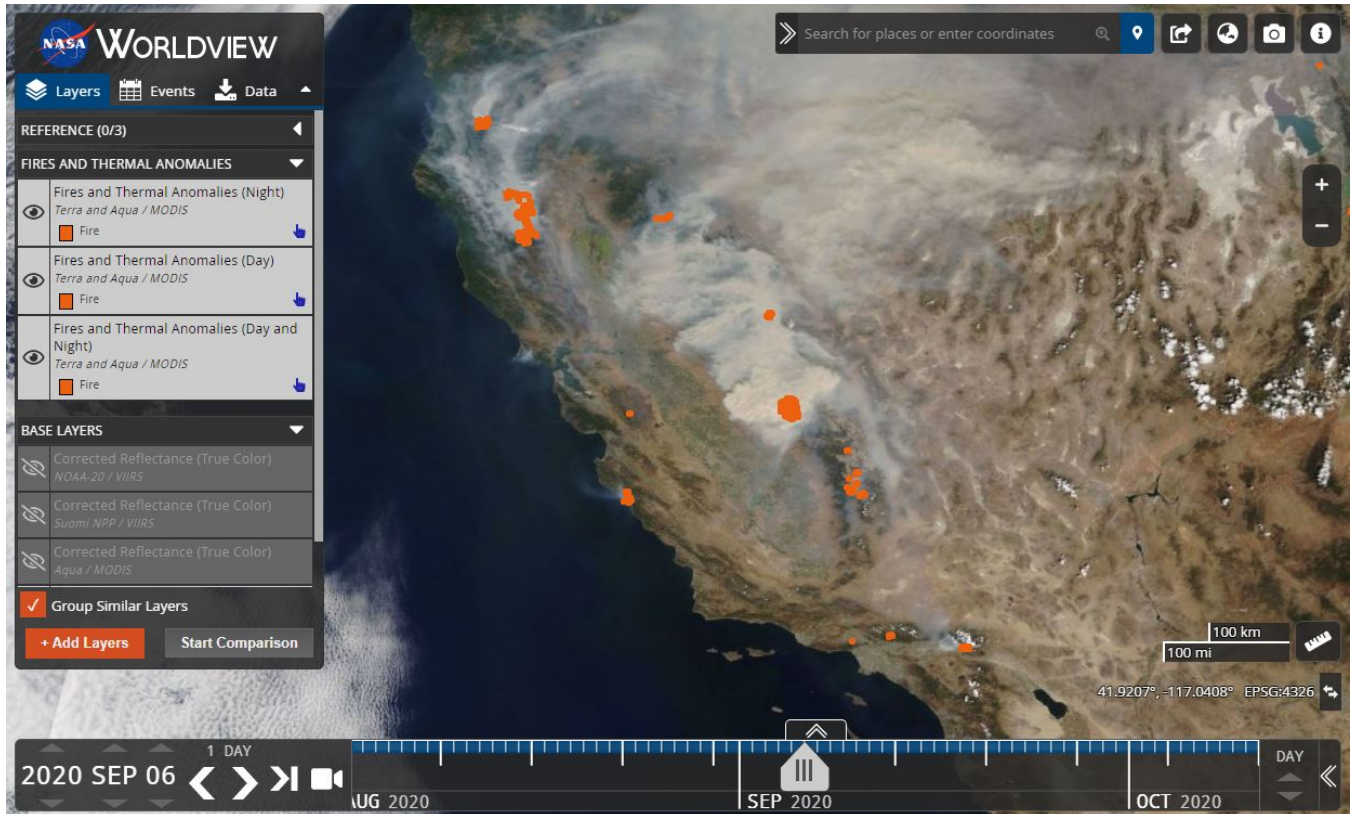


Figure 3.15: Worldview satellite imagery showing the Creek Fire and other wildfire smoke plumes on September 6, 2020 (source: <https://worldview.earthdata.nasa.gov>).

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

The maps in Figure 3.16 through Figure 3.22 are from AirNowTech Navigator¹⁸, showing the smoke plumes impacting Mammoth Lakes, detected hotspots, and regional hourly monitored PM10 concentrations on each of the seven (7) POC 5 FRM PM10 exceedances requested for exclusion as Exceptional Events. Maps for all other days with POC 6 SPM T640x exceedances requested for exclusion are shown in Appendix J. Maps in the figures identify the Mammoth Lakes monitor with a black oval outline surrounding the monitor and hourly PM10 concentrations. Displayed PM10 concentrations are from the Mammoth Lakes SPM T640x.

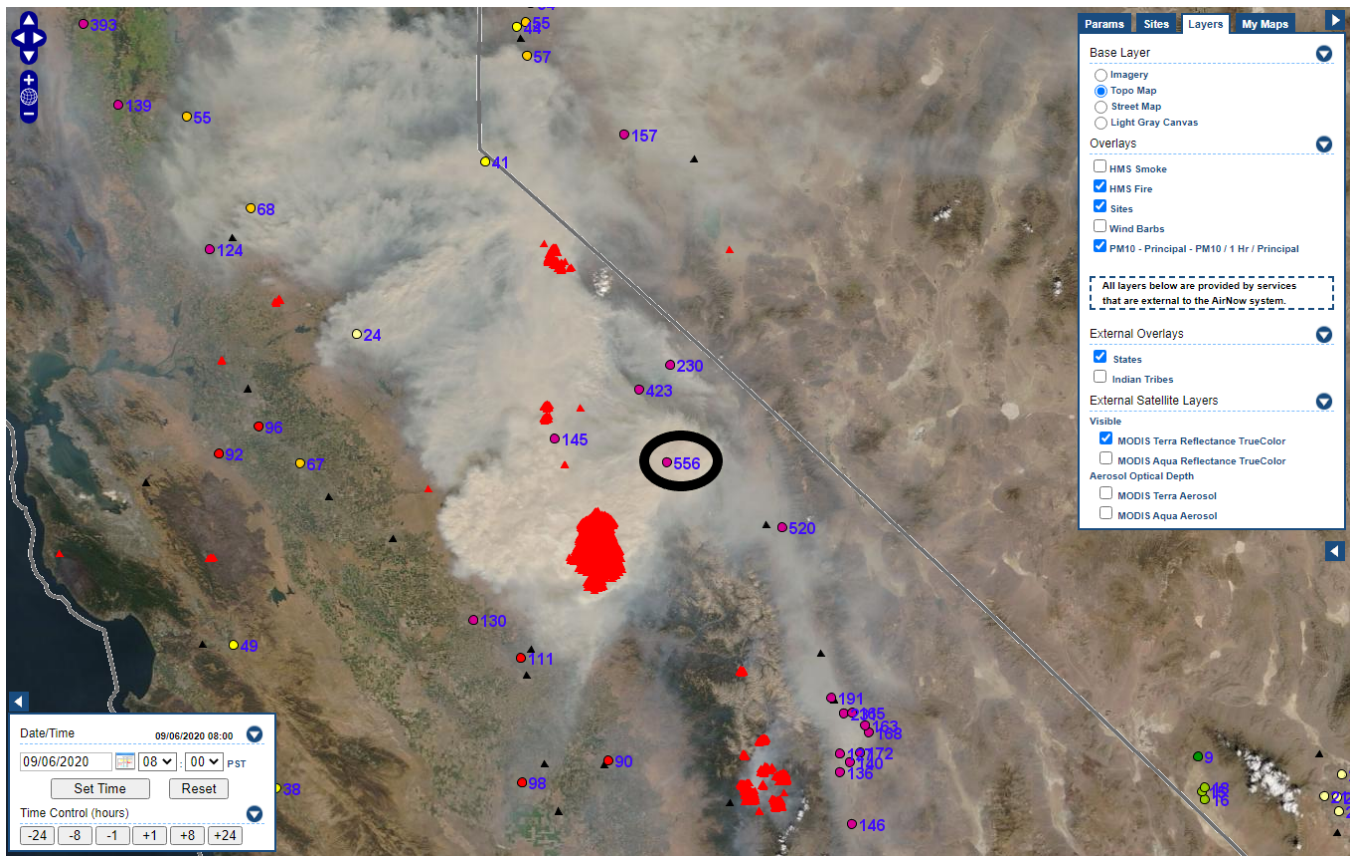


Figure 3.16: Satellite Image, detected hotspots, and monitored PM10 concentrations on September 6, 2020 08:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

¹⁸ AirNowTech navigator is accessible at <https://www.airnowtech.org/navigator/index.cfm>.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

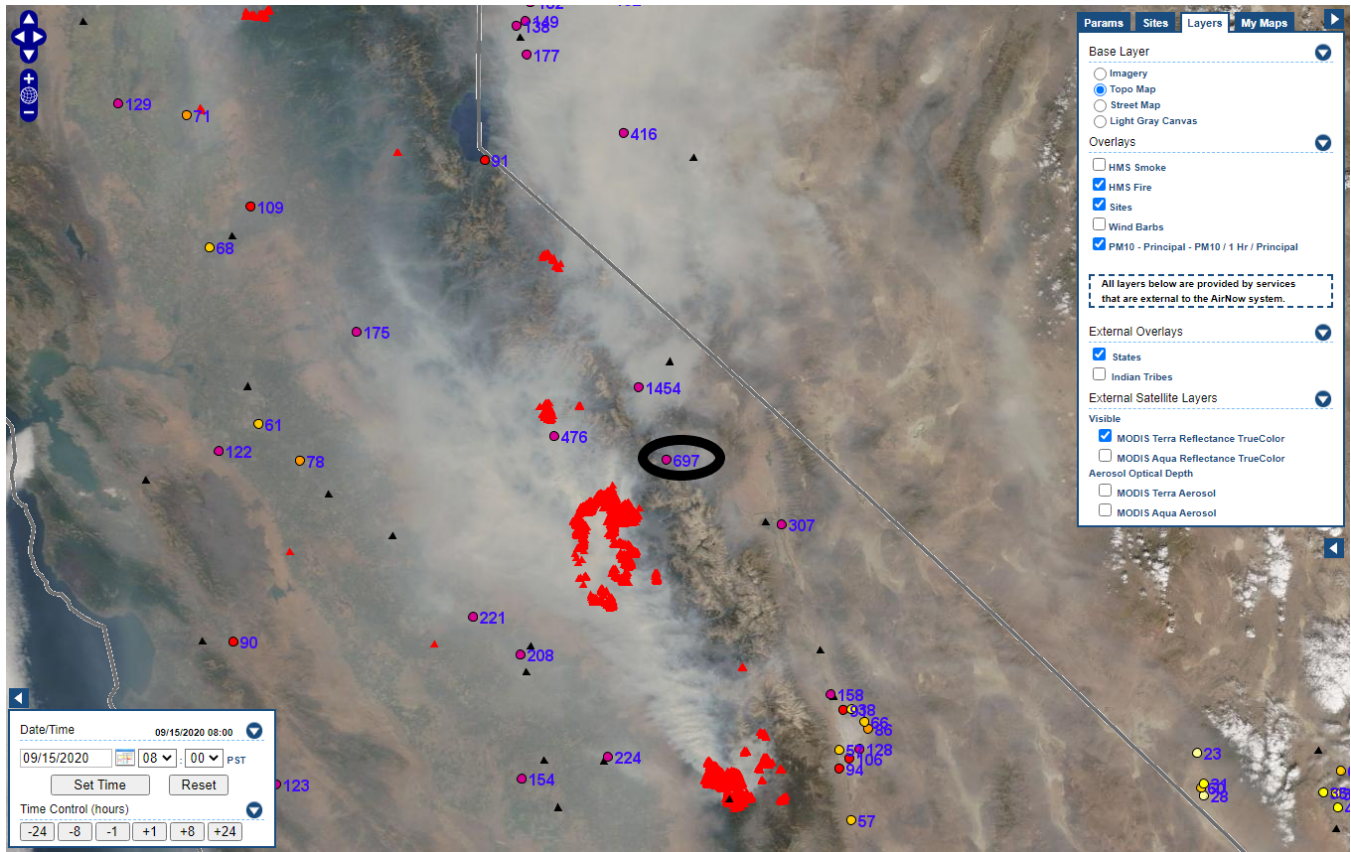


Figure 3.17: Satellite Image, detected hotspots, and monitored PM10 concentrations on September 15, 2020 08:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

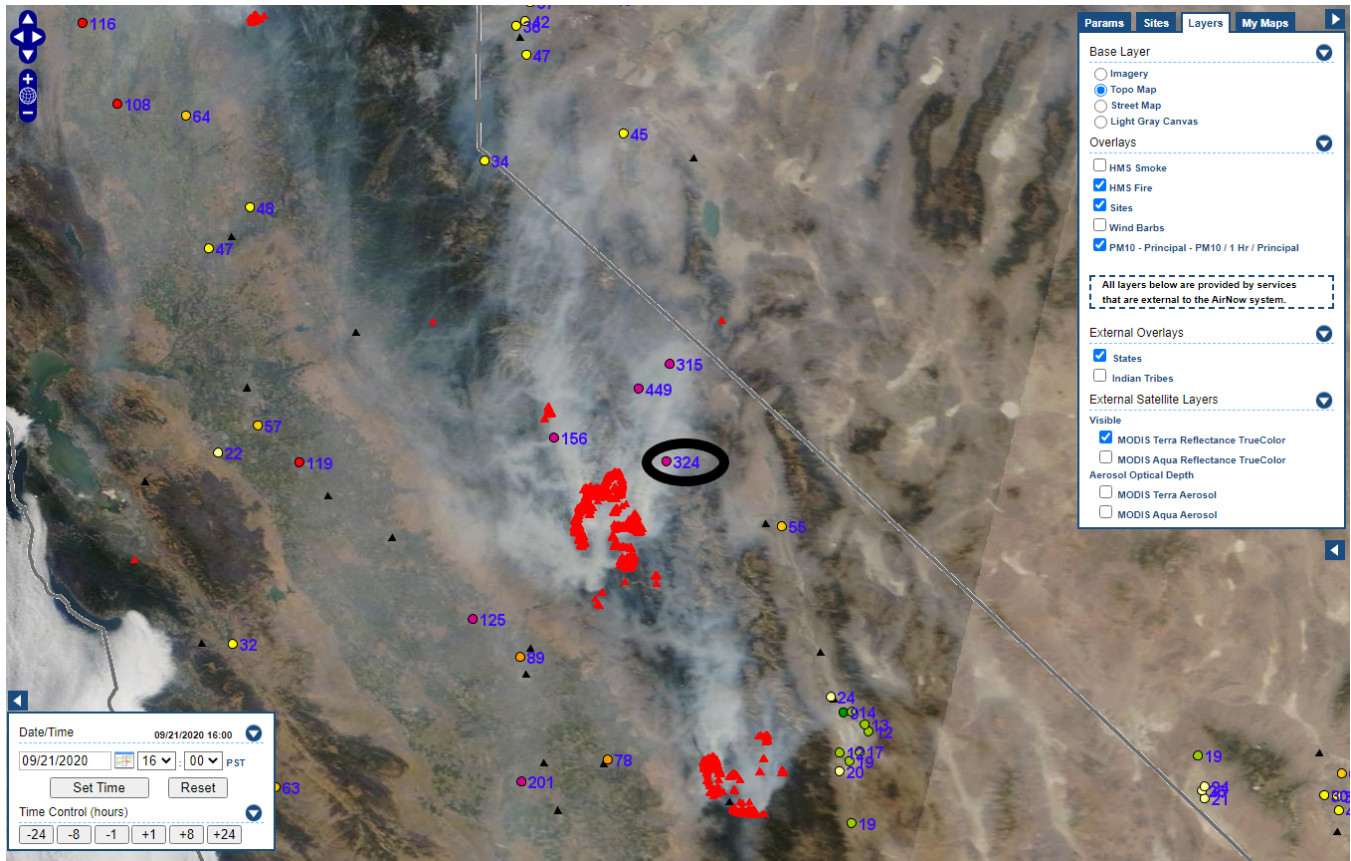


Figure 3.18: Satellite Image, detected hotspots, and monitored PM10 concentrations on September 21, 2020 16:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

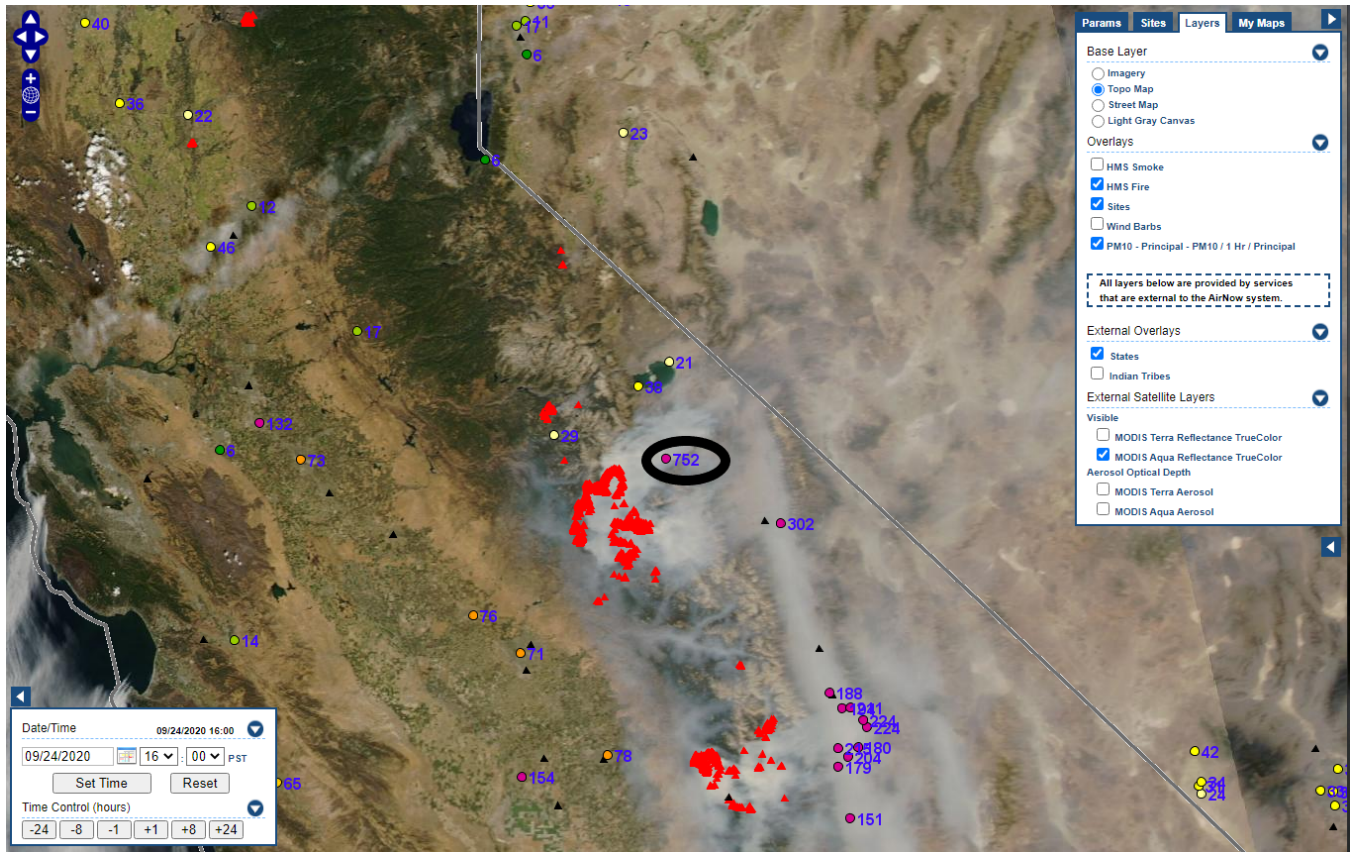


Figure 3.19: Satellite Image, detected hotspots, and monitored PM10 concentrations on September 24, 2020 16:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

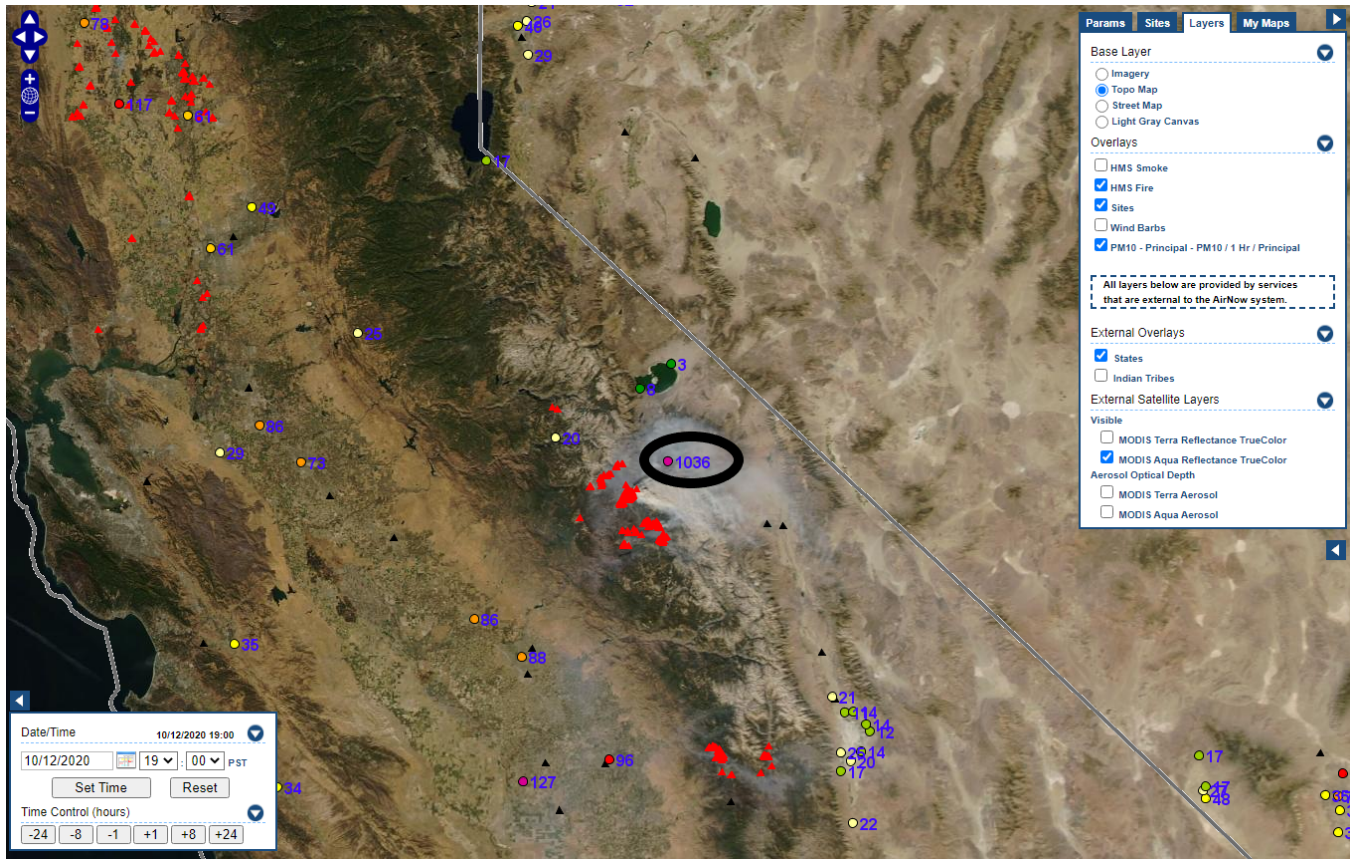


Figure 3.20: Satellite Image, detected hotspots, and monitored PM10 concentrations on October 12, 2020 16:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

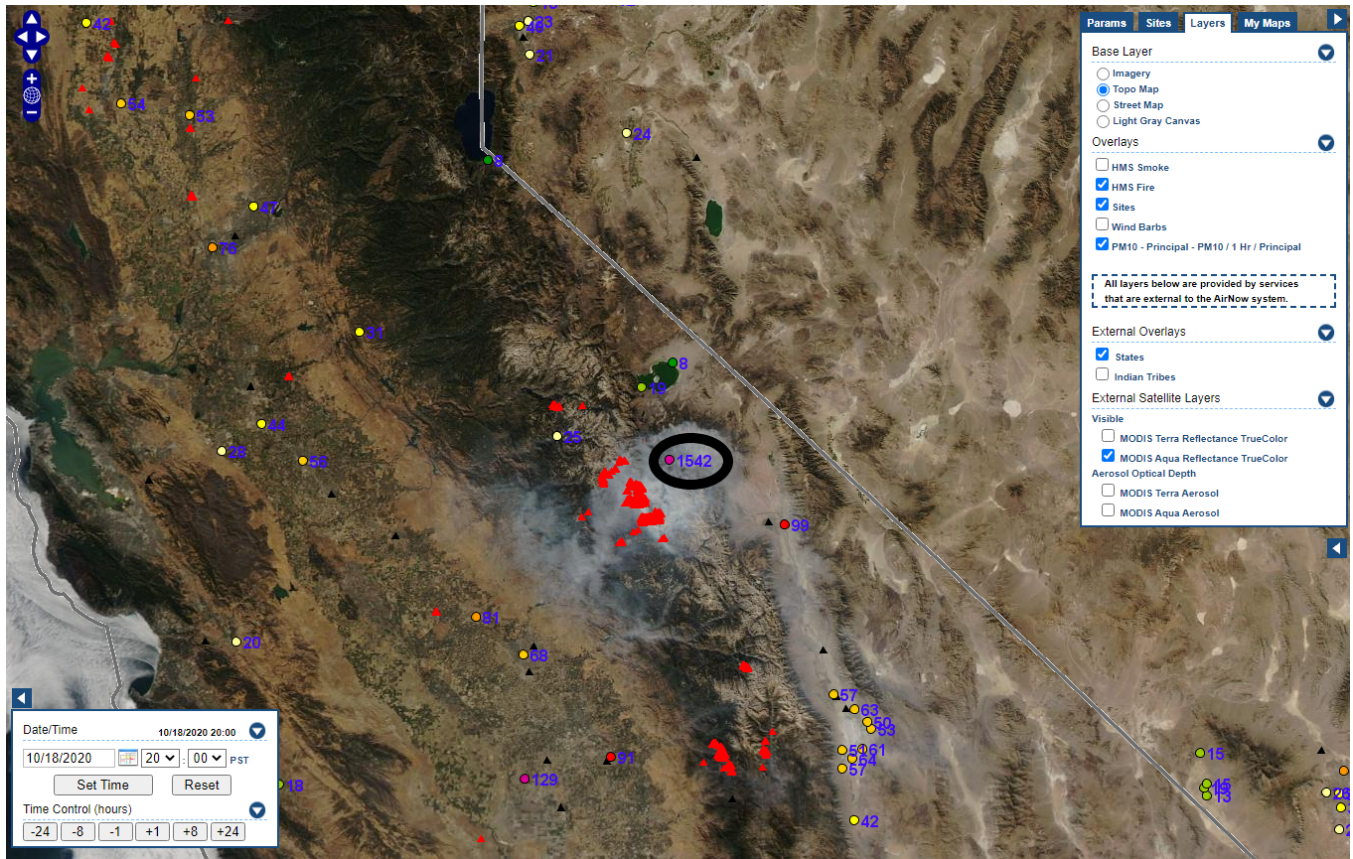


Figure 3.21: Satellite Image, detected hotspots, and monitored PM10 concentrations on October 18, 2020 20:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

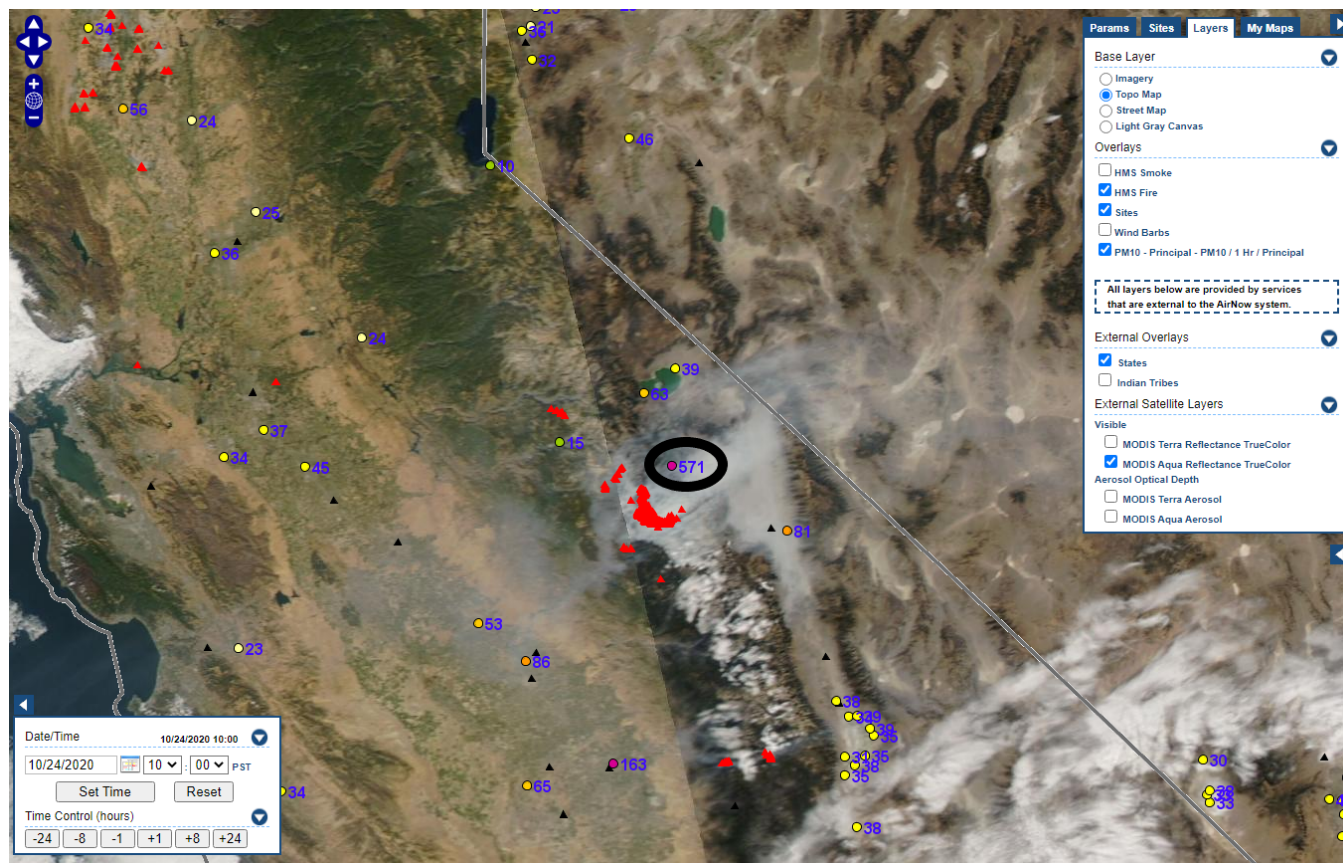


Figure 3.22: Satellite Image, detected hotspots, and monitored PM10 concentrations on October 24, 2020 10:00 PST. (Source <https://www.airnowtech.org/navigator/index.cfm#>)

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Figure 3.23 through Figure 3.29 show Hazard Mapping System (HMS) Smoke Plume maps of modeled smoke plume density and satellite-detected hotspots in California and the Mammoth Lakes area on all seven (7) POC 5 FRM requested Exceptional Event days. HMS maps for all other days requested for exclusion as registered by the SPM POC 6 T640x are shown in Appendix K. The maps show “Heavy” or “Medium” smoke density in Mammoth Lakes on nearly all event days.

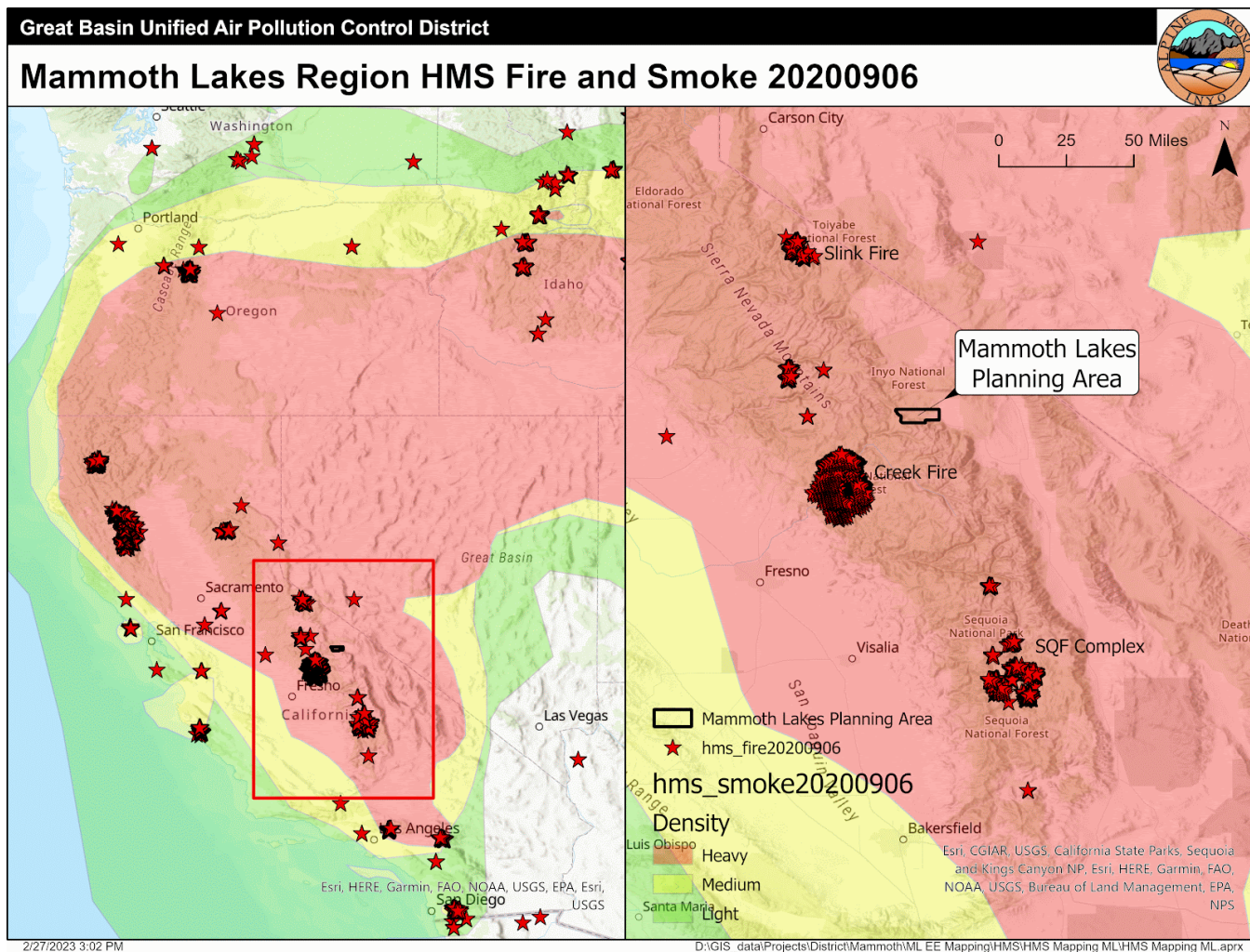


Figure 3.23: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, September 6, 2020 (Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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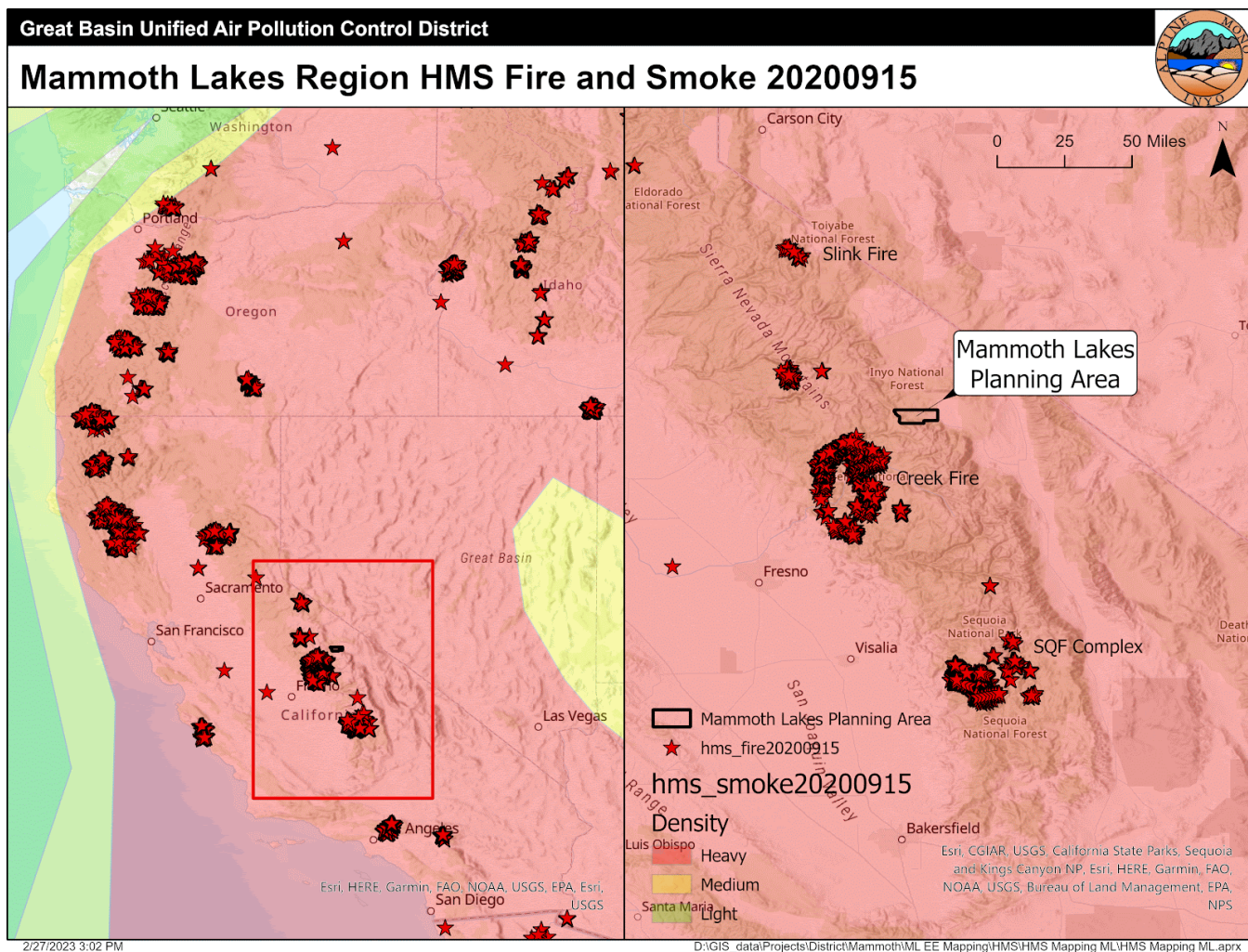


Figure 3.24: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, September 15, 2020 (Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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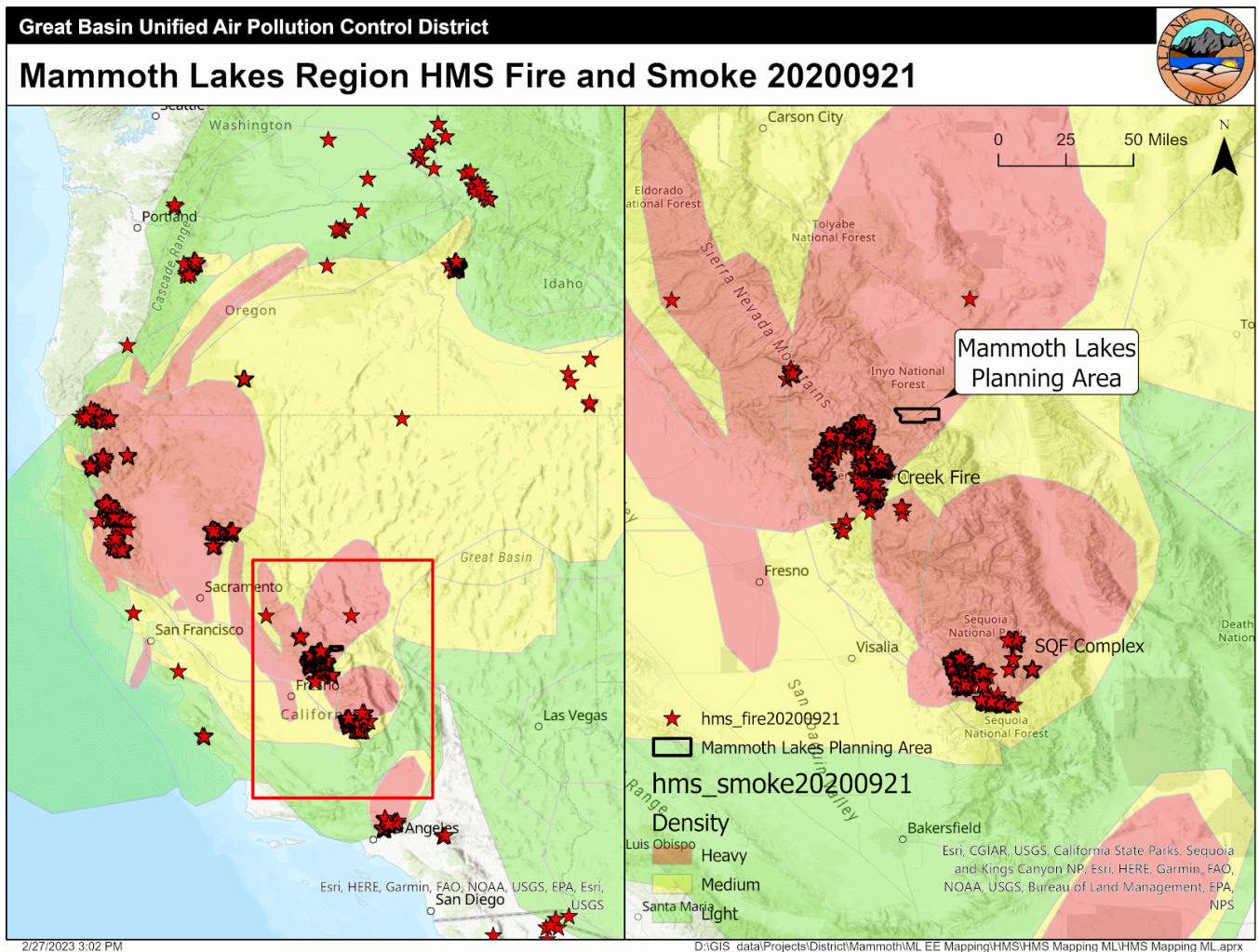


Figure 3.25: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, September 21, 2020 (Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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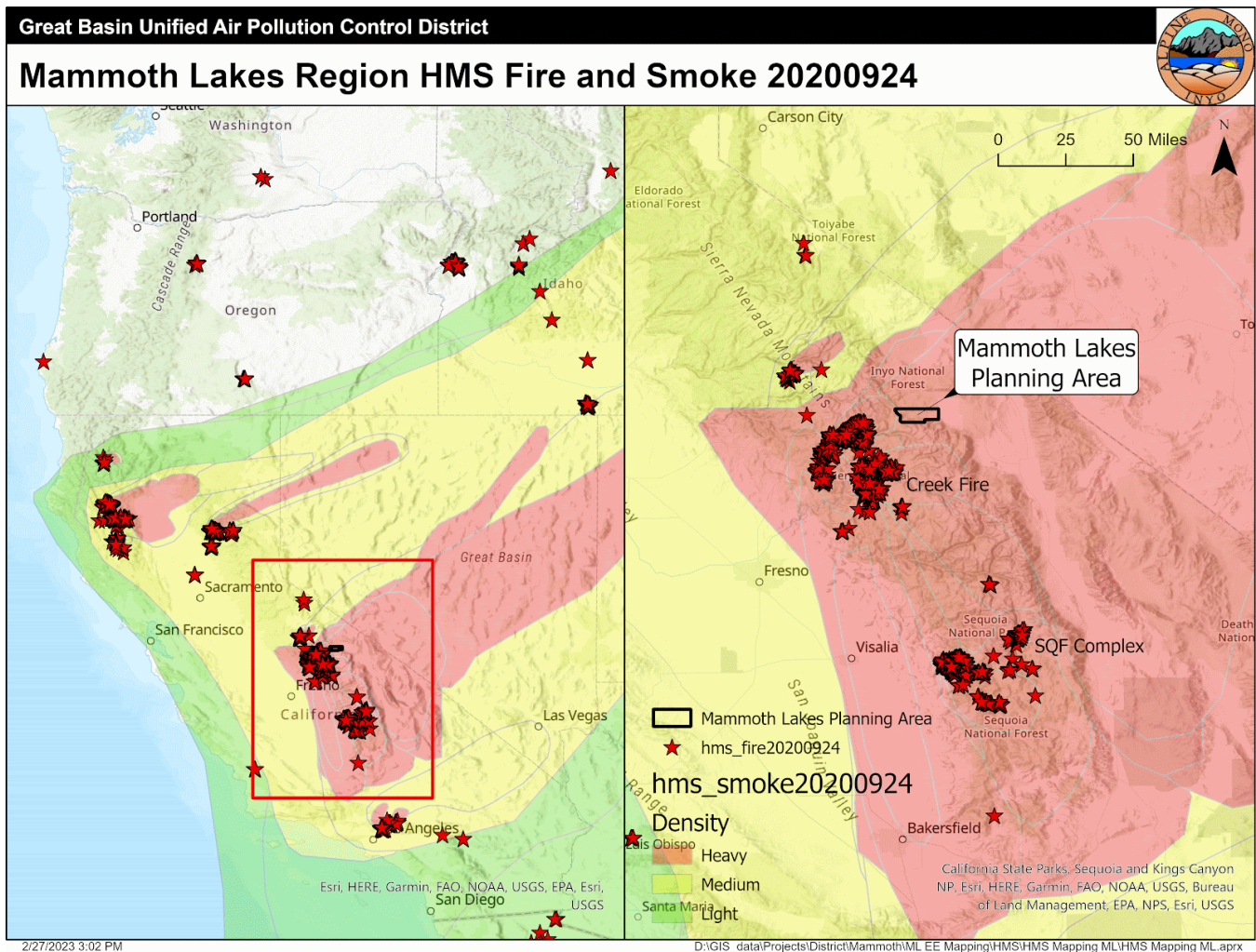


Figure 3.26: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, September 24, 2020 (Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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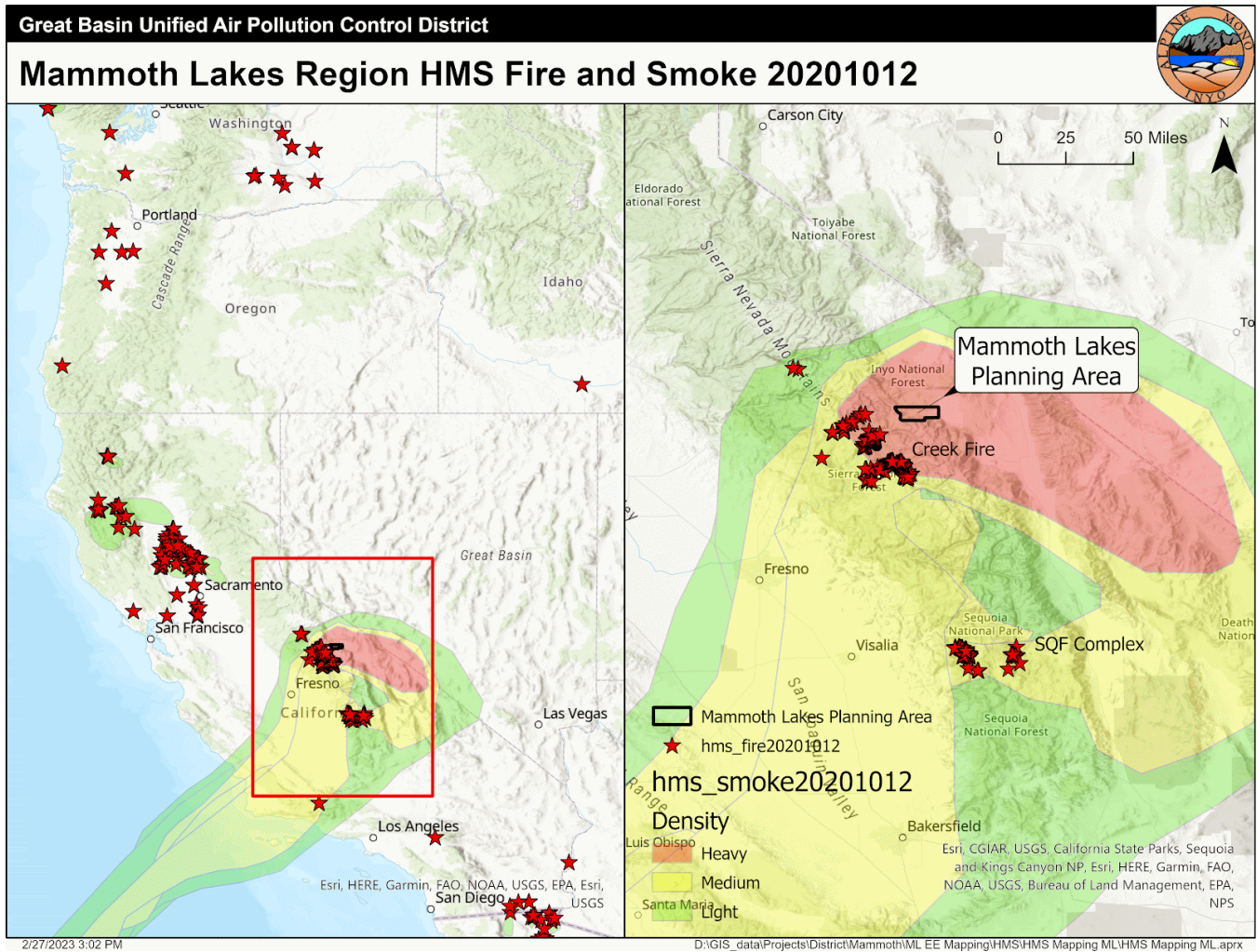


Figure 3.27: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, October 12, 2020
(Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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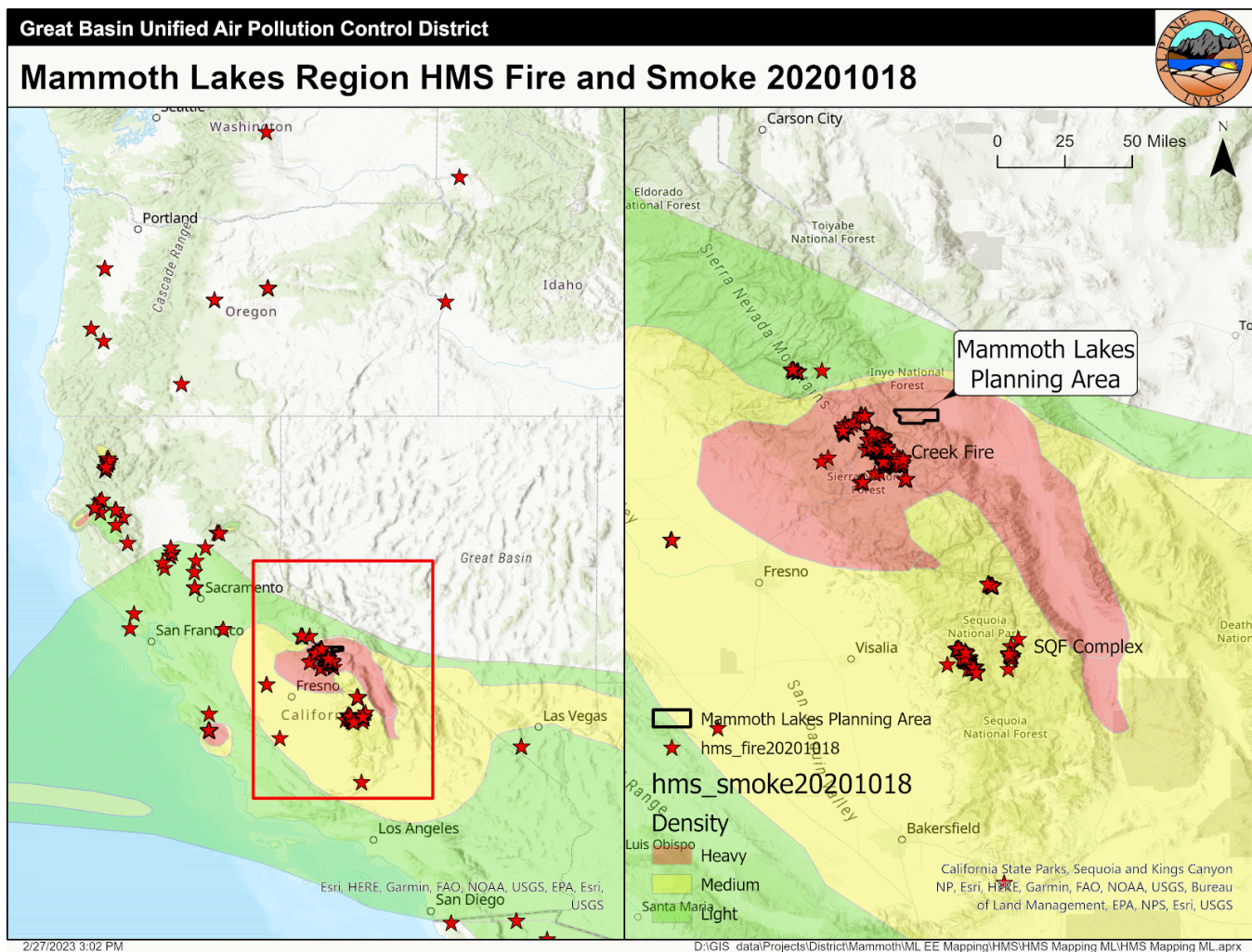


Figure 3.28: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, October 18, 2020, (Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

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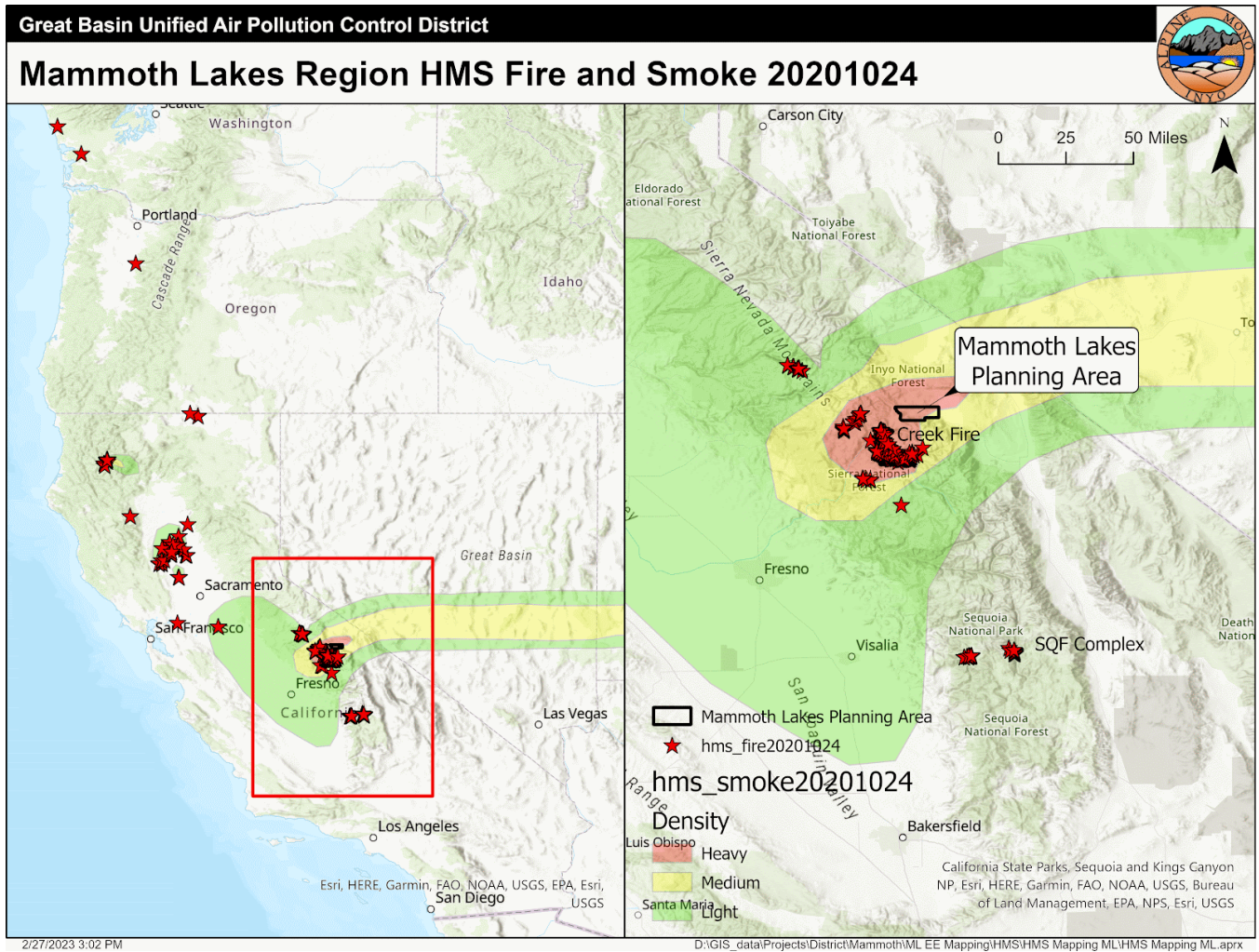


Figure 3.29: Hazard Mapping System (HMS) Fire Detection and Smoke Plume Map, October 24, 2020
(Source: <https://www.ospo.noaa.gov/Products/land/hms.html>).

Event-related PM10 Concentrations

Wildfire smoke from the Creek Fire and other California wildfires was transported into the Mammoth Lakes PM10 Planning Area, thereby elevating PM10 conditions well above normal conditions. The graph in Figure 2.4 shows Mammoth Lakes POC 5 FRM Partisol daily average PM10 concentrations during September and October between 2010 and 2022 at Mammoth Lakes, alongside the wildfire-smoke-impacted 2020 exceedances. The data presented in the graph exclude the 2013 and 2018 wildfire smoke exceedances already requested for exclusion in AQS. The graph shows the 2020 PM10 exceedances with black dots (POC 5) and yellow dots (POC 6). The datapoints requested for exclusion in this demonstration are outlined with black squares, all above the Federal Exceedance NAAQS Standard. The graph shows PM10 conditions have historically been well below both the Federal (150 µg/m³) NAAQS exceedance threshold.

Table 3.5 lists September and October daily average PM10 concentrations at Mammoth Lakes in 2020 (event-conditions) and 2022 (non-event conditions). Both PM10 POCs are shown, POC 5 and POC 6. The exceedances requested for exclusion in 2020 are shown in bold font. In 2020, POC 6 was operating as a Special Purpose Monitor (SPM) to evaluate T640x comparability with the POC 5 FRM Partisol. As illustrated in the table, the T640x was found to report concentrations significantly higher than those from the FRM Partisol. The SPM T640x study was discontinued in 2022 and POC 6 was replaced with a continuous TEOM and operated as SLAMS. Even though the T640x SPM reported values significantly higher than the Partisol, was operated as an experiment, and the monitor was removed after the conclusion of the study, the monitor nonetheless recorded exceedances which are requested for exclusion. The rightmost columns in the table show that in 2022, a non-event-condition year without significant wildfire smoke impacts, the FRM Partisol and FEM TEOM report comparable concentrations, all relatively low.

Table 3.5: Daily Average PM10 at Mammoth Lakes (06-051-0001) in September and October 2020 (event-period) and September and October 2022 (non-event period). Green (low) to red (high) PM10 color ramps are column-specific. Bold values are requested exclusions. All values from AQS AMP300 Violation Day Count Report.

2020 event conditions (µg/m³)			2022 non-event conditions (µg/m³)		
Date	Partisol (POC 5)	T640x SPM (POC 6)	Date	Partisol (POC 5)	TEOM (POC 6)
9/1/2020		41	9/1/2022		18
9/2/2020		38	9/2/2022	20	21
9/3/2020	18	26	9/3/2022		19
9/4/2020		23	9/4/2022		23
9/5/2020		82	9/5/2022	17	19
9/6/2020	168	296	9/6/2022		39
9/7/2020		128	9/7/2022		42
9/8/2020		597	9/8/2022	39	37
9/9/2020	28	43	9/9/2022		47
9/10/2020		890	9/10/2022		21
9/11/2020		424	9/11/2022	12	13
9/12/2020	90	191	9/12/2022		14

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2020 event conditions ($\mu\text{g}/\text{m}^3$)			2022 non-event conditions ($\mu\text{g}/\text{m}^3$)		
Date	Partisol (POC 5)	T640x SPM (POC 6)	Date	Partisol (POC 5)	TEOM (POC 6)
9/13/2020		486	9/13/2022		18
9/14/2020		1001	9/14/2022	15	17
9/15/2020	334	1146	9/15/2022		17
9/16/2020		1030	9/16/2022		27
9/17/2020		896	9/17/2022	17	19
9/18/2020	N/A	243	9/18/2022		15
9/19/2020		508	9/19/2022		9
9/20/2020		350	9/20/2022	7	8
9/21/2020	174	351	9/21/2022		12
9/22/2020		400	9/22/2022		14
9/23/2020		444	9/23/2022	11	12
9/24/2020	198	464	9/24/2022		26
9/25/2020		390	9/25/2022		10
9/26/2020		215	9/26/2022	14	13
9/27/2020	12	20	9/27/2022		18
9/28/2020		14	9/28/2022		12
9/29/2020		130	9/29/2022	9	13
9/30/2020	37	61	9/30/2022		15
10/1/2020		30	10/1/2022		14
10/2/2020		93	10/2/2022	11	14
10/3/2020	43	78	10/3/2022		22
10/4/2020		123	10/4/2022		22
10/5/2020		282	10/5/2022	19	27
10/6/2020	129	259	10/6/2022		25
10/7/2020		237	10/7/2022		15
10/8/2020		251	10/8/2022	17	19
10/9/2020	67	127	10/9/2022		12
10/10/2020		138	10/10/2022		19
10/11/2020		42	10/11/2022	30	37
10/12/2020	192	412	10/12/2022		28
10/13/2020		673	10/13/2022		18
10/14/2020		108	10/14/2022		10
10/15/2020	N/A	253	10/15/2022		13
10/16/2020		34	10/16/2022		14
10/17/2020		808	10/17/2022	19	22
10/18/2020	284	781	10/18/2022		38
10/19/2020		771	10/19/2022		28
10/20/2020		150	10/20/2022	22	23
10/21/2020	N/A	291	10/21/2022		25
10/22/2020		525	10/22/2022		41

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2020 event conditions (µg/m³)			2022 non-event conditions (µg/m³)		
Date	Partisol (POC 5)	T640x SPM (POC 6)	Date	Partisol (POC 5)	TEOM (POC 6)
10/23/2020		514	10/23/2022	7	9
10/24/2020	182	417	10/24/2022		16
10/25/2020		303	10/25/2022		12
10/26/2020		38	10/26/2022	10	13
10/27/2020	13	23	10/27/2022		15
10/28/2020		19	10/28/2022		19
10/29/2020		35	10/29/2022	14	16
10/30/2020	17	26	10/30/2022		20
10/31/2020		26	10/31/2022		61

Regional PM Impacts

Wildfire smoke impacts were monitored well beyond Mammoth Lakes in September and October 2020. Elevated PM concentrations from wildfire smoke were observed at neighboring monitors, notably in the Mono Basin to the north and Owens Valley to the southeast. The map in Figure 3.30 shows PM monitoring site locations in the region.

The timing and monitored PM10 concentrations shown in Table 3.6a and Table 3.6b are consistent with the narrative of this EE documentation. The tables show PM10 monitors across the top with daily average PM10 concentrations for each day in September 2020 (Table 3.6a) and October 2020 (Table 3.6b). Mammoth is shown in the left columns, both POC 5 (FRM SLAMS) and POC 6 (FEM SPM). The monitors most proximate to Mammoth are Lee Vining and Mono, shown in the next columns to the right. More distant are monitors in the Owens Valley: near Bishop (NCORE), surrounding Owens Lake (Lone Pine, Dirty Socks, Olanca, Stanley, Lizard Tail, North Beach, Mill Site, Keeler) and Rose Valley (Coso Junction). In addition to the T640x operated at Mammoth (POC 6) during September-October 2020, the NCORE site near Bishop operated a T640x (POC 1) during this time as well, and although it did not exhibit the extremes of the T640x monitor at Mammoth Lakes, it still recorded concentrations much higher than the NCORE FRM monitor (POC 4). The tables illustrate the regional distributional pattern of PM10 impact well, with the largest concentrations recorded at Mammoth and Lee Vining, the two sites closest to the Creek Fire.

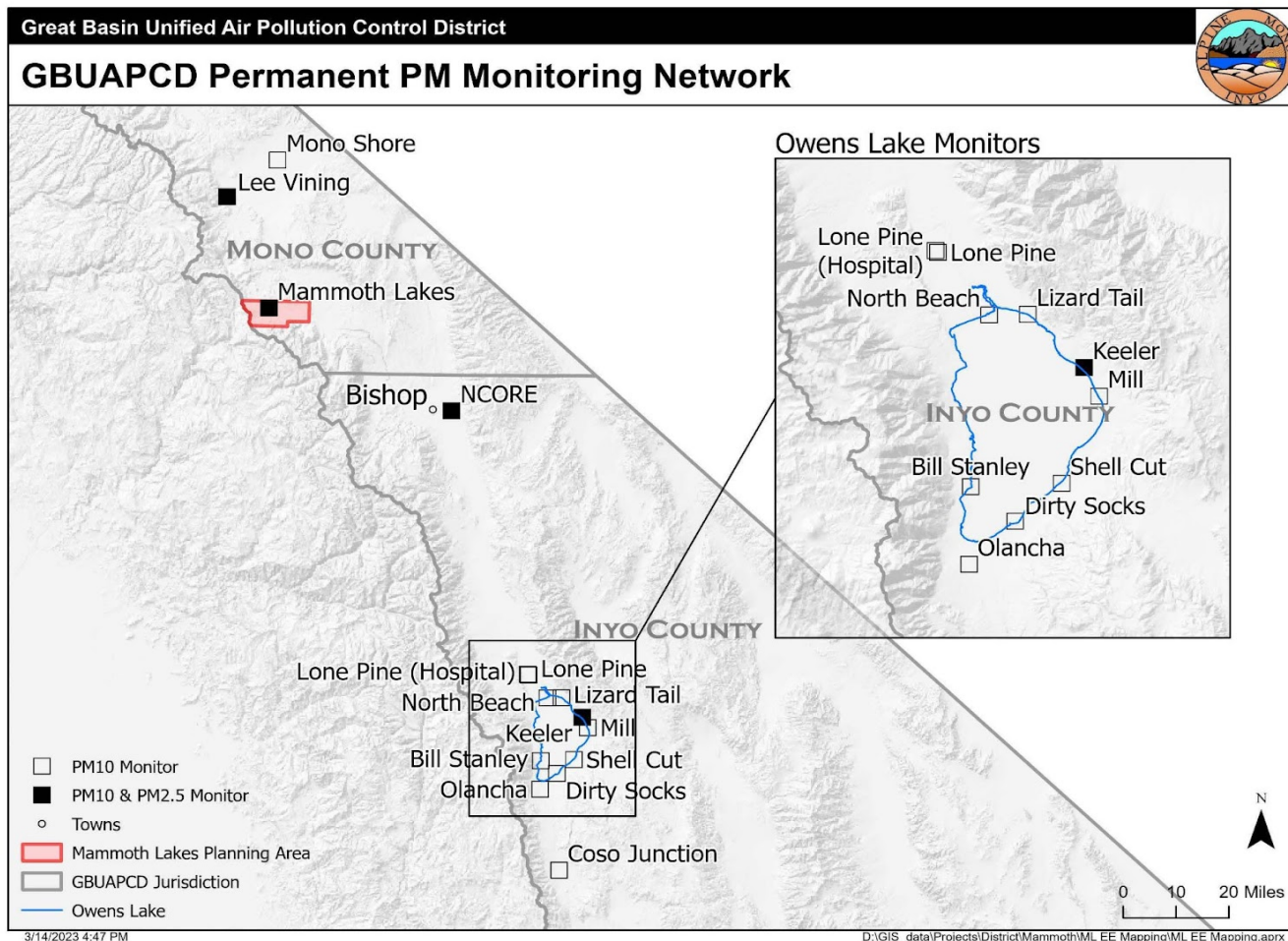


Figure 3.30: GBUAPCD Permanent PM Monitoring Network

All regional PM10 monitors listed in Table 3.6a and Table 3.6b show elevated concentrations from wildfire smoke during the Exceptional Event period. There is variation in concentrations throughout the period due to wildfire burn intensity, control efforts, variation in topography, flow patterns, and distance to smoke sources. Mammoth Lakes, however, was the most affected monitoring site due to the aggressive nature of the Creek Fire, close proximity to the fire, and prevailing wind transport through Mammoth Pass.

Table 3.6a and Table 3.6b show Mammoth Lakes had relatively low PM10 concentrations until September 6, 2020, when the Creek Fire ignited. Following that date, through October 27, 2020, concentrations in Mammoth Lakes and all neighbor monitoring sites fluctuated, but elevated concentrations focused on Mammoth and reached moderately elevated to severely elevated levels.

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Table 3.6a: Regional daily average PM10 concentrations ($\mu\text{g}/\text{m}^3$) in September 2020.

	Mammoth: POC 5	Mammoth: POC 6	Lee Vining: POC 4	Mono Shore: POC 3	NCORE: POC 1	NCORE: POC 4	Lone Pine: POC 4	Dirty Socks: POC 2	Olancha: POC 1	Olancha: POC 2	Stanley: POC 1	Lizard Tail: POC 1	North Beach: POC 1	Mill Site: POC 1	Keeler: POC 4	Keeler: POC 6	Keeler: POC 7	Coso Junction: POC 4
9/1/2020		41		18	50		35	42	38	40	46	35	38	43	36	35		46
9/2/2020		38		14	25		22	29	59	22	55	21	16	21	21	20		48
9/3/2020	18	26		11	24	17	21	28	42	26	43	32	16	30	34	32		46
9/4/2020		23		15	23		16	15	16	16	18	15	19	14	18	17		22
9/5/2020		82		62	73		30	46	57	45	41	38	35	35	37	36		37
9/6/2020	168	296		123	274	154	124	137	120	137	119	126	132	131	124	127		124
9/7/2020		128		48	138		68	74	243	66	62	58	55	84	82	86		189
9/8/2020		597		511	788		439	526	282	500	357	520	374	501	529	489		553
9/9/2020	28	43	48	19	26	25	23	19	27	26	28	20	16	25	18	19		27
9/10/2020		890	43	19	27		15	17	20	18	18	16	10	17	15	14		18
9/11/2020		424	82	34	47		24	25	21	20	20	17	20	17	18	16		20
9/12/2020	90	191	45	15	28	17	18	17	15	14	14	12	11	12	13	11	12	16
9/13/2020		486	372	159	28		13	14	20	13	13	11	9	12	12	10		16
9/14/2020		1001	1449		49		27	29	29	26	28	24	20	26	31			33
9/15/2020	334	1146	1087	340	123	65	69	59	52	51	49	41	54	45	45	43		52
9/16/2020		1030	1278	443	143		72	69	74	67	70	51	57	57	57	56		61
9/17/2020		896	1453	594	226		97	95	102	87	87	74	83	80	74	73		72
9/18/2020		243	259	110	126	67	95	142	130	142	125	91	76	115	103	113		86
9/19/2020		508	70	34	85		37	33	30	31	34	34	33	32	31	37		36
9/20/2020		350	115	18	65		31	34	36	32	30	31	27	30	28	29		34
9/21/2020	174	351	323	169	92	54	46	50	54	35	41	35	36	32	36	36		35
9/22/2020		400	167	86	186		71	93	126	67	109	61	65	47	49	49		108
9/23/2020		444	159	137	283		114	130	138	116	134	94	99	98	97	96		125
9/24/2020	198	464	195	94	205	106	118	122	134	115	131	123	111	112	113	109	109	139
9/25/2020		390	81	41	246		117	110	111	106	114	119	113	111	112	110		114
9/26/2020		215	25	11	118		74	73	71	71	70	71	66	71	69	68		72
9/27/2020	12	20	18	7	25	16	19	17	19	17	18	20	17	19	22	23		28
9/28/2020		14	12	4	17		13	7	10	12	13	9	8	11	9	9		10
9/29/2020		130	63	24	43		15	9	19	11	10	9	5	8	11	10		14
9/30/2020	37	61	64	36	59	34	33	30	40	29	30		28	27	31	29		33

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Table 3.6b: Regional daily average PM10 concentrations ($\mu\text{g}/\text{m}^3$) in October 2020:

	Mammoth: POC5	Mammoth: POC6	Lee Vining: POC4	Mono Shore: POC3	NCORE: POC1	NCORE: POC4	Lone Pine: POC4	Dirty Socks: POC2	Olancha: POC1	Olancha: POC2	Stanley: POC1	Lizard Tail: POC1	North Beach: POC1	Mill Site: POC1	Keeler: POC4	Keeler: POC6	Keeler: POC7	Coso Junction: POC4
10/1/2020		30	31	19	31		17	20	26	18	19	15	13	17	19	19		20
10/2/2020		93	12	4	26		14	9	13	9	8	8	6	8	9	7		10
10/3/2020	43	78	29	9	37	22	16	14	22	13	18	10	9	10	12	11		15
10/4/2020		123	129	64	81		37	37	42	33	43	26	28	29	28	25		33
10/5/2020		282	178	88	145		80	70	70	69	69	61	63	59	61	57		67
10/6/2020	129	259	125	48	79	46	47	48	48	46	44	43	39	44	44	42	42	44
10/7/2020		237	162	92	51		28	27	29	25	30	23	19	21	23	22		25
10/8/2020		251	111	62	45		26	26	30	24	29	20	19	20	20	20		33
10/9/2020	67	127	74	51	42	27	29	36	39	32	35	28	22	28	29	27		42
10/10/2020		138	71	60	83		52	62	62	51	58	49	42	50	54	50		54
10/11/2020		42	61	21			33	41	38	38	39	37	31	37	37	35		39
10/12/2020	192	412	13	1		20	14	18	20	17	15	15	10	17	19	28		24
10/13/2020		673	41	11			22	21	20	19	19	18	17	17	19	18		23
10/14/2020		108	15	4	39		40	36	34	32	35	34	33	32	35	32		34
10/15/2020		253	14	8	43	29	18	21	20	17	19	21	14	18	22	22		18
10/16/2020		34	21	6	23		19	17	18	15	15	15		15	31	27		17
10/17/2020		808	20	5	56		24	17	19	15	15	19		15	22	21		16
10/18/2020	284	781	17	7	113	61	66	53	50	49	49	47		48	52	49	49	43
10/19/2020		771	29	23	258		99	78	72	71	76	74		64	88	86		57
10/20/2020		150	22	6	65		51	60	60	60	62	70		64	67	65		52
10/21/2020		291	67	23	91	51	45	32		34	34	33	35	31	30	30		29
10/22/2020		525	69	33	121		73	53		49	56	60	64	51	58	55		45
10/23/2020		514	70	46	80		45	50	48	49	46	46	41	47	47	43		47
10/24/2020	182	417	44	29	80	48	36	43	42	36	37	37	35	35	36	34		39
10/25/2020		303	70	95	450		145	108	131	122	99	164	149	131	237	193		153
10/26/2020		38	32	13	39		55	35	48	46	40	121	72	49	156	144		70
10/27/2020	13	23	12	6	15	17	23	19	16	20	16	26	22	30	58	51		19
10/28/2020		19	8	3	11		9	7	9	5	8	7	6	4	5	7		12
10/29/2020		35	7	1	16		9	8	7	4	12	5	5	4	6	13		9
10/30/2020	17	26	8	1	18	11	10	7	9	5	8	7	7	7	6	4		7
10/31/2020		26	9	3	19		13	8	8	6	8	6	8	6	11	10		9

The September 8, 2020 Regional Event

The Mammoth Lakes POC 6 SPM FEM T640x PM10 monitor registered an exceedance of 597 $\mu\text{g}/\text{m}^3$ on 9/8/2020, a non-run day for the POC 5 1:3 FRM Partisol. Upon examination of the data, the day was determined to consist of a combined double-impact of particulates, starting with wildfire smoke in the early morning hours, followed by a strong pulse of regional dust from the north from sources as far away as Nevada. The dust event was widespread. Indeed, as shown in Table 3.6a, all monitors in the region experienced consistent elevated PM10 levels on this day. Due to the mixed nature of the PM10 source, the exceedance recorded on 9/8/2020 is not presently requested for exclusion.

PM10/PM2.5 Proportioning

Since wildfire smoke is generally characterized by smaller-sized particles and windblown dust is characterized by larger-sized particles, a review of the PM2.5 to PM10 proportions is instructive to determine whether wildfire smoke or another particulate such as dust is responsible for elevated PM10. The Mammoth Lakes SPM T640x recorded both PM10 (POC 6) and PM2.5 (POC 6) and can be analyzed as an hourly ratio. In addition, the site had a POC 5 1:3 PM10 Partisol and a POC 5 1:3 PM2.5 Partisol in operation during the September to October 2020 event period.

The values in Table 3.7 show the POC 5 daily average PM10 and PM2.5 concentrations and the ratio between PM2.5 and PM10 for each valid run day during the EE period. POC 6 ratios are shown in Figure 3.31. For all wildfire smoke POC 5 exceedance days during this period highlighted in yellow in Table 3.7, the ratios ranged from 66% to 93%, indicating fine particle predominance suggesting wildfire smoke was the source material.

Graphs on Figure 3.31 show the ratio between daily (top) and hourly (bottom) average PM2.5 to PM10 concentrations from the POC 6 SPM T640x in September and October 2020. Although the concentrations reported by the T640x monitor were found to be highly exaggerated when compared to the POC 5 FRM Partisol monitor, the ratios between the reported concentrations from the PM2.5 and PM10 channels from the T640x are instructive. The top figure shows that on all POC 6 exceedance days requested for exclusion from the NAAQS (red squares), the daily ratios were between 52% and 67%. By contrast, the other dates not requested for exclusion (blue diamond) either 1) fell short of the exceedance threshold of 150 $\mu\text{g}/\text{m}^3$ but were still affected by smoke (ratios comparable to EE requested), 2) were not affected by smoke (ratios less than ~50%), or 3) was the 9/8/2020 mixed event day, as annotated on the graph and discussed above in the section "The September 8, 2020 Regional Event". Examples of days affected by smoke but not exceeding the standard are seen in early October. Of note is the variability of the ratios suggesting that not all days during the EE period experienced smoke impacts. This is due to the nature of the variable winds in the region and subsequent smoke transport - smoke wasn't projected over the crest on these days, as well as varied direct control and contaminants efforts (including induced backburn) and natural conflagration of the wildfires.

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Table 3.7: POC 5 daily PM2.5:PM10 Partisol ratios during the EE period. Yellow-highlighted days are POC 5 PM10 exceedances requested for exclusion from the NAAQS.

Date	PM10	PM2.5	PM2.5:PM10
9/3/2020	18	8	44%
9/6/2020	168	113	67%
9/9/2020	28	9	32%
9/12/2020	90	59	66%
9/15/2020	334	309	93%
9/18/2020		154	
9/21/2020	174	120	69%
9/24/2020	198	142	72%
9/27/2020	12	6	50%
9/30/2020	37	21	57%
10/3/2020	43	27	63%
10/6/2020	129	92	71%
10/9/2020	67	43	64%
10/12/2020	192	144	75%
10/15/2020		72	
10/18/2020	284	227	80%
10/21/2020			
10/24/2020	182	144	79%
10/27/2020	13	7	54%
10/30/2020	17	8	47%

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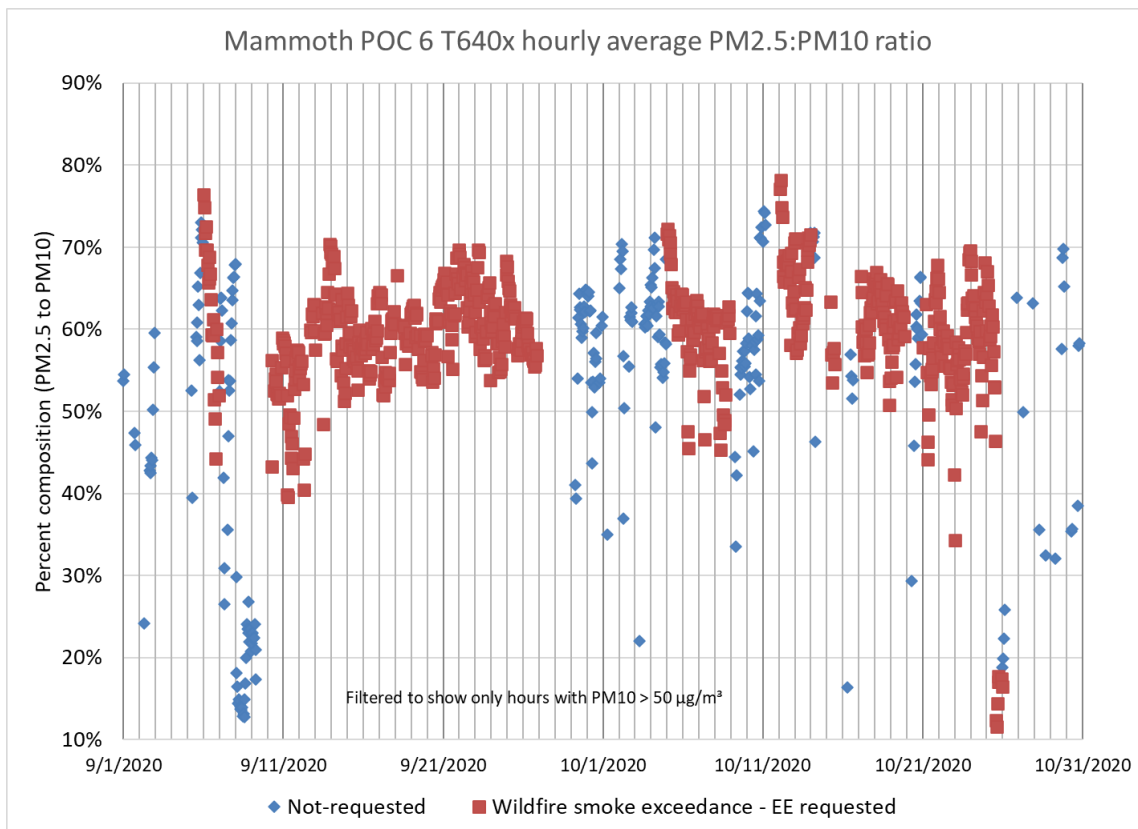
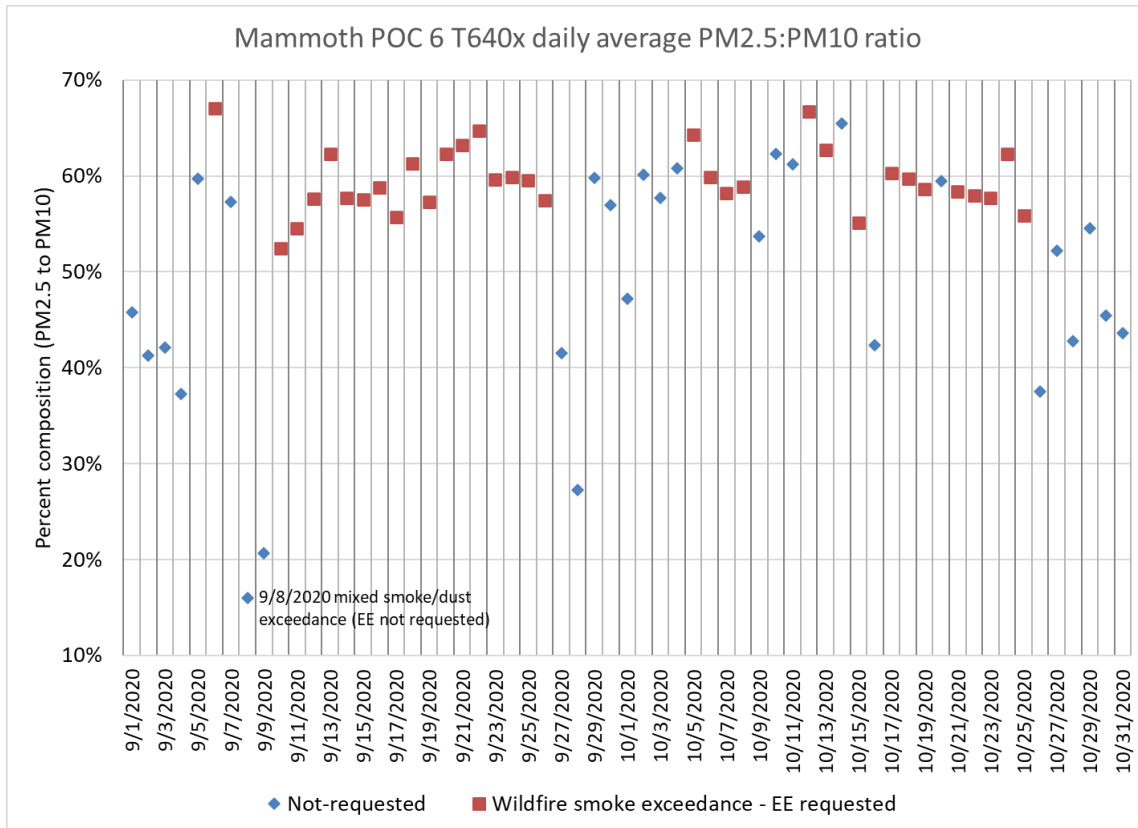


Figure 3.31: Graphs showing the ratio between daily (top) and hourly (bottom) average PM2.5 to PM10 concentrations from the Mammoth Lakes POC 6 T640x SPM during the EE period.

Meteorological Conditions

The meteorological conditions preceding the September and October 2020 events were characterized by widespread lack of precipitation and slightly warmer than average temperatures, as shown in the August 2020 maps in Figure 3.32 and Figure 3.33.

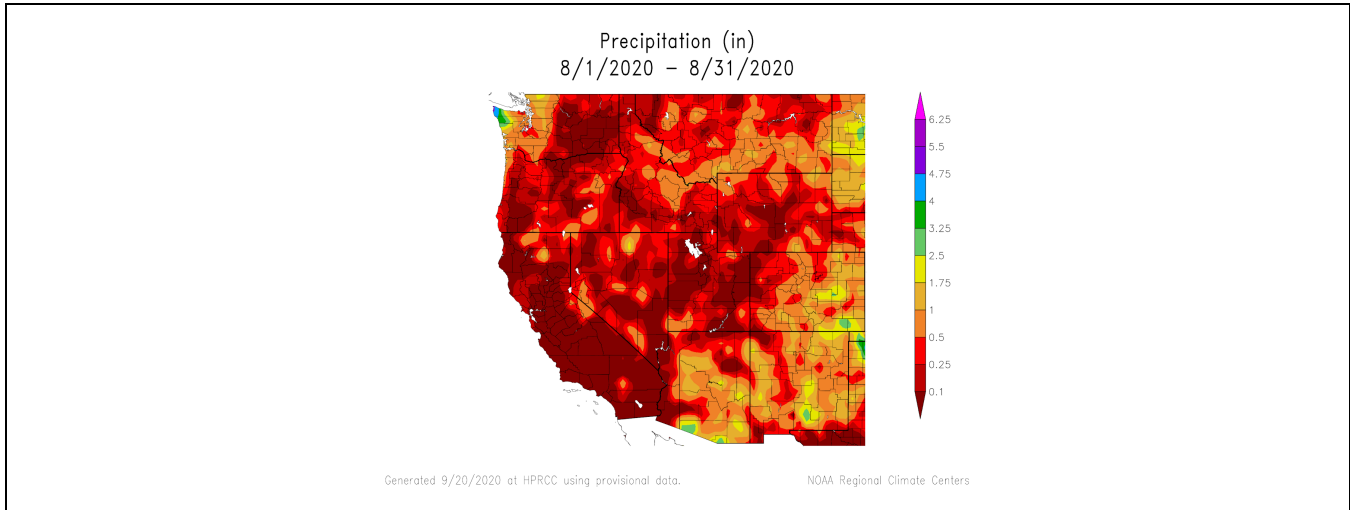


Figure 3.32: Precipitation, in inches, Western Regional Climate Center, western US, August 2020. (Source <https://hprcc.unl.edu/products/maps/acis/wrcc/Aug20PDataWRCC.png>)

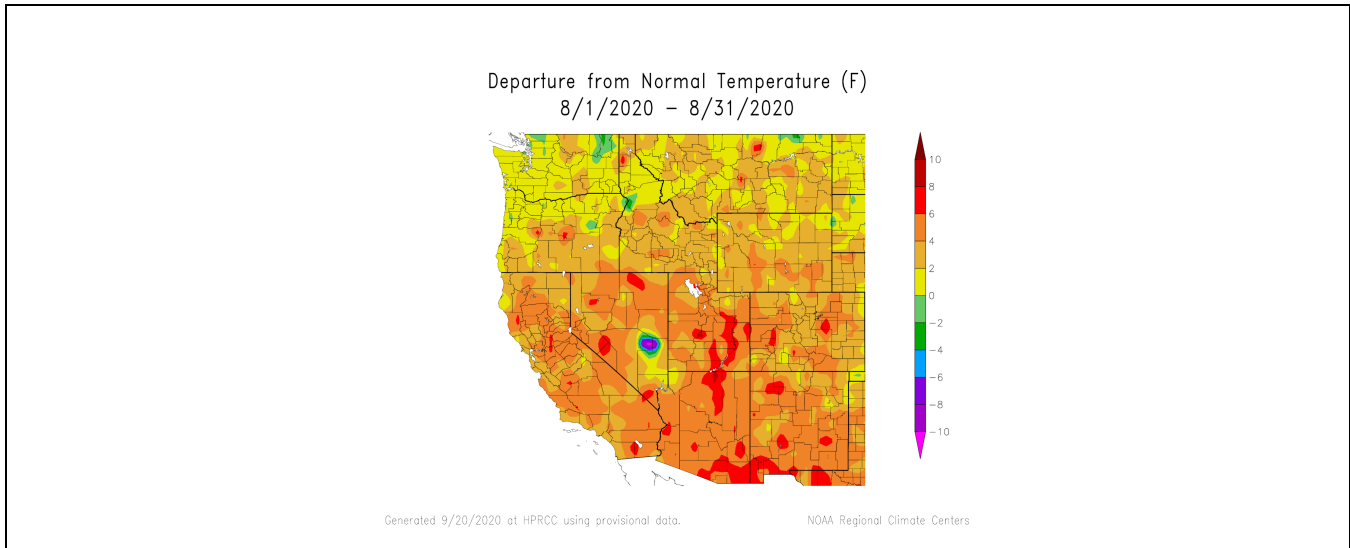


Figure 3.33: Departure from normal temperature (degrees Fahrenheit), Western Regional Climate Center, western US, August 2020. (Source: <https://hprcc.unl.edu/products/maps/acis/wrcc/Aug20TDeptWRCC.png>)

The Drought Monitor map in Figure 3.34 shows conditions in the Sierra Nevada and the Mammoth Lakes area were either in Moderate Drought or Abnormally Dry in August 2020, which may help explain the volatility and rapid growth of the Creek Fire, SQF Complex, and other California wildfires.

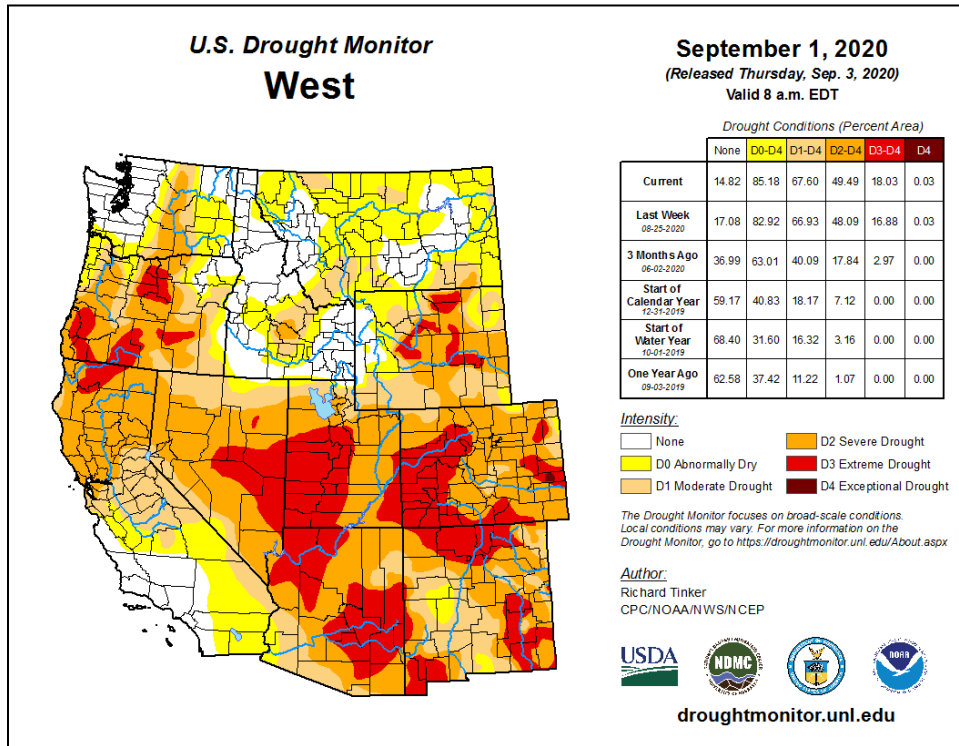


Figure 3.34: Drought conditions for the western U.S. on September 1, 2020. (Source: <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>)

The exceptionally dry and warm conditions in August 2020, as depicted in Figure 3.32 through Figure 3.34, led to tinder-dry fuels across California. Then, in mid-August 2020, a massive lightning storm released thousands of strikes across the state¹⁹. Many of these lightning strikes became wildfires²⁰, including the SQF Complex, which was ignited by the August 16, 2020 lightning storm and continued to burn and grow through the Exceptional Event period. Figure 3.35 shows a map of lightning impacts in a 24-hour period between August 15, 2020 06:00 and August 16, 2020 06:00. Note the lightning strikes represented as dots in the Sequoia region of the southern Sierra, some of which became the SQF Complex.

¹⁹ See CBS News report here: <https://www.cbsnews.com/news/lightning-siege-hits-california-with-nearly-12000-strikes-in-a-week-2020-08-22/>

²⁰ Further information on the August 2020 Lightning Storm and Resulting Wildfires: https://en.wikipedia.org/wiki/August_2020_California_lightning_wildfires

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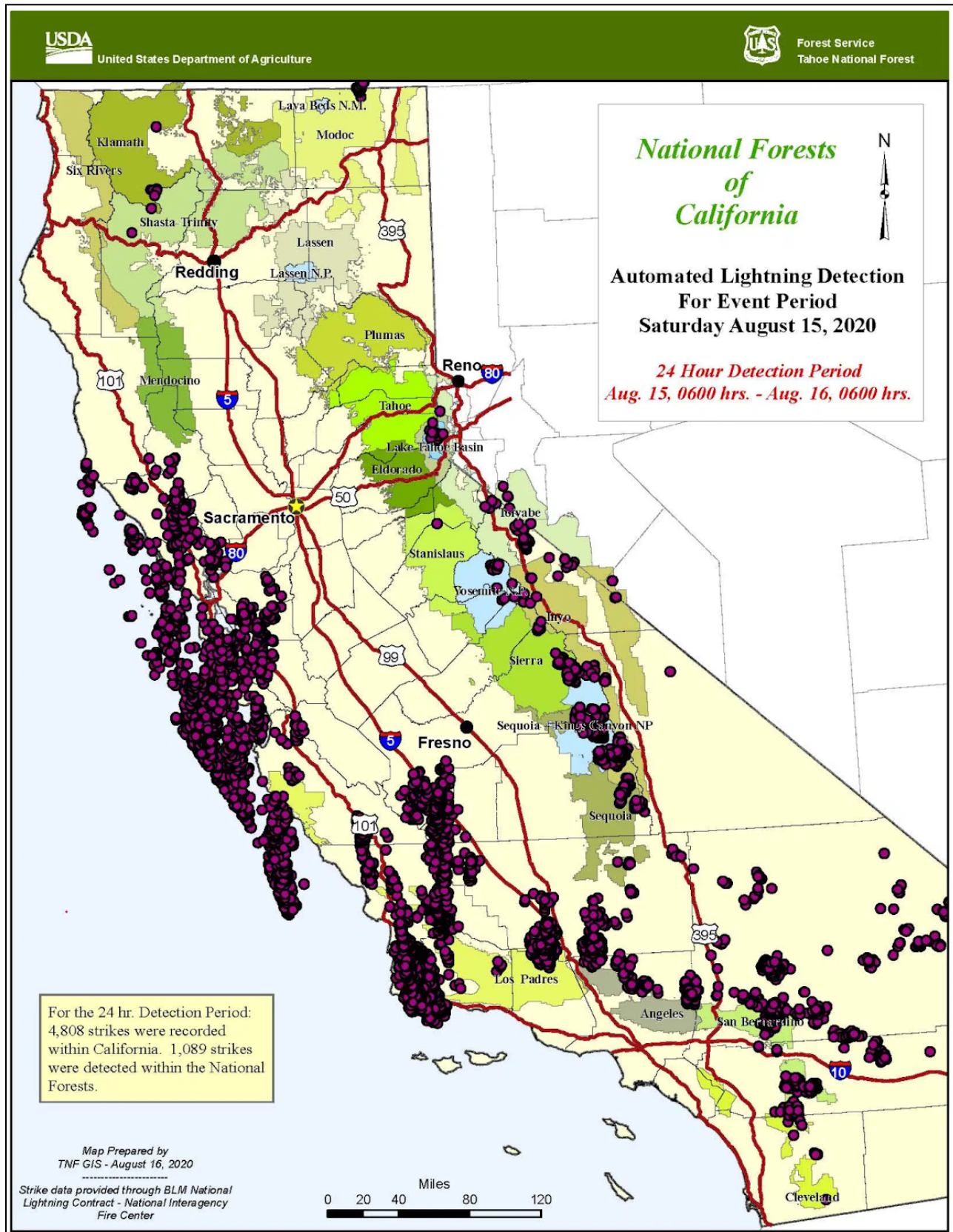


Figure 3.35: Map of August 15, 2020 lightning strikes in California. (Source: <https://yubanet.com/regional/lightning-map-shows-4808-strikes-in-california/>)

Surface weather maps in Figure 3.36 to Figure 3.42 show meteorological conditions on each of the seven (7) POC 5 FRM exceptional event dates. All other exceedance dates requested for exclusion as registered by the POC 6 SPM FEM T640x are shown in Appendix L. Note each day of the thirty-three (33) days requested for exclusion has no precipitation and has warmer than average temperatures, and no strong wind gradients. The wind gradient component of the weather maps are consistent with Figure 2.1 and Figure 2.3, which show monitored wind speeds were low throughout the EE period. While daily weather maps help illustrate the high-level meteorologic conditions, they do not account for local variability, such as the diurnal wind pattern at Mammoth Lakes shown in Figure 2.1, which shows wind direction flip-flopping on most days from east to west. This daily wind direction reversal helps explain the variability of smoke transport over the Sierra crest from the Creek Fire to Mammoth Lakes.

Daily Weather Maps

SUNDAY SEPTEMBER 6, 2020

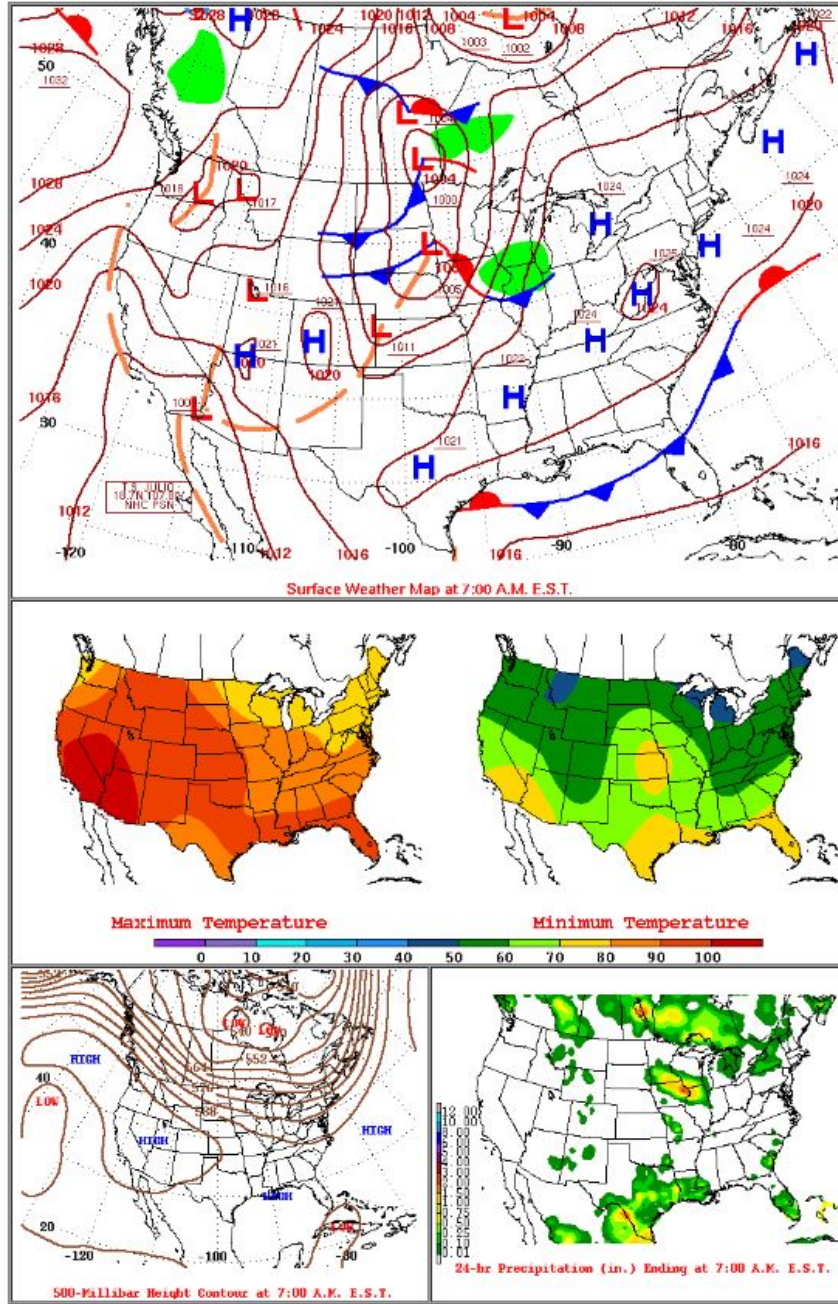


Figure 3.36: Surface weather map September 6, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

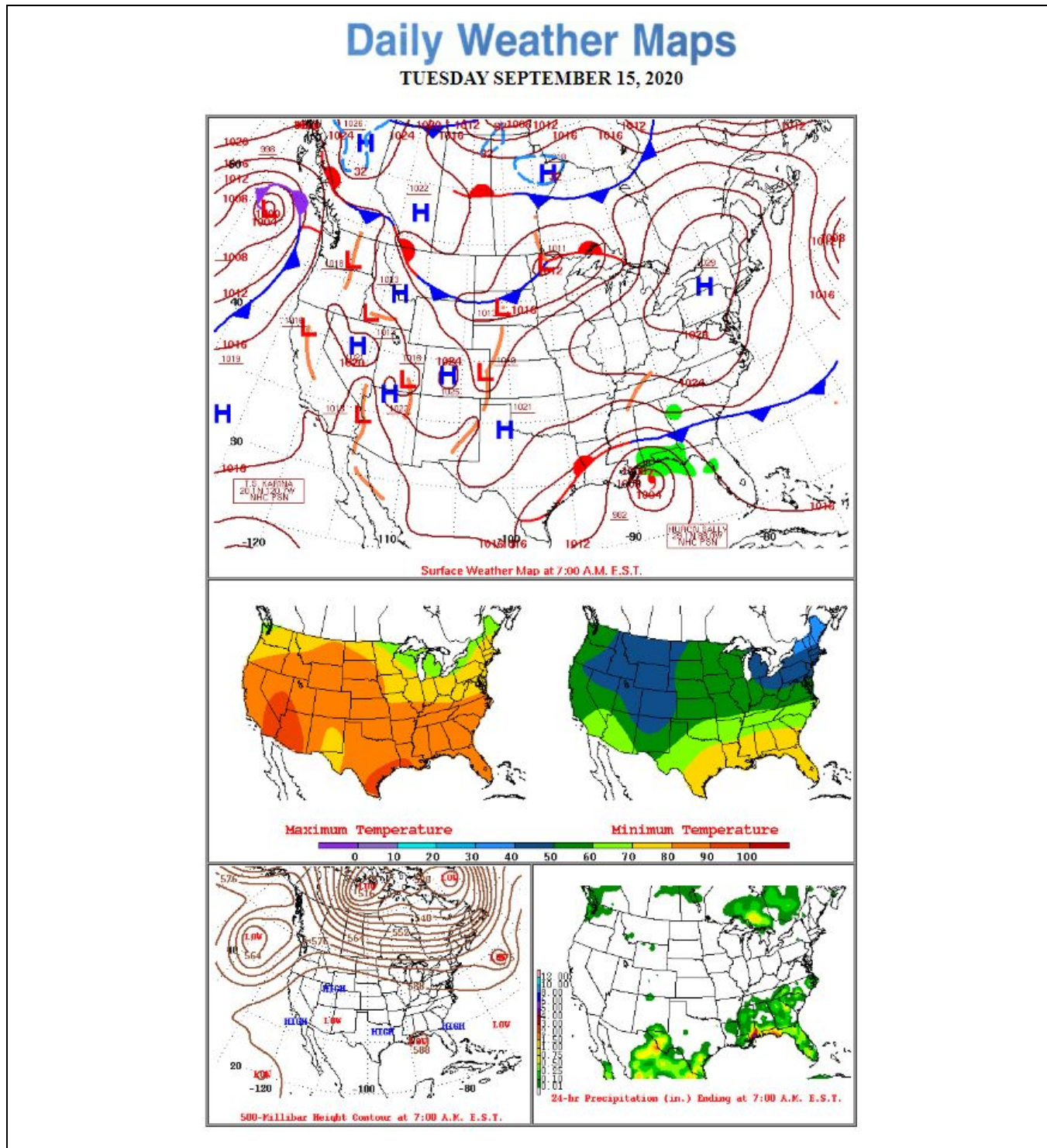


Figure 3.37: Surface weather map September 15, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Daily Weather Maps

MONDAY SEPTEMBER 21, 2020

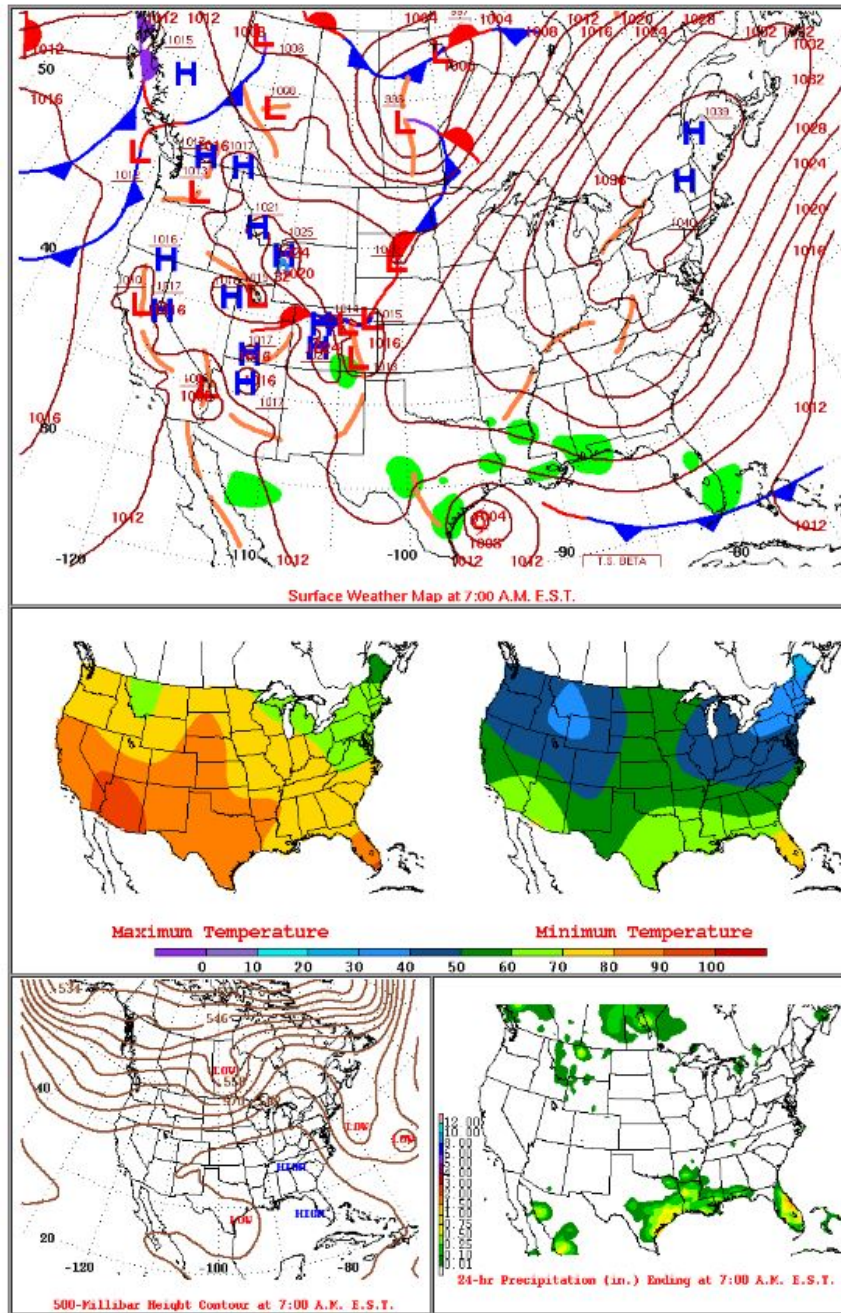


Figure 3.38: Surface weather map September 21, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Daily Weather Maps

THURSDAY SEPTEMBER 24, 2020

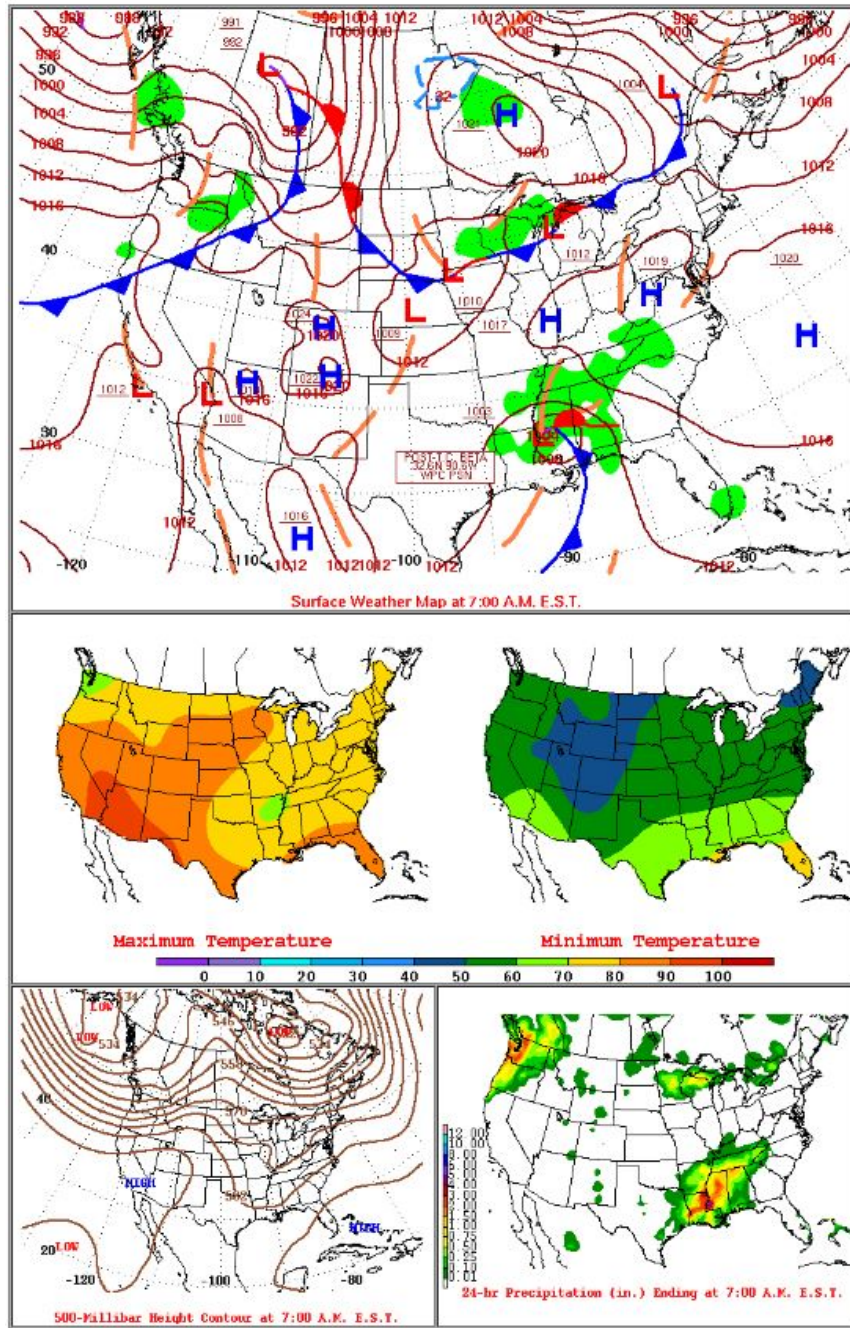


Figure 3.39: Surface weather map September 24, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Daily Weather Maps

MONDAY OCTOBER 12, 2020

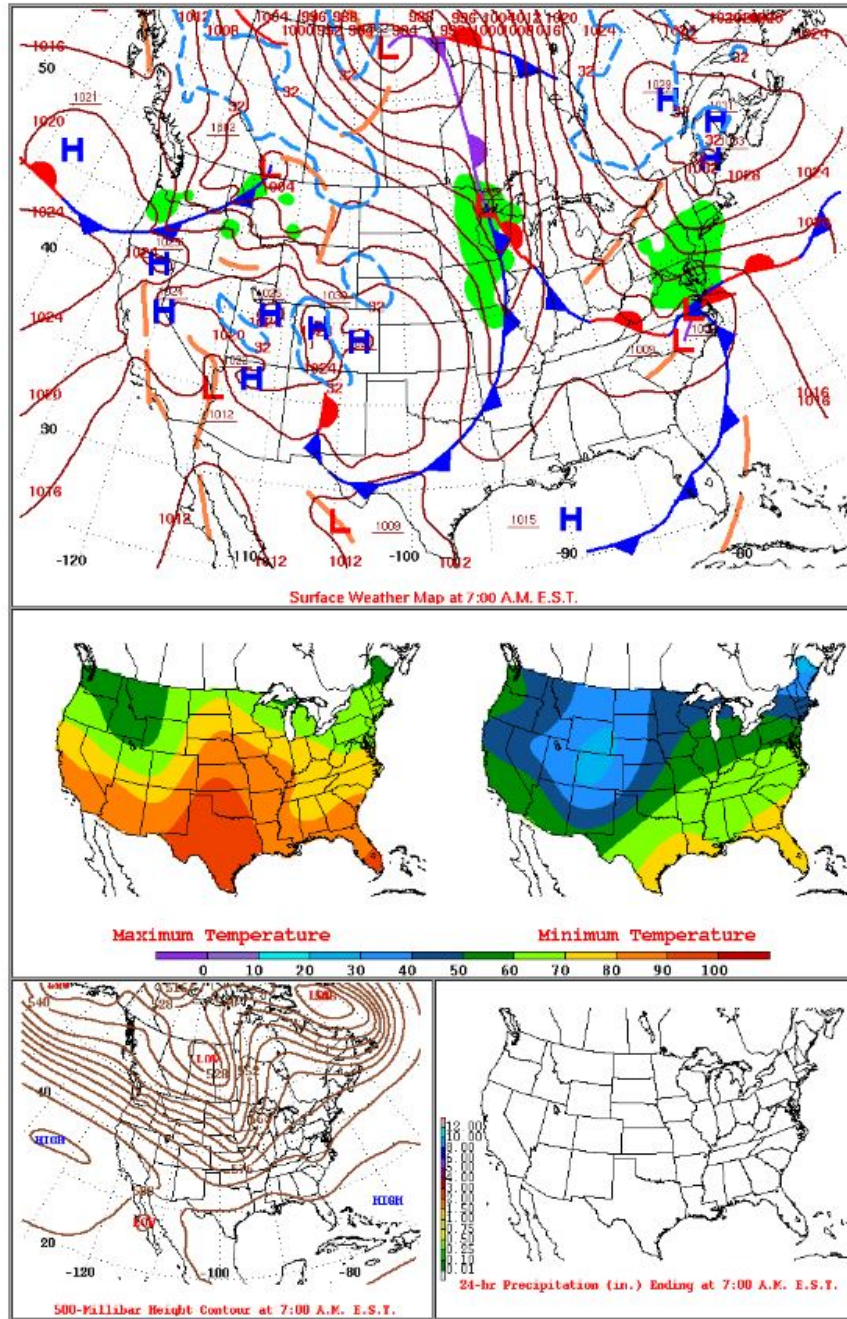


Figure 3.40: Surface weather map October 12, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Daily Weather Maps

SUNDAY OCTOBER 18, 2020

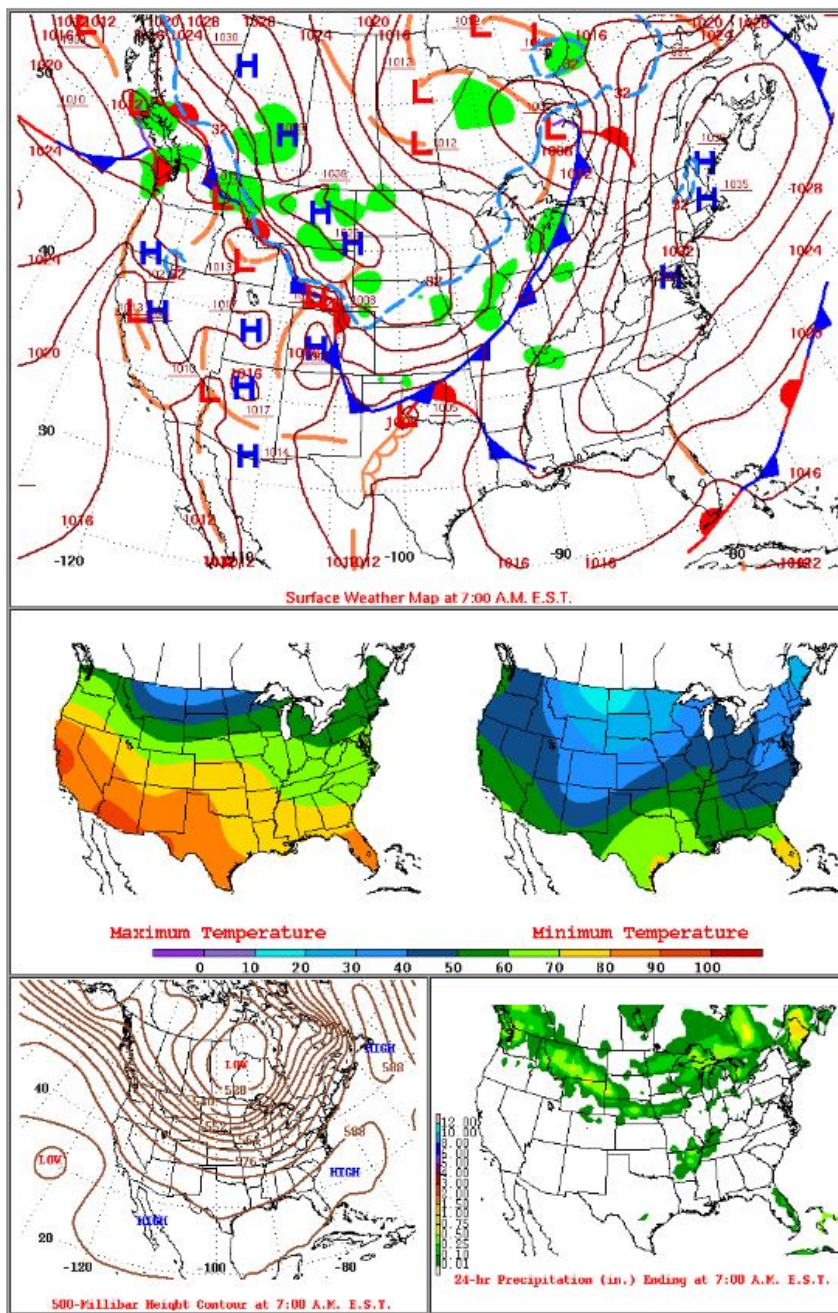


Figure 3.41: Surface weather map October 18, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Daily Weather Maps

SATURDAY OCTOBER 24, 2020

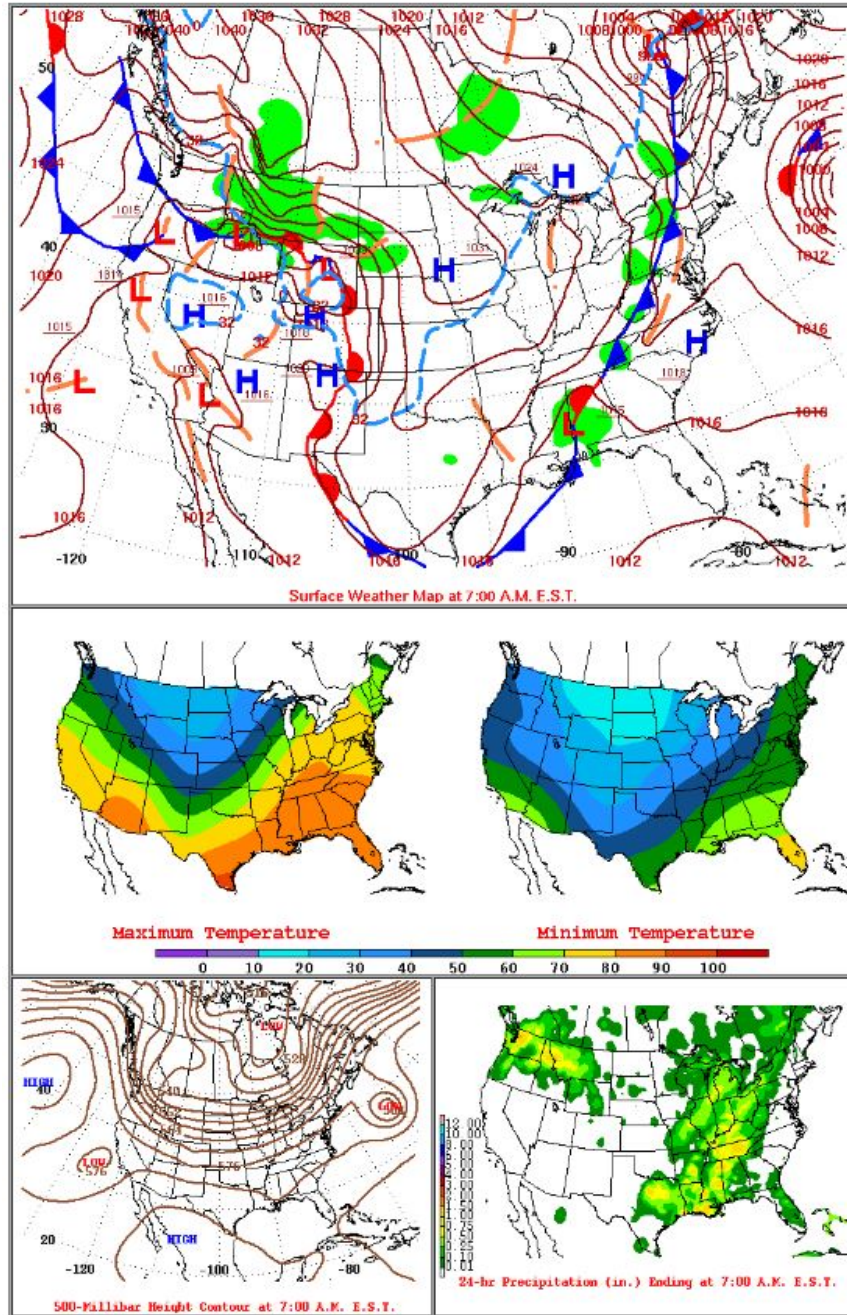


Figure 3.42: Surface weather map October 24, 2020 07:00 PST. (Source: <https://www.wpc.ncep.noaa.gov/dailywxmap/>)

Visibility Analysis

The GBUAPCD operates an air quality monitoring camera at the Mammoth Lakes monitoring site. The camera faces east and captures both short-range and long-range pollution impacts. The camera records images every 30-seconds during daylight hours. The GBUAPCD uses this camera with the specific purpose of visually identifying sources of particulate emissions. Each image recorded in a day is compiled into a daily movie file, and displayed in sunup-to-sundown video animation.

Typical days in Mammoth Lakes have excellent visibility and limited airborne particulates. These days, all features in the field of view are clearly distinguishable, from the near-distant trees and buildings across the street to the moderate-distance peaks on the right side of the image. Daily camera movie examples of typical, clear, non-event days can be viewed here:

Air Quality Camera Videos on Clean Air Days

<p>August 1, 2020 - Mammoth Lakes Air Quality Camera video animation: https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2008_01_2020%20clean%20air%20day.mp4</p>
<p>August 12, 2020 - Mammoth Lakes Air Quality Camera video animation: https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2008_12_2020%20clean%20air%20day.mp4</p>

In contrast to clean air day videos above, days affected by wildfire smoke have reduced visibility and noticeable brown haze partially obscuring features normally easily visible. Links to the camera daily movies on all thirty-three requested EE days shown in Table 3.8.

Table 3.8: Links to camera footage videos on all thirty-three (33) EE days.

Exceptional Event Date	Mammoth Lakes Air Quality Camera video animation
9/6/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_06_2020.mp4
9/8/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_08_2020.mp4
9/10/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_10_2020.mp4
9/11/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_11_2020.mp4
9/12/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_12_2020.mp4
9/13/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_13_2020.mp4

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Exceptional Event Date	Mammoth Lakes Air Quality Camera video animation
9/14/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_14_2020.mp4
9/15/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_15_2020.mp4
9/16/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_16_2020.mp4
9/17/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_17_2020.mp4
9/18/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_18_2020.mp4
9/19/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_19_2020.mp4
9/20/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_20_2020.mp4
9/21/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_21_2020.mp4
9/22/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_22_2020.mp4
9/23/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_23_2020.mp4
9/24/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_24_2020.mp4
9/25/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_25_2020.mp4
9/26/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2009_26_2020.mp4
10/5/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_05_2020.mp4
10/6/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_06_2020.mp4
10/7/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_07_2020.mp4
10/8/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_08_2020.mp4





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Exceptional Event Date	Mammoth Lakes Air Quality Camera video animation
10/12/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_12_2020.mp4
10/13/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_13_2020.mp4
10/15/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_15_2020.mp4
10/17/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_17_2020.mp4
10/18/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_18_2020.mp4
10/19/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_19_2020.mp4
10/21/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_21_2020.mp4
10/22/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_22_2020.mp4
10/23/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_23_2020.mp4
10/24/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_24_2020.mp4
10/25/2020	https://gbuapcd.org/Docs/VideoReview/ExceedanceVideos/Mammoth%20Lakes%2010_25_2020.mp4

The videos on the EE dates above all show the distinct and engulfing smoke from the Creek Fire and other wildfires in Mammoth Lakes. The timing of the visually distinguishable smoke in the camera footage is consistent with the timing of the rise in monitored PM10 concentrations at Mammoth Lakes.





In addition to the videos, still image capture comparisons between clean air non-event days with the POC 5 FRM Exceptional Event days is illustrative. This side-by-side comparison is provided in Table 3.9 with a representative non-event day on the left compared with each of the POC 5 Exceptional Event days on the right. Images from all other POC 6 SPM FEM T640x Exceptional Event days are shown in Appendix M. Each image is from the same time of day (around 12:00 PST) for optimal comparability. In each of the comparisons, the blue sky on the non-event day is replaced with brown haze and sunlight, trees, and mountains are obscured on the event days. The PM10 concentration at 12:00 PST as well as the daily maximum hourly PM10 concentration for each day is listed in the caption below each image (source: SPM T640x POC 6).

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Non-event Day	Exceptional Event Days
 <p data-bbox="157 800 352 841">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="237 857 957 885">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1068 800 1251 841">GBUAPCD.org Mammoth Lakes Sunday, 06 Sep 2020 11:58:00 AM</p> <p data-bbox="1127 857 1881 885">9/6/2020 12:00 105.3 $\mu\text{g}/\text{m}^3$ PM10; daily max 824.2 $\mu\text{g}/\text{m}^3$</p>
 <p data-bbox="157 1339 352 1380">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="237 1393 957 1421">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1068 1339 1251 1380">GBUAPCD.org Mammoth Lakes Monday, 14 Sep 2020 11:58:05 AM</p> <p data-bbox="1113 1393 1896 1421">9/14/2020 12:00 221.1 $\mu\text{g}/\text{m}^3$ PM10; daily max 2725.3 $\mu\text{g}/\text{m}^3$</p>





Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.9. Visual Comparison of non-event days with POC 5 Exceptional Event Days. The caption for each image lists the hourly average PM10 at 12:00 PST (the approximate time of the image capture) and daily maximum hourly average PM10 from the SPM T640x (POC 6).

Non-event Day	Exceptional Event Days
 <p data-bbox="155 760 348 800">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="239 816 957 846">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1071 760 1251 800">GBUAPCD.org Mammoth Lakes Monday, 21 Sep 2020 11:58:43 AM</p> <p data-bbox="1121 816 1885 846">9/21/2020 12:00 771.9 $\mu\text{g}/\text{m}^3$ PM10; daily max 771.9 $\mu\text{g}/\text{m}^3$</p>
 <p data-bbox="155 1304 348 1344">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="239 1352 957 1382">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1071 1304 1251 1344">GBUAPCD.org Mammoth Lakes Thursday, 24 Sep 2020 12:31:07 PM</p> <p data-bbox="1121 1352 1885 1382">9/24/2020 12:00 456.2 $\mu\text{g}/\text{m}^3$ PM10; daily max 1114.3 $\mu\text{g}/\text{m}^3$</p>



Exceptional Event Demonstration for
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Table 3.9. Visual Comparison of non-event days with POC 5 Exceptional Event Days. The caption for each image lists the hourly average PM10 at 12:00 PST (the approximate time of the image capture) and daily maximum hourly average PM10 from the SPM T640x (POC 6).

Non-event Day	Exceptional Event Days
 <p data-bbox="155 760 352 800">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="239 816 957 846">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1066 760 1264 800">GBUAPCD.org Mammoth Lakes Monday, 12 Oct 2020 11:05:28 AM</p> <p data-bbox="1108 816 1906 846">10/12/2020 12:00 286.0 $\mu\text{g}/\text{m}^3$ PM10; daily max 1339.0 $\mu\text{g}/\text{m}^3$</p>
 <p data-bbox="155 1304 352 1344">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="239 1360 957 1390">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1066 1304 1264 1344">GBUAPCD.org Mammoth Lakes Sunday, 18 Oct 2020 11:57:15 AM</p> <p data-bbox="1108 1360 1906 1390">10/18/2020 12:00 390.0 $\mu\text{g}/\text{m}^3$ PM10; daily max 2885.8 $\mu\text{g}/\text{m}^3$</p>

Exceptional Event Demonstration for
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Table 3.9. Visual Comparison of non-event days with POC 5 Exceptional Event Days. The caption for each image lists the hourly average PM10 at 12:00 PST (the approximate time of the image capture) and daily maximum hourly average PM10 from the SPM T640x (POC 6).

Non-event Day	Exceptional Event Days
 <p data-bbox="155 760 352 802">GBUAPCD.org Mammoth Lakes Saturday, 01 Aug 2020 11:59:49 AM</p> <p data-bbox="239 815 957 846">8/1/2020 12:00 11.6 $\mu\text{g}/\text{m}^3$ PM10; daily max 27.4 $\mu\text{g}/\text{m}^3$</p>	 <p data-bbox="1066 760 1255 802">GBUAPCD.org Mammoth Lakes Saturday, 24 Oct 2020 11:58:17 AM</p> <p data-bbox="1108 815 1906 846">10/24/2020 12:00 167.1 $\mu\text{g}/\text{m}^3$ PM10; daily max 1416.4 $\mu\text{g}/\text{m}^3$</p>

Clear Causal Relationship

In this section evidence is provided that demonstrates the PM10 events for which the GBUAPCD is requesting EPA Exceptional Event concurrence were caused by smoke produced from wildland fires.

Based on the documentation provided in Section 3 of this submittal, the Creek Fire and other wildfire events in California qualify as wildfires because lightning and/or an undetermined ignition source caused the unplanned wildfire events. The EPA generally considers the emissions of PM10 from wildfires on wildland to meet the regulatory definition of a natural event, defined as one 'in which human activity plays little or no direct causal role.' These wildfire events occurred on wildland (see Figure 3.6, Figure 3.10, and Appendix E) and accordingly, GBUAPCD has shown that these events are natural events and may be considered for treatment as exceptional events.

Deviation from Normal Conditions

In order to establish that the PM10 concentrations on the requested EE days were out-of-the-ordinary and exceptional, the meteorological and particulate matter data collected during non-event days must be compared with those the same data collected on event days, as well as those that happened under similar conditions, but with no exceedances.

The graph in Figure 2.4, above, shows the PM10 deviation from normal conditions at Mammoth Lakes in September and October 2020. The graph shows PM10 NAAQS exceedances were the highest recorded in September and October at the Mammoth Lakes monitoring site when excluding the 2013 and 2018 exceedances previously requested for exclusion.

Table 3.10, below, lists all monitored PM10 exceedances between 2015 and 2022 at Mammoth Lakes, sorted by descending PM10 exceedance value. The table also lists the dates of each exceedance, the rank and percentile among all monitored days between 2015 and 2022, and a comment on the impact source of each exceedance. Note the September and October 2020 events requested for exclusion from the NAAQS are highlighted yellow and all are at minimum 0.986 percentile rank among all monitored days.

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Table 3.10: Monitored PM10 exceedances at Mammoth Lakes between 2015 and 2022, their POC, NAAQS value, rank, percentile rank, exclusion status, and impact sources. Listed in descending order of NAAQS 24-hour PM10 average. Yellow-highlighted dates are those requested for exclusion in this EE demonstration.

Date	POC	24-hour PM10 (µg/m³)	Numeric Rank	Percentile Rank	Request for Exclusion from NAAQS	PM10 Impact Source
9/15/2020	6	1146	1	1.000	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/16/2020	6	1030	2	0.999	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/14/2020	6	1001	3	0.999	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/17/2020	6	896	4	0.999	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/10/2020	6	890	5	0.998	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/17/2020	6	808	6	0.998	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/18/2020	6	781	7	0.998	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/19/2020	6	771	8	0.997	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/13/2020	6	673	9	0.997	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/8/2020	6	597	10	0.997	No	Mixed smoke and dust
10/22/2020	6	525	11	0.997	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/23/2020	6	514	12	0.996	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/19/2020	6	508	13	0.996	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California

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Date	POC	24-hour PM10 (µg/m³)	Numeric Rank	Percentile Rank	Request for Exclusion from NAAQS	PM10 Impact Source
						throughout California
9/13/2020	6	486	14	0.996	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/24/2020	6	464	15	0.995	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/23/2020	6	444	16	0.995	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/11/2020	6	424	17	0.995	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/24/2020	6	417	18	0.994	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/12/2020	6	412	19	0.994	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/22/2020	6	400	20	0.994	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/25/2020	6	390	21	0.994	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/21/2020	6	351	22	0.993	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/20/2020	6	350	23	0.993	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/15/2020	5	334	24	0.993	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
8/2/2018	6	308	25	0.992	Yes	2018 Wildfire Smoke Ferguson Fire
10/25/2020	6	303	26	0.992	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California

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Date	POC	24-hour PM10 (µg/m³)	Numeric Rank	Percentile Rank	Request for Exclusion from NAAQS	PM10 Impact Source
9/6/2020	6	296	27	0.992	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/21/2020	6	291	28	0.992	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/18/2020	5	284	29	0.991	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/5/2020	6	282	30	0.991	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
8/3/2018	6	261	31	0.991	Yes	2018 Wildfire Smoke Ferguson Fire
10/6/2020	6	259	32	0.99	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/15/2020	6	253	33	0.99	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/8/2020	6	251	34	0.99	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/18/2020	6	243	35	0.989	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
8/3/2018	5	239	36	0.989	Yes	2018 Wildfire Smoke Ferguson Fire
10/7/2020	6	237	37	0.989	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/26/2020	6	215	38	0.989	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/24/2020	5	198	39	0.988	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/12/2020	5	192	40	0.988	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California

Exceptional Event Demonstration for
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Date	POC	24-hour PM10 (µg/m³)	Numeric Rank	Percentile Rank	Request for Exclusion from NAAQS	PM10 Impact Source
9/12/2020	6	191	41	0.988	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
10/24/2020	5	182	42	0.987	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
8/4/2018	6	180	43	0.987	Yes	2018 Wildfire Smoke Ferguson Fire
9/21/2020	5	174	44	0.987	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California
9/6/2020	5	168	45	0.986	Yes	2020 Wildfire Smoke: Creek Fire, SQF Complex, and others throughout California

Table 3.11a through Table 3.11d compare observed conditions during each day of the September 2020 to October 2020 EE period with normal conditions between 2014 and 2019. The thirty-three (33) EE days are bolded and shaded mauve. The table shows Mammoth Lakes daily average PM10, average temperature, maximum temperature, maximum wind speed and average wind speed. Notable interpretations of the table are as follows:

- Daily Average PM10 - The table shows the daily average PM10 concentrations on Exceptional Event days were roughly 10-times greater than the average concentrations on the same day of the year between 2014 and 2019. For example, average PM10 concentrations on September 6 is 23.12 $\mu\text{g}/\text{m}^3$, while on the September 6, 2020 EE day, the daily average PM10 concentration was 168 $\mu\text{g}/\text{m}^3$ for POC 5 and 297 $\mu\text{g}/\text{m}^3$ for POC 6.
- Temperature - The table shows both the average and maximum daily temperature on the 2020 Exceptional Event days and compares them to normal temperatures on those days of the year. Temperatures were on similar or greater than average for the date on every Exceptional Event day for both average and maximum temperatures. A notable temperature drop well below normal on 10/25/2020-10/26/2020 may have helped Creek Fire control efforts and reduce smoke emissions.
- Wind Speed - Wind speed is rarely significantly elevated in Mammoth Lakes, and such was the case on the Exceptional Event days. The wind speed conditions on these days were comparable to the normal conditions on those days of the year.

Table 3.11a through Table 3.11d can also be used to inspect non-event conditions. Since the Creek Fire and associated smoke began to arrive on 9/5/2020, the dates 9/1 through 9/4 represent non-event conditions. On these days prior to the Creek Fire, PM10 conditions were comparable to average conditions between 2014 and 2019, ranging from 18 $\mu\text{g}/\text{m}^3$ to 41 $\mu\text{g}/\text{m}^3$, while the normal PM10 concentrations range from 22.13 $\mu\text{g}/\text{m}^3$ to 40.86 $\mu\text{g}/\text{m}^3$. Temperatures were also comparable, if not slightly elevated compared to normal conditions. Wind speed was light, comparable with normal conditions.

In summary, PM10 on the September and October 2020 Exceptional Event days strongly deviated from both historic and non-event PM10 conditions. In contrast, wind speed was very similar and temperature was generally comparable.

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Table 3.11a - September, Part 1: Observed PM10 and meteorological conditions during the September and October 2020 EE period. Shows POC 5 and POC 6 EEs as bold font with mauve shading. Table compares 2020 conditions with normal conditions on those days between 2014 and 2019. Data are from AQS report AMP501.

	09/01	09/02	09/03	09/04	09/05	09/06	09/07	09/08	09/09	09/10	09/11	09/12	09/13	09/14	09/15
24-hour Avg PM10 ($\mu\text{g}/\text{m}^3$)															
2020 Observed (POC 5)			18			168			28			90			334
2020 Observed (POC 6)	41	39	27	24	82	297	128	597	43	891	424	191	487	1002	1146
Normal	22.13	37.23	40.86	28.31	19.20	23.12	37.15	23.50	19.52	18.51	19.85	30.53	32.65	19.61	12.79
Average Temperature ($^{\circ}\text{C}$)															
2020 Observed	16.97	18.34	20.03	21.16	20.49	18.53	18.77	12.55	11.51	10.62	12.53	13.76	14.32	12.60	13.60
Normal	16.92	17.55	15.85	14.13	13.79	14.76	15.53	15.64	15.15	15.17	14.94	14.27	13.19	12.93	12.65
Maximum Temperature ($^{\circ}\text{C}$)															
2020 Observed	26.04	27.51	28.40	29.05	27.73	24.58	26.71	17.94	21.05	20.24	22.14	22.86	22.51	19.58	20.74
Normal	24.15	23.75	21.97	20.39	20.73	21.74	22.69	21.97	22.35	22.22	22.19	20.72	19.17	19.11	17.98
24-hour Maximum Wind Speed (m/s)															
2020 Observed	2.86	2.47	2.66	2.59	3.52	1.78	2.59	3.17	2.63	2.15	2.87	3.93	3.06	1.59	2.46
Normal	2.64	2.62	2.85	3.02	2.57	2.51	2.76	2.69	2.51	2.58	3.11	3.00	2.99	2.81	2.86
24-hour Average Wind Speed (m/s)															
2020 Observed	1.37	1.51	1.71	1.75	1.78	1.02	1.59	1.76	1.35	1.18	1.39	1.85	1.50	1.16	1.47
Normal	1.61	1.82	1.81	1.75	1.45	1.50	1.75	1.75	1.58	1.63	1.64	1.95	1.71	1.78	1.84

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.11b - September, Part 2: Observed PM10 and meteorological conditions during the September and October 2020 EE period. Shows POC 5 and POC 6 EEs as bold font with mauve shading. Table compares 2020 conditions with normal conditions on those days between 2014 and 2019. Data are from AQS report AMP501.

	09/16	09/17	09/18	09/19	09/20	09/21	09/22	09/23	09/24	09/25	09/26	09/27	09/28	09/29	09/30
24-hour Avg PM10 ($\mu\text{g}/\text{m}^3$)															
2020 Observed (POC 5)						174			198			12			37
2020 Observed (POC 6)	1031	897	344	509	351	351	401	444	464	391	215	21	15	130	61
Normal	14.80	14.68	40.65	11.34	21.00	26.90	14.09	10.86	14.70	15.18	20.59	19.20	19.14	19.93	14.17
Average Temperature ($^{\circ}\text{C}$)															
2020 Observed	13.13	14.09	12.89	13.61	12.58	12.86	15.10	14.81	17.08	17.39	16.23	12.90	12.48	13.07	13.92
Normal	11.90	12.98	12.94	12.65	12.41	10.49	10.18	10.90	11.96	12.34	12.45	11.80	10.79	10.17	10.53
Maximum Temperature ($^{\circ}\text{C}$)															
2020 Observed	21.23	21.01	17.51	21.19	21.25	20.16	20.01	22.31	22.94	24.19	24.91	20.47	21.34	22.10	22.15
Normal	17.06	20.06	19.15	18.70	19.99	17.37	15.84	17.33	19.86	19.68	19.76	18.62	16.42	15.65	15.58
24-hour Maximum Wind Speed (m/s)															
2020 Observed	2.08	2.19	3.07	2.43	1.86	2.38	2.37	2.36	2.28	2.30	2.67	3.11	2.37	1.84	2.53
Normal	3.25	2.65	3.00	2.95	2.90	2.57	2.82	2.72	2.70	2.85	2.60	2.62	2.78	2.79	3.00
24-hour Average Wind Speed (m/s)															
2020 Observed	1.39	1.43	2.08	1.51	1.34	1.57	1.79	1.45	1.70	1.73	1.41	1.68	1.40	1.21	1.50
Normal	2.11	1.64	2.07	1.94	1.75	1.70	1.84	1.54	1.50	1.73	1.70	1.72	1.79	1.83	2.02

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.11c - October, Part 1: Observed PM10 and meteorological conditions during the September and October 2020 EE period. Shows POC 5 and POC 6 EEs as bold font with mauve shading. Table compares 2020 conditions with normal conditions on those days between 2014 and 2019. Data are from AQS report AMP501.

	10/01	10/02	10/03	10/04	10/05	10/06	10/07	10/08	10/09	10/10	10/11	10/12	10/13	10/14	10/15
24-hour Avg PM10 ($\mu\text{g}/\text{m}^3$)															
2020 Observed (POC 5)			43			129			67			192			
2020 Observed (POC 6)	31	93	79	124	283	259	237	251	127	139	43	413	673	108	253
Normal	12.55	13.24	12.09	7.82	12.74	13.75	12.83	17.56	14.46	19.69	16.47	23.33	16.58	19.85	18.33
Average Temperature ($^{\circ}\text{C}$)															
2020 Observed	13.95	14.30	14.40	14.46	13.31	12.41	11.53	10.60	11.29	10.99	11.55	11.62	11.49	13.25	11.46
Normal	8.55	6.56	6.44	7.64	8.05	8.36	9.43	10.45	9.41	8.71	9.44	8.16	9.27	7.90	7.20
Maximum Temperature ($^{\circ}\text{C}$)															
2020 Observed	22.86	24.00	23.20	22.29	23.05	21.12	19.71	18.99	18.51	14.25	19.01	21.24	21.29	23.48	21.19
Normal	14.92	13.55	12.84	14.11	15.80	17.11	17.59	18.70	17.07	15.90	15.74	16.33	17.40	14.82	14.26
24-hour Maximum Wind Speed (m/s)															
2020 Observed	3.57	1.92	2.07	2.28	1.67	2.02	1.74	2.02	2.28	2.99	3.83	1.83	1.91	2.30	3.36
Normal	3.02	2.51	3.13	2.78	2.58	2.27	2.34	2.73	2.93	2.80	2.72	2.40	2.54	3.31	2.98
24-hour Average Wind Speed (m/s)															
2020 Observed	1.72	1.43	1.42	1.57	1.30	1.26	1.28	1.38	1.56	2.07	1.49	1.19	1.22	1.46	1.42
Normal	1.76	1.53	1.79	1.74	1.53	1.37	1.43	1.52	1.68	1.49	1.69	1.38	1.54	1.86	1.76

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.11d - October, Part 1: Observed PM10 and meteorological conditions during the September and October 2020 EE period. Shows POC 5 and POC 6 EEs as bold font with mauve shading. Table compares 2020 conditions with normal conditions on those days between 2014 and 2019. Data are from AQS report AMP501.

	10/16	10/17	10/18	10/19	10/20	10/21	10/22	10/23	10/24	10/25	10/26	10/27	10/28	10/29	10/30	10/31
24-hour Avg PM10 ($\mu\text{g}/\text{m}^3$)																
2020 Observed (POC 5)			284						182			13			17	
2020 Observed (POC 6)	34	808	781	772	151	292	525	515	418	303	38	24	20	36	27	26
Normal	16.80	12.23	11.59	14.62	11.68	12.39	14.98	12.10	15.98	13.99	16.08	13.33	9.16	7.73	15.98	16.13
Average Temperature ($^{\circ}\text{C}$)																
2020 Observed	10.18	12.52	14.39	12.91	9.81	11.06	11.64	7.61	10.04	3.62	-2.78	3.69	6.39	6.77	6.40	6.76
Normal	7.95	7.10	6.43	7.41	6.15	6.71	8.42	9.23	8.76	8.73	8.96	6.59	6.90	6.66	4.09	5.29
Maximum Temperature ($^{\circ}\text{C}$)																
2020 Observed	19.82	22.05	20.51	20.66	18.27	18.97	18.22	16.59	15.91	10.33	5.29	13.37	17.37	16.72	17.20	17.57
Normal	14.40	12.69	13.65	14.19	12.66	14.20	16.77	15.81	16.32	16.24	17.47	15.13	13.70	13.59	11.51	12.92
24-hour Maximum Wind Speed (m/s)																
2020 Observed	2.72	2.24	2.13	2.02	1.61	2.56	2.00	2.16	2.61	6.20	2.93	3.43	2.64	2.38	2.33	2.27
Normal	2.95	3.04	2.75	2.78	2.85	2.58	2.50	2.94	2.68	2.59	2.63	3.26	2.73	2.99	2.73	2.74
24-hour Average Wind Speed (m/s)																
2020 Observed	1.19	1.47	1.63	1.40	1.25	1.57	1.03	1.03	2.05	2.78	1.37	1.53	1.40	1.33	1.41	1.29
Normal	1.68	1.83	1.54	1.61	1.69	1.44	1.48	1.72	1.66	1.67	1.56	1.65	1.66	1.65	1.57	1.66

Analysis Showing Wildfire Influence on Affected Days

HYSPLIT Model

The HYSPLIT model²¹ is a useful tool to model forest fire atmospheric smoke transport and dispersion, and to display forward trajectories for plumes and back trajectories for receptors (monitoring sites). The HYSPLIT model can also show plume trajectories at different elevations. For this demonstration 100 meter, 1000 meter, and 2500 meter elevations above the surface were selected. The HYSPLIT model was run on EPA AIRNowTech Navigator²². Forward trajectories were run for 15 hours to provide context of longer-range transport patterns related to the Mammoth Lakes region. Backward trajectories were run for 24 hours to identify the influence of more distant sources such as the SQF Complex on 9/15/2020. Forward trajectory start times are during daylight hours, the time of day at which diurnal flow and transport over the Sierra crest traditionally takes place. Backward trajectory start times are the hour with the maximum PM10, based on the POC 6 T640x. Figure 3.43a through Figure 3.43g show the HYSPLIT models for each requested POC 5 FEM EE day. The figures include forward smoke trajectories (top) from nearby active fires (Creek Fire, SQF Complex, and Slink Fire) backward trajectories from Mammoth Lakes bottom.

In addition to the AirNowTech models, the HYSPLIT²³ backward trajectory model was also run on the NOAA website for all thirty-three (33) POC 5 and POC 6 PM10 requested EE days. Output graphics from those simulations can be found in Appendix F. Start time for each backward trajectory model is the UTC equivalent of the PST POC 6 T640x maximum hourly PM10 for each EE day.

Both the forward and backward models indicate a strong association between wildfire smoke from California wildfires and elevated PM10 impacts on Mammoth Lakes for every requested EE day. Below is a summary of the HYSPLIT models for all thirty-three (33) requested EE days:

- September 6, 2020 (POC 5 and POC 6) - The forward HYSPLIT model indicates the majority of the smoke impacting Mammoth Lakes was from the Slink Fire to the north. The backward trajectories demonstrate a confluence of impacts: the Slink Fire (north) at 1000 m, as well influence from the Creek Fire (west) at 100 m, and the SQF Complex (south) at 2500 m.
- September 10, 2020 (POC 6) - The backward HYSPLIT model shows minimal dispersion and transport at lower elevations (100 m and 1000 m) with smoke lingering in southern Mono County suggesting accumulated stagnation in Mammoth Lakes from Creek Fire smoke incursions during the previous days.
- September 11, 2020 (POC 6) - The backward HYSPLIT model shows Mammoth Lakes was impacted by sources from the south, the direction of the SQF Complex, at the 100 m height, with additional southerly components to the 1000 m height.

²¹The HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) model, developed by the National Oceanic and Atmospheric Administration (NOAA) Air Resources Laboratory and the Australian Bureau of Meteorology Research Centre in 1988.

²² AirNowTech Navigator is accessed here: <https://www.airnowtech.org/index.cfm>

²³ The NOAA HYSPLIT Model can be accessed here:
<https://www.ready.noaa.gov/hypub-bin/trajtype.pl?runtype=archive>

- September 12, 2020 (POC 6) - The backward HYSPLIT model shows sources from the south-southeast, the direction of the SQF Complex, at the 100 m height.
- September 13, 2020 (POC 6) - The backward HYSPLIT model shows sources from the south-southeast, the direction of the SQF Complex, at all three heights.
- September 14, 2020 (POC 6) - The backward HYSPLIT model shows sources from the southeast, the direction of the SQF Complex at the 2500 m height, and the Creek Fire to the southwest at the 100 m and 2500 m heights.
- September 15, 2020 (POC 5 and POC 6) - Winds were generally from the south and the forward HYSPLIT model shows smoke from the SQF Complex drifting north to the Creek Fire region, then toward Mammoth Lakes with cumulative impact. The backward HYSPLIT trajectories source the impacts on Mammoth to the direction of the Creek Fire (southwest) with some longer-range transport from the SQF Complex (south-southeast).
- September 16, 2020 (POC 6) - The backward HYSPLIT model shows sources from the south-southeast, the direction of the SQF Complex, at the 2500 m height, and the Creek Fire to the southwest at the 100 m and 1000 m heights.
- September 17, 2020 (POC 6) - The backward HYSPLIT model shows sources from the southwest, the direction of the Creek Fire, at all three heights.
- September 18, 2020 (POC 6) - The backward HYSPLIT model shows sources from the southwest, the direction of the Creek Fire, at all three heights.
- September 19, 2020 (POC 6) - The backward HYSPLIT model shows complex swirling at the 100 m and 1000 m heights sourced from the direction of the Creek Fire to the southwest.
- September 20, 2020 (POC 6) - The backward HYSPLIT model shows southwest to northeast transport from the Creek Fire toward Mammoth all three heights.
- September 21, 2020 (POC 5 and POC 6) - The forward HYSPLIT trajectories show smoke from the Creek Fire impacting Mammoth Lakes with flow toward the northeast. The backward HYSPLIT trajectories show transport from the southwest toward the northeast from the direction of the Creek Fire toward Mammoth Lakes at all three heights, with longer-range transport from the SQF Complex to the south at the 1000 m height.
- September 22, 2020 (POC 6) - The backward HYSPLIT model shows sources from the west and southwest, the direction of the SQF Complex, at all three heights.
- September 23, 2020 (POC 6) - The backward HYSPLIT model shows sources from the southwest, the direction of the SQF Complex, at all three heights.
- September 24, 2020 (POC 5 and POC 6) - The forward HYSPLIT trajectories show direct smoke impact from the Creek Fire on Mammoth Lakes with flow toward the northeast. The backward trajectories confirm transport from the southwest, the direction of the Creek Fire at all three modeled heights.
- September 25, 2020 (POC 6) - The backward HYSPLIT model shows easterly transport from the Creek Fire to Mammoth Lakes at all three heights.
- September 26, 2020 (POC 6) - The backward HYSPLIT model shows smoke sources from the west, the direction of the Creek Fire in the 2500 m height, and complex local swirling at 100 m and 1000 m.
- October 5, 2020 (POC 6) - The backward HYSPLIT model shows direct plume southwest to northeast transport from the Creek Fire toward Mammoth Lakes at all three heights.
- October 6, 2020 (POC 6) - The backward HYSPLIT model shows direct plume southwest to northeast transport from the Creek Fire toward Mammoth Lakes at all three heights.

- October 7, 2020 (POC 6) - The backward model shows direct plume transport from west to east from the Creek Fire toward Mammoth Lakes at 2500 m, and a complex trans-Sierra transport at 100 m and 2500 m.
- October 8, 2020 (POC 6) - The backward HYSPLIT model shows complex trans-Sierra smoke transport from the Creek Fire in the 100 m height, with more far reaching transport from the south, the direction of the SQF Complex at the 1000 m height.
- October 12, 2020 (POC 5 and POC 6) - The forward HYSPLIT model shows the Creek Fire impacting Mammoth Lakes from the southwest at the 1000 m elevation. The backward model also shows impacts from the southwest, the location of the Creek Fire at the 1000 m elevation.
- October 13, 2020 (POC 6) - The backward HYSPLIT model shows direct plume transport from the Creek Fire at 1000 m and 2500 m heights and complex swirling suggesting stagnation near ground level at 100 m.
- October 15, 2020 (POC 6) - The backward HYSPLIT model shows transport from the north at all three heights, suggesting influence from one or more of the other major California Fires besides the Creek Fire to the southwest, or lack of model resolution to capture micrometeorological conditions and local impact from a fire only 11 miles from a source (the distance from the Creek Fire from Mammoth Lakes).
- October 17, 2020 (POC 6) - The backward HYSPLIT model shows transport from the north at all three heights, suggesting influence from one or more of the other major California Fires besides the Creek Fire to the southwest, or lack of model resolution to capture micrometeorological conditions and local impact from a fire only 11 miles from a source (the distance from the Creek Fire from Mammoth Lakes).
- October 18, 2020 (POC 5 and POC 6) - The forward HYSPLIT trajectories show easterly trans-Sierra transport from the Creek Fire toward Mammoth Lakes from the west for all three modeled heights. The 100 and 1000 m backward trajectories are short and spiraled, suggesting minimal dispersion at lower heights indicating local stagnation of previously deposited Creek Fire smoke.
- October 19, 2020 (POC 6) - The backward HYSPLIT model shows close-proximity trans-Sierra plume transport from the west, the direction of the Creek Fire at 100 m and 1000 m.
- October 21, 2020 (POC 6) - The backward HYSPLIT model shows easterly trans-Sierra plume transport from the Creek Fire at all three heights.
- October 22, 2020 (POC 6) - The backward HYSPLIT model shows easterly trans-Sierra plume transport from the Creek Fire at all three heights.
- October 23, 2020 (POC 6) - The backward HYSPLIT model shows close-proximity easterly trans-Sierra plume transport from the Creek Fire at all three heights in the immediate hours prior to the max PM10 concentration at Mammoth Lakes.
- October 24, 2020 (POC 5 and POC 6) - The forward HYSPLIT trajectories show direct impacts of Creek Fire smoke impacting Mammoth Lakes with flow to the northeast. The backward HYSPLIT trajectories confirm transport from the southwest, the direction of the Creek Fire.
- October 25, 2020 (POC 6) - The backward HYSPLIT model shows easterly trans-Sierra plume transport from the Creek Fire in the 100 m and 1000 m heights.

Exceptional Event Demonstration for
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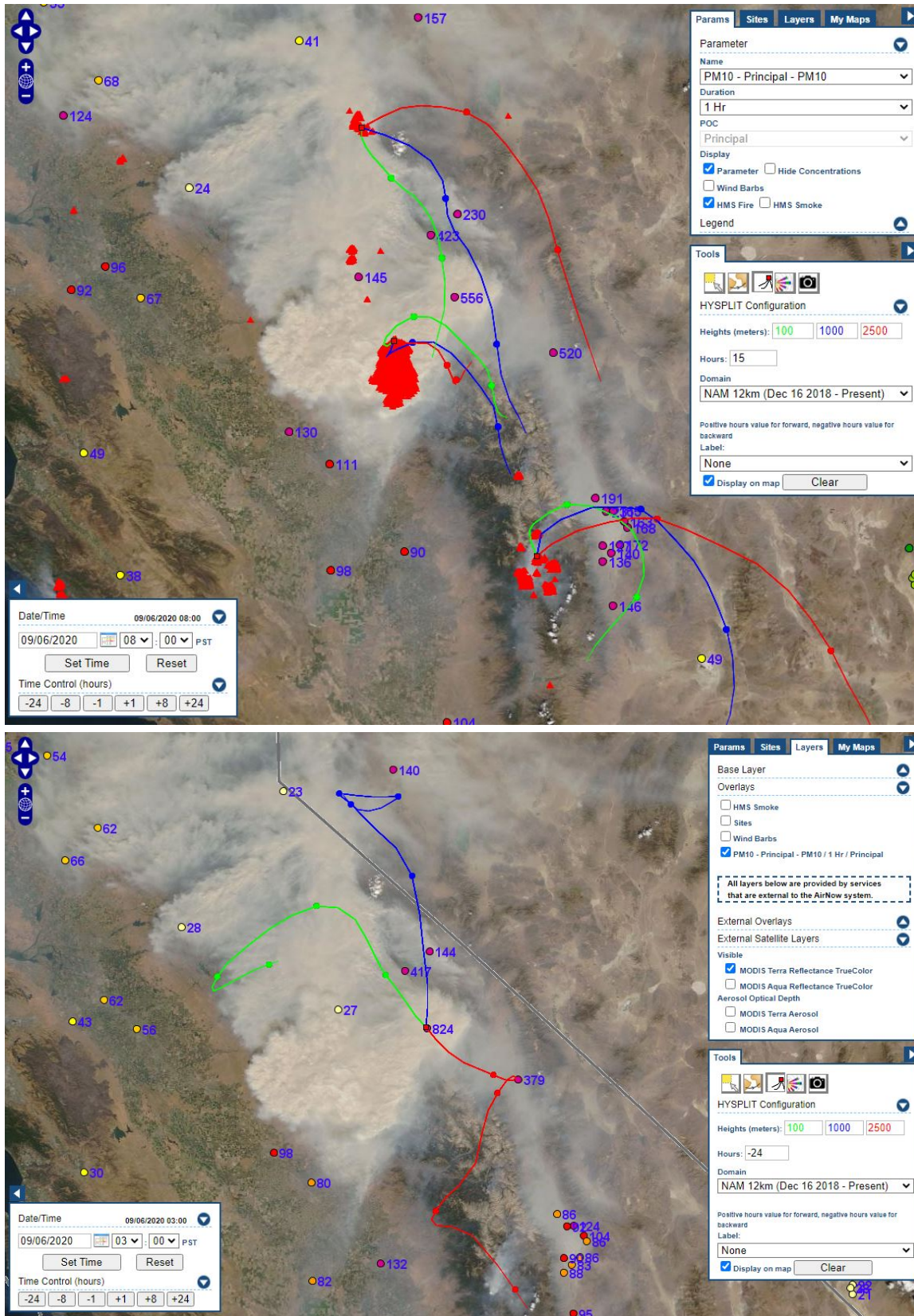


Figure 3.43a: September 6, 2020 Forward (top) and Backward HYSPLIT trajectories.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

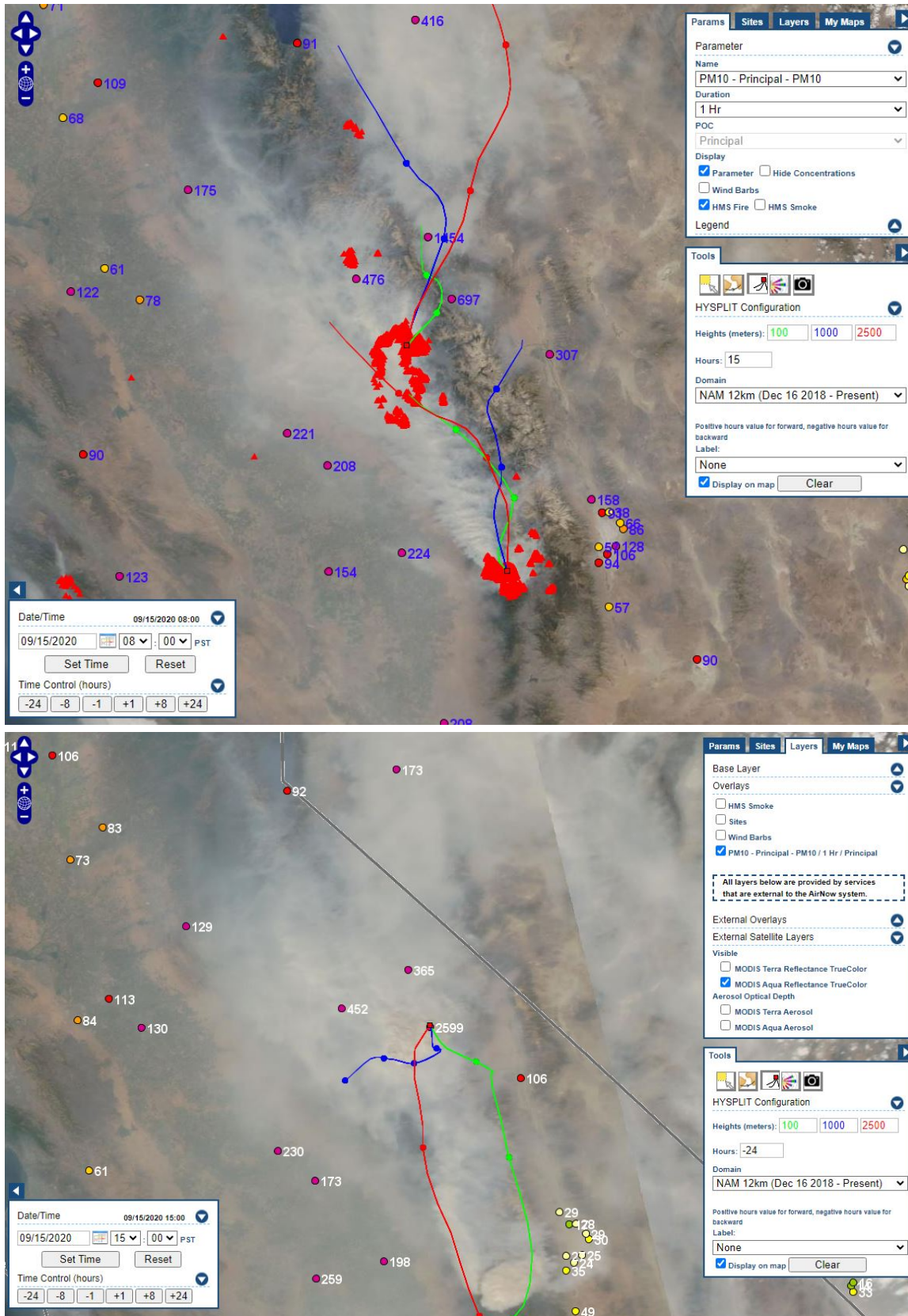


Figure 3.43b: September 15, 2020 Forward (top) and Backward HYSPLIT trajectories.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

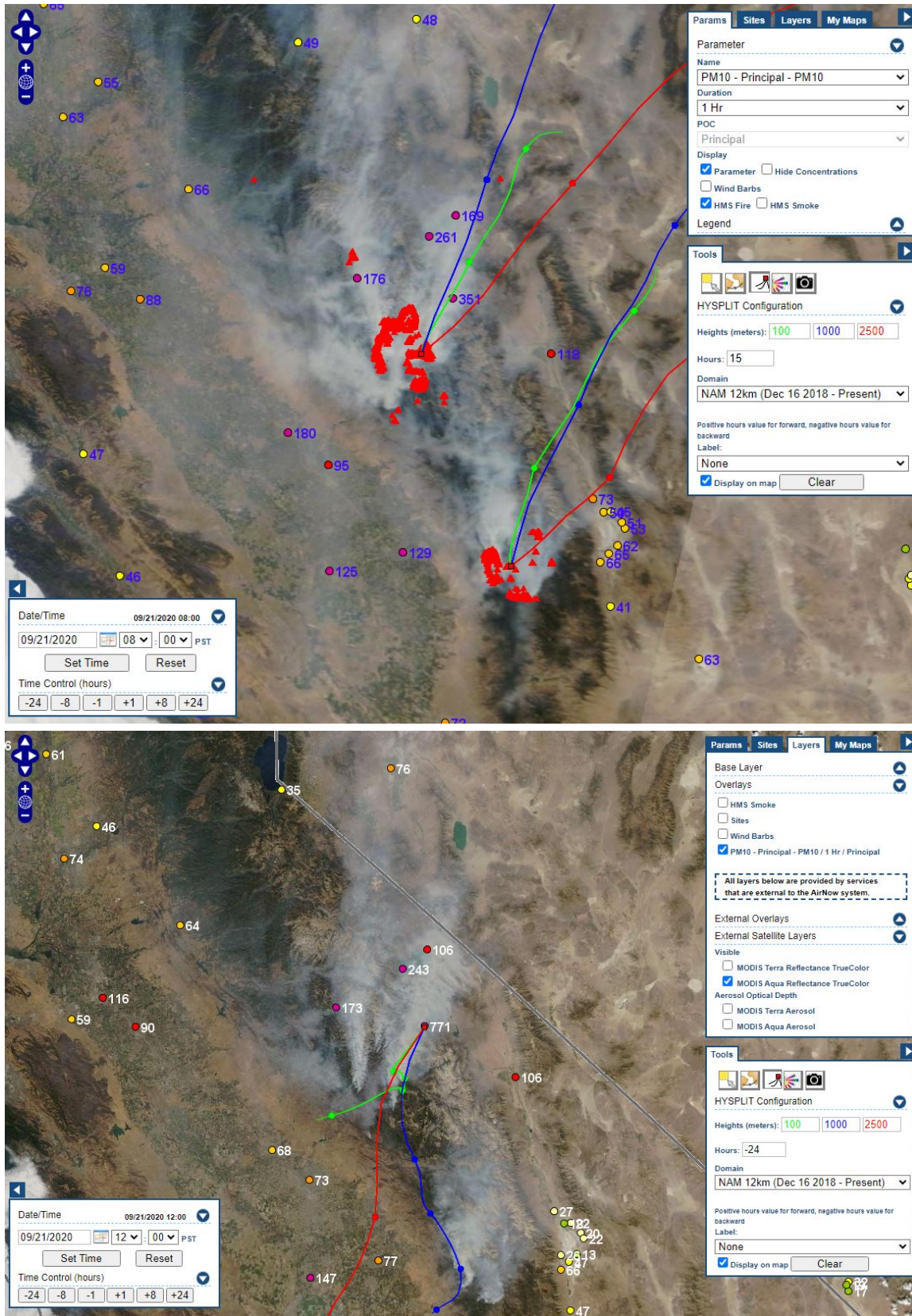


Figure 3.43c: September 21, 2020 Forward (top) and Backward HYSPLIT trajectories.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

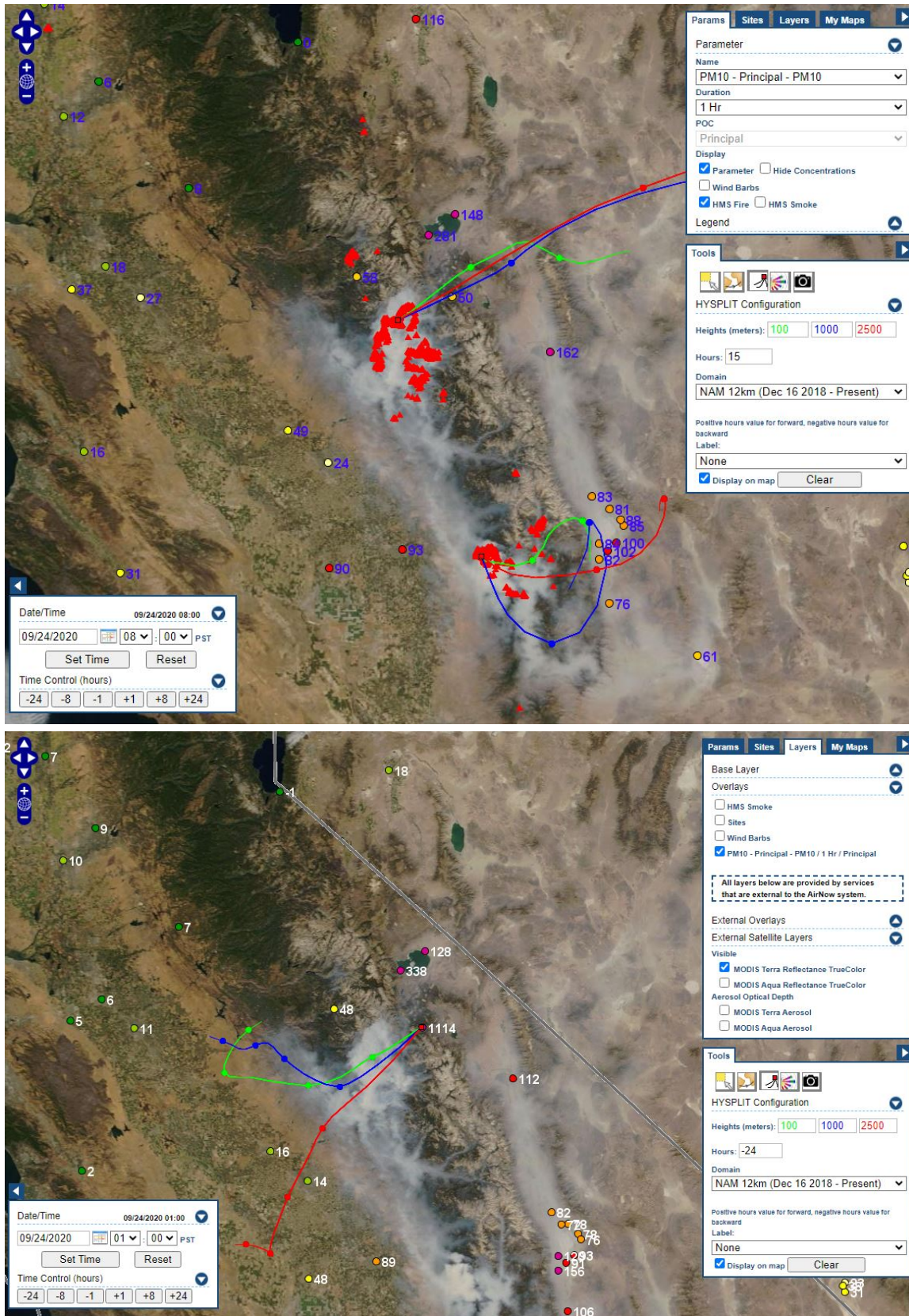


Figure 3.43d: September 24, 2020 Forward (top) and Backward HYSPLIT trajectories.

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Mammoth Lakes PM10 in September and October 2020

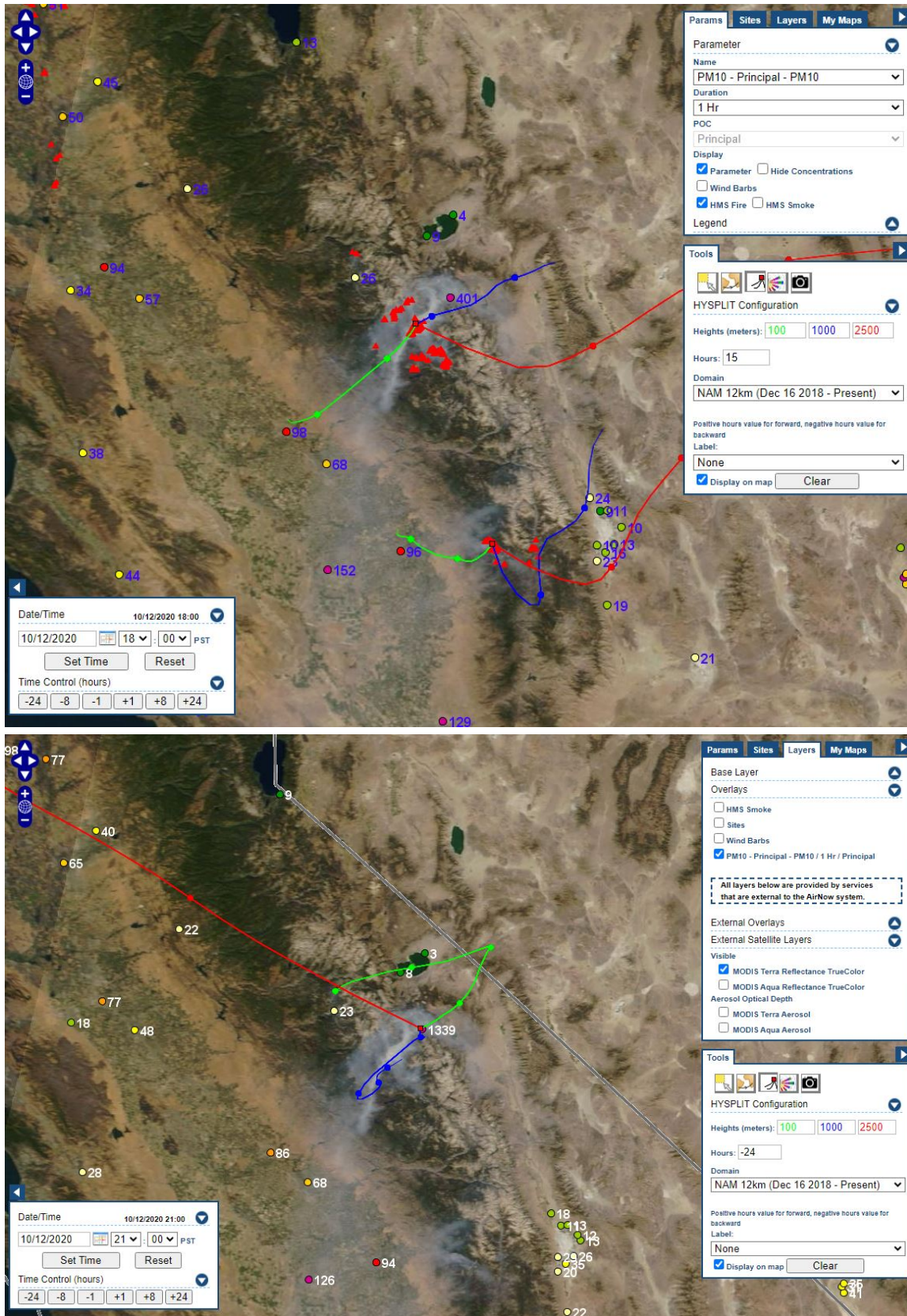


Figure 3.43e: October 12, 2020 Forward (top) and Backward HYSPLIT trajectories.

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Mammoth Lakes PM10 in September and October 2020

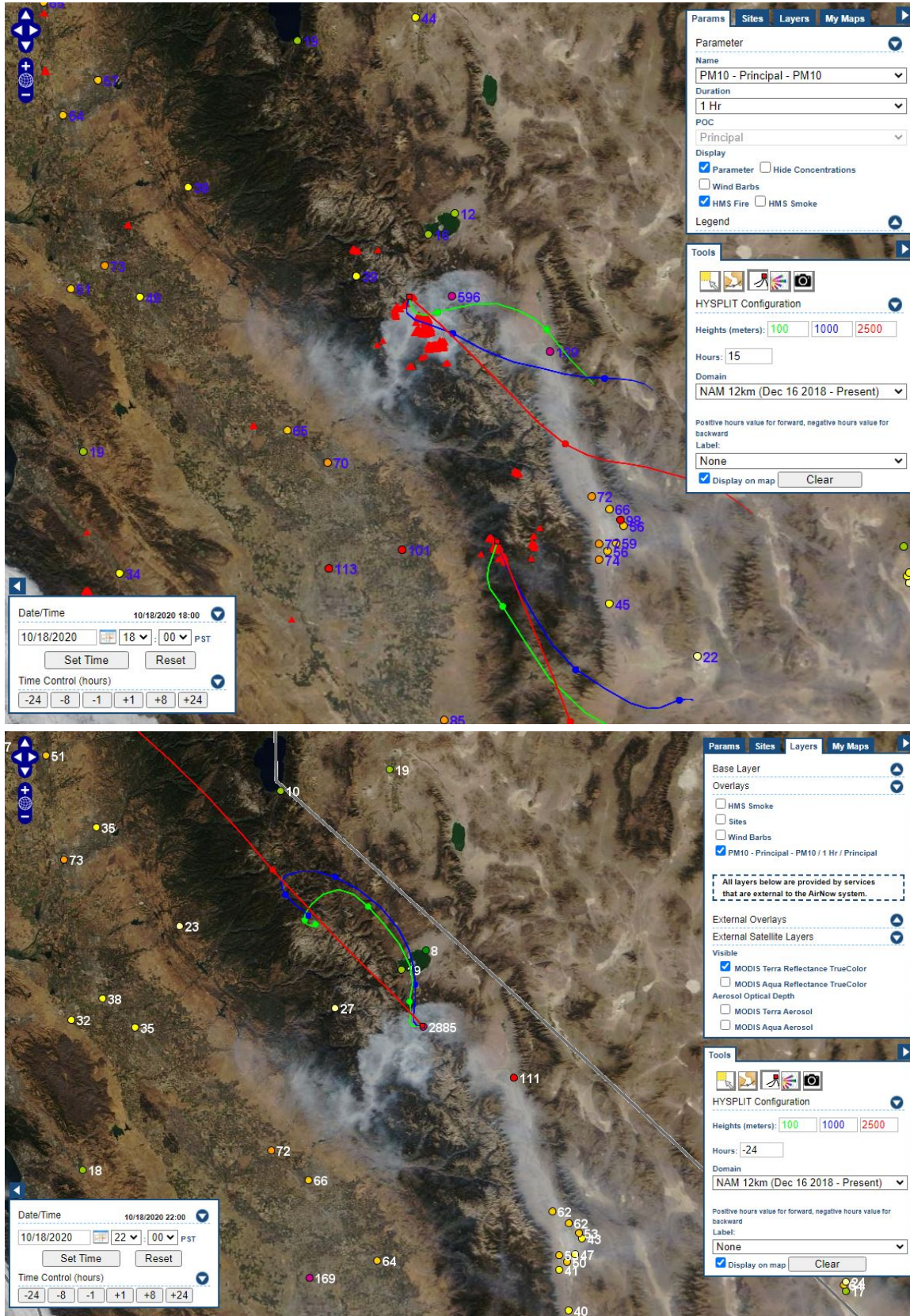


Figure 3.43f: October 18, 2020 Forward (top) and Backward HYSPLIT trajectories.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

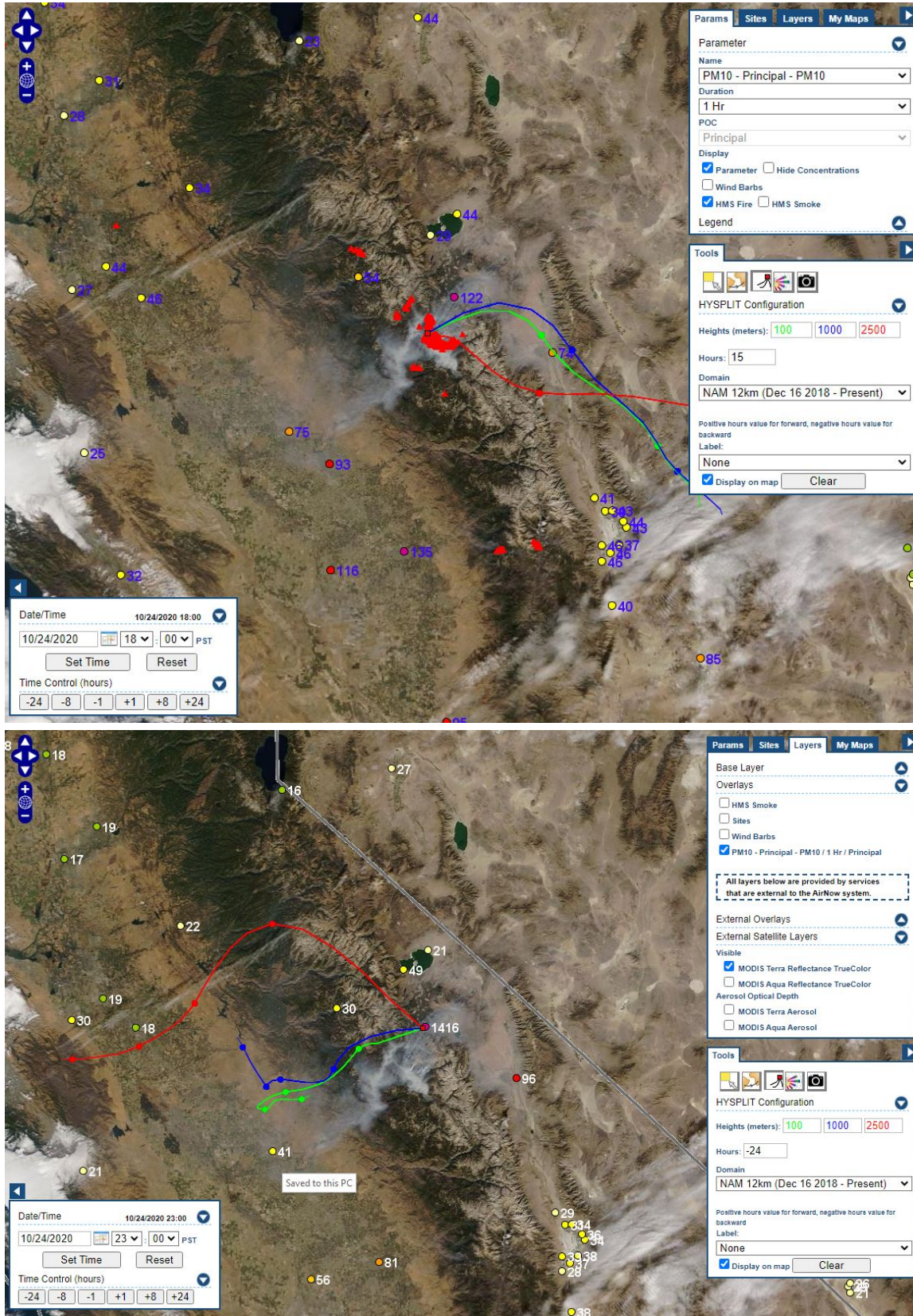


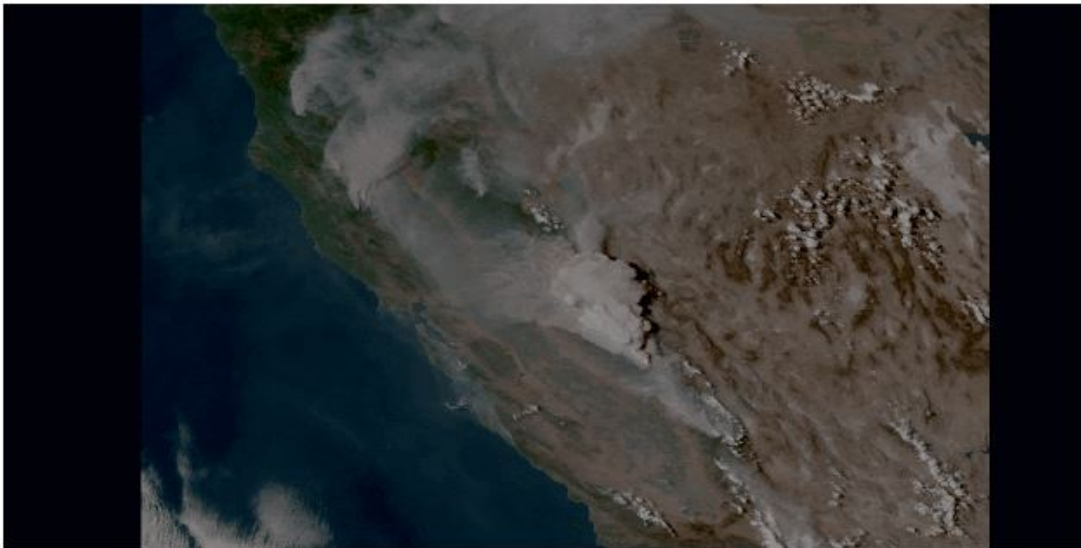
Figure 3.43g: October 24, 2020 Forward (top) and Backward HYSPLIT trajectories

California Smoke Blog Posts

The California Smoke Blog is a voluntary effort by public agencies to coordinate and aggregate information for California communities affected by smoke. The Blog covered the wildfire smoke events throughout California thoroughly in September and October 2020. Figure 3.44 shows the first occurrence of the Creek Fire in the Blog²⁴. The majority of the California Smoke Blog Posts documenting the severe smoke impacts to the Mammoth Lakes area during the EE period are the Creek Fire ARA reports, all of which are included in Appendix G, as well as Figure 3.9.

Saturday September 5, 2020 - The #Creekfire Plume is Heading North/Northwest

A new fire, #Creekfire (<https://inciweb.nwcg.gov/incident/7147/>), has exploded to 5000+ acres since this morning, and its plume is spreading heavy smoke to the north/northwest. While much of this smoke has lofted very high, smoke, possibly very dense smoke, may mix down to the surface as the evening progresses (the smoke models and forecasts from this morning would not have included this new smoke source).



Looped video of the #creekfire plume, from ~1 PM through 5 PM (8 minute intervals), courtesy of the experimental RAAMB Slider (<https://rammb-slider.cira.colostate.edu/>)

Figure 3.44: The first appearance of the Creek Fire on the California Smoke blog, on Saturday, September 5th.

NOAA/NWS Area Forecast Discussions

NWS Smoke Forecast Maps were periodically posted to the California Smoke Blog during the EE period. The maps on Figure 3.45 through Figure 3.49 show the National Weather Service (NWS) Sacramento Statewide Near Surface Smoke Forecasts on September 7, September 13, and September 21, October 2, and October 7, respectively. No forecast maps were available after October 7. On all maps, the Creek Fire is depicted as the largest smoke-producing wildfire in the region with a large, dense plume of smoke moving east and southeast. On Figure 3.45, the Mammoth Lakes PM10 Planning Area appears mapped in the interface between yellow and magenta, with the majority of the

²⁴ California Smoke Blog:
<https://californiasmokeinfo.blogspot.com/2020/09/saturday-september-5th-creekfire-plume.html>

plume south of the monitor. On the remaining figures, dense smoke from the Creek Fire blankets the entire Mammoth Lakes PM10 Planning Area.

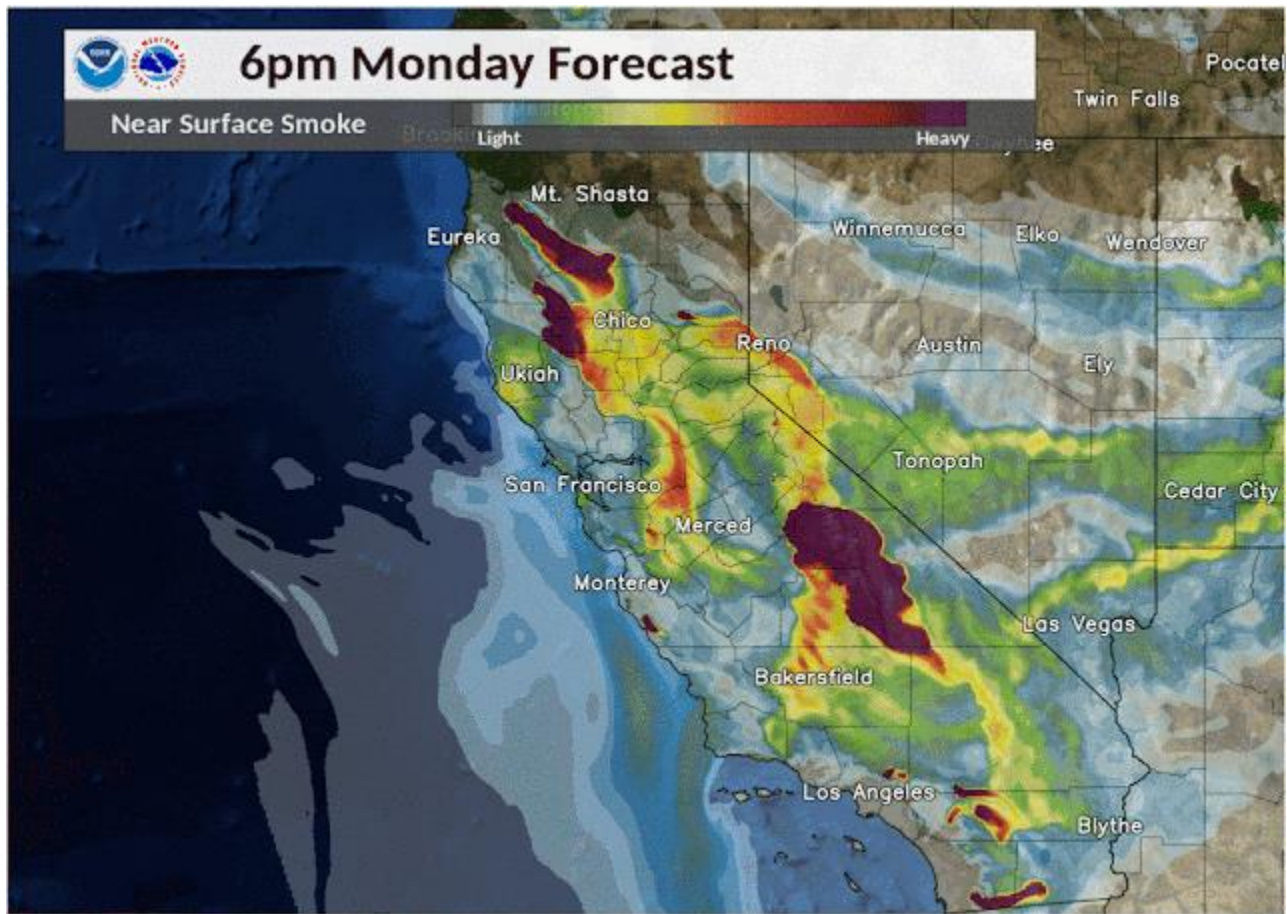


Figure 3.45: Map showing National Weather Service Sacramento Statewide Smoke Forecast at 6:00 PM PDT Monday, September 7, 2020. (Source: <https://californiasmokeinfo.blogspot.com/2020/09/monday-september-7-2020-updated-nws.html>)

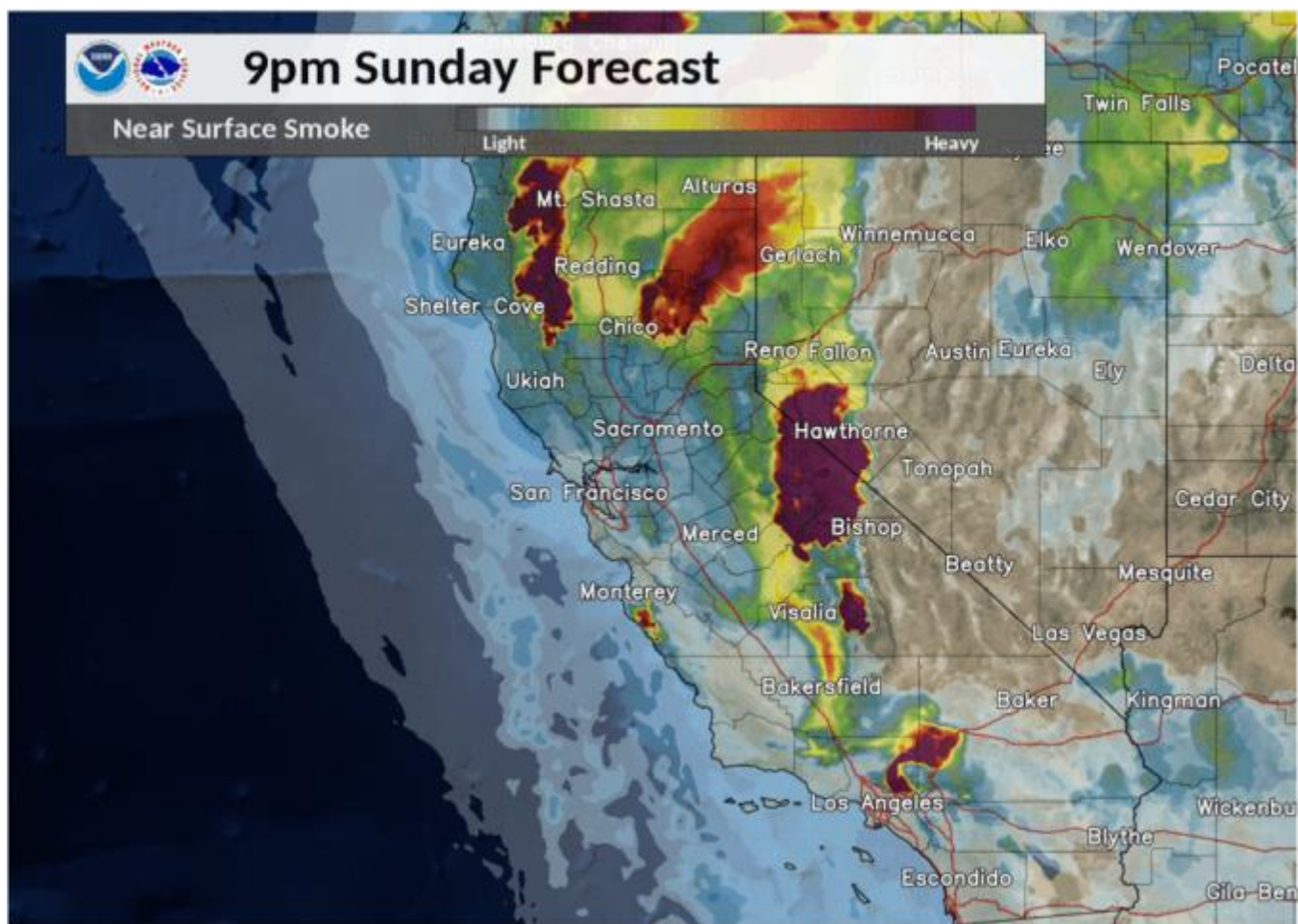


Figure 3.46: Map showing National Weather Service Sacramento Statewide Smoke Forecast at 9:00 PM PDT Monday, September 13, 2020. (Source <https://californiasmokeinfo.blogspot.com/2020/09/sunday-september-13-2020-nws.html>)

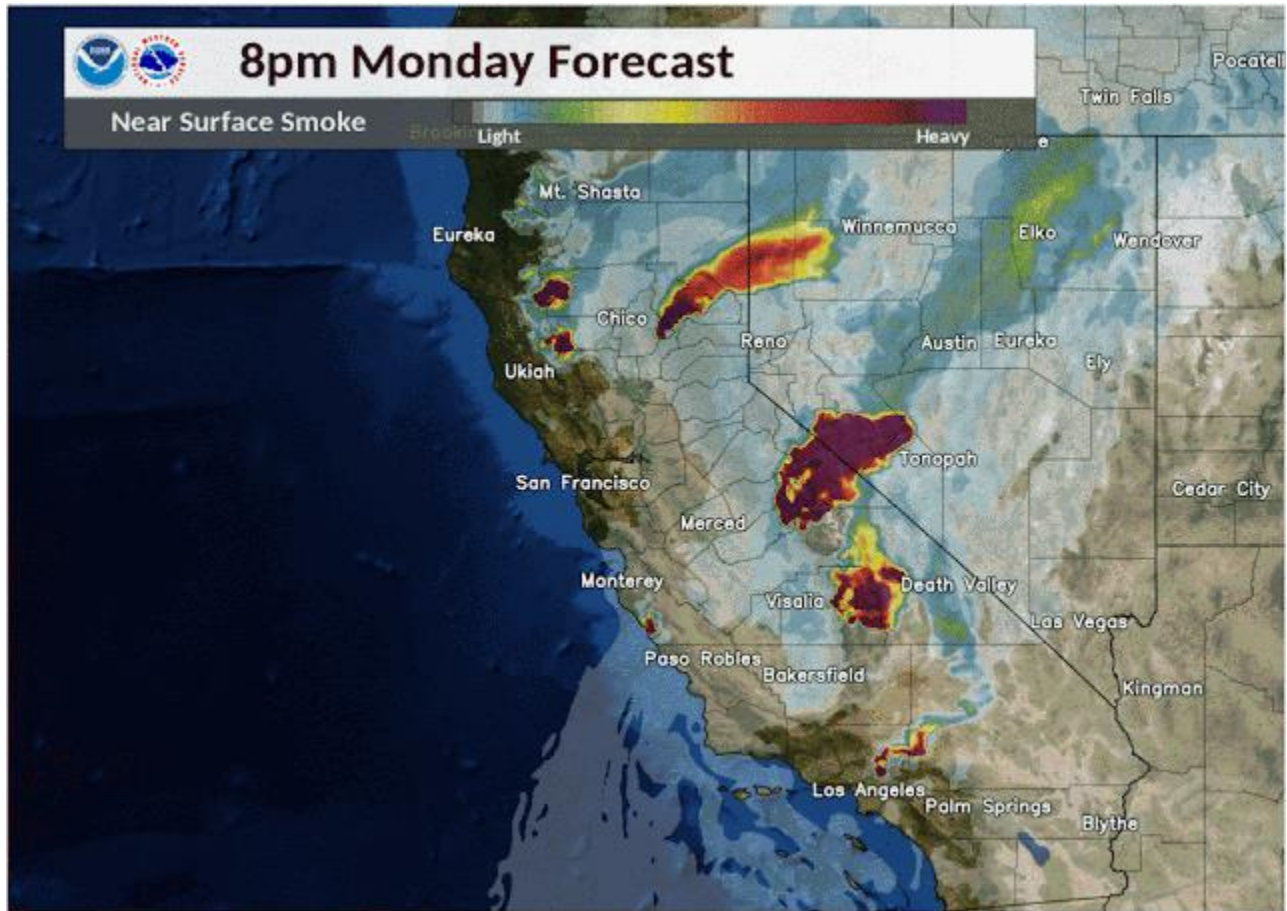


Figure 3.47: Map showing National Weather Service Sacramento Statewide Smoke Forecast at 8:00 PM PDT Monday, September 21, 2020. (Source <https://californiasmokeinfo.blogspot.com/2020/09/monday-september-21-2020-national.html>)

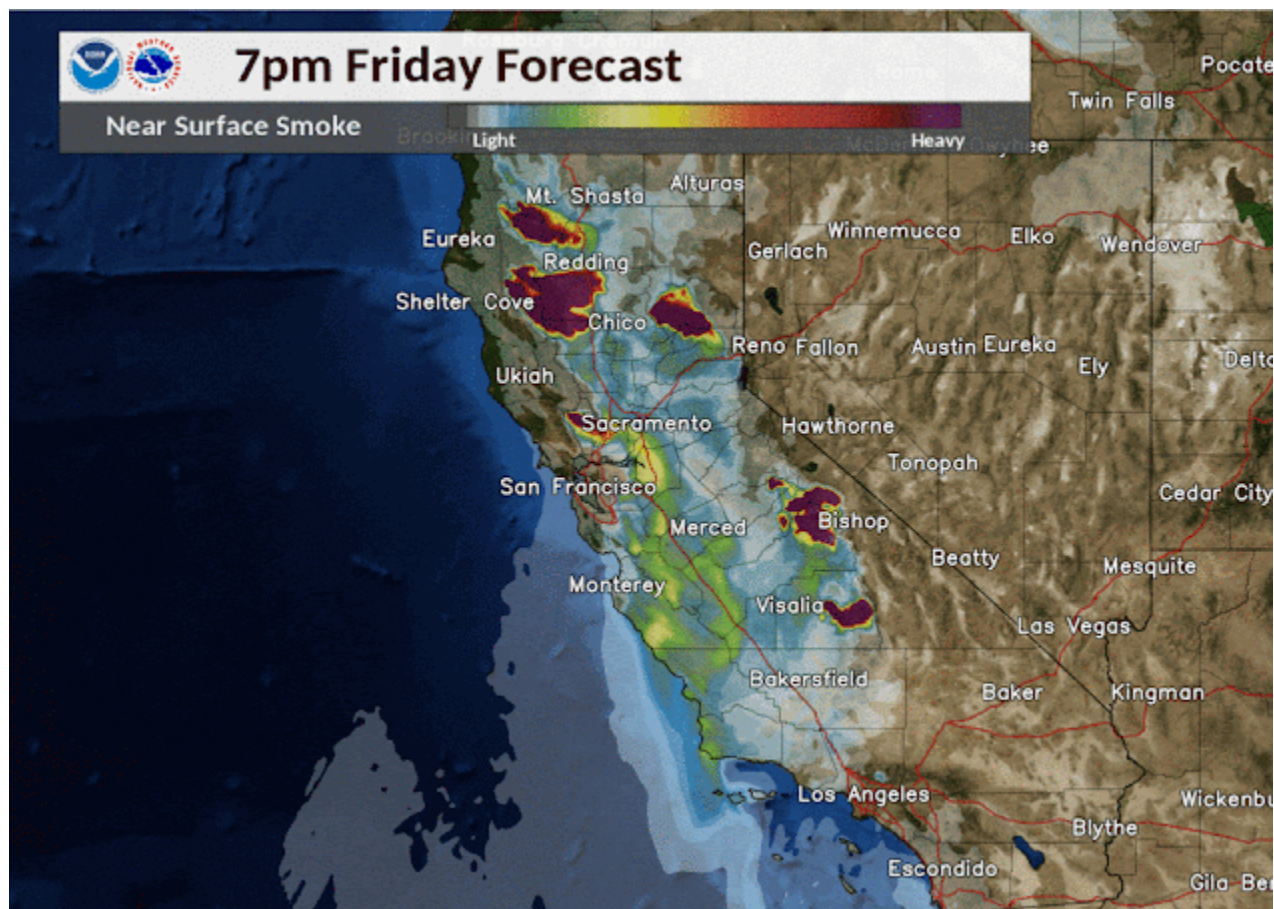


Figure 3.48: Map showing National Weather Service Sacramento Statewide Smoke Forecast at 7:00 PM PDT Monday, October 2, 2020. (Source <https://californiasmokeinfo.blogspot.com/2020/10/friday-october-2-2020-national-weather.html>)

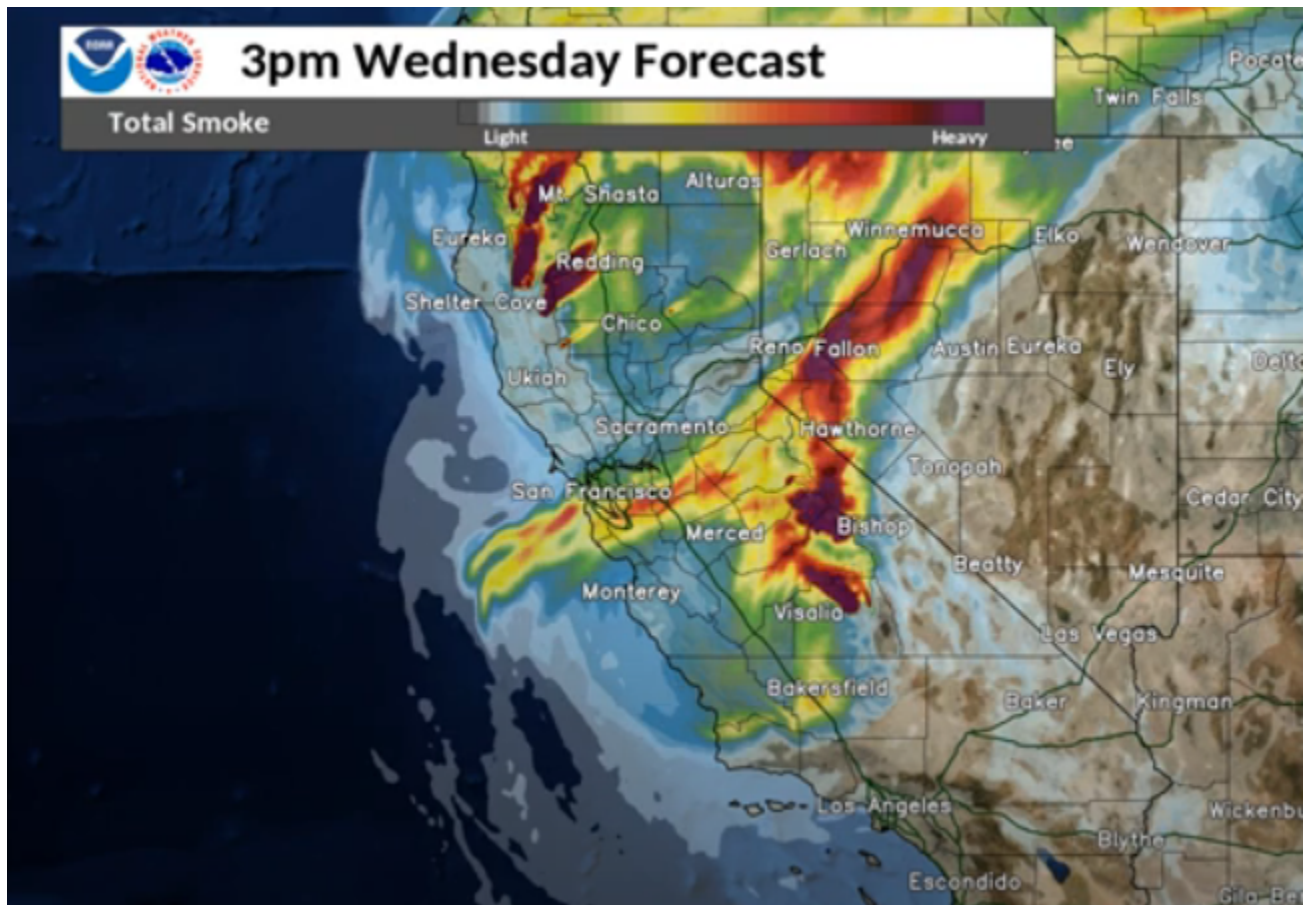


Figure 3.49: Map showing National Weather Service Sacramento Statewide Smoke Forecast at 3:00 PM PDT Monday, October 7, 2020. (Source <https://californiasmokeinfo.blogspot.com/2020/10/wednesday-october-7-2020-national.html>)

Figure 3.50 and Figure 3.51 are National Oceanic and Atmospheric Administration text-based satellite imagery analyses of observed dust and smoke over the United States. NOAA text analyses for all POC 5 FRM EE days are shown in Appendix I.

Below are quotes extracted from the NOAA analyses shown in Figure 3.50 for September 6, 2020, Figure 3.51 for September 7, 2020, and all other POC 5 FRM EE days as included in Appendix I:

- 9/6/2020: "Extremely thick smoke was observed over California"
- 9/7/2020 "Heavy remnant smoke from yesterday's fires throughout California was moving east across Nevada... The same California fires are still emitting moderate to extremely heavy smoke plumes that continue to move towards the east."
- 9/15/2020: "Absolutely expansive coverage of smoke throughout the US...Heavy smoke continued to blanket almost the entirety of the United States."
- 9/21/2020: "Wildfire activity over the western United States was continuing to produce a very large smoke plume that extended over most of the United States."
- 9/24/2020: "Moderate-to-heavy smoke dominates central California in the areas around the Creek Fire, SQF..."

- 10/12/2020: “Thick smoke from the Creek Fire in east central California spread to the east during the afternoon...”
- 10/18/2020: “...The Creek Fire in southern Sierra Nevada Mountains continue to emit smoke resulting in moderate-to-heavy concentration near their sources...Moderate smoke from the Creek Fire spills over the the San Joaquin Valley and the Owens Valley...”
- 10/24/2020: “Wildfires in central California continue to emit smoke resulting in moderate-to-heavy concentrations near their sources.

The modeled smoke plume products from the NWS (Figure 3.45 through Figure 3.49) in conjunction with the satellite imagery interpretations from NOAA (Figure 3.50, Figure 3.51, and Appendix I), provide further evidence that the smoke observed at Mammoth Lakes is directly linked to wildfires and smoke was directly transported from the wildfires to the location of the monitor.

Sunday, September 6, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 0305Z Sunday, September 7, 2020

SMOKE:

Western U.S. into Central U.S...

An area of extremely thick smoke was observed over most of California and Oregon before turning east over Idaho, Wyoming and into the central plains including Kansas, Colorado and northern Texas. A combination of new smoke due to a number of very large fire complexes and stagnant remnant smoke from previous days was to blame. Moderate to light density smoke also related to the widespread fire activity also extended off of the Pacific coast of California, over much of the western U.S. and across the northern and central plains prior to engulfing the Great Lakes region and Mississippi Valley. Additional scattered fire activity throughout Colorado, Washington, Oregon and Idaho added to the increased volume of smoke encompassing much of the United States.

DUST:

Pacific Northwest...

Waves of light blowing dust were observed moving through far southwestern Canada into Washington state and northern Oregon.

JL

THIS TEXT PRODUCT IS PRIMARILY INTENDED TO DESCRIBE SIGNIFICANT AREAS OF SMOKE ASSOCIATED WITH ACTIVE FIRES AND SMOKE WHICH HAS BECOME DETACHED FROM THE FIRES AND DRIFTED SOME DISTANCE AWAY FROM THE SOURCE FIRE. TYPICALLY OVER THE COURSE OF ONE OR MORE DAYS. AREAS OF BLOWING DUST ARE ALSO DESCRIBED. USERS ARE ENCOURAGED TO VIEW A GRAPHIC DEPICTION OF THESE AND OTHER PLUMES WHICH ARE LESS EXTENSIVE AND STILL ATTACHED TO THE SOURCE FIRE IN VARIOUS GRAPHIC FORMATS ON OUR WEB SITE:

JPEG: <http://www.ospo.noaa.gov/data/land/fire/currenthms.jpg>

GIS: <ftp://satpsanone.nesdis.noaa.gov/FIRE/HMS/GIS/>

KML: <http://www.ospo.noaa.gov/data/land/fire/fire.kml> (fire)
<http://www.ospo.noaa.gov/data/land/fire/smoke.kml> (smoke)

ANY QUESTIONS OR COMMENTS REGARDING THIS PRODUCT SHOULD BE SENT TO:
SSDFireTeam@noaa.gov

Figure 3.50: NOAA descriptive narrative for smoke/dust observed in satellite imagery, September 6, 2020. (Source <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/20201070304.html>)

Monday, September 7, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1800Z Sunday, September 7, 2020

SMOKE:

Western U.S. into Central U.S...

Heavy remnant smoke from yesterday's fires throughout California were moving east across Nevada, Utah, Colorado, and then moving SE into northern Texas and Oklahoma. The same California fires are still emitting moderate to extremely heavy smoke plumes that continue to move towards the east.

An area of extremely thick smoke was observed over Oregon before turning east over Idaho, Wyoming and into the central plains including Kansas, Colorado and northern Texas. A combination of new smoke due to a number of very large fire complexes and stagnant remnant smoke from previous days was to blame. Moderate to light density smoke also related to the widespread fire activity also extended off of the Pacific coast of California, over much of the western U.S. and across the northern and central plains prior to engulfing the Great Lakes region and Mississippi Valley. Additional scattered fire activity throughout Colorado, Washington, Oregon and Idaho added to the increased volume of smoke encompassing much of the United States.

Rodriguez

THIS TEXT PRODUCT IS PRIMARILY INTENDED TO DESCRIBE SIGNIFICANT AREAS OF SMOKE ASSOCIATED WITH ACTIVE FIRES AND SMOKE WHICH HAS BECOME DETACHED FROM THE FIRES AND DRIFTED SOME DISTANCE AWAY FROM THE SOURCE FIRE. TYPICALLY OVER THE COURSE OF ONE OR MORE DAYS. AREAS OF BLOWING DUST ARE ALSO DESCRIBED. USERS ARE ENCOURAGED TO VIEW A GRAPHIC DEPICTION OF THESE AND OTHER PLUMES WHICH ARE LESS EXTENSIVE AND STILL ATTACHED TO THE SOURCE FIRE IN VARIOUS GRAPHIC FORMATS ON OUR WEB SITE:

JPEG: <http://www.ospo.noaa.gov/data/land/fire/currenthms.jpg>
GIS: <ftp://satpsanone.nesdis.noaa.gov/FIRE/HMS/GIS/>
KML: <http://www.ospo.noaa.gov/data/land/fire/fire.kml> (fire)
<http://www.ospo.noaa.gov/data/land/fire/smoke.kml> (smoke)

ANY QUESTIONS OR COMMENTS REGARDING THIS PRODUCT SHOULD BE SENT TO:
SSDFireTeam@noaa.gov

Figure 3.51: NOAA descriptive narrative for smoke/dust observed in satellite imagery, September 7, 2020. (Source: <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020I072001.html>)

GBUAPCD Smoke Health Advisory Alerts

The GBUAPCD issues two types of Smoke Health Advisories, 1) Automated Advisories, and 2) Manually-curated Advisories. Automated Advisories are automatically broadcast when specific hourly PM concentrations are exceeded. Manually-curated Advisories are issued when conditions warrant (generally weekly, occasionally daily) and are written by GBUAPCD staff, containing detailed information about smoke sources and affected areas.

Automated Advisories

Table 3.12 lists the hourly Automated Smoke Health Advisories published to the GBUAPCD website at <https://www.gbuapcd.org/AirMonitoringData/HealthAdvisories/> during September and October 2020. Data are based on the Mammoth Lakes continuous T640x monitor. Bolded dates are days with requested Exceptional Events. In total, the GBUAPCD issued six-hundred-and-eight (608) Automated Health Advisories during September and October 2020.

Per GBUAPCD Rule 701²⁵, a Stage 1 smoke advisory is issued when smoke-impacted monitors record an hourly average PM10 value between 100 µg/m³ and 200 µg/m³, while a Stage 2 is greater than 200 µg/m³.

During normal business hours, a Manually-curated Advisory is prepared and issued by GBUAPCD staff. Several of the requested Exceptional Events occurred during non-business hours, such as September 6, 2020 (Labor Day Holiday), and no staff were available to issue a Manually-curated Advisory so only Automated Advisories were broadcasted.

The GBUAPCD Automated Advisory system is unable to differentiate between dust and smoke without guidance. By default, alerts are sent as dust alerts. However, when a wildfire occurs in the region and is deemed by GBUAPCD staff to have the potential to impact a monitor with smoke, a wildfire flag is manually applied to the GBUAPCD database so that when a PM health advisory threshold is met and a wildfire tag exists, the advisory is issued as a smoke advisory. This was the case for all events in September and October 2020. Following the ignition of the Slink Fire and SQF Complex in August 2020, GBUAPCD recognized the size and proximity of these fires to the Mammoth Lakes monitoring site and that the fires had the potential to transport smoke to the monitor. Accordingly, GBUAPCD staff applied a wildfire flag to the database for the Mammoth Lakes monitor preemptively enabling Automated Advisories to be distributed as smoke advisories. The fire flag remained on throughout the duration of the smoke production from the Creek Fire, through the end of the Exceptional Event period.

²⁵ Rule 701, the GBUAPCD Air Pollution Episode Plan, can be viewed here:
<https://gbuapcd.org/Docs/PermittingAndRules/RulesAndRegulations/Rule701.pdf>

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Table 3.12: Tally of the number of hourly Mammoth Lakes Stage 1 and Stage 2 Automated Smoke Health Advisories issued by the GBUAPCD during September and October 2020, based on POC 6 SPM T640x PM10 concentrations. Bolded dates are days with requested Exceptional Events.

Date	Number of Stage 1 Automated Advisories	Number of Stage 2 Automated Advisories	Total Automated Advisories Issued
9/5/2020	2		2
9/6/2020	4	9	13
9/7/2020	3	1	4
9/8/2020	6	5	11
9/10/2020	3	5	8
9/11/2020	3	9	12
9/12/2020		5	5
9/13/2020	3	8	11
9/14/2020	6	18	24
9/15/2020		21	21
9/16/2020		24	24
9/17/2020	1	22	23
9/18/2020	5	9	14
9/19/2020	8	9	17
9/20/2020		8	8
9/21/2020	7	17	24
9/22/2020	8	9	17
9/23/2020	7	14	21
9/24/2020	3	15	18
9/25/2020	9	7	16
9/26/2020	4	7	11
9/29/2020	3	2	5
9/30/2020	1		1
10/2/2020	2	1	3
10/3/2020	5		5
10/4/2020	5		5
10/5/2020	11	7	18
10/6/2020	2	9	11
10/7/2020	7	5	12
10/8/2020	11	2	13
10/9/2020	4	4	8

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Date	Number of Stage 1 Automated Advisories	Number of Stage 2 Automated Advisories	Total Automated Advisories Issued
10/10/2020	3	3	6
10/11/2020	5		5
10/12/2020	10	6	16
10/13/2020	1	23	24
10/14/2020	3	8	11
10/15/2020		5	5
10/17/2020	2	14	16
10/18/2020	2	22	24
10/19/2020	2	22	24
10/20/2020	2	4	6
10/21/2020	5	8	13
10/22/2020	3	20	23
10/23/2020	5	10	15
10/24/2020	6	12	18
10/25/2020	2	13	15
10/29/2020	1		1
10/30/2020	1		1

Manually-curated Advisories

In addition to the Automated Advisories posted to the GBUAPCD website (www.gbuapcd.org) throughout the Exceptional Event period listed above, Manually-curated Smoke Advisories were issued on a weekly basis or as conditions warranted. Manually-curated Health Advisories are distributed via email and SMS to a large distribution list of hundreds of individuals including local citizens, media outlets, schools, public officials, agency officials, and County Health Officers.

In the weeks prior to the EE period, wildfire activity and smoke production in California were developing. Following increased smoke production from the SQF Complex, a Manually-curated Smoke Health Advisory was issued on August 28, 2020, as shown in Appendix C. Also in Appendix C, as a result of the increased smoke production from the Slink Fire, a Manually-curated Smoke Health Advisory was broadcast on September 4, 2020.

The first Manually-curated Smoke Health Advisory issued related to the 2020 Exceptional Events was issued on September 8, 2020, as shown in Figure 3.52. The Advisory identifies the Creek Fire, Castle Fire (SQF Complex), and Slink Fire as causing Stage 2 conditions from wildfire smoke buildup in Inyo, Mono, and Alpine Counties.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.org>
to me ▾

Tue, Sep 8, 2020, 8:26 AM ☆ ↶ Reply ⋮

Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Source: Creek, Castle and Slink Fires

Air Quality Health Advisory: Stage 2 in Alpine, Mono and Inyo Counties

Based on PM10 and PM2.5 air pollution levels at all community monitors overnight and into the morning on September 8, 2020 a Stage 2 Air Pollution Health Advisory is in effect through the rest of today, September 8, 2020 for Alpine, Mono and Inyo Counties. Periods of significant smoke, ash and/or dust may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions.

A Stage 2 Health Advisory recommends everyone refrain from strenuous outdoor activities in the impacted area.

For more information on ways to protect yourself from wildfire smoke, [click here](#).

[Additional Emergency and low cost sensors may be found here. PurpleAir sensors do not accurately capture PM10 impacts and may under report health conditions in some instances.](#)

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

More Information: [Slink Fire InciWeb Page](#)

More Information: [Castle \(SQF Complex\) Fire InciWeb Page](#)

More Information: [Creek Fire InciWeb Page](#)

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Recommendations for Outdoor Physical Activity during Smoky Conditions

This guide is intended to help you make decisions on outdoor activities when it's smoky outside.
Group information is listed below.

Length of Outdoor Physical Activity	Good for Groups (1 - 3)	Moderate for Group 1 Individuals	Unhealthy for Group 1 & 2 Individuals	Unhealthy for Group 1 - 3 Individuals	Very Unhealthy for Group 1 - 3 Individuals	Hazardous for Group 1 - 3 Individuals
	Visibility > 10 miles	Visibility 5 - 10 miles	Visibility 3 - 5 miles	Visibility 1.5 - 3 miles	Visibility 1 - 1.5 miles	Visibility < 1 mile
30 Minutes	No Restrictions	Group 1 Individuals should monitor or reduce physical activity.	Groups 1 & 2 should limit time spent outdoors or reduce physical activity.	Groups 1 & 2 should avoid the outdoors and Group 3 should reduce physical activity.	All Groups should avoid the outdoors and physical activity.	All Groups should avoid the outdoors and physical activity.
1 Hour	No Restrictions	Group 1 Individuals should monitor or reduce physical activity.	Groups 1 & 2 should considerably limit time spent outdoors and reduce physical activity.	All Groups should avoid the outdoors and physical activity.		
2 Hours or More	No Restrictions	Group 1 Individuals should limit prolonged physical activity.	Groups 1 & 2 should avoid the outdoors and Group 3 should reduce physical activity.	All Groups should avoid the outdoors and physical activity.		

WHICH GROUP ARE YOU IN?		
Group 1 Individuals	Group 2 Individuals	Group 3 Individuals
This group includes those with respiratory or heart disease, angina, pulmonary disease, asthma, emphysema or any other disease that may be impacted by any level of smoke.	This group includes those with asthma, or recent respiratory infections, those who experience seasonal allergies, work outside, or in general are more sensitive to the acute effects of smoke.	This group includes those who are more resistant to the short term effects of smoke. Healthy people may also experience adverse effects of smoke depending on duration and exposure.

Graphic created by: Pam Gaulty APCD

Great Basin Unified Air
Pollution Control District



Figure 3.52: Manually-curated Health Advisory Smoke Alert, broadcasted via text and email on September 8, 2020.

Following the September 8, 2020, Stage 2 Manually-curated Smoke Health Advisory broadcast, the District issued twelve (12) additional Manually-curated Smoke Health Advisories during the September and October 2020 Exceptional Event period as itemized in Table 3.13 and presented in Appendix D.

Table 3.13: List of all Manually-curated Health Advisories issued during the Exceptional Event period.

Date	Stage 1 or 2	Smoke Source
9/8/2020	Stage 2	Creek, Castle and Slink Fires
9/10/2020	Stage 1	Creek, Slink, and statewide wildfire smoke
9/11/2020	variable	Creek, SQF (Castle), Slink, and other wildfires
9/14/2020	Stage 2	Creek, Castle (SQF Complex), Slink, and other wildfires
9/18/2020	variable	Creek, SQF Complex, Slink, and other wildfires
9/21/2020	variable	Creek, Castle (SQF Complex), and other wildfires
9/25/2020	variable	Creek, Castle (SQF Complex), and other wildfires
9/29/2020	Stage 2	Creek, Castle (SQF Complex), and other wildfires
10/5/2020	variable	Creek, Castle (SQF Complex), and other wildfires
10/13/2020	Stage 2	Creek, Castle (SQF Complex), and other wildfires
10/16/2020	variable	Creek and Castle (SQF Complex) Wildfires
10/19/2020	variable	Creek and Castle (SQF Complex) Wildfires
10/23/2020	variable	Sources: Creek and Castle (SQF Complex) Wildfires

Media and Inciweb coverage

The SQF Complex and Creek Fire received much media and Inciweb coverage and reporting, as shown in Figure 3.53 and Figure 3.54. In particular, the Creek Fire received national attention from the helicopter evacuation of 200 people physically trapped by the fire²⁶ and a massive pyrocumulonimbus cloud (Figure 3.55). In addition, there were many social media posts regarding these events. The Creek Fire was the focus of many articles including the article in Figure 3.53, indicating the close proximity of the Creek Fire to the Town of Mammoth Lakes, the poor air quality, and anxiety over evacuation and total loss of the Town. The Inyo Register newspaper, a small newspaper covering Inyo County, occasionally published wildfire smoke-related stories, such as smoke impacts in the Owens Valley from the Creek Fire²⁷ and Forest Closure related to the SQF Complex²⁸.

²⁶ Read more about the Creek Fire helicopter evacuation at USA Today:
<https://www.usatoday.com/story/news/nation/2020/09/10/creek-fire-stockton-national-guard-rescue-california-wildfire-saves-200/3457357001/>

²⁷Inyo Register, Creek Fire: <https://www.inyoregister.com/content/creek-fire-dumps-smoke-valley>

²⁸ Inyo Register, Forest Closure, Fire Listing:
<https://inyoregister.com/content/national-forest-closure-order-extended-through-weekend>

the sheet

NEWS ARTS AND LIFE OPINION/EDITORIAL LETTERS TO THE EDITOR DINING

Time To Get Out the Paddles?

BY OWEN PAGE IN FEATURED - NEWS — 18 SEP, 2020

Smoke from the Creek Fire continued to inundate the Eastern Sierra all week, creating yellow skies and hazardous air conditions for everyone, not just those with pre-existing conditions.

The air quality has, quite literally, been off the charts. At 9 a.m. Thursday morning, the Air Quality Index in Mammoth Lakes was 1525 for PM10 and 742 for PM2.5. The AQI index measures 0-500, any number higher than that is considered “beyond the AQI.” Bishop’s conditions were measured to be the same as Mammoth Lakes while Bridgeport and the Mono Lake area were only slightly below 500 on the AQI.

The smoke from the California wildfires has been reportedly felt as far away as the Netherlands and Hamburg, Germany.

The Creek Fire, which began over Labor Day weekend, has burned more than 240,000 acres of land, mostly in the Sierra National Forest between Madera and Fresno counties. Officials stated that 11,000 people on the west side of the Sierra have been evacuated. 806 structures have been burned so far with an estimated 9,500 currently threatened.

It is currently the 10th largest wildfire in California history.

While the Eastern Sierra hasn’t seen any evacuations yet, the massive wildfire burning about 13-15 miles from Mammoth Lakes has understandably generated a lot of anxiety. Both the Mono County Board of Supervisors and Mammoth Lakes Town Council took time to receive updates on the blaze this week. The supervisors

Figure 3.53: Mammoth Sheet article from September 13, 2020 (Source: <https://thesheetnews.com/2020/09/18/time-to-get-out-the-paddles/>)

There were numerous live streams of fire updates. Examples are the Sequoia National Forest live-streams of their Morning Briefing for the SQF Complex on Facebook:

- September 7, 2020; see <https://www.facebook.com/SequoiaNF/videos/243456790260867/>
- September 8, 2020; this video discusses the winds and break-out expansion of the fire on September 7, 2020; see <https://www.facebook.com/SequoiaNF/videos/352869602562455/>

The Creek Fire was covered by the Sierra National Forest and provided live-streams of their control and containment briefings, examples here:

- September 8, 2020; see <https://fb.watch/l36sjyFVcr/>
- September 16, 2020; see <https://fb.watch/l36cUAdpYW/>
- October 23, 2020; see <https://fb.watch/l36vfDPIKJ/>
- October 25, 2020; see Operational Update here <https://www.youtube.com/watch?v=46Ce9Ni2vHk>

Additional Sierra National Forest updates and briefings can be found on the Creek Fire YouTube page: <https://www.youtube.com/@creekfireinformation5892/videos>



Figure 3.54: The southwest edge of the SQF Complex on 9/7/2020, courtesy Inciweb. (Source: <https://inciweb.nwcg.gov/incident/photograph/7048/82/105259>)



Figure 3.55: Creek Fire pyrocumulonimbus on 9/5/2020 from a Southwest flight between San Jose, CA and Las Vegas, NV, courtesy the Washington Post/Twitter.

(Source:<https://www.washingtonpost.com/weather/2020/09/06/california-wildfires-heat-wave/>)

4. NATURAL EVENT

Based on the documentation provided in Section 3 (Exceptional Event Demonstration), the Creek Fire and SQF Complex events qualify as wildfires because lightning and an undetermined source caused these unplanned wildfire events.

The EPA generally considers the emissions of PM10 from wildfires on wildland to meet the regulatory definition of a natural event at 40 CFR 50.1(k), defined as one 'in which human activity plays little or no direct causal role.' Both the Creek Fire and the SQF Complex events meet the definitions of wildfires on wildland as provided in 40 CFR 50.1(n) and (o). These wildfires occurred on wildland as documented in Figure 3.6 and Figure 3.10 and accordingly, the GBUAPCD has shown that these events are natural events and their impact may be considered for treatment as an Exceptional Event.

5. NOT REASONABLY CONTROLLABLE OR PREVENTABLE

Based on the documentation provided in Section 3 of this submittal, lightning and an undetermined source caused the SQF Complex and Creek Fire wildfire events on wildland. The GBUAPCD is not aware of any evidence clearly demonstrating that prevention or control efforts beyond those actually made would have been reasonable. In addition, appropriate precautions were taken to prevent human-induced wildfires by the closures by the United States Forest Service, as shown in Figure 5.1. The intent of the closure is in part, to “reduce the potential for human-caused fire starts.”

With respect to wildfires, 40 CFR 50.14(b)(4) states that “...[p]rovided the Administrator determines that there is no compelling evidence to the contrary in the record, the Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements identified in paragraph (c)(3)(iv)(D) of this section regarding the not reasonably controllable or preventable criterion.” As shown in previous sections, the SQF Complex and Creek Fire meet the definitions of wildfires on wildland and were therefore not reasonably controllable or preventable.

The GBUAPCD concludes that the SQF Complex and Creek Fire wildfire events should be considered natural events that were not reasonably controllable or preventable.



United States Department of Agriculture

U.S. Forest Service
Pacific Southwest Region
1323 Club Drive
Vallejo, CA 94591
[Web: www.fs.usda.gov/r5](http://www.fs.usda.gov/r5)

News Release

September 7, 2020
Media Contact: Jonathan Groveman
(707) 562-8995
jonathan.groveman@usda.gov



Forest Service Temporarily Closes Southern California National Forests, Adds Prohibitions in Others

VALLEJO, Calif., September 7, 2020 – Most of California remains under the threat of unprecedented and dangerous fire conditions with a combination of extreme heat, significant wind events, dry conditions, and firefighting resources that are stretched to the limit. Due to these conditions, the USDA Forest Service Pacific Southwest Region is announcing the following temporary closures and fire restrictions to provide for public safety and reduce the potential for human caused fire starts. They will go into effect at 5:00 pm Pacific Standard Time on Monday, September 7, 2020, and will be re-evaluated daily as conditions change.

1. Closure of the following National Forests: Stanislaus National Forest, Sierra National Forest, Sequoia National Forest, Inyo National Forest, Los Padres National Forest, Angeles National Forest, San Bernardino National Forest, and Cleveland National Forest.
2. Prohibition of the use of any ignition source on all National Forest System lands (campfires, gas stoves, etc.) throughout California.
3. Closure of all developed campgrounds and day-use sites on National Forests in California.

“The wildfire situation throughout California is dangerous and must be taken seriously. Existing fires are displaying extreme fire behavior, new fire starts are likely, weather conditions are worsening, and we simply do not have enough resources to fully fight and contain every fire,” said Randy Moore, Regional Forester for the USDA Forest Service Pacific Southwest Region. “We are bringing every resource to bear nationally and internationally to fight these fires, but until conditions improve, and we are confident that National Forest visitors can recreate safely, the priority is always to protect the public and our firefighters. With these extreme conditions, these temporary actions will help us do both.”

An example of extreme fire behavior is the Creek Fire on the Sierra National Forest which began on Friday Sep. 4th and grew rapidly on Saturday, Sep. 5th. The fire made a 15-mile run in a single day and burned 36,000 acres, prompting evacuations and life saving measures. The California National Guard evacuated at least 200 people from Wagner Mammoth Pool Campground and assessed them for medical needs.

The Forest Service thanks our partners and the public for their cooperation and understanding of this monumental fire threat. It is critical that all Californians and national forest visitors follow these important closures and restrictions for their own safety and the safety of our firefighters.

USDA is an equal opportunity provider, employer and lender.

Figure 5.1: United States Forest Service closure order, dated September 7, 2020.

6. EER PROCEDURAL REQUIREMENTS

According to the provisions in 40 CFR 50.14(c)(1)(i), air agencies must “notify the public promptly whenever an event occurs or is reasonably anticipated to occur which may result in the exceedance of an applicable air quality standard.” Table 3.12 lists the GBUAPCD Automated Smoke Advisories that were broadcasted during this Exceptional Event. The Advisories were posted on the GBUAPCD Smoke website in real-time at <https://www.gbuapcd.org/AirMonitoringData/Smoke>.

In addition to the automated advisories, the GBUAPCD issued manually-curated Smoke Health Advisories to email and SMS lists which include media outlets, public health agencies and the general public, as well as posting to the GBUAPCD Smoke website. GBUAPCD Health Advisories are standard District practice, as mandated by Rule 701²⁹, with the intent to help keep the public informed, safe, and aware of current or potential upcoming impacts. Health Advisories related to the SQF Complex began on Friday, August 28th, 2020 (see Appendix D), again on Friday, September 4, 2020 (see Appendix C), and on Tuesday, September 8, 2020 (Figure 3.52). The Friday, August 28th, 2020 advisory warned of smoky conditions from the SQF Complex. The Friday, September 4th, 2020 advisory reported on anticipated smoke impacts from the Slink Fire, a relatively small wildfire only 16,200 acres at the time. The Slink Fire was located 60 miles north of Mammoth Lakes and considered to have relatively minor impacts in Mammoth Lakes. The Creek Fire did not ignite until after business hours later that day, September 4, 2020 18:00, and therefore, was not addressed in the September 4, 2020 Advisory. The GBUAPCD continued to prepare and distribute Smoke Health Advisories throughout the September and October 2020 Exceptional Event period.

GBUAPCD staffing schedules do not include coverage on weekends or holidays. Therefore, no staff were available to issue advisories during the Labor Day weekend of Saturday, September 5th and Sunday, September 6th, or on Monday, September 7th, the Labor Day holiday. The Smoke Advisory that followed the Friday, September 4th Advisory was on Tuesday, September 8th. This Advisory is shown in Figure 3.52 and lists the Creek Fire, Castle Fire (SQF Complex), and Slink Fire as causing wildfire smoke impacts in Inyo, Mono, and Alpine Counties. In total, thirteen (13) Smoke Advisory Broadcasts were distributed during the Exceptional Event period, as shown in Table 3.13.

In addition, according to 40 CFR 50.14(c)(3)(v), air agencies must “document [in their exceptional events demonstration] that the [air agency] followed the public comment process and that the comment period was open for a minimum of 30 days....” Further, air agencies must submit any received public comments to the EPA and address in their submission those comments disputing or contradicting the factual evidence in the demonstration.

The GBUAPCD posted notice of this Exceptional Event demonstration on August 2, 2023 on the GBUAPCD website at: <https://gbuapcd.org>. Notice of the public comment period was also emailed to the California Air Resources Control Board on this date. Comments were accepted through the GBUAPCD Governing Board meeting on September 7, 2023. Appendix H contains the web posting,

²⁹ Rule 701, the GBUAPCD Air Pollution Episode Plan, can be viewed here: <https://gbuapcd.org/Docs/PermittingAndRules/RulesAndRegulations/Rule701.pdf>

email notice, and public comments that were received, and GBUAPCD's responses to these comments. No comments were received during the public comment period.

7. CONCLUSION AND RECOMMENDATIONS

The Creek Fire and SQF Complex were wildfires in California's Sierra Nevada mountains. The Creek Fire burned in the Sierra National Forest, reaching 379,895 acres to become California's 5th largest wildfire to-date. The Creek Fire advanced to within 11 miles of the Mammoth Lakes PM10 Planning Area. The SQF Complex was ignited naturally by lightning strikes. The ignition source of the Creek Fire is, as yet, undetermined. The SQF Complex burned 170,384 acres, primarily in Sequoia National Park and Sequoia National Forest. Each wildfire produced substantial amounts of smoke, some of which lofted over the Sierra crest into the Mammoth Lakes PM10 Planning Area, impacting the Mammoth Lakes PM10 monitoring site.

The Creek Fire and SQF Complex resulted in forty (40) PM10 exceedances in September and October 2020. This Exceptional Event Demonstration supports the criteria for Exceptional Events detailed in the 2016 Exceptional Events Rule. Specifically, the documentation used the following evidence to demonstrate the Exceptional Event:

- ambient air monitoring data
- analysis of the monitoring data compared to historical concentrations and conditions
- analysis of wildfire growth and smoke emissions
- analysis of PM2.5-to-PM10 ratios
- satellite imagery (visible and detected smoke plumes)
- narratives from the National Oceanic and Atmospheric Administration and National Weather Service
- HYSPLIT trajectory analyses
- social media and other news media posts

This EE Demonstration clearly presents justification for the exclusion of Mammoth Lakes PM10 data on thirty-three (33) dates in September and October 2020 due to an Exceptional Event as described in 40 CFR 50.14(c)(3)(iv). This Exceptional Event Demonstration has provided evidence that:

1. Emissions from the Creek Fire and SQF Complex wildfire events caused PM10 exceedances at the Mammoth Lakes monitors;
2. The events affected air quality in such a way that there exists a clear causal relationship between the wildfire events and the exceedances in September and October 2020;
3. Event-influenced concentrations were unusual and above normal historical concentrations;
4. The events were wildfires and natural events predominantly occurring on wildland; and
5. The events were not reasonably controllable or preventable.

The GBUAPCD recommends that EPA Region 9 concur with the Exceptional Events Demonstration for Wildfire Smoke Impacts to the Mammoth Lakes PM10 monitors for the dates and POCs listed in Table 1.1 and exclude said data from the Mammoth Lakes PM10 monitors from inclusion in the calculation of the three-year design values for the Mammoth Lakes PM10 Planning Area.

APPENDICES

Appendix A: Top 20 Largest California Wildfires

(accessed 3/14/2023 from CalFire. The Creek Fire is #5. (Source:

[https://34c031f8-c9fd-4018-8c5a-4159cdf6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/our-impact/fire-statistics/featured-items/top20_acres.pdf?rev=be2a6ff85932475e99d70fa9458dca79&hash=A355A978818640DFACE7993C432ABF81\)](https://34c031f8-c9fd-4018-8c5a-4159cdf6b0d-cdn-endpoint.azureedge.net/-/media/calfire-website/our-impact/fire-statistics/featured-items/top20_acres.pdf?rev=be2a6ff85932475e99d70fa9458dca79&hash=A355A978818640DFACE7993C432ABF81)))

Top 20 Largest California Wildfires

FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 AUGUST COMPLEX (Lightning)	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
2 DIXIE (Powerlines)	July 2021	Butte, Plumas, Lassen, Shasta & Tehama	963,309	1,311	1
3 MENDOCINO COMPLEX (Human Related)	July 2018	Colusa, Lake, Mendocino & Glenn	459,123	280	1
4 SCU LIGHTNING COMPLEX (Lightning)	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, & San Joaquin	396,625	225	0
5 CREEK (Undetermined)	September 2020	Fresno & Madera	379,895	858	0
6 LNU LIGHTNING COMPLEX (Lightning/Arson)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
7 NORTH COMPLEX (Lightning)	August 2020	Butte, Plumas & Yuba	318,935	2,352	15
8 THOMAS (Powerlines)	December 2017	Ventura & Santa Barbara	281,893	1,060	2
9 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
10 RUSH (Lightning)	August 2012	Lassen	271,911 CA / 43,666 NV	0	0
11 RIM (Human Related)	August 2013	Tuolumne	257,314	112	0
12 ZACA (Human Related)	July 2007	Santa Barbara	240,207	1	0
13 CARR (Human Related)	July 2018	Shasta County & Trinity	229,651	1,614	8
14 MONUMENT (Lightning)	July 2021	Trinity	223,124	28	0
15 CALDOR (Human Related)	August 2021	Alpine, Amador, & El Dorado	221,835	1,005	1
16 MATILJA (Undetermined)	September 1932	Ventura	220,000	0	0
17 RIVER COMPLEX (Lightning)	July 2021	Siskiyou & Trinity	199,359	122	0
18 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
19 KLAMATH THEATER COMPLEX (Lightning)	June 2008	Siskiyou	192,038	0	2
20 MARBLE CONE (Lightning)	July 1977	Monterey	177,866	0	0

There is no doubt that there were fires with significant acreage burned in years prior to 1932, but those records are less reliable, and this list is meant to give an overview of the large fires in more recent times. This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

*Numbers not final.



10/24/2022

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Appendix B: AQS AMP480 Design Value reports

Showing the 2020-2022 design values both **including** and **excluding** the requested POC 5 Exceptional Events.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: May. 3, 2023

Pollutant: PM10 Total 0-10um STP(81102)

Design Value Year: 2022

Standard Units: Micrograms/cubic meter (25 C)(001)

REPORT INCLUDES MEASUREMENTS WITH EXCEPTIONAL EVENT FLAGS.

NAAQS Standard: PM10 24-hour 2006

Statistic: Annual Estimated Days > Standard Level: 150

State Name: California

Site ID	POC	STREET ADDRESS	2022			2021			2020			3 - Year				
			Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Estimated Exceedances	Validity Ind.			
06-051-0001	5	MAMMOTH, Corner of Old Mammoth Road and HWY 203, MAMMOTH LAKES	0	0	4	Y	0	0	4	Y	22.1	7	4	Y	7.4	Y
06-051-0001	6	MAMMOTH, Corner of Old Mammoth Road and HWY 203, MAMMOTH LAKES	0*	0	2	N	0*	0	0	N	39	34	4	Y	13	Y

- Notes:**
1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
 2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
 3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
PRELIMINARY DESIGN VALUE REPORT

Report Date: May. 3, 2023

Pollutant: PM10 Total 0-10um STP(81102)

Design Value Year: 2022

Standard Units: Micrograms/cubic meter (25 C)(001)

REPORT EXCLUDES ALL MEASUREMENTS WITH EXCEPTIONAL EVENT FLAGS.

NAAQS Standard: PM10 24-hour 2006

Statistic: Annual Estimated Days > Standard Level:150

State Name: California

Site ID	POC	STREET ADDRESS	2022			2021			2020			3 - Year				
			Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Exceedances Estimated Count	#Comp Quarter	Cert& Eval	Estimated Exceedances	Validity Ind.			
06-051-0001	5	MAMMOTH, Corner of Old Mammoth Road and HWY 203, MAMMOTH LAKES	0	0	4	Y	0	0	4	Y	0	0	4	Y	0	Y
06-051-0001	6	MAMMOTH, Corner of Old Mammoth Road and HWY 203, MAMMOTH LAKES	0*	0	2	N	0*	0	0	N	1.7	1	4	Y	0.6	N

- Notes:**
1. Computed design values are a snapshot of the data at the time the report was run (may not be all data for year).
 2. Some PM2.5 24-hour DVs for incomplete data that are marked invalid here may be marked valid in the Official report due to additional analysis.
 3. Annual Values not meeting completeness criteria are marked with an asterisk ('*').

Appendix C: GBUAPCD manually-curated Smoke Advisories issued in the two weeks prior to the EE period

Friday, August 28, 2020 Manually-curated Smoke Advisory as the Castle Fire (SQF Complex) develops.

GBUAPCD Smoke Advisory Health Advisories x



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.org>
to me ▾

Aug 28, 2020, 4:28 PM



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Source: Castle Fire (Sequoia Complex)

Air Advisory: Inyo County

Smoky conditions are expected in Inyo County through the weekend due to the Castle Fire (SQF Complex) burning in the Golden Trout Wilderness. The current weather patterns have been bringing smoke into the area in the evening through the early morning with clearing for portions of the day. Periods of smoke and clearing may fluctuate through out the weekend depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

An air resource advisor (ARA) has been added to the Sequoia Complex fire team. For the most recent report [click here](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Inyo County Monitors

[Bishop](#)

[Coso Junction](#)

[Keeler](#)

[Lone Pine](#)

[Lone Pine Emergency PM2.5 monitor](#)

[Olancho](#)

[Low Cost Sensor Data](#)

Friday, September 4, 2020, prior to the ignition of the Creek Fire.

GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.org>

Sep 4, 2020, 8:27 AM



Reply



to me

Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Source: Slink Fire

Air Quality Health Advisory: Stage 1 in Alpine and northern Mono Counties

Based on air pollution levels at the Antelope Valley PM2.5 monitor between 7:00 am and 8:00 am on September 4, 2020 a Stage 1 Air Pollution Health Advisory is in effect for Mono and Alpine Counties through the rest of the day. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. There will be no District-issued Health Advisories through the Labor Day weekend. Current PM conditions can be found 24/7 [here](#).

A Stage 1 Health Advisory recommends children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, to stay indoors and avoid strenuous outdoor activities in the impacted areas.

For more information on ways to protect yourself from wildfire smoke, [click here](#).

[GBUAPCD Slink Fire page, which includes links to the ARA Air Quality Summary Report.](#)

[Webcam of the Slink Fire](#)

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

More Information: [Slink Fire InciWeb Page](#)

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Appendix D: All GBUAPCD manually-curated Smoke Advisories issued during the EE period
Due to staffing limitations, manually-curated Smoke Advisories are only issued during normal business hours and, therefore, not all EE days have Manually-curated Advisories.

Manually-curated Smoke Advisory issued 9/8/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.or... Tue, Sep 8, 2020, 8:26 AM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Source: Creek, Castle and Slink Fires

Air Quality Health Advisory: Stage 2 in Alpine, Mono and Inyo Counties

Based on PM10 and PM2.5 air pollution levels at all community monitors overnight and into the morning on September 8, 2020 a Stage 2 Air Pollution Health Advisory is in effect through the rest of today, September 8, 2020 for Alpine, Mono and Inyo Counties. Periods of significant smoke, ash and/or dust may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions.

A Stage 2 Health Advisory recommends everyone refrain from strenuous outdoor activities in the impacted area.

For more information on ways to protect yourself from wildfire smoke, [click here](#).

[Additional Emergency and low cost sensors may be found here. PurpleAir sensors do not accurately capture PM10 impacts and may under report health conditions in some instances.](#)

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Manually-curated Smoke Advisory issued 9/10/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd....
to me ▾

Thu, Sep 10, 2020, 9:43AM



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Slink, and statewide wildfire smoke

Based on $PM_{2.5}$ readings at the Mammoth Lakes and Woodfords air quality monitors on 9/10/2020 at 9:00 AM, a Stage 1 Health Advisory is issued for Mono and Alpine Counties. In addition, smoke can be expected to increase throughout the day in Inyo, Mono, and Alpine Counties as winds shift and bring smoke eastward.

A Stage 1 Health Advisory recommends children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, to stay indoors and avoid strenuous outdoor activities in the impacted areas.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

More Information: [Slink Fire InciWeb Page](#)

More Information: [Creek Fire InciWeb Page](#)

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 9/11/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.org> Fri, Sep 11, 2020, 5:12 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, SQF (Castle), Slink, and other wildfires

Air Advisory: Inyo, Mono, and Alpine Counties

Smoky conditions are expected in Inyo, Mono, and Alpine Counties through the weekend due to the numerous wildfires throughout California. The forecasted weather pattern will bring smoke to the Eastern Sierra this weekend, particularly on Sunday. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions. There will be no District-issued Health Advisories through the weekend.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

Air resource advisors (ARAs) are reporting [daily smoke outlooks](#) for the Creek, SQF, North Complex, and Slink Fires.

For more information on ways to protect yourself from wildfire smoke, [click here](#).

[Map of current NowCast AQIs.](#)

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Manually-curated Smoke Advisory issued 9/14/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd... Mon, Sep 14, 2020, 12:39 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), Slink, and other wildfires

Air Quality Air Advisory: Extended smoke conditions in Alpine, Mono and Inyo Counties

Based on air pollution levels at all community monitors in Alpine and Mono counties a Stage 2 Air Pollution Health Advisory is currently in effect.

The unprecedented 2020 fire season and its resulting smoke have lead to extended smoky conditions throughout the three counties that Great Basin Unified Air Pollution Control District monitors. Conditions are expected to remain smoky, with some hours of clearing and many hours of decreased air quality. Due to the expectation that smoke conditions will remain off and on for some time, this health advisory will cover Alpine, Mono and Inyo Counties through Friday, 9/18/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time PM10 or PM2.5 conditions or [AirFire's AQI map](#). There is not a monitor in every community and in some communities we are seeing conditions vary from one end of town to another. Please listen to your body and reduce activity if you are noticing impacts and use this [visibility chart](#) to make decisions for your location.

A Stage 2 Health Advisory recommends everyone refrain from strenuous outdoor activities in the impacted area.

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Manually-curated Smoke Advisory issued 9/18/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.or... Fri, Sep 18, 2020, 2:56 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, SQF Complex, Slink, and other wildfires

Air Advisory: Inyo, Mono, and Alpine Counties

Smoky conditions are expected in Inyo, Mono, and Alpine Counties through the weekend due to the numerous wildfires throughout California. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions. There will be no District-issued Health Advisories through the weekend.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

[Map of current NowCast AQIs](#).

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 9/21/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.... Mon, Sep 21, 2020, 9:03 AM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), and other wildfires

Air Quality Air Advisory: Extended smoke conditions in Alpine, Mono and Inyo Counties

The unprecedented 2020 fire season and its resulting smoke have lead to extended smoky conditions throughout the three counties that Great Basin Unified Air Pollution Control District serves. Currently the heaviest impacts are being seen in Mono County. Inyo and Alpine Counties can expect continued degraded air quality conditions as well. Due to the expectation that smoky conditions will remain off and on for some time, this air advisory will cover Alpine, Mono and Inyo Counties through Friday, 9/25/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time PM10 or PM2.5 conditions or [AirFire's AQI map](#). If there is not a monitor near you use this [visibility chart](#) to make decisions for your location.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 9/25/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.or... Fri, Sep 25, 2020, 3:31PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), and other wildfires

Air Quality Air Advisory: Extended smoke conditions in Alpine, Mono and Inyo Counties

The unprecedented 2020 fire season and its resulting smoke have lead to extended smoky conditions throughout the three counties that Great Basin Unified Air Pollution Control District serves. Currently the heaviest impacts are being seen in Inyo and Mono Counties. Alpine County can expect continued degraded air quality conditions as well. Due to the expectation that smoky conditions will remain off and on, this air advisory will cover Alpine, Mono and Inyo Counties through Sunday, 9/27/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time PM10 or PM2.5 conditions or [AirFire's AQI map](#). If there is not a monitor near you use this [visibility chart](#) to make decisions for your location.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Health advisories on the web: <https://gbuapcd.org/AirMonitoringData/HealthAdvisories/>

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 9/29/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.... Tue, Sep 29, 2020, 4:04 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), and other wildfires

Air Quality Health Advisory: Stage 2 in southern Mono County with variable smoky conditions expected in Mono, Alpine, and Inyo Counties through the week.

Based on current PM2.5 conditions in Mammoth Lakes, a Stage 2 Health Advisory is issued for southern Mono County. Additionally, variably smoky conditions will remain off and on throughout Mono, Alpine, and Inyo Counties through Friday, 10/2/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time PM10 or PM2.5 conditions or [AirFire's AQI map](#). If there is not a monitor near you use this [visibility chart](#) to make decisions for your location.

A Stage 2 health advisory recommends that everyone refrain from strenuous outdoor activities in the impacted area.

A Stage 1 Health Advisory recommends children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, to stay indoors and avoid strenuous outdoor activities in the impacted areas.

Learn more about GBUAPCD [Stage 1 and Stage 2 Health Advisories](#)

Smoke conditions may change quickly. If you have any questions please visit: www.gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

Manually-curated Smoke Advisory issued 10/5/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.or... Mon, Oct 5, 2020, 9:13AM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), and other wildfires

Air Quality Health Advisories: Stage 2 in southern Mono County and Stage 1 in Inyo County, with variable smoky conditions expected in Mono, Alpine, and Inyo Counties through the week.

Based on current $PM_{2.5}$ conditions in Mammoth Lakes, a Stage 2 Health Advisory is issued for southern Mono County. In addition, elevated levels of $PM_{2.5}$ in Bishop and PM_{10} in Lone Pine have resulted in a Stage 1 Health Advisory being issued for Inyo County. Variably smoky conditions will remain off and on throughout Mono, Alpine, and Inyo Counties through Friday, 10/9/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit gbuapcd.org for last hours PM_{10} or $PM_{2.5}$ conditions or [AirFire's AQI map](#). If there is not a monitor near you use this [visibility chart](#) to make decisions for your location.

A Stage 2 health advisory recommends that everyone refrain from strenuous outdoor activities in the impacted area.

A Stage 1 Health Advisory recommends children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, to stay indoors and avoid strenuous outdoor activities in the impacted areas.

Learn more about GBUAPCD [Stage 1 and Stage 2 Health Advisories](#)

Manually-curated Smoke Advisory issued 10/13/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.o... Tue, Oct 13, 2020, 8:44 AM
to me ▾



← Reply ⋮

Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek, Castle (SQF Complex), and other wildfires

Air Quality Health Advisories: Stage 2 in southern Mono County with variable smoky conditions expected in Mono, Alpine, and Inyo Counties through the week.

Based on current $PM_{2.5}$ conditions in Mammoth Lakes, a Stage 2 Health Advisory is issued for southern Mono County. Expect variable smoke conditions throughout Mono, Alpine, and Inyo Counties through Friday, 10/16/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit gbuapcd.org for last hours PM_{10} or $PM_{2.5}$ conditions or [AirFire's AQI map](#). If there is not a monitor near you use this [visibility chart](#) to make decisions for your location.

A Stage 2 health advisory recommends that everyone refrain from strenuous outdoor activities in the impacted area.

A Stage 1 Health Advisory recommends children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, to stay indoors and avoid strenuous outdoor activities in the impacted areas.

Learn more about GBUAPCD [Stage 1 and Stage 2 Health Advisories](#)

Smoke conditions may change quickly. If you have any questions please visit: gbuapcd.org or call the Great Basin Air Pollution Control District office in Bishop at 760-872-8211 during regular business hours.

Air resource advisors (ARAs) are reporting [Daily Smoke Outlooks](#).

Manually-curated Smoke Advisory issued 10/16/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.or... Fri, Oct 16, 2020, 4:09 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek and Castle (SQF Complex) Wildfires

Air Advisory: Inyo, Mono, and Alpine Counties

Smoky conditions are expected in Inyo, Mono, and Alpine Counties through Sunday, 10/18/2020. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions. If there is not a monitor near you, use this [visibility chart](#) to make decisions for your location. Please be aware that there will be no District-issued Smoke Advisories through the weekend.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 10/19/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.... Mon, Oct 19, 2020, 8:24 AM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek and Castle (SQF Complex) Wildfires

Air Advisory: Inyo and Mono Counties

Smoky conditions are expected in Inyo and Mono Counties through Friday, 10/23/2020. Alpine County may also experience smoke. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions. If there is not a monitor near you, use this [visibility chart](#) to make decisions for your location.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Manually-curated Smoke Advisory issued 10/23/2020:



GBUAPCD Smoke Advisory <HealthAdvisories@gbuapcd.org> Fri, Oct 23, 2020, 2:18 PM
to me ▾



Reply



Smoke Advisory

Great Basin Unified Air Pollution Control District

Smoke Sources: Creek and Castle (SQF Complex) Wildfires

Air Advisory: Inyo and Mono Counties

Smoky conditions are expected in Inyo and Mono Counties through Sunday, 10/25/2020. Alpine County may also experience smoke. Periods of smoke and clearing may fluctuate depending on wind patterns and locations. Visit www.gbuapcd.org for near real time conditions. If there is not a monitor near you, use this [visibility chart](#) to make decisions for your location.

Children, the elderly, people with heart or lung problems, or people with current illnesses such as the flu or Covid-19, should stay indoors and avoid strenuous outdoor activities in the impacted areas when smoke is elevated.

Air resource advisors (ARAs) are reporting [daily smoke Outlooks](#).

For more information on ways to protect yourself from wildfire smoke, [click here](#).

Information on all smoke events being monitored in the District: <https://gbuapcd.org/smoke/>

Appendix E: SQF Complex, Creek Fire, and Slink Fire Incident Website Screenshots
(Note: these are no longer located on the Inciweb site, which does not house an archive.)

SQF Complex

Unit Information
Sequoia National Forest
U.S. Forest Service
1839 S. Newcomb St
Porterville, CA 93257

Incident Contacts
Sequoia National Forest
Email: sqfcomplex2020@gmail.com
Phone: 559-920-1588
Hours: Mon-Fri 8:30 a.m. - 4:30 p.m.
[Show additional contacts](#)

Information | Announcements | Closures | News | Photographs | Videos | Maps

Highlighted Activity

[Castle Fire closures remain in effect for severely burned areas](#) 02/12/2021
From August to December 2020, the Castle Fire burned across thousands of acres in the Sequoia National Forest and Giant Sequoia National Monument. Forest officials evaluated the most impacted area.
Closure - 02/12/2021

Incident Overview

[Operations Map](#) | [Fire History Map](#) | [Land Ownership Map](#)

Fire personnel in the Sequoia National Forest and Sequoia and Kings Canyon National Parks continue managing lands affected by the 174,178-acre SQF Complex. The lightning-caused Castle and Shotgun Fires were discovered on August 19, 2020, and later managed as one incident named the SQF Complex. The Castle Fire burned on portions of the Sequoia National Forest and Giant Sequoia National Monument (131,087 acres), Inyo National Forest (12,508 acres), Sequoia National Park (18,984 acres), lands managed by the Bureau of Land Management (736 acres). State (4,017 acres).




Image options: [Full Size]

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Creek Fire Information - InciWeb x +


inciweb.nwcg.gov/incident/7147

Creek Fire

[Twitter](#) [Instagram](#) [Facebook](#) [Share](#)

Unit Information

Sierra National Forest
U.S. Forest Service
1600 Tollhouse Road
Clovis, CA 93611



Incident Contact

Creek Fire Information and Media

Email: 2020.Creek@firenet.gov
Phone: 559-297-0706
Hours: M-F 8am-4pm

Information Announcements Closures News Photographs Videos Maps

Highlighted Activity

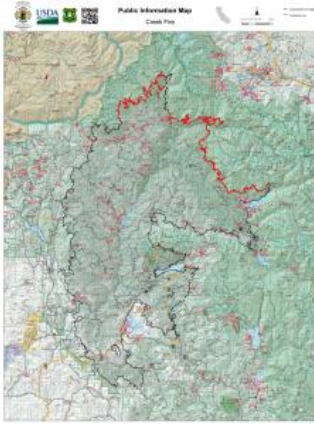
Sierra National Forest Declares the Creek Fire 100% contained 12/24/2020

CLOVIS, Calif., December 24, 2020 – For Immediate Release. With the recent change in weather conditions, Fire Officials with the Sierra National Forest are declaring the Creek Fire 100 percent...

News - 12/24/2020

Incident Overview

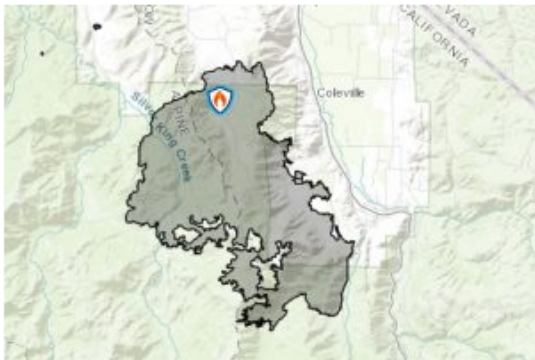
CLOVIS, Calif., December 24, 2020 – For Immediate Release. With the recent change in weather conditions, Fire Officials with the Sierra National Forest are declaring the Creek Fire 100 percent contained. The Creek Fire started the evening of September 04, 2020 in the Big Creek drainage burning an unprecedented 379,895 acres before being contained on December 24, 2020.





Slink Fire Acreage And Containment Climbs

By Tracey Petersen — Published Sep 9, 2020 02:06 pm



Slink Fire map 9-9-2020

 [View Photo](#)

Walker, CA – While the Slink Fire’s acreage has doubled in size in a week, forest fire official relay that crews are making good progress.

The fire is burning in Mono County near the Marine Corps Mountain Warfare Training Center. As reported here last Wednesday, the flames had scorched 11,000 acres forcing the shutdown of a section of Highway 395 along with evacuations in Walker and Coleville. Residents have returned to their homes, but the flames continue to gobble up acreage.

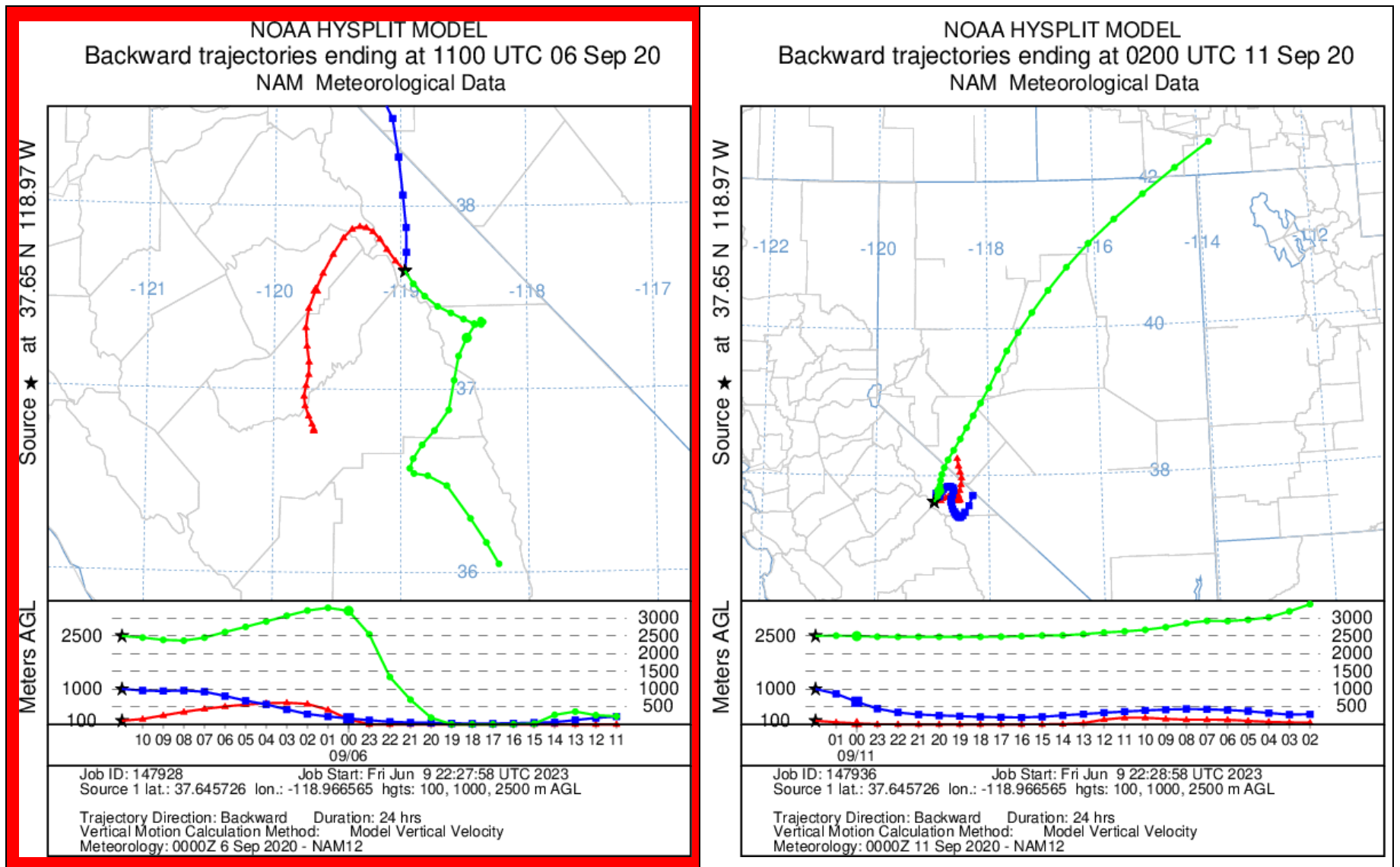
Currently, the fire is 21,755 acres and containment has increased to 36 percent. Forest fire officials note that they expect the fire active on Mineral Mountain and Corral Valley Creek west of Antelope Peak. Today’s fire suppression efforts will concentrate on the west side of the fire, using indirect and direct tactics on Mineral Mountain and the East Fork Carson River drainage. Crews are also building hand lines, using helicopters for water drops, laying hose, and installing pumps to prevent the fire spreading west of East Fork Carson River, detail forest fire officials. Repair work will begin today on the east side of the fire above Highway 395 as well.

On Monday, the Bureau of Land Management increased its fire restrictions to prohibit all uses of open flame including campfires, barbecues and stoves, on BLM-managed public lands in the state of California.

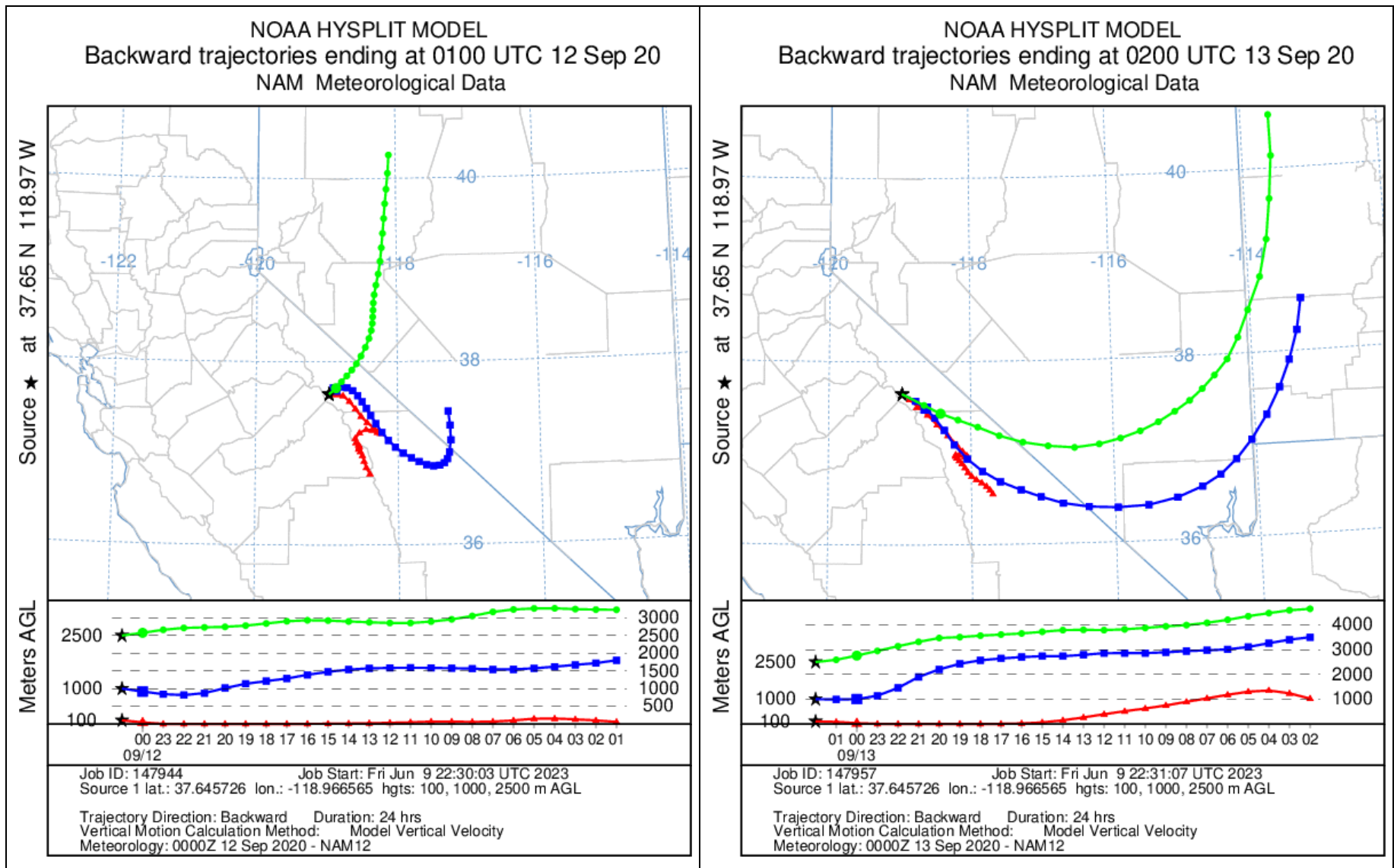
Appendix F: NOAA HYSPLIT trajectories

These maps show the backward trajectory from Mammoth Lakes on all requested Exceptional Event days. Backward trajectories span 24 hours. Start time is the UTC equivalent of the PST POC 6 T640x maximum daily PM10. Red-outlined graphics represent POC 5 requested EEs.

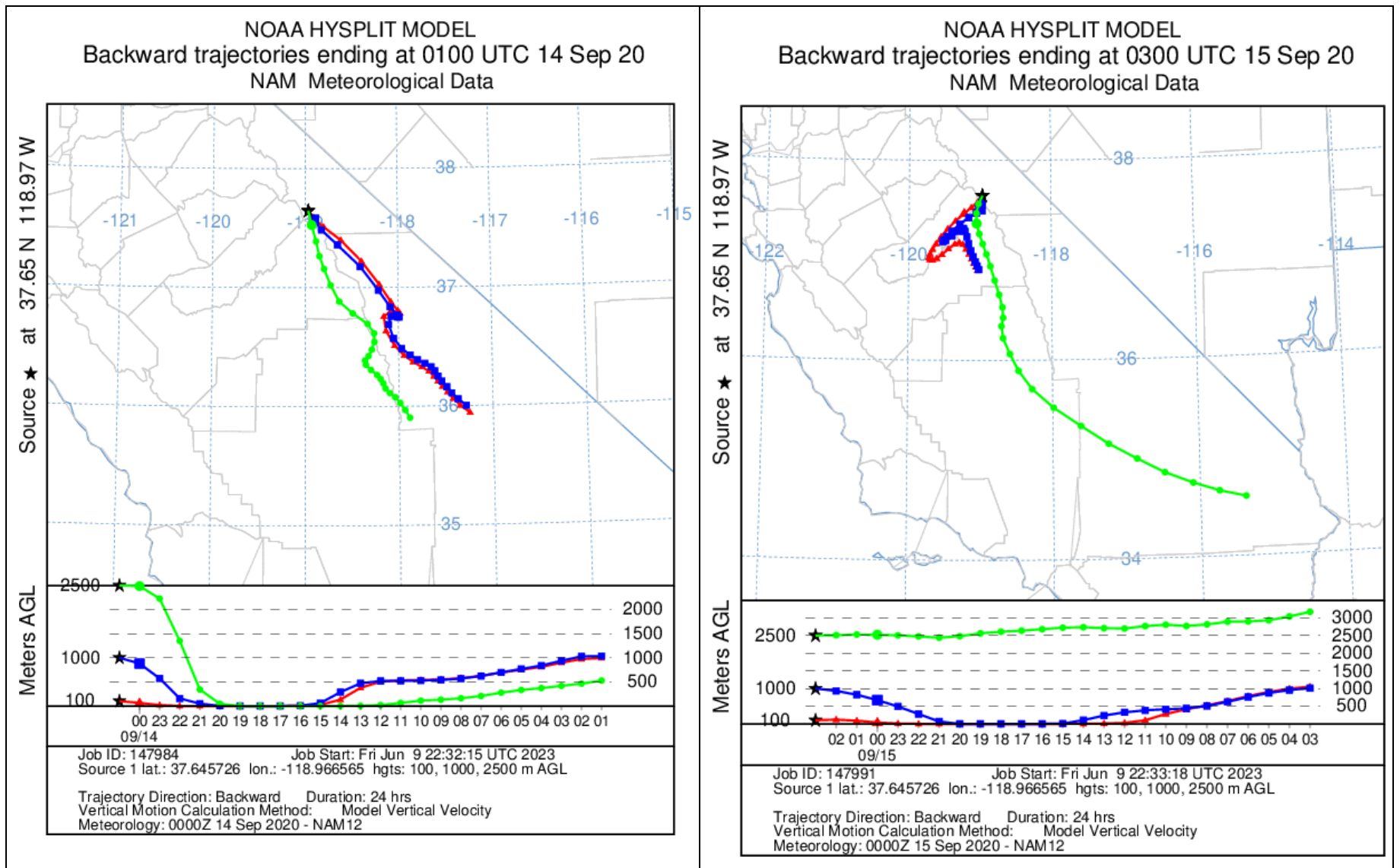
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



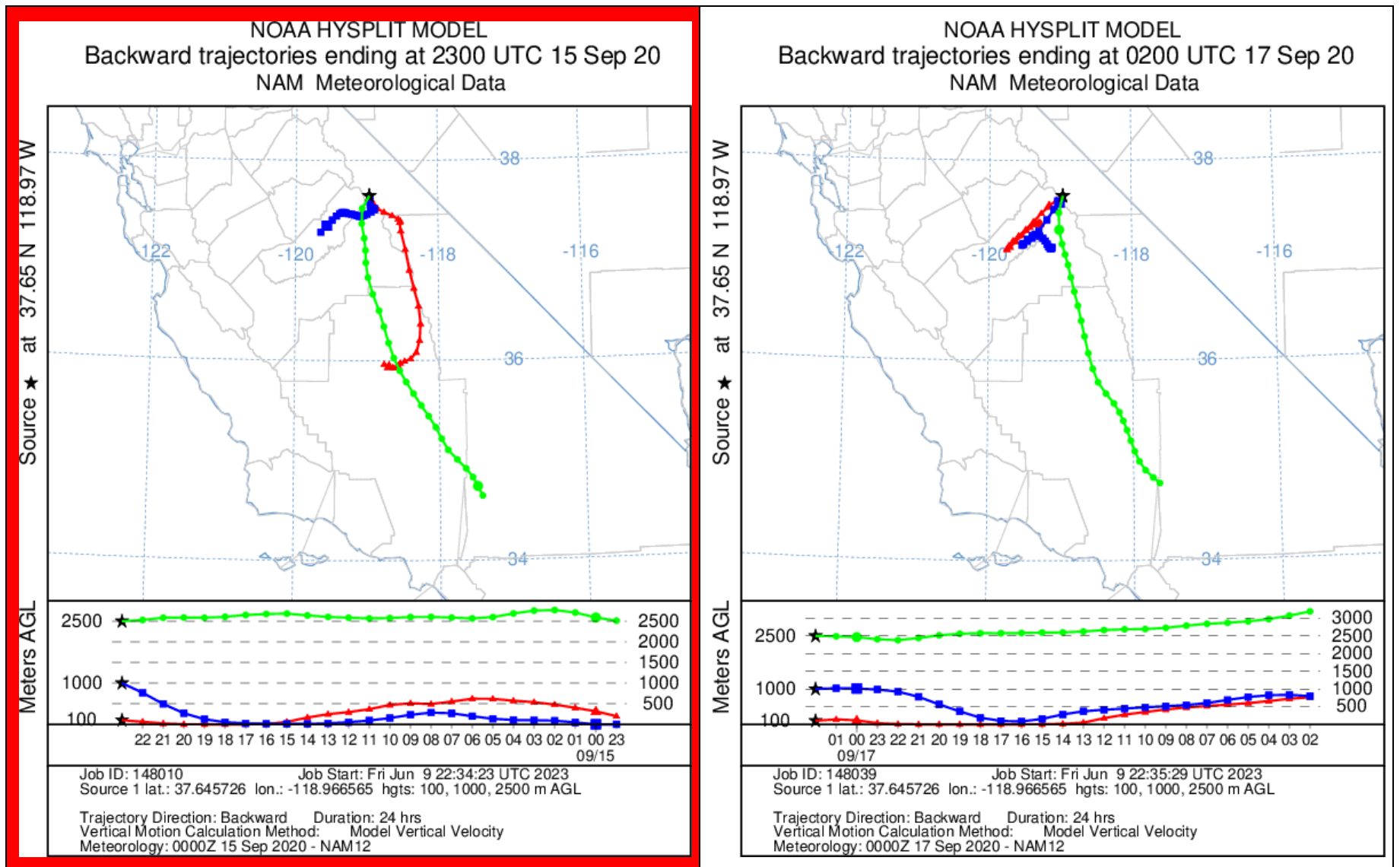
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



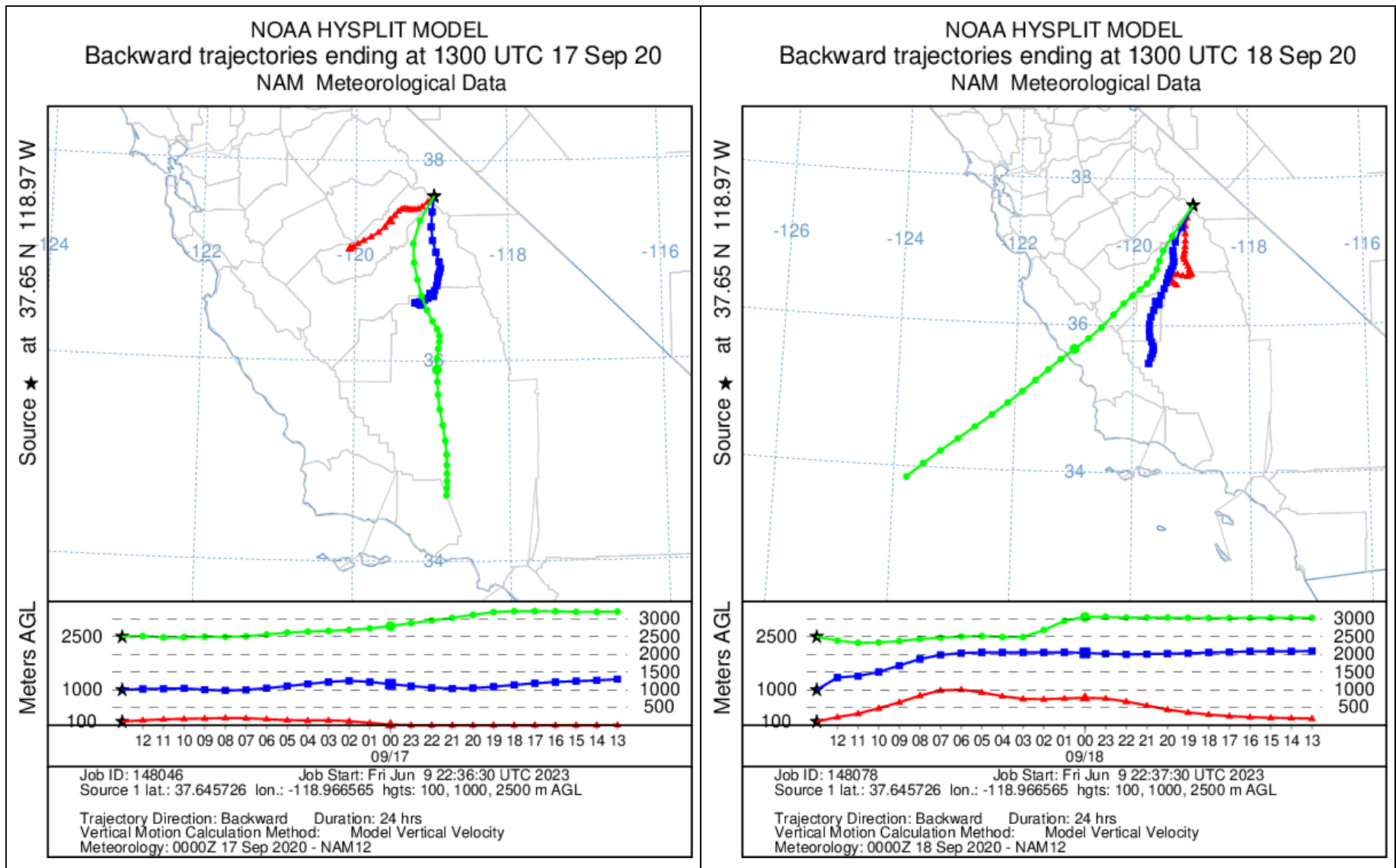
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



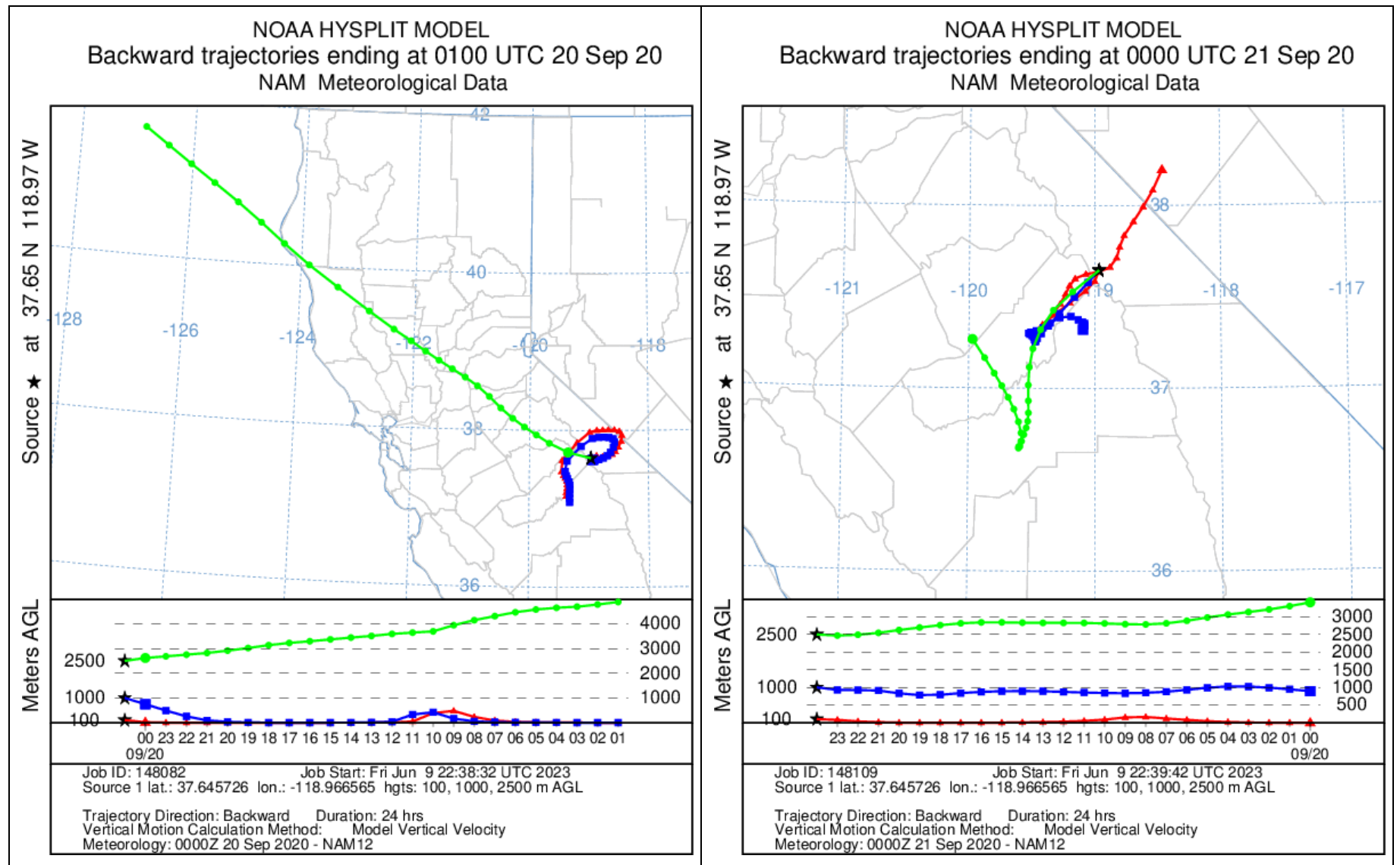
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



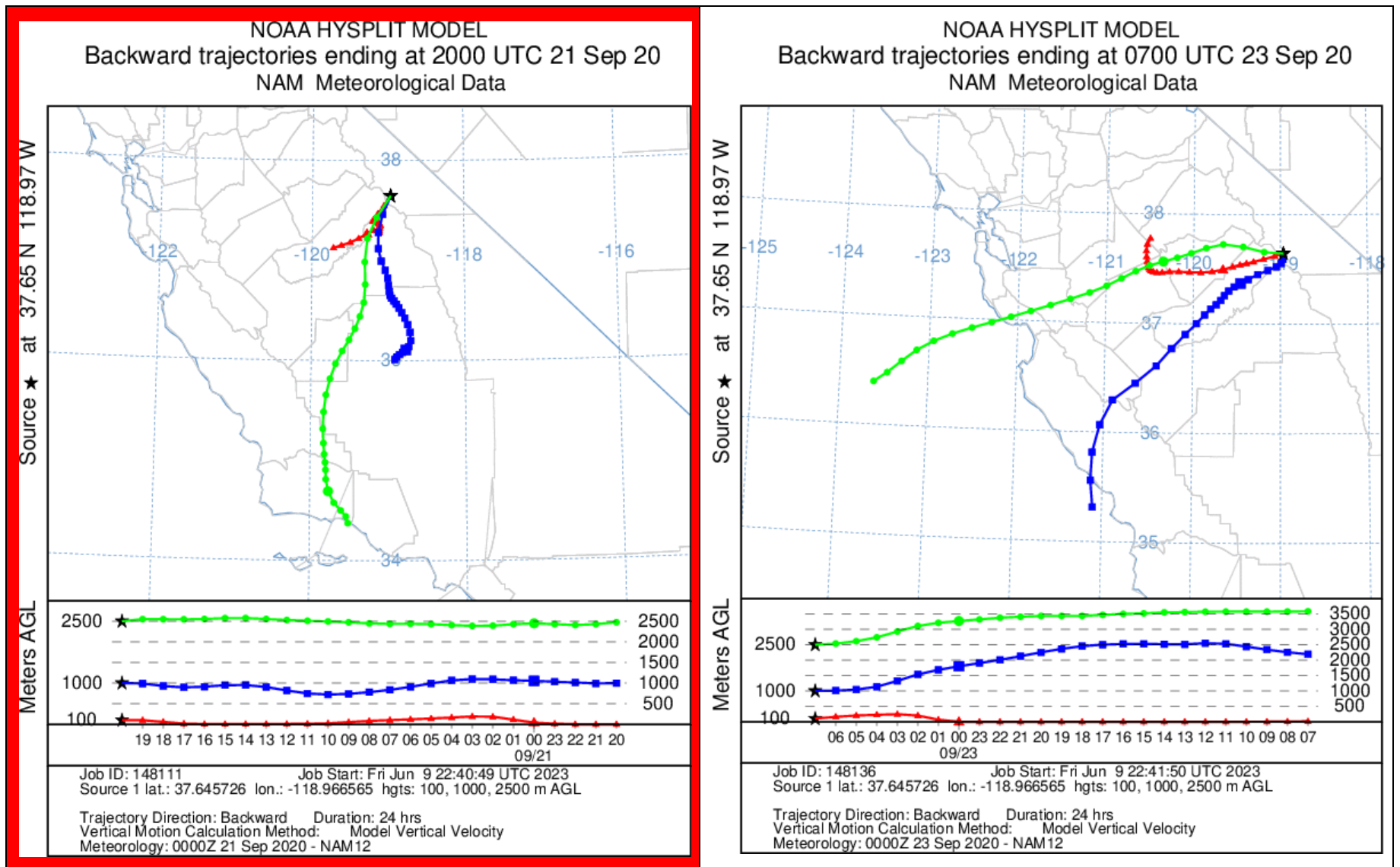
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



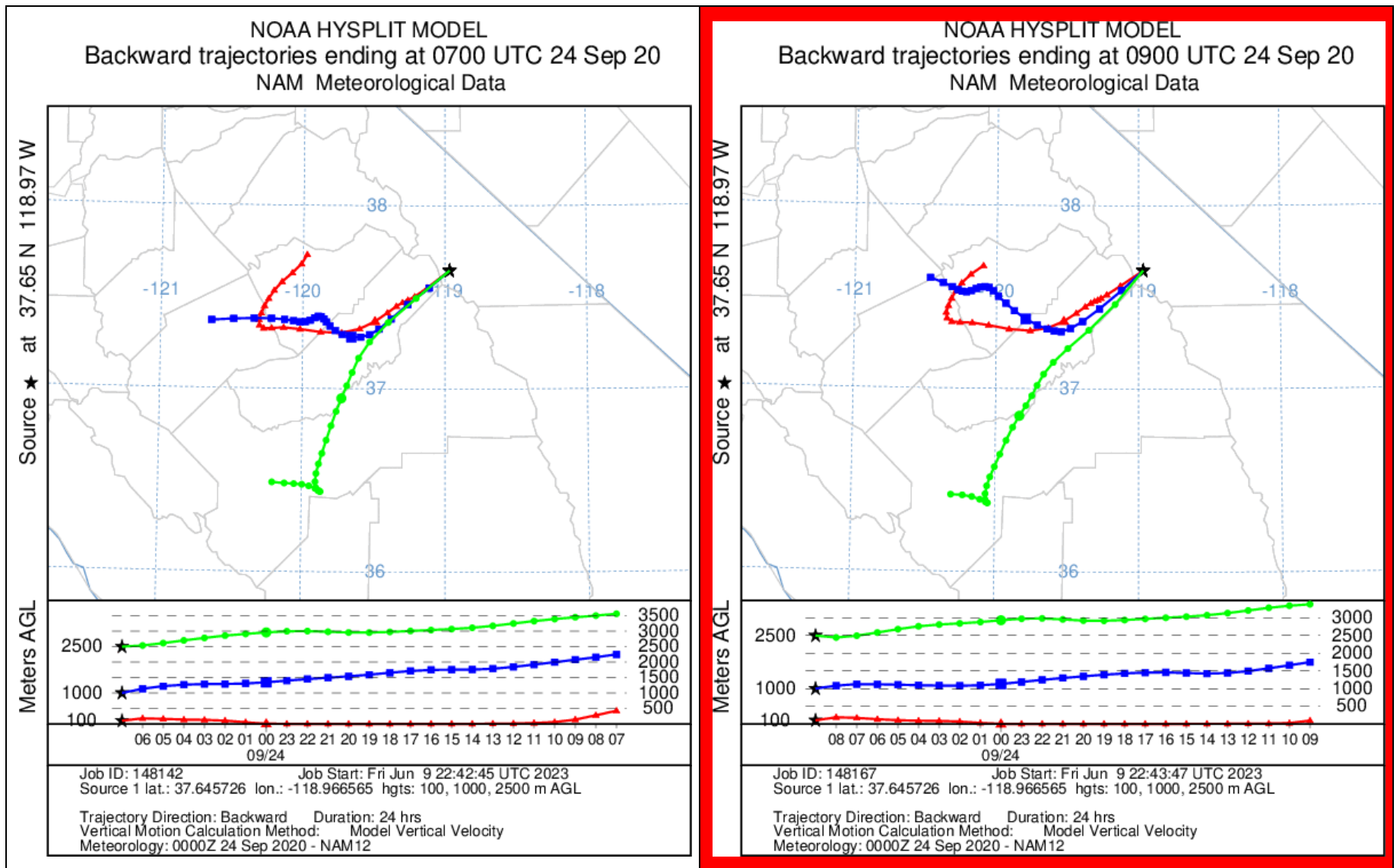
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



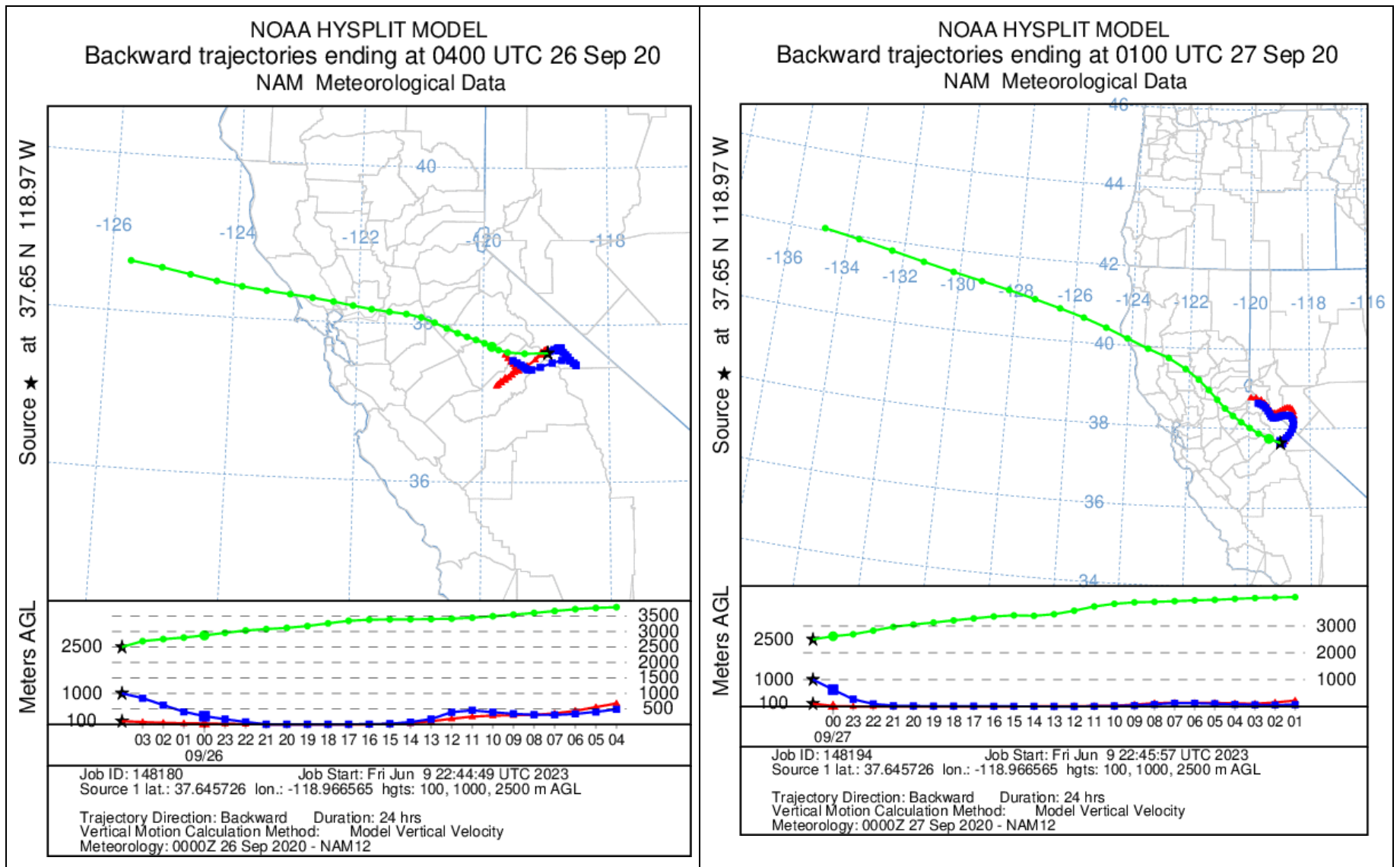
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



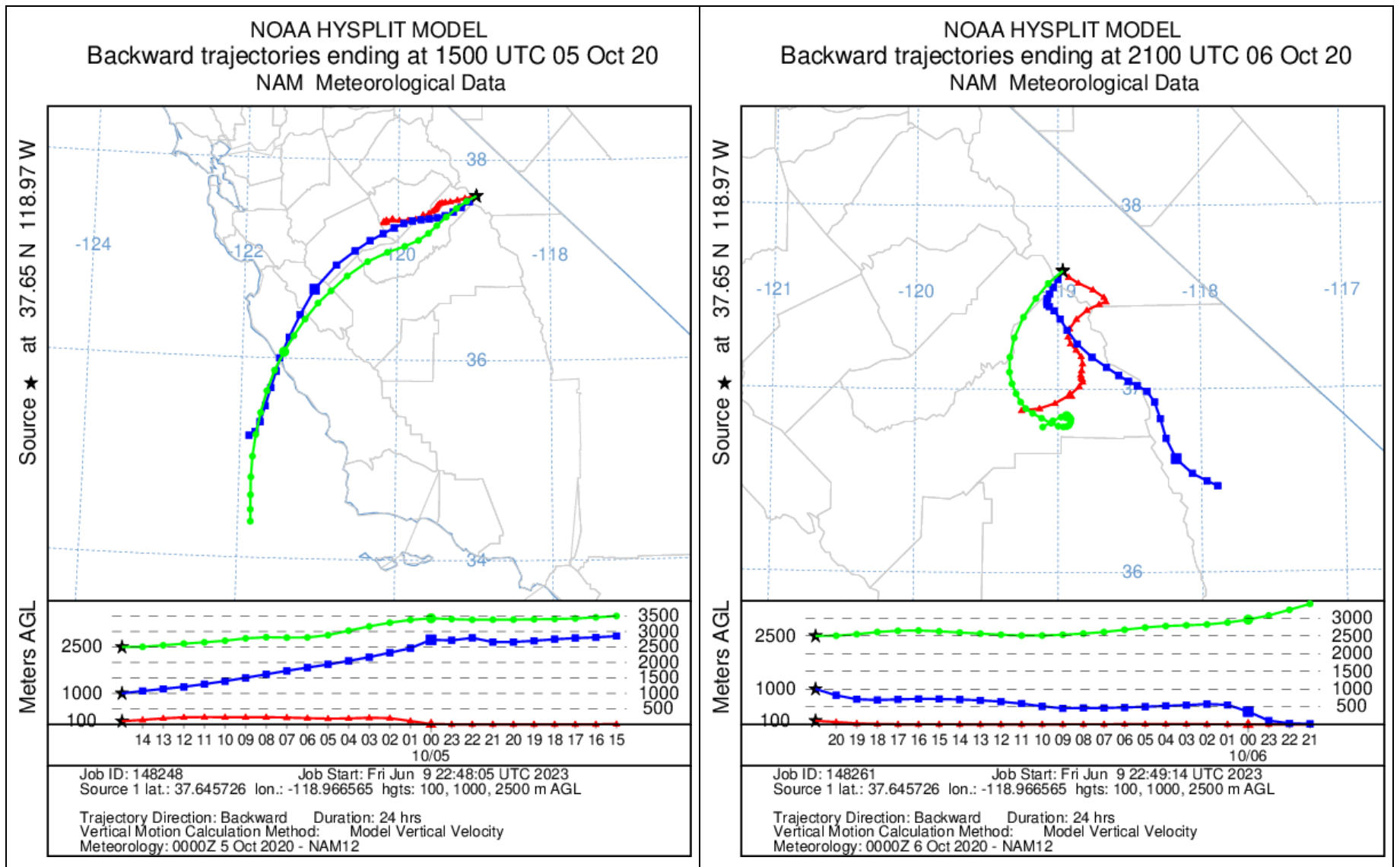
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



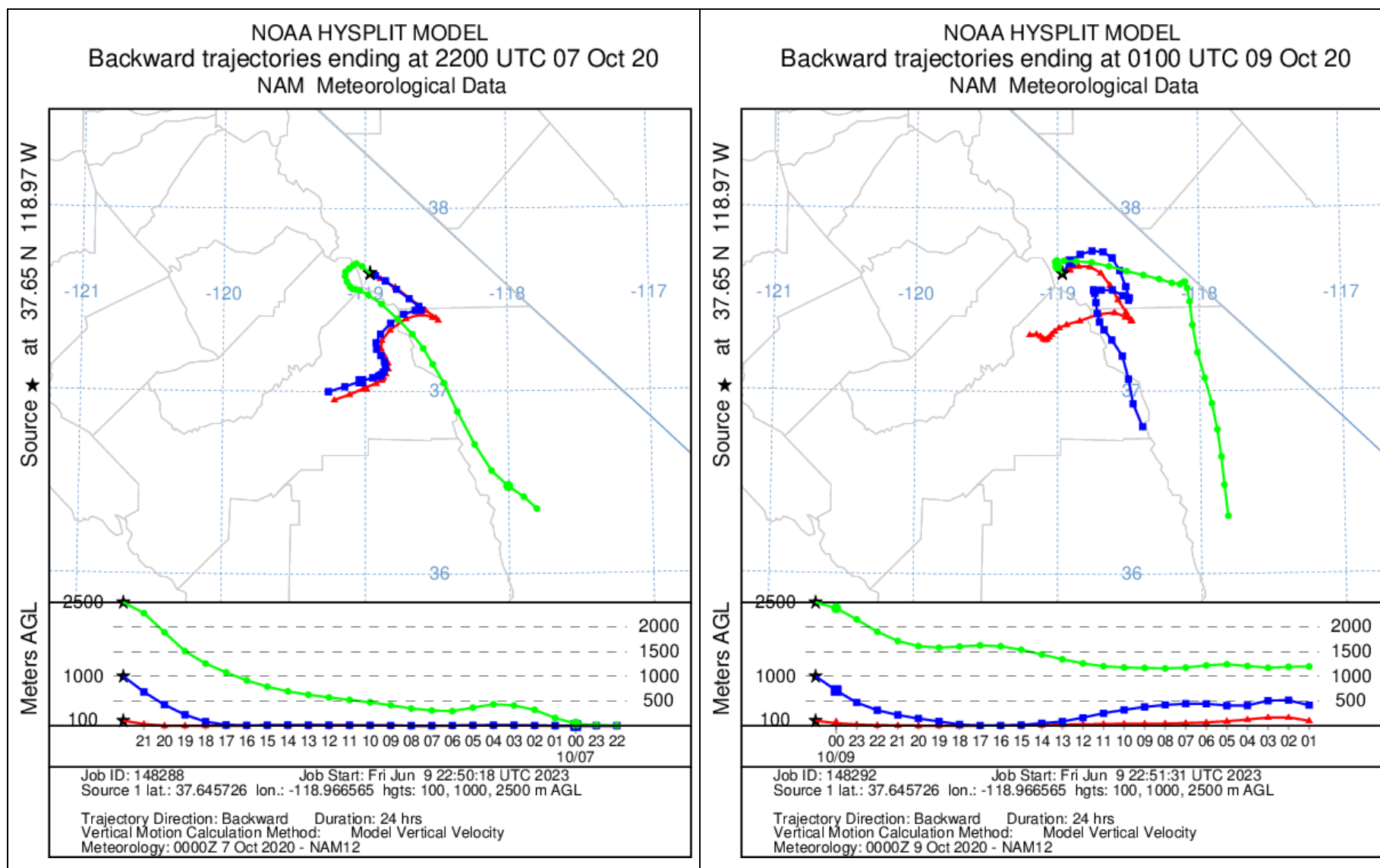
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



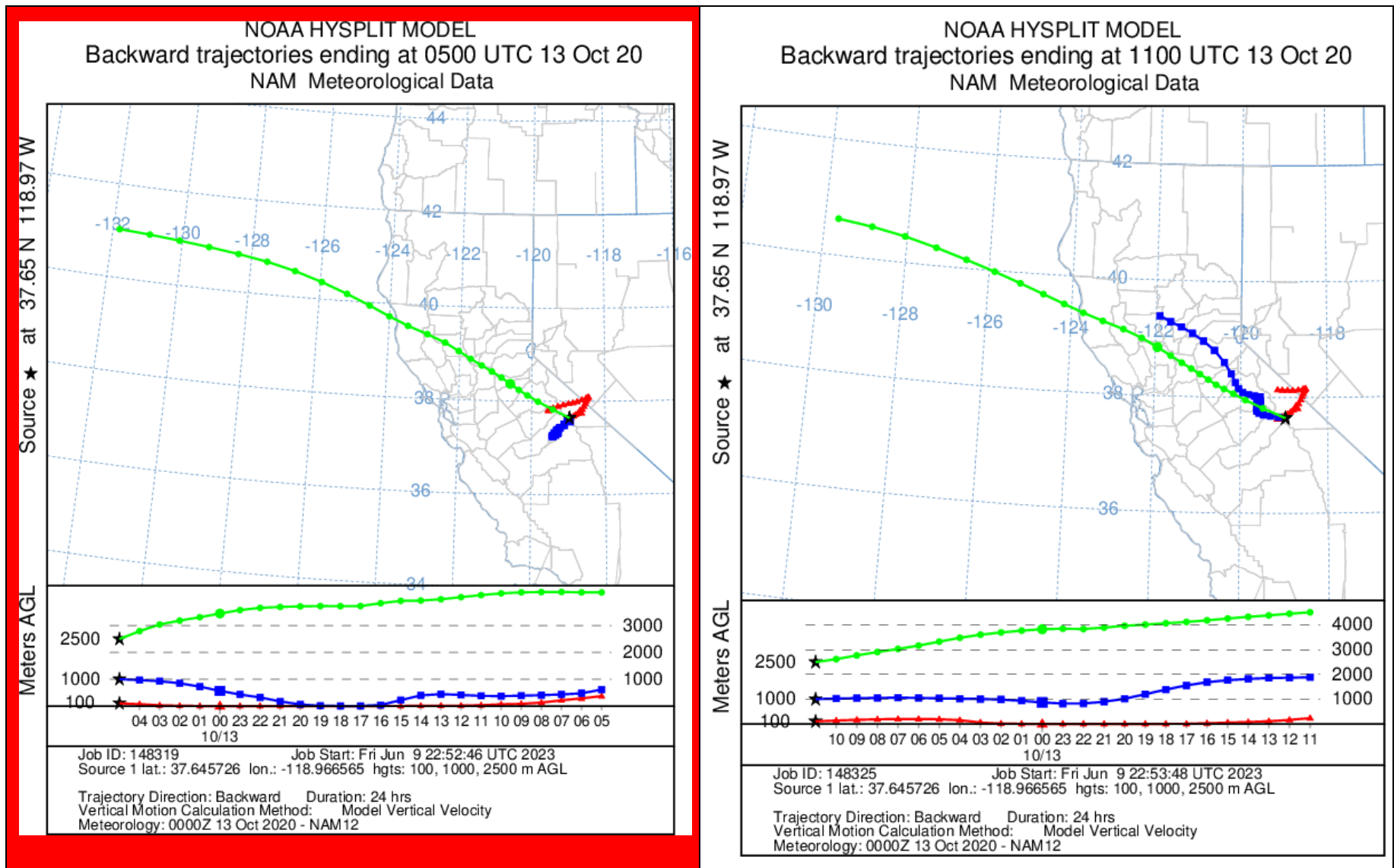
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



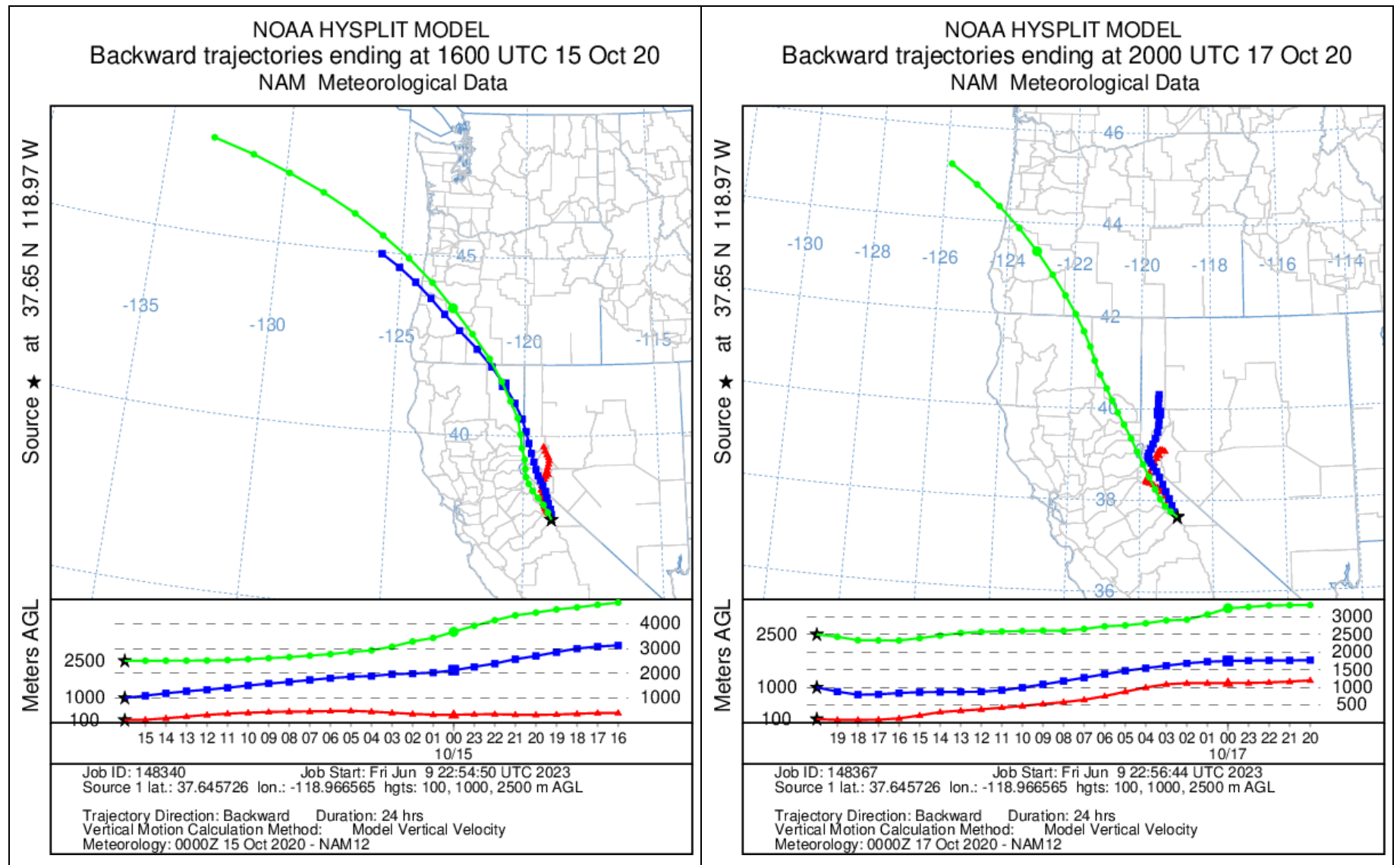
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



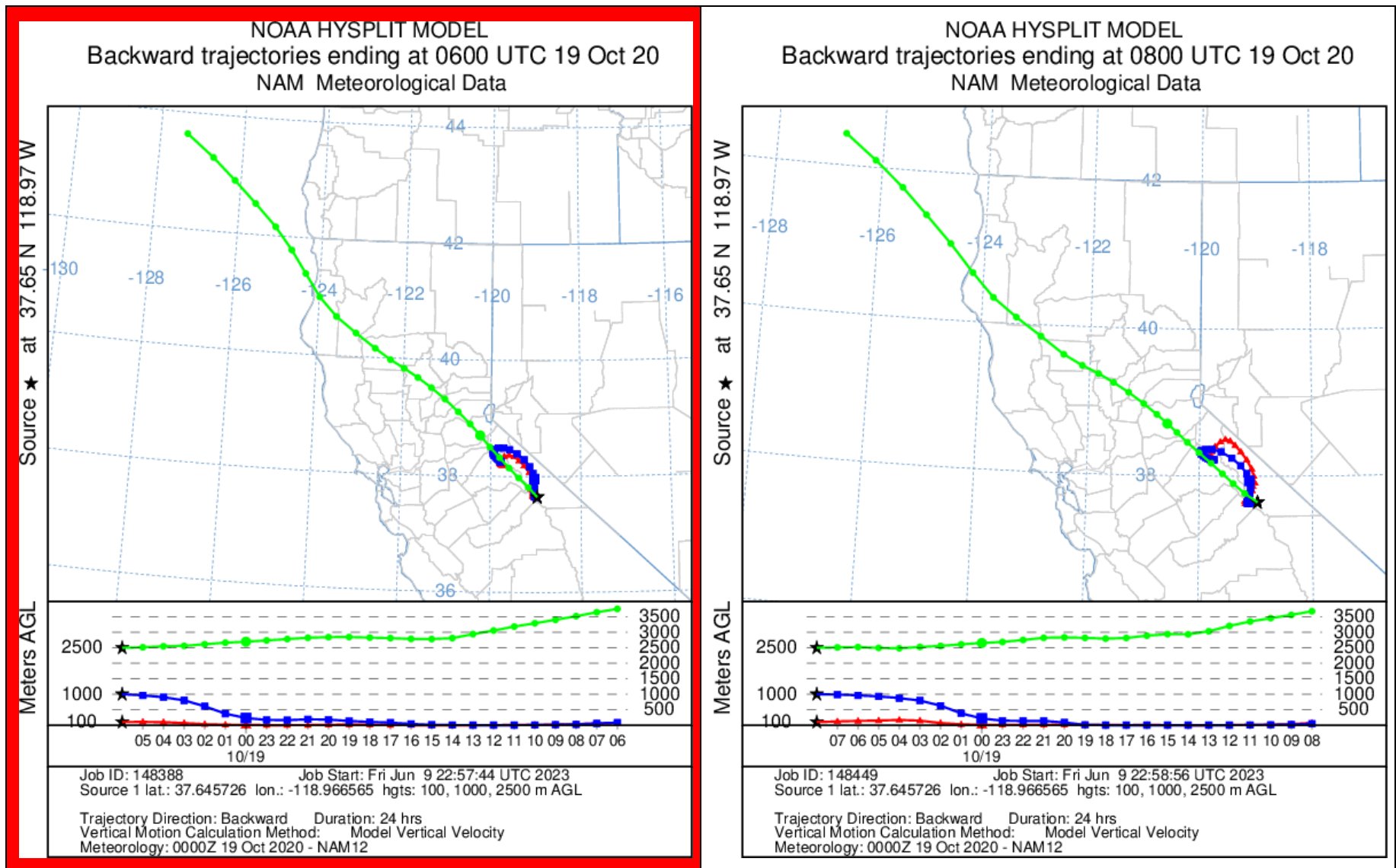
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



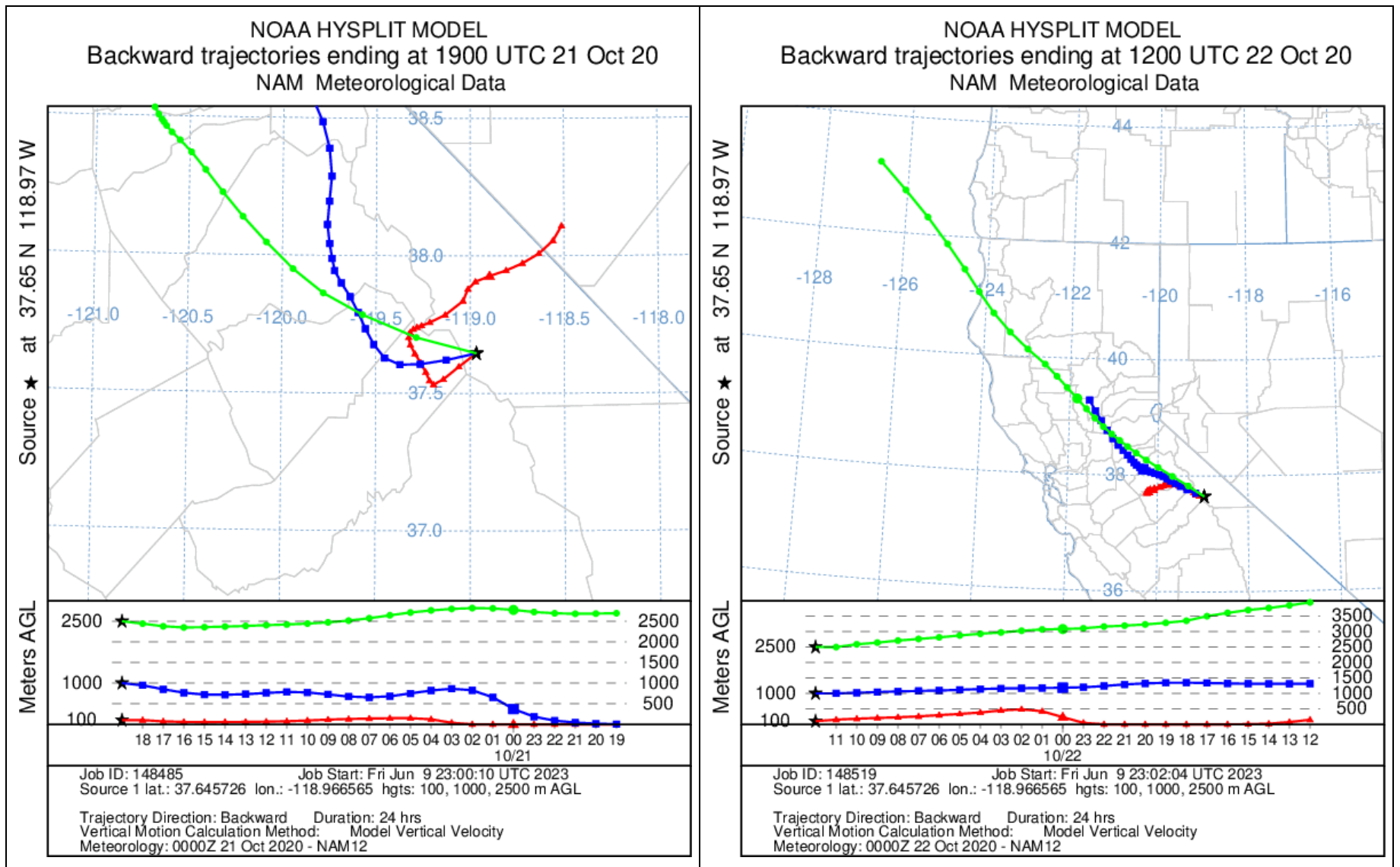
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



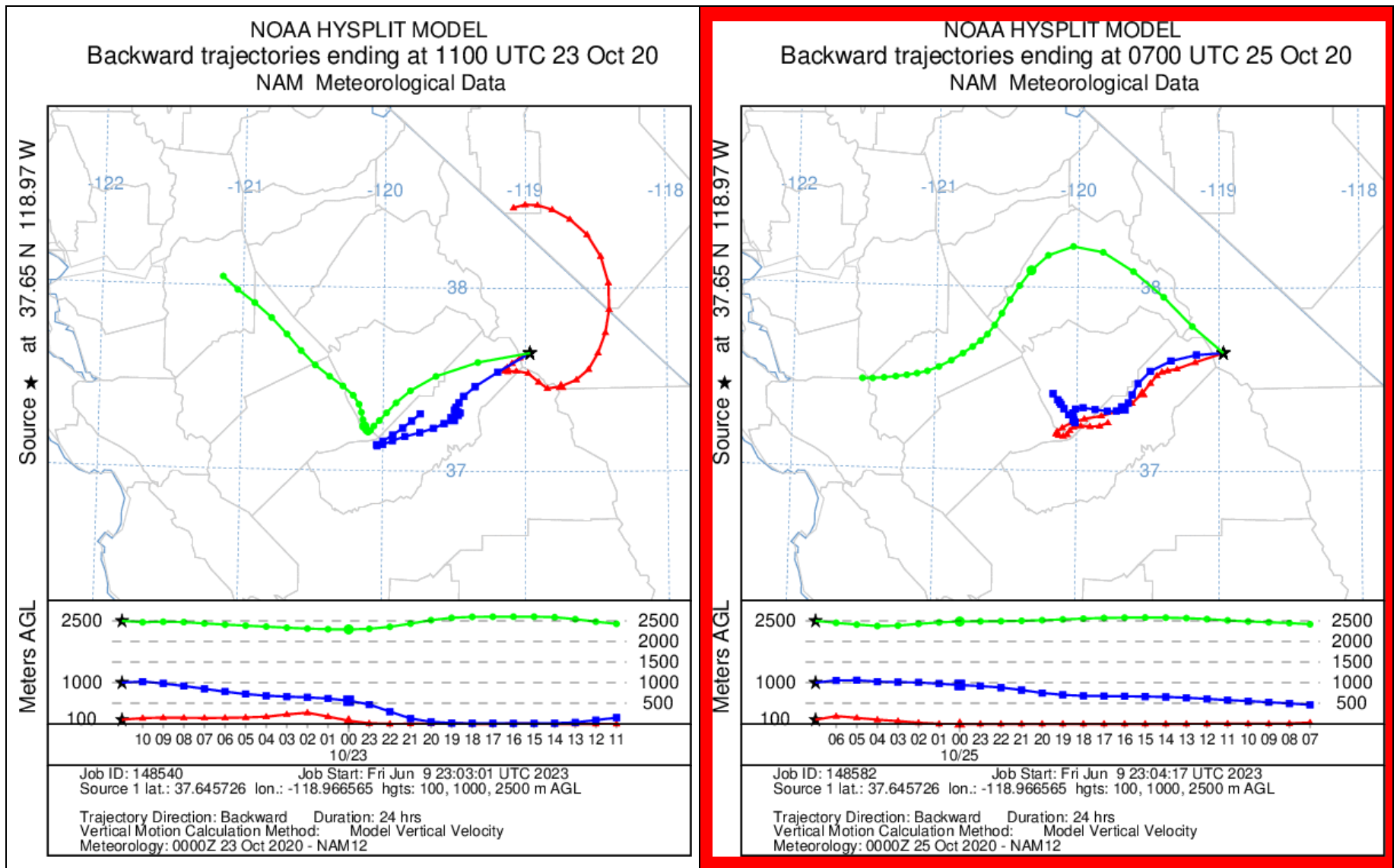
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



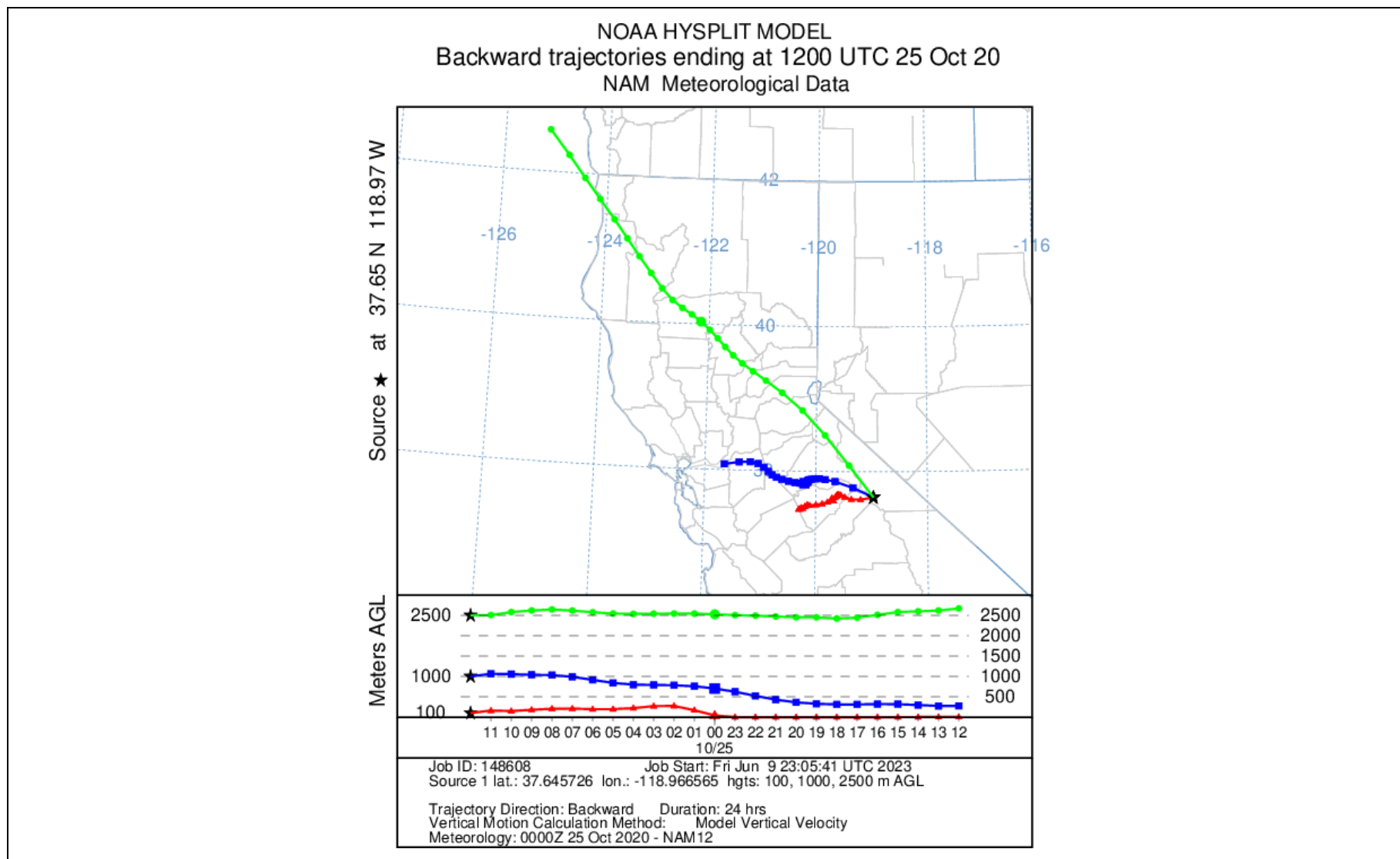
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Appendix G: All Creek Fire ARA Smoke Outlooks issued during the EE period

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/08 - 9/09
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-08 11:28 PDT

Fire

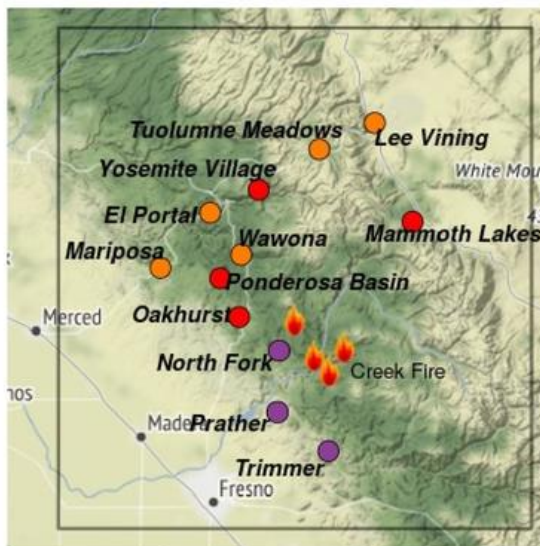
As of last night, the Creek Fire has burned over 135,000 acres, much of it in heavy mixed conifer fuels, with over 50,000 acres of that burning in the last 24 hrs. Potential for extreme fire behavior and large-scale growth continues.

Smoke

NW transport winds are blowing smoke to the SE from the Creek Fire this morning, and there is a lot of residual smoke from yesterday trapped in the canyons and lower terrain. Some of this may mix out in the afternoon, however continued large-scale emissions are likely to worsen air quality tonight and tomorrow, throughout the forecast area.

Notes

Forecasts reflect particulate matter only - not ozone. Poor visibility, potentially less than 1/4 mile, may occur on roads to the south and/or west of the fire and may also hinder aircraft flight operations.



Daily AQI Forecast* for Sep 08, 2020

Station	Yesterday hourly	Mon 9/07	Forecast* Comment for Today -- Tue, Sep 08	Tue Wed 9/08 9/09
Lee Vining			Possible moderate range this afternoon	
Tuolumne Meadows			Possible moderate range this afternoon	
Mammoth Lakes			Possible moderate range this afternoon	
Yosemite Village			Possible moderate range this afternoon	
El Portal			Possible moderate range this afternoon	
Wawona			Possible moderate range this afternoon	
Mariposa			Possible moderate range this afternoon	
Ponderosa Basin			Some afternoon improvement; worsening again likely late afternoon/evening	
Oakhurst	No hourly data		Some afternoon improvement; worsening again likely late afternoon/evening	
North Fork			Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	
Trimmer			Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	
Prather	No hourly data		Continued Very Unhealthy to Hazardous range; Possible improvement in afternoon	

Issued 2020-09-08 11:28 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD -- <http://www.valleyair.org>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/09 - 9/10
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-09-09 07:45 PDT

Fire

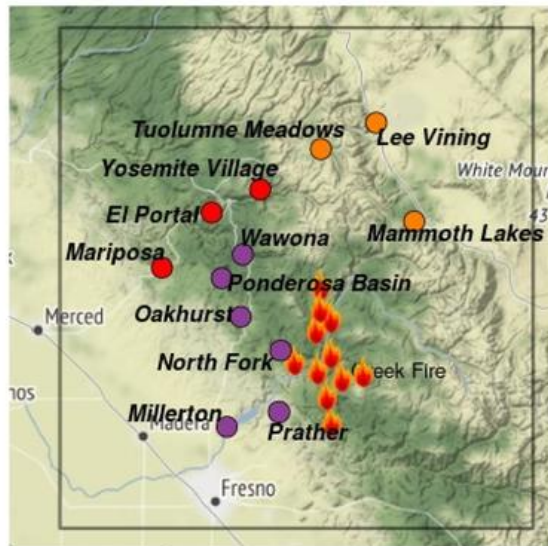
Yesterday's smoke inversion moderated fire behavior (~ 1/2 the fire growth and smoke compared to the day before). Today moderate fire activity under terrain-driven winds is again likely in areas under the persistent smoke inversion, but red flag conditions persist in areas above that inversion under continued north winds aloft.

Smoke

Yesterday evening east winds finally arrived in the forecast area, clearing eastern sites to moderate for this morning. On the west side of the Sierra Crest, a strong smoke inversion formed and continues to trap smoke in the Unhealthy/Very Unhealthy range this morning. Today, the inversion is unlikely to break, so smoke is likely to accumulate to unhealthy or worse concentrations as large-scale emissions continue. Smoke from the North Complex, August complex, Slink Fire, and Blue Jay fires may contribute.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under ~5000 foot elevation



Daily AQI Forecast* for Sep 09, 2020

Station	Yesterday hourly	Tue 9/08	Forecast* Comment for Today -- Wed, Sep 09	Wed Thu 9/09 9/10
Lee Vining		●	Moderate, unless/until N winds bring smoke from north	● ●
Tuolumne Meadows		●	Moderate, unless/until N winds bring smoke from north	● ●
Mammoth Lakes		●	Late afternoon/evening wind and Unhealthy range smoke from west possible	● ●
Yosemite Village		●	Smoke inversion likely; late afternoon/evening peaks to Very Unhealthy range possible	● ●
El Portal		●	Smoke inversion likely; --noon peaks to Very Unhealthy range possible	● ●
Wawona		●	Smoke inversion likely; early afternoon peaks to Very Unhealthy/Hazardous range likely	● ●
Mariposa		●	Smoke inversion likely; late morning peaks to Very Unhealthy range possible	● ●
Ponderosa Basin		●	Smoke inversion very likely; noontime peaks to Very Unhealthy/Hazardous range likely	● ●
Oakhurst	No hourly data	●	Smoke inversion very likely; noontime peaks to Very Unhealthy/Hazardous range likely	● ●
North Fork		●	Smoke inversion very likely; noontime peaks to Very Unhealthy/Hazardous range likely	● ●
Prather	No hourly data	●	Smoke inversion very likely; continued Very Unhealthy to Hazardous range	● ●
Millerton		●	Smoke inversion very likely; peaks to Very Unhealthy to Hazardous range possible	● ●

Issued 2020-09-09 07:45 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/10 - 9/11
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-09-10 08:06 PDT

Fire

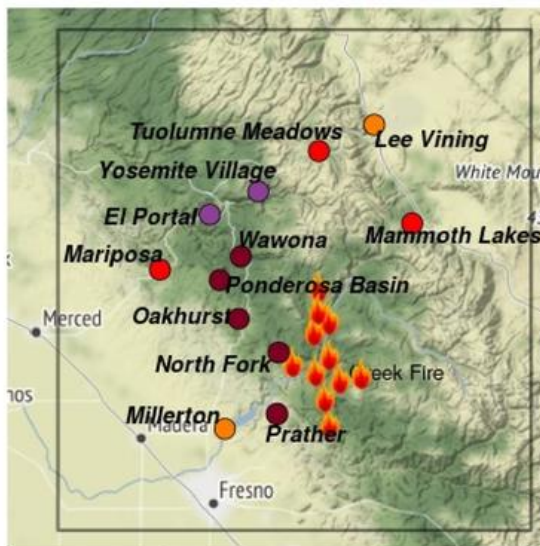
Yesterday's smoke inversion again helped moderate fire behavior, with about 1/2 the growth we saw yesterday. Today, moderate fire activity under terrain-driven winds is again likely in areas under the persistent smoke inversion, but potential for active fire behavior persists in areas above that inversion, with afternoon winds switching to light SW this afternoon.

Smoke

Yesterday evening, east winds cleared eastern sites to the good range for much of the day, while most west-side sites experienced at least some hours of Very Unhealthy/Hazardous smoke under smoke enhanced inversions. Today, the west-side inversion will likely persist in lower elevations, but may break in the higher elevation sites. Upslope smoke is also likely to push into the east-side sites, with periods of Very Unhealthy possible. More west-side inversions are likely tomorrow and dramatically more smoke is likely on the east side.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under ~6000 foot elevation



Daily AQI Forecast* for Sep 10, 2020

Station	Yesterday hourly	Wed 9/09	Forecast* Comment for Today -- Thu, Sep 10	Thu 9/10	Fri 9/11
Lee Vining			Late morning/afternoon SW winds likely to bring in some smoke		
Tuolumne Meadows			Late morning/afternoon SW winds likely to bring in heavy smoke		
Mammoth Lakes			Late morning/afternoon SW winds likely to bring in heavy smoke		
Yosemite Village			Smoke inversion; some late afternoon/evening improvement possible		
El Portal			Smoke inversion; some late afternoon/evening improvement likely		
Wawona			Smoke inversion; some late afternoon/evening improvement possible		
Mariposa			Smoke inversion; afternoon improvement likely		
Ponderosa Basin			Smoke inversion; some late afternoon/evening improvement possible		
Oakhurst	No hourly data		Smoke inversion; some late afternoon/evening improvement possible		
North Fork			Smoke inversion; some late afternoon/evening improvement possible		
Prather	No hourly data		Smoke inversion; some late afternoon/evening improvement possible		
Millerton			Smoke inversion; afternoon improvement likely		

Issued 2020-09-10 08:06 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/11 - 9/12
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-11 07:42 PDT

Fire

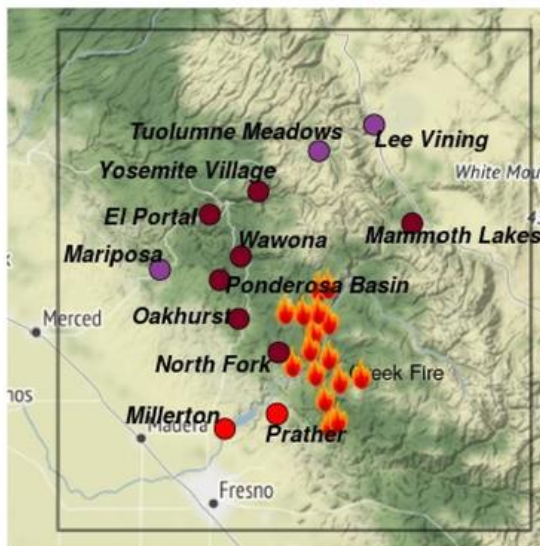
Yesterday's smoke inversion again helped moderate fire behavior, with 6% containment along the western edge of the fire, and about the same emissions levels as we saw yesterday. Today, moderate fire activity under terrain-driven winds is again likely in areas under the persistent smoke inversion, but potential for active fire behavior persists in areas outside that inversion, with light afternoon winds out of the SW again this afternoon.

Smoke

Hazardous range air quality is occurring under the smoke-enhanced inversion all around this fire. Afternoon SW winds aloft also helped bring heavy smoke to Mammoth Lakes farther east last night. That smoke inversion pattern under light SW winds aloft is likely to persist in these same areas today and tomorrow. Models show some evening improvement today at sites at lower elevations on the edge of the San Joaquin Valley, south and/or west of the fire.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under ~6000 foot elevation



Daily AQI Forecast* for Sep 11, 2020

Station	Yesterday hourly	Thu 9/10	Forecast* Comment for Today -- Fri, Sep 11	Fri 9/11	Sat 9/12
Lee Vining			Late morning/afternoon heavy smoke; some improvement to USG range possible overnight		
Tuolumne Meadows			Late morning/afternoon heavy smoke; some improvement to USG range possible overnight		
Mammoth Lakes			Heavy smoke likely to persist; overnight improvement to Unhealthy range possible		
Yosemite Village			Strong smoke inversion; little improvement likely		
El Portal			Strong smoke inversion; little improvement likely		
Wawona			Strong smoke inversion; little improvement likely		
Mariposa			Smoke inversion; some evening improvement to Unhealthy range likely		
Ponderosa Basin			Strong smoke inversion; little improvement likely		
Oakhurst	No hourly data		Strong smoke inversion; little improvement likely		
North Fork			Strong smoke inversion; little improvement likely		
Prather	No hourly data		Smoke inversion; afternoon improvement to moderate likely		
Millerton			Smoke inversion; afternoon improvement to moderate likely		

Issued 2020-09-11 07:42 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/12 - 9/13
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-12 08:32 PDT

Fire

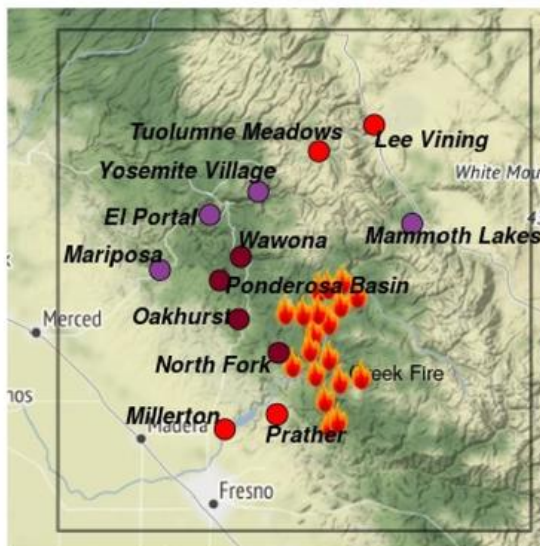
Yesterday's smoke inversion again helped moderate fire behavior, with 6% containment along the western edge of the fire, and similar smoke production. Today will likely bring more active fire under a persistent, but possibly thinner, inversion and terrain-driven winds, which again turn SW this afternoon.

Smoke

Today, the smoke inversion may thin somewhat as SW winds aloft strengthen, but is still likely to remain intact, with peak hours of smoke still in the Very Unhealthy/Hazardous range still possible at sites under the inversion. Upslope SW winds in the San Joaquin River drainage will also likely bring heavy smoke to our east-side sites this evening. Tomorrow those winds might strengthen and further thin the inversion, but it may remain intact in many sites, where the same pattern is likely.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is possible under the smoke inversion



Daily AQI Forecast* for Sep 12, 2020

Station	Yesterday hourly	Fri 9/11	Forecast* Comment for Today -- Sat, Sep 12	Sat 9/12	Sun 9/13
Lee Vining			Some morning clearing; evening heavy smoke		
Tuolumne Meadows			Heavy late morning smoke likely; less improvement overnight		
Mammoth Lakes			Potential morning clearing; afternoon heavy smoke		
Yosemite Village			Smoke inversion; some evening improvement possible		
El Portal			Smoke inversion; some evening improvement possible		
Wawona			Smoke inversion; some overnight improvement possible		
Mariposa			Thinning smoke inversion likely; evening improvement to USG possible		
Ponderosa Basin			Smoke inversion w/ some evening improvement possible		
Oakhurst	No hourly data		Smoke inversion w/ some evening improvement possible		
North Fork			Smoke inversion w/ some evening improvement possible		
Prather	No hourly data		Smoke inversion w/ some evening improvement possible		
Millerton			Smoke inversion; afternoon improvement to moderate/USG possible		

Issued 2020-09-12 08:32 PDT by Leland Tarnay, Air Resource Advisor (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke_index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/13 - 9/14
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-13 08:22 PDT

Fire

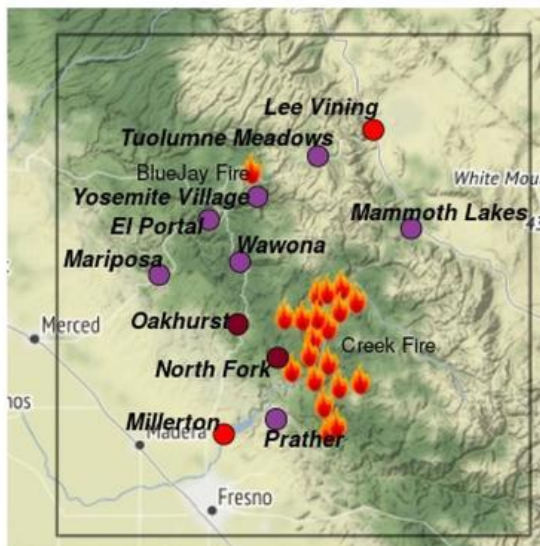
Yesterday containment went up to 8% on the west and south side of the fire with increased fire activity on the north end of the fire under clearer skies. Today will look much the same, except SE winds aloft will likely be switching to more directly S winds on the fire, and smoke plumes will likely go more directly north, rather than northwest.

Smoke

The more direct southerly winds today will enhance transport of potentially heavy smoke to our east side sites, but thin the inversion above ridgetops by afternoon, and possibly clear some low-lying sites by evening. Canyon and low lying areas are likely to remain under inversions through at least the afternoon, with continued impacts into the Very Unhealthy/Hazardous range. Models show potential for some improvement late afternoon/evening. Tomorrow, the same pattern likely repeats.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is possible under the smoke inversions in the canyons.



Daily AQI Forecast* for Sep 13, 2020

Station	Yesterday hourly	Sat 9/12	Forecast* Comment for Today -- Sun, Sep 13	Sun 9/13	Mon 9/14
Lee Vining			Morning clearing; heavy afternoon/evening smoke likely		
Tuolumne Meadows			Morning clearing; heavy afternoon/evening smoke likely		
Mammoth Lakes			Morning clearing; heavy afternoon/evening smoke likely		
Yosemite Village			Unhealthy/Very Unhealthy throughout the day		
El Portal			Unhealthy/Very Unhealthy throughout the day		
Wawona			Unhealthy/Very Unhealthy throughout the day		
Mariposa			Some clearing this evening likely		
Oakhurst	No hourly data		Hazardous/Very Unhealthy throughout the day		
North Fork	No hourly data		No Data, Likely Hazardous/Very Unhealthy throughout the day		
Prather	No hourly data		Hazardous/Very Unhealthy throughout the day		
Millerton			Smoke impacts throughout the day, possible clearing this evening		

Issued 2020-09-13 08:22 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/14 - 9/15
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-14 08:13 PDT

Fire

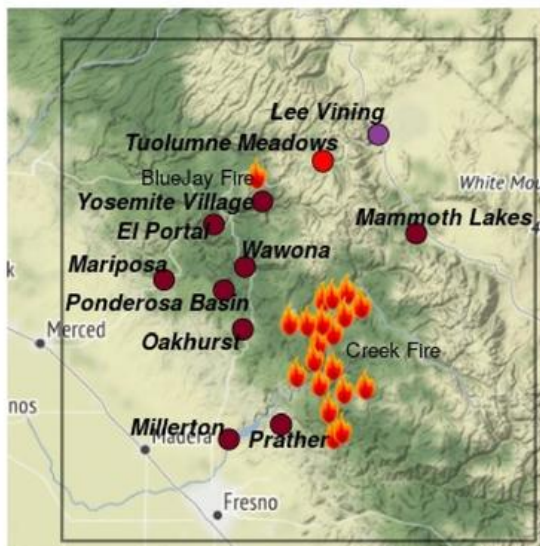
Yesterday containment went up to 10% on the west and south side of the fire with increased fire activity on the north end of the fire. This increased activity is driving our smoke impact. For the latest Creek Fire fire information details, go to: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

Yesterday, the Creek Fire produced substantially more smoke than the past few days, leaving this forecast area with uniformly Very unhealthy/Hazardous air quality this morning. Today south winds may be slightly more westerly, sending smoke plumes directly north and potentially clearing some west-side sites in the afternoon. More fire activity is likely, creating continued heavy smoke impacts this evening on the east side, and likely more smoke tomorrow morning throughout the forecast area.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under morning smoke inversions.



Daily AQI Forecast* for Sep 14, 2020

Station	Yesterday hourly	Sun 9/13	Forecast* Comment for Today -- Mon, Sep 14	Mon 9/14	Tue 9/15
Lee Vining			Hazardous this morning with little clearing likely; more smoke this evening		
Tuolumne Meadows			Possible noon clearing; heavy afternoon/evening smoke likely		
Mammoth Lakes			Likely Hazardous/Very Unhealthy all day; more heavy smoke this evening		
Yosemite Village			Hazardous/Very Unhealthy; some afternoon clearing possible		
El Portal			Hazardous/Very Unhealthy; some afternoon clearing possible		
Wawona			Hazardous/Very Unhealthy; some afternoon clearing possible		
Mariposa			Hazardous/Very Unhealthy; some afternoon clearing possible		
Ponderosa Basin			Hazardous/Very Unhealthy; some afternoon clearing possible		
Oakhurst			Hazardous/Very Unhealthy; some afternoon clearing possible		
Prather	No hourly data		Hazardous/Very Unhealthy; some afternoon clearing possible		
Millerton			Hazardous/Very Unhealthy; some afternoon clearing possible		

Issued 2020-09-14 08:13 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuaacd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/15 - 9/16 San Joaquin-Yosemite Area (Creek Fire) Issued at: 2020-09-15 08:49 PDT

Fire

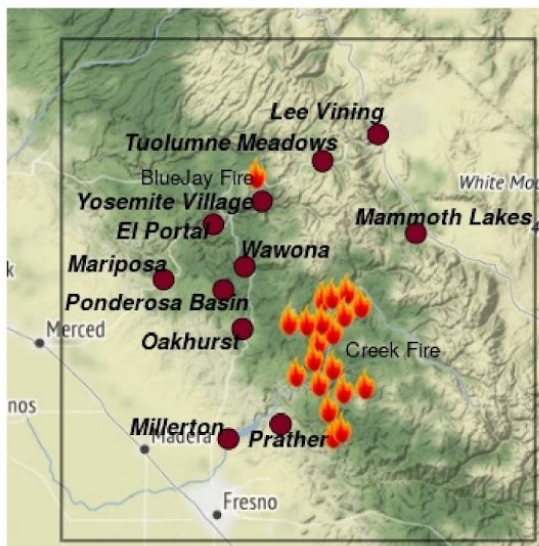
Yesterday, containment went up to 16%, but the fire continues to be active. This increased activity is creating continued heavy smoke impacts. For the latest Creek Fire fire information and details, go to:
<https://inciweb.nwcg.gov/incident/videos/7147/>

Smoke

Yesterday, air quality within the forecast area ranged from Very Unhealthy to Hazardous, throughout the day. Increased fire activity is expected again today and will likely continue to cause heavy smoke impacts and similar air quality patterns throughout the forecast area. Increased fire activity this afternoon will likely lead to more smoke impacts in the eastern part of the forecast areas again this evening.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under morning smoke inversions.



Daily AQI Forecast* for Sep 15, 2020

Station	Yesterday	Mon 9/14	Forecast* Comment for Today -- Tue, Sep 15	Tue Wed	
	hourly			9/15	9/16
Lee Vining		●	Hazardous this morning with little clearing likely	●	●
Tuolumne Meadows		●	Hazardous this morning with little clearing likely; more smoke late evening	●	●
Mammoth Lakes		●	Hazardous this morning with little clearing likely; more smoke late evening	●	●
Yosemite Village		●	Smoke inversion most of the day; evening improvement more likely	●	●
El Portal		●	Hazardous/Very Unhealthy likely all day, evening improvement more likely	●	●
Wawona		●	Hazardous/Very Unhealthy likely all day, possible evening/overnight improvement	●	●
Mariposa		●	Hazardous/Very Unhealthy likely through mid-afternoon, likely evening/overnight improvement	●	●
Ponderosa Basin		●	Hazardous/Very Unhealthy likely through mid-afternoon, likely evening/overnight improvement	●	●
Oakhurst		●	No Data; Likely Hazardous/Very Unhealthy with limited afternoon/evening improvement	●	●
Prather	No hourly data	●	Hazardous/Very Unhealthy; some afternoon improvement likely	●	●
Millerton		●	Very Unhealthy/Unhealthy; some afternoon improvement likely	●	●

Issued 2020-09-15 08:49 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/16 - 9/17
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-16 08:29 PDT

Fire

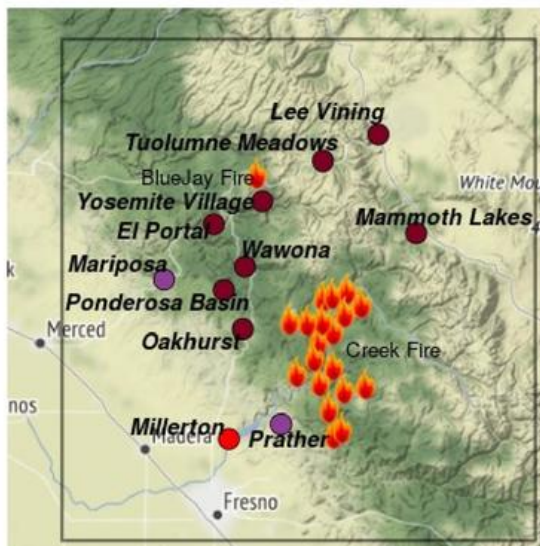
The Creek Fire remained moderately active yesterday on the northern portion of the fire. Containment is 18%, and fire activity and smoke production could be higher due to higher winds and lower humidity than yesterday. For the latest Creek Fire fire information and details, go to: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

Yesterday, air quality was in the Very Unhealthy to Hazardous ranges, with the exception of Millerton remaining in the Unhealthy range. Today, we can expect heavy smoke impacts and similar air quality patterns again, but with the increased fire activity. Tomorrow, depending on fire activity today, we may see improvement in the afternoon with the forecasted stronger southwest winds, but the potential increased smoke production from today's fire activity might negate that.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under morning smoke inversions.



Daily AQI Forecast* for Sep 16, 2020

Station	Yesterday hourly	Tue 9/15	Forecast* Comment for Today -- Wed, Sep 16	Wed 9/16	Thu 9/17
Lee Vining	6a noon 6p	●	Hazardous this morning with little clearing likely	●	●
Tuolumne Meadows		●	Hazardous this morning with some clearing possible; more smoke late evening	●	●
Mammoth Lakes		●	Hazardous this morning with little clearing likely; more smoke late evening	●	●
Yosemite Village		●	Hazardous/Very Unhealthy likely all day	●	●
El Portal		●	Hazardous/Very Unhealthy likely all day	●	●
Wawona		●	Hazardous/Very Unhealthy likely all day	●	●
Mariposa		●	Hazardous/Very Unhealthy likely through mid-afternoon some evening/overnight improvement possible	●	●
Ponderosa Basin		●	Hazardous/Very Unhealthy likely through mid-afternoon, some evening/overnight improvement possible	●	●
Oakhurst		●	Hazardous/Very Unhealthy likely through mid-afternoon, some evening/overnight improvement possible	●	●
Prather	No hourly data	●	Unhealthy/Very Unhealthy this morning with late afternoon/evening improvement possible	●	●
Millerton		●	Likely Unhealthy with potentially more afternoon improvement likely	●	●

Issued 2020-09-16 08:29 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/17 - 9/18 San Joaquin-Yosemite Area (Creek Fire) Issued at: 2020-09-17 08:35 PDT

Fire

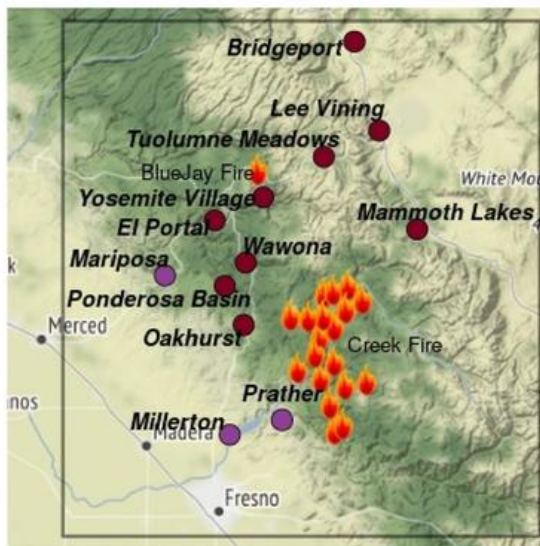
The Creek Fire continued to be active yesterday. Containment is 18%, and today elevated fire activity and smoke production will likely continue under SW winds and low humidity. Increased active fire is likely tomorrow under those elevated SW winds. For the latest Creek Fire fire information and details, go to: <https://inciweb.nwccg.gov/incident/7147/>

Smoke

Yesterday we had a little afternoon clearing, but increased fire activity helped replenish the smoke inversion. Most sites in the forecast area remain in the Very Unhealthy/Hazardous range this morning. Today, SW winds could improve air quality in lower elevation sites on the west side this afternoon/evening. Tomorrow should have the same pattern, but emissions continue to increase from the fire, so expect early morning smoke again, and little east side improvement.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under morning smoke inversions.



Daily AQI Forecast* for Sep 17, 2020

Station	Yesterday	Wed 9/16	Forecast*	Thu 9/17	Fri 9/18
	hourly				
	6a noon 6p		Comment for Today -- Thu, Sep 17		
Bridgeport			Hazardous this morning with little clearing likely		
Lee Vining			Hazardous this morning with little clearing likely		
Tuolumne Meadows			Hazardous this morning with afternoon clearing possible; more smoke late evening		
Mammoth Lakes			Hazardous this morning with little clearing likely; more smoke late evening		
Yosemite Village			Hazardous/Very Unhealthy likely all day		
El Portal			Hazardous/Very Unhealthy this morning, some evening/overnight improvement possible		
Wawona			Hazardous/Very Unhealthy this morning, some evening/overnight improvement possible		
Mariposa			Hazardous/Very Unhealthy this morning; evening/overnight improvement to Unhealthy range or better possible		
Ponderosa Basin			Hazardous/Very Unhealthy this morning; evening/overnight improvement to Unhealthy range or better possible		
Oakhurst			Unhealthy/Very Unhealthy this morning with limited late afternoon/evening improvement		
Prather			Hazardous/Very Unhealthy this morning; afternoon improvement to Unhealthy range or better possible		
Millerton			Very Unhealthy late this morning; evening improvement to Unhealthy range or better possible		

Issued 2020-09-17 08:35 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/18 - 9/19 San Joaquin-Yosemite Area (Creek Fire) Issued at: 2020-09-18 08:40 PDT

Fire

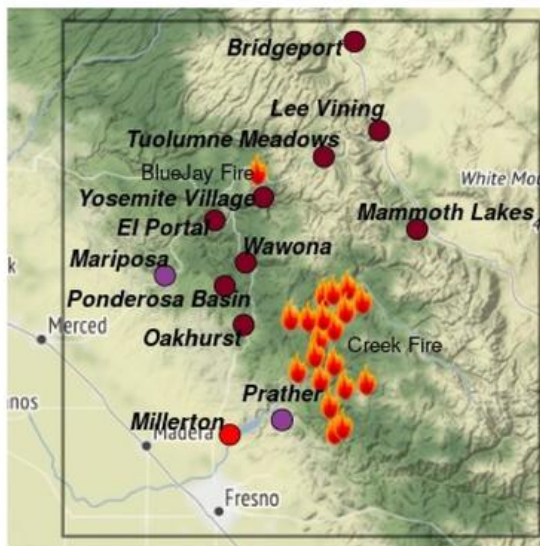
The Creek Fire was less active yesterday, with the majority of the activity on the north and west portions of the fire. Low winds and increased humidity reduced the fire activity, leading to more smoke accumulation. Today fire activity will likely increase with the forecasted increased winds, depending on cloud cover. For the latest Creek Fire information and details, go to: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

There was minimal clearing in the forecast area yesterday, due to cloud cover. Today, conditions are lining up for some improvement: this morning, rain helped to clear some smoke out and continued stronger southwest winds on the ridges will likely clear the western sites in the forecast area. Smoke production from fire activity today will settle back into the drainage's tonight. Tomorrow, light winds will likely allow more smoke accumulation and strengthen smoke inversions.

Notes

Forecasts reflect particulate matter from smoke only - not ozone or dust. Poor visibility, potentially less than 1/4 mile is likely under morning smoke inversions.



Daily AQI Forecast* for Sep 18, 2020

Station	Yesterday hourly	Thu 9/17	Forecast* Comment for Today -- Fri, Sep 18	Fri 9/18	Sat 9/19
Bridgeport	6a noon 6p No hourly data	○	No data, but likely Hazardous/Very Unhealthy this afternoon as smoke accumulates	●	●
Lee Vining	[Bar chart]	●	Very Unhealthy/Hazardous likely throughout the day	●	●
Tuolumne Meadows	[Bar chart]	●	Some afternoon clearing possible, otherwise Very Unhealthy/Hazardous	●	●
Mammoth Lakes	[Bar chart]	●	Very Unhealthy/Hazardous likely throughout the day	●	●
Yosemite Village	[Bar chart]	●	Hazardous/Very Unhealthy likely all day, some brief improvement at noon possible	●	●
El Portal	[Bar chart]	●	Very Unhealthy/Hazardous likely; little evening improvement	●	●
Wawona	[Bar chart]	●	Very Unhealthy/Hazardous likely; little evening improvement	●	●
Mariposa	[Bar chart]	○	Possible afternoon clearing to Unhealthy/USG; accumulation to Hazardous/Very Unhealthy likely towards evening	○	●
Ponderosa Basin	[Bar chart]	●	Unhealthy/Very Unhealthy, accumulation to Hazardous/Very Unhealthy likely towards evening	●	●
Oakhurst	[Bar chart]	●	Possible afternoon clearing to Unhealthy/Very Unhealthy; accumulation to Hazardous/Very Unhealthy likely towards evening	●	●
Prather	[Bar chart]	○	Possible afternoon clearing to Unhealthy/USG; accumulation tonight/early morning to Hazardous/Very Unhealthy likely	○	○
Millerton	[Bar chart]	●	Possible clearing this afternoon to Unhealthy/USG; accumulation tonight/early morning to Hazardous/Very Unhealthy likely	●	○

Issued 2020-09-18 08:40 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbupcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/19 - 9/20 San Joaquin-Yosemite Area (Creek Fire) Issued at: 2020-09-19 08:49 PDT

Fire

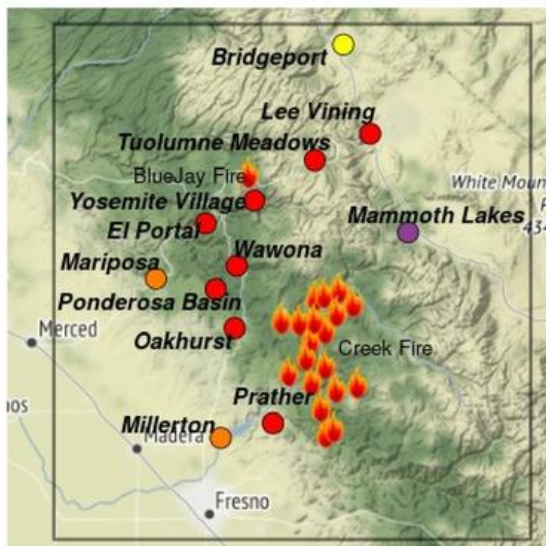
A quarter inch of rain dampened the fire activity substantially on the northern portion of the Creek Fire yesterday. That rain was limited to the higher terrain, so fire activity was mainly on the lower, western perimeter of the fire. Today and tomorrow fire activity will likely remain minimal, but may start to increase again if fuels dry out under light, terrain-driven winds. Detailed fire information can be found at: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

Yesterday, rain cleared much of the smoke out of the area, leading to improved air quality. Today we could see similar air quality, likely in the Unhealthy to Unhealthy for Sensitive Groups range. Depending on fire activity, smoke could accumulate to Very Unhealthy this evening and or early morning in the mid-elevation sites near the fire. Mammoth will likely continue to get heavy smoke impacts tonight.

Notes

Outlooks reflect particulate matter from smoke only - not ozone or dust.



Daily AQI Forecast* for Sep 19, 2020

Station	Yesterday hourly	Fri 9/18	Forecast* Comment for Today -- Sat, Sep 19	Sat 9/19	Sun 9/20
Lee Vining			Moderate to USG throughout the day		
Tuolumne Meadows			Possible improvement to USG/Moderate, if low fire activity continues; more evening smoke likely		
Mammoth Lakes			Very Unhealthy/Hazardous likely, brief afternoon improvement possible before this evening's smoke		
Yosemite Village			USG/Unhealthy throughout the day, possible accumulation to Very Unhealthy tonight/early morning		
El Portal			USG/Unhealthy throughout the day, possible accumulation to Very Unhealthy tonight/early morning		
Wawona			USG/Unhealthy throughout the day, possible accumulation to Very Unhealthy tonight/early morning		
Mariposa			Moderate to USG throughout the day, Unhealthy likely late evening/early morning		
Ponderosa Basin			USG/Unhealthy throughout the day, accumulation to Very Unhealthy tonight/early morning		
Oakhurst			USG/Unhealthy throughout the day, accumulation to Very Unhealthy tonight/early morning		
Prather			USG to Unhealthy throughout the day, accumulation tonight/early morning possible		
Millerton			Moderate to USG throughout the day, accumulation to Unhealthy likely tonight/early morning		
Bridgeport			Moderate to USG throughout the day		

Issued 2020-09-19 08:49 PDT by Julie Hunter (jdhunter@washoecounty.us) and Leland Tarnay (leland_tarnay@firenet.gov)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/21 - 9/22
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-21 08:44 PDT

Fire

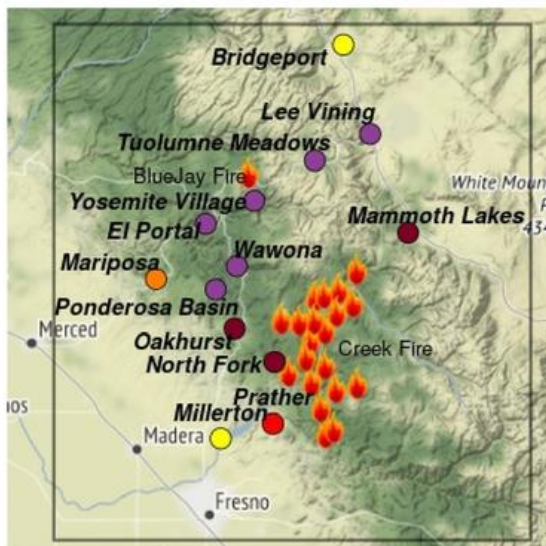
The Creek Fire was most active in the North Zone, with moderate activity in the south. The footprint of the Lion Fire slowed growth on the northeast perimeter. Today fire activity will be similar to yesterday. Detailed fire information can be found at: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

Yesterday smoke settled back into the area leading to Unhealthy to Very Unhealthy air quality at all sites nearest the fire. Smoke will likely accumulate again today, further degrading air quality. Areas furthest from the fire should remain in the Moderate to Unhealthy for Sensitive Groups (USG).

Notes

Outlooks reflect particulate matter from smoke only - not ozone or dust.



Daily AQI Forecast* for Sep 21, 2020

Station	Yesterday hourly	Sun 9/20	Forecast* Comment for Today -- Mon, Sep 21	Mon 9/21	Tue 9/22
Bridgeport			Moderate to USG throughout the day		
Lee Vining			Unhealthy to Very Unhealthy throughout the day, periods of Hazardous likely this afternoon/evening		
Mammoth Lakes			Very Unhealthy to Hazardous throughout the day		
Tuolumne Meadows			Unhealthy to Very Unhealthy throughout the day		
Yosemite Village			Unhealthy to Very Unhealthy throughout the day, periods of Hazardous possible this afternoon		
El Portal			Unhealthy to Very Unhealthy throughout the day		
Wawona			Unhealthy to Very Unhealthy throughout the day, periods of Hazardous likely this afternoon		
Mariposa			Moderate to USG throughout the day		
Ponderosa Basin			Unhealthy to Very Unhealthy, periods of Hazardous likely this afternoon/evening		
Oakhurst			Very Unhealthy/Hazardous throughout the day		
North Fork			Very Unhealthy/Hazardous throughout the day		
Prather			Unhealthy to Very Unhealthy throughout the day		
Millerton			No data; good to Moderate throughout the day		

Issued 2020-09-21 08:44 PDT by Julie Hunter (jdhunter@washoecounty.us)

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>

Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke_index



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/22 - 9/23
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-22 08:42 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

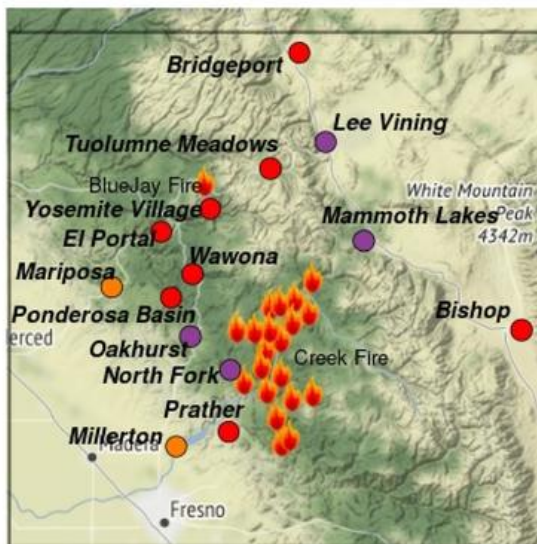
The Creek Fire was active yesterday, similar fire activity can be expected again today. As smoke lifts, fire activity will increase with warmer and dryer conditions. Detailed fire information can be found at: <https://inciweb.nwcg.gov/incident/7147/>

Smoke

Smoke accumulated in the area yesterday, degrading air quality to Unhealthy/Very Unhealthy at all sites in the forecast area, with the exception of Bishop. With similar weather and fire behavior expected again today, air quality will remain in the Unhealthy to Very Unhealthy conditions, with periods of Hazardous possible at sites nearest the fire.

Notes

Sensitive groups included children, the elderly, people with heart or lung problems, and people with respiratory illnesses.



Daily AQI Forecast* for Sep 22, 2020

Station	Yesterday hourly	Mon 9/21	Forecast* Comment for Today -- Tue, Sep 22	Tue 9/22	Wed 9/23
Bridgeport		●	Unhealthy with periods of Very Unhealthy throughout the day	●	●
Lee Vining		●	Very Unhealthy to Hazardous throughout the day	●	●
Mammoth Lakes		●	Smoke accumulating in the afternoon likely to Unhealthy/Very Unhealthy conditions	●	●
Tuolumne Meadows		●	Unhealthy with periods of Very Unhealthy throughout the day	●	●
Yosemite Village		●	Unhealthy with periods of Very Unhealthy throughout the day	●	●
El Portal		●	Unhealthy with periods of Very Unhealthy throughout the day	●	●
Wawona		●	Unhealthy with periods of Very Unhealthy throughout the day	●	●
Mariposa		●	Moderate to USG throughout the day	●	●
Ponderosa Basin		●	USG, with periods of Unhealthy late morning, possible clearing in the afternoon	●	●
Oakhurst		●	No data, similar air quality conditions as North Fork	●	●
North Fork		●	Unhealthy/Very Unhealthy, periods of Hazardous, with clearing possible late afternoon/evening	●	●
Prather		●	Very Unhealthy/Hazardous, with improvement possible in the afternoon	●	●
Millerton		●	USG, with periods of Unhealthy late morning, possible clearing in the afternoon	●	●
Bishop		●	Unhealthy throughout the day, with clearing to USG possible this afternoon	●	●

Issued 2020-09-22 08:42 PDT by Julie Hunter (jdhunter@washoecounty.us)

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/24 - 9/25
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-09-24 08:06 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

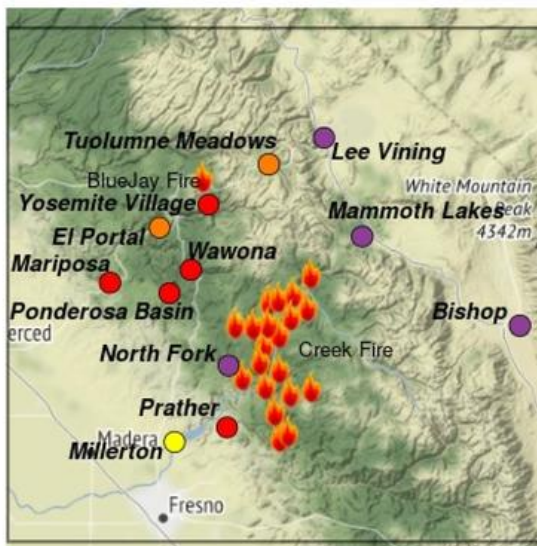
Fire behavior was moderated overnight, yet is expected to increase again this afternoon, similar to yesterday. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Heavy smoke from the Creek Fire continues to accumulate in valleys and basins, leading to significant impacts on air quality. Unhealthy to Hazardous levels are expected again today at sites nearest the fire. Similar to yesterday, afternoon westerly winds should drift smoke easterly, which will give areas on the west side of the fire some improvement in the evening hours. Communities to the east of the fire, such as Mammoth Lakes and Bishop are expected to remain in heavy smoke through the day.

Notes

Sensitive groups include children, the elderly, people with heart or lung problems, and people with respiratory illnesses.



Daily AQI Forecast* for Sep 24, 2020

Station	Yesterday hourly	Wed 9/23	Forecast* Comment for Today -- Thu, Sep 24	Thu 9/24	Fri 9/25
Lee Vining		●	Very Unhealthy throughout the day with possible slight improvement in the evening.	●	●
Mammoth Lakes		●	Very Unhealthy with periods of Hazardous throughout the day.	●	●
Tuolumne Meadows		●	Overall Unhealthy for Sensitive Groups with periods of Unhealthy midday possible.	●	●
Yosemite Village		●	Overall USG/Unhealthy conditions throughout the day.	●	●
El Portal		●	USG throughout the day, with clearing in the afternoon	●	●
Wawona		●	Unhealthy throughout the day, with slight improvement in the evening.	●	●
Mariposa		●	Unhealthy to Hazardous midday with clearing in the evening and overnight hours.	●	●
Ponderosa Basin		●	Unhealthy to Hazardous midday with clearing in the evening and overnight hours.	●	●
North Fork		●	Very Unhealthy to Hazardous through the day with clearing possible this afternoon and evening.	●	●
Millerton		●	Overall Moderate with potential for periods of Unhealthy for Sensitive Groups midday.	●	●
Prather		●	Overall Unhealthy with periods of Very Unhealthy to Hazardous midday.	●	●
Bishop		●	Generally Very Unhealthy throughout the day with possible improvement overnight.	●	●

Issued 2020-09-24 08:06 PDT by Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/26 - 9/27
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-26 07:56 PDT

Special Statement

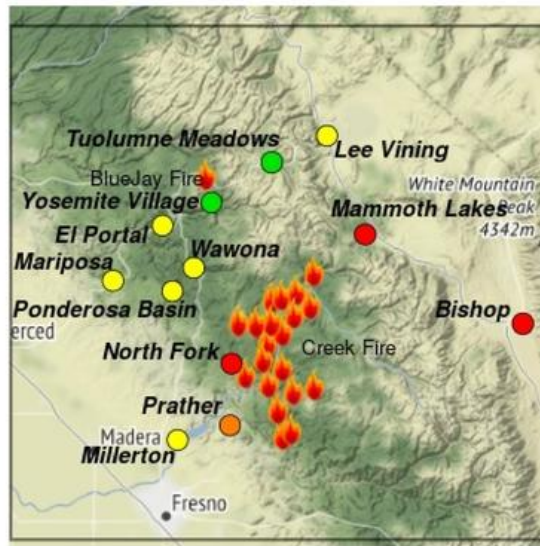
For information on local air quality advisories, see the links below.

Fire

Fire behavior is expected to be active again on the Creek Fire due to warm and dry conditions. Increased fire behavior is expected again this afternoon. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

While much of the Creek Fire smoke is drifting to the south this morning, surface smoke continues to lie in local valleys and basins on the west and east sides of the fire. This will keep those communities in the Unhealthy for Sensitive Groups to Unhealthy range. Areas to the north and northwest, such as Yosemite Park, should experience Good to Moderate conditions with high level haze. Afternoon westerly winds should again provide improvement for the west side of the fire. However, winds are expected to shift easterly tonight through tomorrow, which will drift smoke westerly, and increase smoke levels in the eastern foothill communities of the San Joaquin Valley.



Daily AQI Forecast* for Sep 26, 2020

Station	Yesterday hourly	Fri 9/25	Forecast* Comment for Today -- Sat, Sep 26	Sat 9/26	Sun 9/27
Lee Vining			Overall Moderate air quality.		
Mammoth Lakes			Unhealthy/Very Unhealthy conditions through the day with likely improvement this evening through tomorrow.		
Bishop			Unhealthy conditions through the day with likely improvement this evening through tomorrow.		
Tuolumne Meadows			Overall Good with periods of Moderate throughout the day.		
Yosemite Village			Overall Good with periods of Moderate throughout the day.		
El Portal			Overall Moderate conditions expected today with possible increasing smoke levels tomorrow.		
Wawona			Overall Moderate with slightly heavier smoke impacts midday and tomorrow.		
Mariposa			Overall Moderate today with heavier smoke impacts possible tomorrow.		
Ponderosa Basin			Overall Moderate with potential for Unhealthy conditions midday.		
North Fork			Overall Unhealthy air quality with periods of Very Unhealthy midday and into tomorrow.		
Prather			Overall Unhealthy for Sensitive Groups with periods of Unhealthy midday. Tomorrow could see worsening conditions.		
Millerton			Overall Moderate conditions with degrading air quality expected tomorrow.		

Issued 2020-09-26 07:56 PDT by Wendy Wagner (ARA) wendy_wagner@firenet.gov, Ambarish Vaidyanathan (ARAT) rishv@cdc.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/27 - 9/28
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-27 08:20 PDT

Special Statement

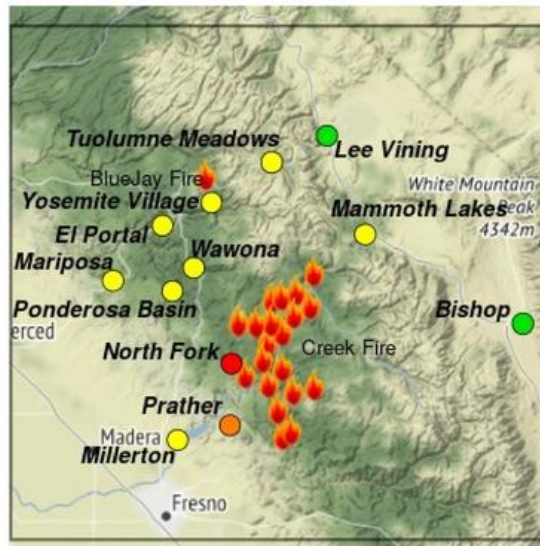
For information on local air quality advisories, see the links below.

Fire

Fire behavior is expected to be moderate to active again on the Creek Fire due to warm and dry conditions. Increased fire behavior is expected again this afternoon. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Upper level smoke from the Creek Fire is drifting to the west and northwest this morning. This is creating hazy skies aloft for the San Joaquin Valley. Surface smoke will continue to impact communities to the west of the fire, especially in the region from Oakhurst to Prather. To the north of the fire and in Yosemite Park, hazy skies and Moderate smoke levels are expected with the possibility for midday spikes into the Unhealthy for Sensitive Groups range. Communities to the east, such as Mammoth Lakes and Bishop, saw a marked improvement in air quality overnight and are expected to see light to moderate smoke impacts today into tomorrow.



Daily AQI Forecast* for Sep 27, 2020

Station	Yesterday hourly	Sat 9/26	Forecast* Comment for Today -- Sun, Sep 27	Sun Mon 9/27 9/28
Lee Vining			Overall Good air quality.	
Mammoth Lakes			Overall Moderate conditions with potential for improvement to periods of good later today and into tomorrow.	
Bishop			Overall Good air quality with potential for periods of Moderate midday.	
Tuolumne Meadows			Moderate to Good conditions expected with high level haze.	
Yosemite Village			Overall Moderate with possible periods of Unhealthy for Sensitive Groups midday.	
El Portal			Overall Moderate conditions with periods of Unhealthy for Sensitive Groups possible late in the day.	
Wawona			Overall Moderate conditions with periods of Unhealthy for Sensitive Groups possible midday.	
Mariposa			Overall Moderate today with periods of Unhealthy for Sensitive Groups midday possible.	
Ponderosa Basin			Overall Moderate today with periods of Unhealthy for Sensitive Groups midday possible.	
North Fork			Overall Unhealthy air quality with periods of Very Unhealthy midday and into tomorrow.	
Prather			Overall Unhealthy for Sensitive Groups with periods of Unhealthy.	
Millerton			Overall Moderate today with periods of Unhealthy for Sensitive Groups midday possible.	

Issued 2020-09-27 08:20 PDT by Wendy Wagner (ARA) wendy_wagner@firenet.gov, Ambarish Vaidyanathan (ARAT) rishv@cdc.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 9/30 - 10/01
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-09-30 08:03 PDT

Special Statement

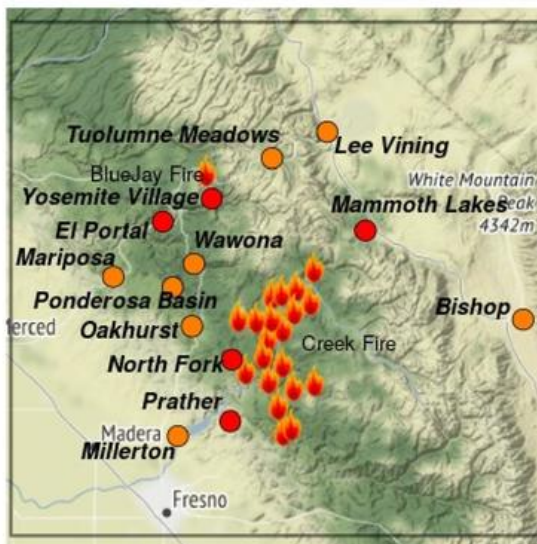
For information on local air quality advisories, see the links below.

Fire

Fire behavior is expected to be active again at the north/northeastern parts of the fire. A potential increase in fire behavior is expected this afternoon due to fire weather conditions and unburned fuels near the perimeter and within the containment lines. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Widespread smoke lies over the forecast region this morning. As a result, communities west of the fire perimeter should experience USG to Unhealthy levels. Communities to the east of the fire perimeter, such as, Lee Vining and Mammoth Lakes, should continue to experience heavier smoke impacts. Smoke from the Creek and Blue Jay fires is degrading air quality in the Yosemite Park area. In addition, smoke from fires in Northern California may impact communities in the forecast area this afternoon due to stronger northerly winds transporting smoke in our direction.



Daily AQI Forecast* for Sep 30, 2020

Station	Yesterday hourly	Tue 9/29	Forecast* Comment for Today -- Wed, Sep 30	Wed 9/30	Thu 10/01
Lee Vining			USG expected with periods of Unhealthy to Very Unhealthy.		
Mammoth Lakes			Unhealthy conditions with periods of Very Unhealthy midday.		
Bishop			USG expected with periods of Unhealthy to Very Unhealthy.		
Tuolumne Meadows			USG conditions expected for today and tomorrow.		
Yosemite Village			Unhealthy conditions expected.		
El Portal			Unhealthy conditions expected.		
Wawona			Overall USG expected with periods of Unhealthy midday.		
Mariposa			Overall USG expected with possible periods of Unhealthy midday.		
Ponderosa Basin			Overall USG expected with possible periods of Unhealthy midday.		
Oakhurst			Overall USG expected with possible periods of Unhealthy midday.		
North Fork			Unhealthy conditions expected, with improvements later today.		
Prather			Unhealthy conditions expected, with improvements later today.		
Millerton			USG with improvements later in the day.		

Issued 2020-09-30 08:03 PDT by Ambarish Vaidyanathan (ARA) rishv@cdc.gov; Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/01 - 10/02
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-01 07:58 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

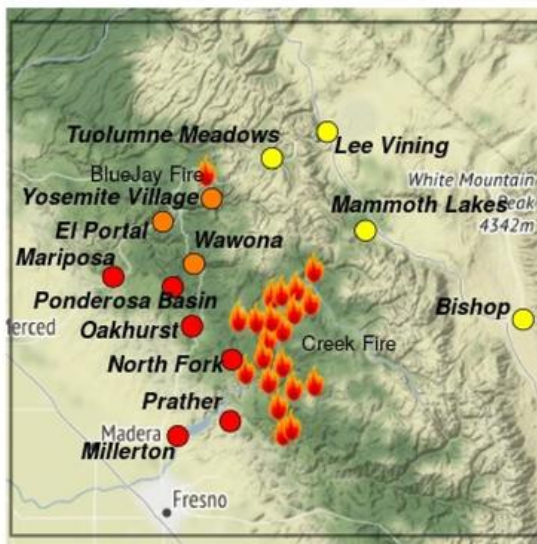
Fire behavior is expected to be moderate to active again on the Creek Fire due to warm and dry conditions. Increased fire behavior is expected again this afternoon. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Heavy smoke persists in the San Joaquin Valley due to the Creek fire as well as several other fires burning in California. As a result, foothill communities located west of the fire perimeter will continue to experience unhealthy levels of air quality. Easterly ridge winds over the Sierra crest are drifting smoke westerly, resulting in moderate to good smoke impacts in communities east of the fire, such as Lee Vining and Mammoth Lakes.

Special Notes

For more information on wildfire smoke and health, please visit: cdc.gov/air/wildfire-smoke/default



Daily AQI Forecast* for Oct 01, 2020

Station	Yesterday	Wed	Forecast*	Thu	Fri
	hourly	9/30		10/01	10/02
	6a noon 6p		Comment for Today -- Thu, Oct 01		
Lee Vining			Overall moderate conditions with USG tomorrow.		
Mammoth Lakes			Overall moderate conditions with USG tomorrow.		
Bishop			Overall moderate conditions with periods of USG midday.		
Tuolumne Meadows	No hourly data		Overall moderate conditions.		
Yosemite Village			Overall USG expected.		
El Portal			Overall USG expected with periods of Unhealthy midday.		
Wawona			Overall USG expected with periods of Unhealthy midday.		
Mariposa			Overall Unhealthy conditions expected.		
Ponderosa Basin			Overall Unhealthy conditions expected.		
Oakhurst			Unhealthy conditions with Very Unhealthy levels midday.		
North Fork			Unhealthy conditions with Very Unhealthy levels midday.		
Prather			Unhealthy conditions with Very Unhealthy levels midday.		
Millerton			Overall Unhealthy conditions expected.		

Issued 2020-10-01 07:58 PDT by Ambarish Vaidyanathan (ARA) rishv@cdc.gov; Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

***Disclaimer:** This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/02 - 10/03
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-02 07:55 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

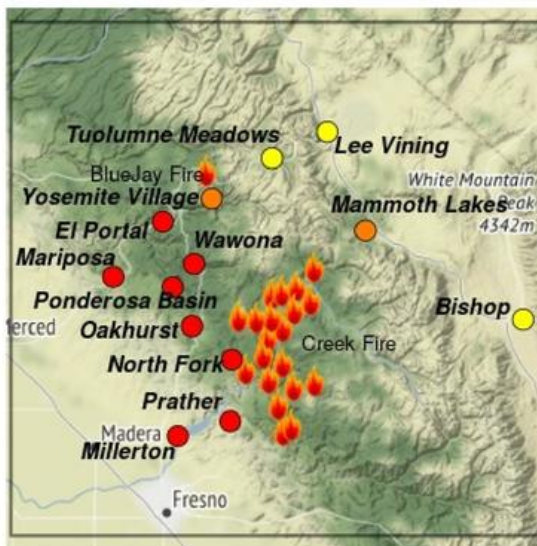
Fire behavior is expected to be moderate to active again on the Creek Fire due to warm and dry conditions. Increased fire behavior is expected again this afternoon. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Minimal clearing is expected as smoke levels remain significantly high in the San Joaquin Valley foothills, particularly impacting communities located in our forecast area. Sustained smoke impacts are highly likely in communities north/west of the fire perimeter for today and tomorrow. In the Yosemite Park area, with the exception of Tuolumne Meadows, Unhealthy to USG conditions are expected. Later in the day, smoke is forecast to drift over the Sierra Crest, affecting communities such as Mammoth Lakes.

Special Notes

For more information on wildfire smoke and health, please visit: cdc.gov/air/wildfire-smoke/default



Daily AQI Forecast* for Oct 02, 2020

Station	Yesterday hourly	Thu 10/01	Forecast* Comment for Today -- Fri, Oct 02	Fri 10/02	Sat 10/03
Lee Vining			Overall moderate with higher impacts expected tomorrow.		
Mammoth Lakes			Overall USG conditions with periods of unhealthy later today.		
Bishop			Overall moderate with higher impacts expected starting tonight.		
Tuolumne Meadows	No hourly data		Overall moderate conditions.		
Yosemite Village			Overall USG expected with periods of Unhealthy.		
El Portal			Overall Unhealthy conditions expected.		
Wawona			Overall Unhealthy conditions expected.		
Mariposa			Overall Unhealthy conditions expected.		
Ponderosa Basin			Overall Unhealthy conditions expected.		
Oakhurst			Overall Unhealthy conditions expected.		
North Fork			Unhealthy conditions with Very Unhealthy levels midday.		
Prather			Unhealthy conditions with Very Unhealthy levels midday.		
Millerton	No hourly data		Overall Unhealthy conditions expected.		

Issued 2020-10-02 07:55 PDT by Ambarish Vaidyanathan (ARA) rishv@cdc.gov; Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/03 - 10/04
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-03 08:01 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

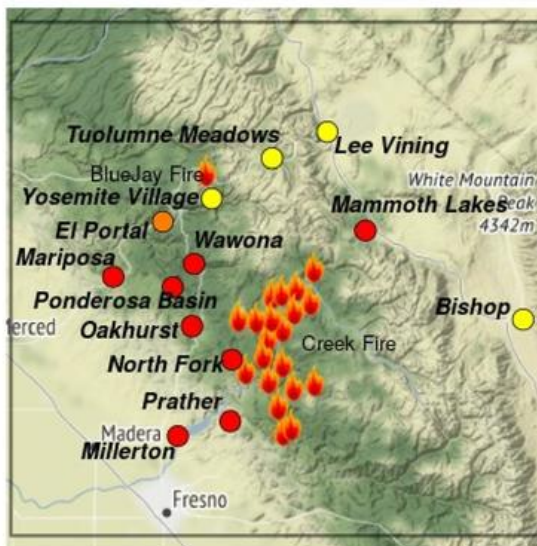
Yesterday, fire activity increased in the afternoon hours and a similar pattern is expected today due to the unseasonably warm and dry weather conditions. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Smoke emissions from the Creek Fire, along with other fires in the region, are creating unhealthy air quality conditions in the San Joaquin Valley and the foothill communities of our forecast zone. These heavy smoke levels are expected to persist due to the high pressure ridge over the region, which is limiting smoke dispersion. Today, southwesterly winds are expected to transport smoke over the Yosemite Park area and the Sierra Crest, affecting communities located in the north and east of the fire perimeter.

Special Notes

For more information on wildfire smoke and health, please visit: cdc.gov/air/wildfire-smoke/default



Daily AQI Forecast* for Oct 03, 2020

Station	Yesterday hourly	Fri 10/02	Forecast* Comment for Today -- Sat, Oct 03	Sat 10/03	Sun 10/04
Lee Vining			Overall Moderate with higher impacts expected starting tonight.		
Mammoth Lakes			Overall Unhealthy conditions late in the day.		
Bishop			Overall Moderate with higher impacts expected starting tonight.		
Tuolumne Meadows	No hourly data		Overall Moderate conditions with higher impacts expected tomorrow.		
Yosemite Village			Overall Moderate conditions with periods of USG midday.		
El Portal			Overall USG expected with periods of Unhealthy.		
Wawona			Overall Unhealthy conditions expected.		
Mariposa			Overall Unhealthy conditions expected.		
Ponderosa Basin			Overall Unhealthy conditions expected.		
Oakhurst			Overall Unhealthy conditions expected.		
North Fork			Unhealthy conditions with Very Unhealthy levels midday.		
Prather			Unhealthy conditions with Very Unhealthy levels midday.		
Millerton	No hourly data		Overall Unhealthy conditions expected.		

Issued 2020-10-03 08:01 PDT by Ambarish Vaidyanathan (ARA) rishv@cdc.gov; Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/04 - 10/05
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-04 07:52 PDT

Special Statement

For information on local air quality advisories, see the links below.

Fire

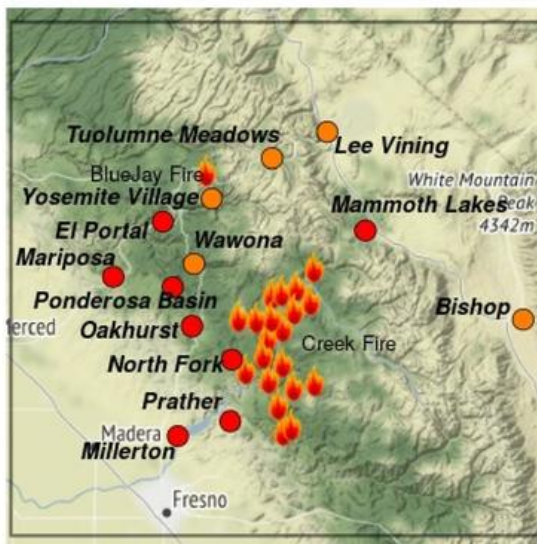
Active fire behavior continues on the Creek Fire due to hot and dry weather. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Widespread heavy smoke impacts continue to affect the foothills of the San Joaquin Valley with several locations in our forecast zone experiencing generally Unhealthy air quality conditions. Smoke levels in Yosemite Park increased into the Unhealthy range yesterday and such conditions should persist for today and tomorrow. Southwesterly winds forecast for today should drift smoke into areas such as Lee Vining and Mammoth Lakes today, leading to USG or Unhealthy air quality conditions.

Special Notes

For more information on wildfire smoke and health, please visit: cdc.gov/air/wildfire-smoke/default



Daily AQI Forecast* for Oct 04, 2020

Station	Yesterday hourly	Sat 10/03	Forecast* Comment for Today -- Sun, Oct 04	Sun 10/04	Mon 10/05
Lee Vining			Overall USG expected with periods of Unhealthy.		
Mammoth Lakes			Overall Unhealthy conditions late in the day.		
Bishop			Overall USG expected with periods of Unhealthy.		
Tuolumne Meadows	No hourly data		Overall USG expected with periods of Unhealthy.		
Yosemite Village			Overall USG expected with periods of Unhealthy.		
El Portal			Overall Unhealthy conditions expected.		
Wawona			Overall USG expected with periods of Unhealthy.		
Mariposa			Overall Unhealthy conditions expected.		
Ponderosa Basin			Overall Unhealthy conditions expected.		
Oakhurst			Unhealthy conditions with Very Unhealthy levels midday.		
North Fork			Unhealthy conditions with Very Unhealthy levels midday.		
Prather			Unhealthy conditions with Very Unhealthy levels midday.		
Millerton	No hourly data		Overall Unhealthy conditions expected.		

Issued 2020-10-04 07:52 PDT by Ambarish Vaidyanathan (ARA) rishv@cdc.gov; Wendy Wagner (ARA) wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/05 - 10/06
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-05 07:57 PDT

Special Statement

For information on local air quality, see the links below.

Fire

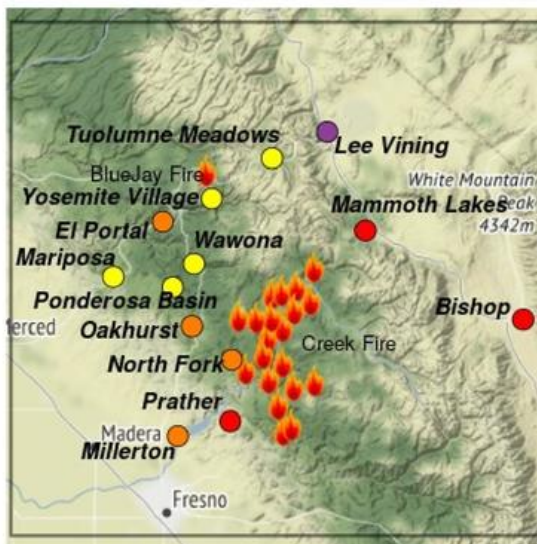
Fire activity increased yesterday afternoon on the north and east perimeter. Similar activity is expected again today. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Moderate to heavy smoke continues to impact the San Joaquin foothill communities and the majority of the forecast zone. However, clearer air pushed into the Central Valley from the coast overnight improving air quality this morning in areas along the foothills and in Yosemite Park. The exception will be east of the fire, where heavy smoke impacts currently exist and afternoon westerly winds will again drift smoke easterly over the Sierra Crest; impacting Lee Vining, Mammoth Lakes and Bishop.

Special Notes

For more information on wildfire smoke and health, please visit: cdc.gov/air/wildfire-smoke/default



Daily AQI Forecast* for Oct 05, 2020

Station	Yesterday hourly	Sun 10/04	Forecast* Comment for Today -- Mon, Oct 05	Mon 10/05	Tue 10/06
Lee Vining		●	Very Unhealthy air quality with some improvement in evening.	●	●
Mammoth Lakes		●	Overall Unhealthy air quality expected.	●	●
Bishop		●	Overall Unhealthy air quality expected.	●	●
Tuolumne Meadows	No hourly data	●	Generally Moderate conditions, possible USG latter in the day.	●	●
Yosemite Village		●	Overall Moderate with potential for periods of USG midday.	●	●
El Portal		●	USG expected with improvement to Moderate in the evening.	●	●
Wawona		●	Overall Moderate with potential for periods of USG midday.	●	●
Mariposa		●	Overall Moderate with potential for periods of USG midday.	●	●
Ponderosa Basin		●	Overall Moderate with potential for periods of USG midday.	●	●
Oakhurst		●	Overall USG conditions with Unhealthy levels midday.	●	●
North Fork		●	Generally USG conditions with Unhealthy levels midday.	●	●
Prather	No hourly data	●	Unhealthy conditions with improvement in the late afternoon.	●	●
Millerton	No hourly data	●	Overall USG conditions expected with improvement in evening.	●	●

Issued 2020-10-05 07:57 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapccd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/07 - 10/08
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-07 08:07 PDT

Special Statement

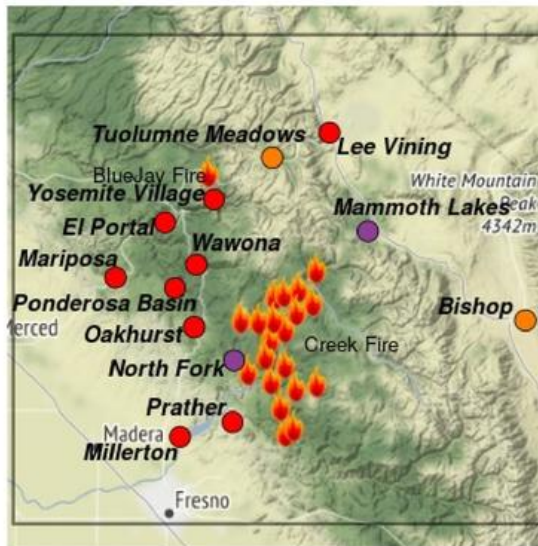
For information on local air quality, see the links below.

Fire

The Creek fire continues to be most active on the eastern and northern perimeters. An afternoon increase in fire behavior is again expected today. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Widespread heavy smoke continues to impact communities surrounding the fire. Those directly down drainage, i.e. North Fork, Prather and Mammoth Lakes, can expect periods of Very Unhealthy air quality through the day. For those areas along the San Joaquin foothills and in Yosemite Park, generally Unhealthy conditions are forecast for the first part of the day. Once again, afternoon westerly upslope winds along the foothills should help to improve air quality for the late afternoon and evening hours. This should bring those foothill communities into the Unhealthy for Sensitive Groups (USG) range and possibly to Moderate by sunset. Communities east of the Sierra Crest are forecast to remain in heavy smoke as the ridgetop winds continue to drift smoke to the east.



Daily AQI Forecast* for Oct 07, 2020

Station	Yesterday hourly	Tue 10/06	Forecast* Comment for Today -- Wed, Oct 07	Wed 10/07	Thu 10/08
Lee Vining		●	Unhealthy conditions expected through today and tomorrow.	●	●
Mammoth Lakes		●	Very Unhealthy conditions expected today and tomorrow.	●	●
Bishop		●	USG conditions expected today with Unhealthy tomorrow.	●	●
Tuolumne Meadows	No hourly data	●	USG conditions during the day with improvement overnight.	●	●
Yosemite Village		●	Unhealthy conditions midday with improvement late in the day.	●	●
El Portal		●	Unhealthy conditions midday with afternoon improvement.	●	●
Wawona		●	Generally Unhealthy conditions through the day.	●	●
Mariposa		●	Unhealthy air quality midday with afternoon improvement.	●	●
Ponderosa Basin		●	Very Unhealthy midday with some improvement in the evening.	●	●
Oakhurst		●	Very Unhealthy midday with some improvement in the evening.	●	●
North Fork		●	Overall Very Unhealthy conditions, some evening improvement.	●	●
Prather	No hourly data	●	Unhealthy air quality with periods of Very Unhealthy midday.	●	●
Millerton	No hourly data	●	Unhealthy air quality with improvement expected this evening.	●	●

Issued 2020-10-07 08:07 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/08 - 10/09
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-08 07:53 PDT

Special Statement

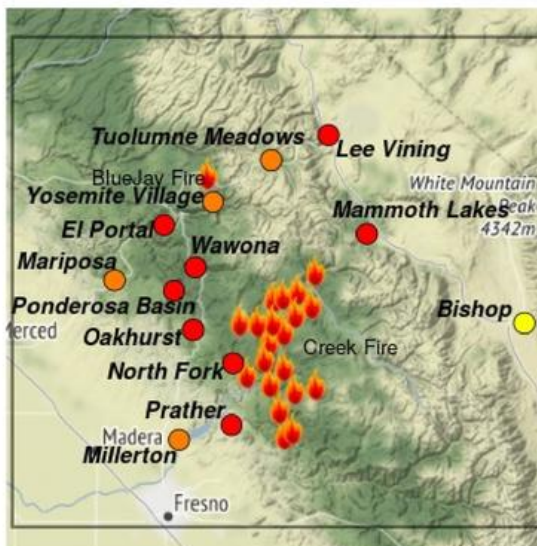
For information on local air quality, see the links below.

Fire

The Creek fire continues to be most active on the eastern and northern perimeters in the afternoon hours. Similar fire behavior is expected today. Detailed fire information can be found at: inciweb.nwccg.gov/incident/7147/

Smoke

Widespread smoke continues to lie over the foothills, Yosemite Park and the majority of the forecast zone this morning. Similar to yesterday, daytime warming and some down-slope winds will mix heavy smoke to the surface, which will degrade air quality during the late morning hours to the Unhealthy and possibly Very Unhealthy range. Afternoon up-slope winds along the foothills are expected to again bring in some cleaner air for the evening hours. This should improve conditions to Unhealthy for Sensitive Groups (USG) and even Moderate in the late evening hours for those in the lower foothills and Yosemite Park. To the east, over the Sierra Crest, Mammoth Lakes and Lee Vining are forecast to remain Unhealthy. The good news is, a trough is moving through for the weekend, which should greatly improve air quality.



Daily AQI Forecast* for Oct 08, 2020

Station	Yesterday hourly	Wed 10/07	Forecast* Comment for Today -- Thu, Oct 08	Thu 10/08	Fri 10/09
Lee Vining			Unhealthy conditions expected through today and tomorrow.		
Mammoth Lakes			Unhealthy conditions expected today and tomorrow.		
Bishop			Moderate conditions expected today with USG tomorrow.		
Tuolumne Meadows	No hourly data		USG conditions during the day with improvement overnight.		
Yosemite Village			Overall USG with an expected spike to Unhealthy midday.		
El Portal			Unhealthy conditions midday with late afternoon improvement.		
Wawona			Unhealthy conditions midday with late afternoon improvement.		
Mariposa			Overall USG with an expected spike to Unhealthy midday.		
Ponderosa Basin			Overall Unhealthy with late afternoon/evening improvement.		
Oakhurst			Overall Unhealthy with late afternoon/evening improvement.		
North Fork			Overall Unhealthy conditions with some evening improvement.		
Prather	No hourly data		Overall Unhealthy conditions with some evening improvement.		
Millerton	No hourly data		Overall USG with an expected spike to Unhealthy midday.		

Issued 2020-10-08 07:53 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

***Disclaimer:** This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/09 - 10/10
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-09 07:58 PDT

Special Statement

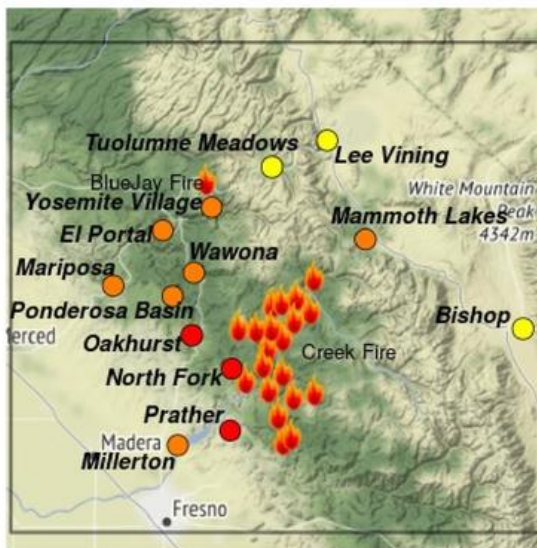
For information on local air quality, see the links below.

Fire

The Creek fire continues to be most active on the eastern perimeter in the afternoon hours. Moderated fire behavior is expected today due to increased humidity and shading by smoke and high clouds. Detailed fire information can be found at: inclweb.nwcg.gov/incident/7147/

Smoke

Widespread smoke impacts continue to affect the San Joaquin foothills, Yosemite Park and the majority of the forecast zone again this morning. In general, air quality should remain in the Unhealthy for Sensitive Groups (USG) to Unhealthy levels in most areas until this afternoon. Afternoon up-slope winds should again bring in some cleaner air, which is expected to improve conditions in the late afternoon/evening for foothill communities (i.e., Millerton to Mariposa) and Yosemite Park. To the east, Mammoth Lakes and Lee Vining are forecast to remain in moderate smoke. Mammoth Lakes may again see a spike to Very Unhealthy in the evening. Stronger southwest winds tomorrow, ahead of a trough moving in, should help improve air quality for the weekend.



Daily AQI Forecast* for Oct 09, 2020

Station	Yesterday hourly	Thu 10/08	Forecast* Comment for Today -- Fri, Oct 09	Fri 10/09	Sat 10/10
Lee Vining			Overall Moderate conditions with periods of USG midday.		
Mammoth Lakes			USG conditions expected, spiking to Unhealthy in the evening.		
Bishop			Moderate conditions expected today with USG tomorrow.		
Tuolumne Meadows	No hourly data		Moderate conditions with a chance for USG midday.		
Yosemite Village			Overall USG with an expected spike to Unhealthy midday.		
El Portal			Overall USG with an expected spike to Unhealthy midday.		
Wawona			Overall USG with an expected spike to Unhealthy midday.		
Mariposa			Overall USG with an expected spike to Unhealthy midday.		
Ponderosa Basin			Overall USG with midday spike to Unhealthy conditions.		
Oakhurst			Overall Unhealthy with late afternoon/evening improvement.		
North Fork			Overall Unhealthy conditions with some evening improvement.		
Prather			Overall Unhealthy conditions with some evening improvement.		
Millerton			Overall USG with an expected spike to Unhealthy midday.		

Issued 2020-10-09 07:58 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/10 - 10/11
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-10 07:59 PDT

Special Statement

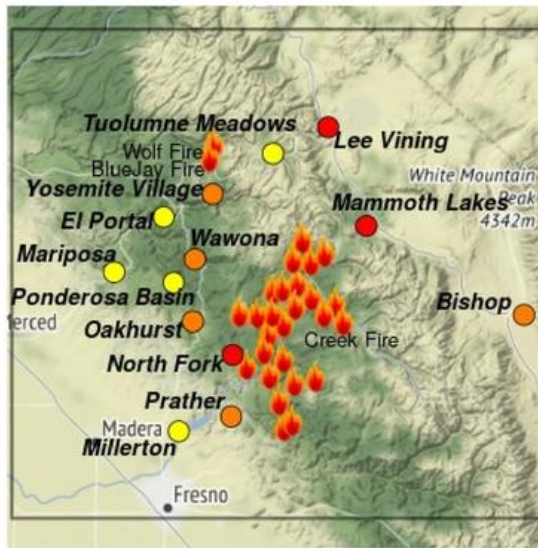
For information on local air quality, see the links below.

Fire

The Creek fire continues to be most active on the northeastern perimeter in the afternoon hours. Moderated fire behavior is expected today due to increased humidity and cooler temperatures. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Lingering moderate to heavy smoke from overnight sits in valleys and basins this morning surrounding the Creek fire. Through the day, southwesterly winds are expected to drift smoke easterly and over the Sierra Crest. This should provide some much anticipated improvement in air quality in the San Joaquin foothills, Yosemite Park and the majority of the forecast zone west of the Sierra Crest. For those to the east in Mammoth Lakes and Lee Vining, smoke is expected to remain heavy, in the Unhealthy range today. Tonight into Sunday, a trough moving through with associated northwesterly winds, will transport remaining smoke southeasterly and continued improvement in air quality should be seen.



Daily AQI Forecast* for Oct 10, 2020

Station	Yesterday	Fri 10/09	Forecast*	Sat 10/10	Sun 10/11
	hourly				
Lee Vining			Unhealthy conditions today with improvement tomorrow.		
Mammoth Lakes			Unhealthy conditions expected today, improvement tomorrow.		
Bishop			USG conditions expected today with improvement tomorrow.		
Tuolumne Meadows			USG/Moderate conditions today, Moderate/Good tomorrow.		
Yosemite Village			Overall USG with improving air quality this evening/tomorrow.		
El Portal			Overall Moderate conditions with periods of USG midday.		
Wawona			USG conditions today, improvement this evening/tomorrow.		
Mariposa			Moderate conditions, periods of Good this evening/tomorrow.		
Ponderosa Basin			Overall Moderate conditions with periods of USG midday.		
Oakhurst			Overall USG conditions today with periods of Unhealthy midday.		
North Fork			Overall Unhealthy conditions today with evening improvement.		
Prather			Overall USG conditions today with spikes to Unhealthy midday.		
Millerton			Moderate conditions, periods of Good this evening/tomorrow.		

Issued 2020-10-10 07:59 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/11 - 10/12
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-11 08:01 PDT

Special Statement

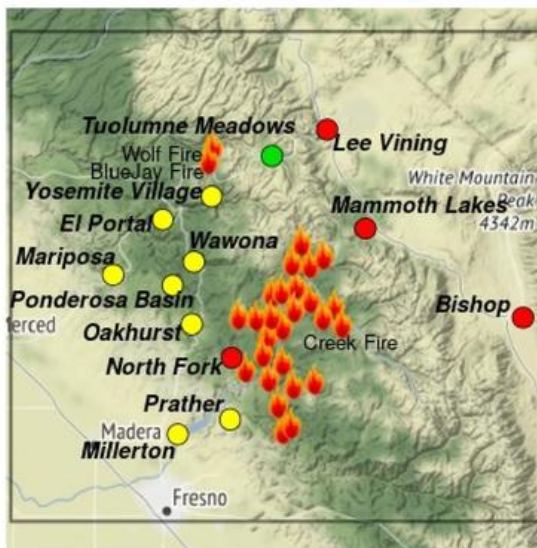
For information on local air quality, see the links below.

Fire

Moderate fire active was seen yesterday with the most active are on the northeastern perimeter. Fire activity could become active in the higher elevation terrain today due to clearer skies and breezy northwest winds. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Improved air quality is being seen this morning in the San Joaquin foothill areas and Yosemite National Park. Westerly winds have pushed lingering smoke, that has been lying in the region, off to the east and allowed for clearer air to move in. These areas should continue to experience Moderate to Good conditions today through Monday. The exception is North Fork and communities nearest the fire where heavier smoke remains in valleys and Unhealthy air quality is forecast today before improving this evening and tomorrow. To the east of the fire and over the Sierra Crest, in Mammoth Lakes and Lee Vining, smoky conditions should persist and Unhealthy conditions are expected to continue through the weekend.



Daily AQI Forecast* for Oct 11, 2020

Station	Yesterday hourly	Sat 10/10	Forecast* Comment for Today -- Sun, Oct 11	Sun 10/11	Mon 10/12
Lee Vining			Unhealthy conditions with improvement this evening/tomorrow.		
Mammoth Lakes			Unhealthy conditions expected today, improvement tomorrow.		
Bishop			Unhealthy conditions expected today and tomorrow.		
Tuolumne Meadows			Good conditions, could see some smoke from the Blue Jay fire.		
Yosemite Village			Moderate today, Good conditions this evening and tomorrow.		
El Portal			Overall Moderate conditions with improvement this evening.		
Wawona			Overall Moderate conditions with improvement this evening.		
Mariposa			Moderate conditions, periods of Good this evening/tomorrow.		
Ponderosa Basin			Overall Moderate conditions with improvement this evening.		
Oakhurst			Overall Moderate conditions with periods of USG midday.		
North Fork			Overall Unhealthy conditions today with evening improvement.		
Prather			Overall Moderate conditions with periods of USG midday.		
Millerton			Moderate conditions, periods of Good this evening/tomorrow.		

Issued 2020-10-11 08:01 PDT by Wendy Wagner (ARA), wendy_wagner@firenet.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/12 - 10/13
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-12 08:29 PDT

Special Statement

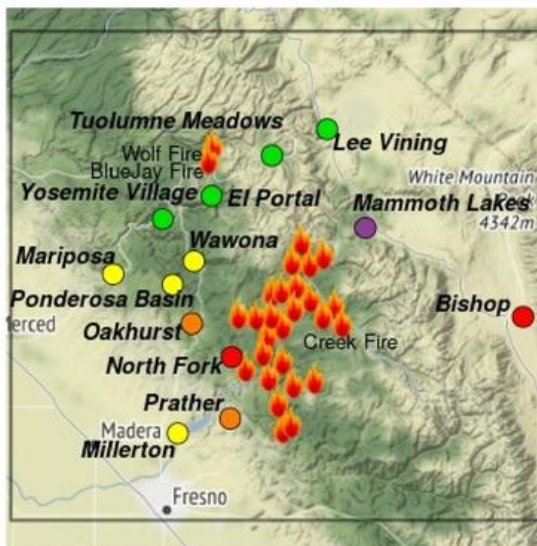
For information on local air quality, see the links below.

Fire

Active fire was seen yesterday near Cassidy Meadows and Rattlesnake Lake, mostly confined to the northeastern fire perimeter. Fire activity may increase today due to warmer temperatures and lower RHs. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Overall improved air quality continues for the Yosemite Valley, El Portal, Tuolumne Meadows, and Lee Vining with Good conditions as northwesterly winds bring in clean air. Heaviest smoke impacts today will be seen in Mammoth Lakes and Bishop in the eastern valleys, as well as North Fork and communities nearest the fire. Foothills areas, such as Oakhurst, Ponderosa Basin, Mariposa, Prather, and Wawona will see Moderate conditions overall with periods of USG as upslope flow brings in lingering smoke. As high pressure settles in over the area, this pattern will continue with smoke concentrations slowing building over the week as fire activity may increase due to warmer and dryer conditions developing.



Daily AQI Forecast* for Oct 12, 2020

Station	Yesterday hourly	Sun 10/11	Forecast* Comment for Today -- Mon, Oct 12	Mon 10/12	Tue 10/13
Lee Vining			Good conditions with periods of Moderate midday.		
Mammoth Lakes			Very Unhealthy conditions expected today & tomorrow.		
Bishop			Unhealthy conditions expected today & tomorrow.		
Tuolumne Meadows			Good conditions, could see some smoke from the Blue Jay fire.		
Yosemite Village			Good conditions throughout today & increasing tomorrow.		
El Portal			Good conditions throughout today & increasing tomorrow.		
Wawona			Overall Moderate conditions today & tomorrow.		
Mariposa			Overall Moderate conditions today & tomorrow.		
Ponderosa Basin			Overall Moderate conditions today & tomorrow.		
Oakhurst			Moderate conditions in AM with periods of USG midday.		
North Fork			Unhealthy conditions expected today & tomorrow.		
Prather			Overall USG conditions with intermittent Moderate periods.		
Millerton			Overall Moderate conditions today & tomorrow.		

Issued 2020-10-12 08:29 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/13 - 10/14
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-13 08:35 PDT

Special Statement

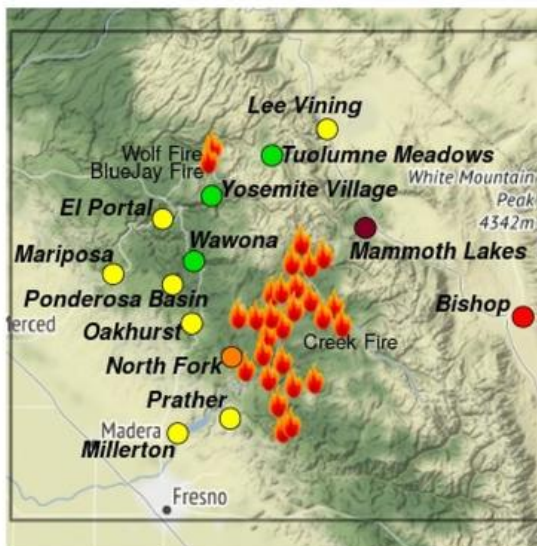
For information on local air quality, see the links below.

Fire

The fire was active yesterday near Rattlesnake Lake and along the northeastern fire perimeter. Internal hotspots continue to produce heat and smoke. Fire activity will increase today and throughout the week due to warmer temperatures and lower RHs. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Cleanest air will be within the Yosemite Valley and high elevation locations north of the fire. Expect heaviest smoke impacts in Mammoth Lakes down to Bishop and locations near the fire perimeter, such as North Fork. Light smoke settled overnight in foothills areas, including El Portal, Mariposa, Ponderosa Basin, Oakhurst, Prather, and Millerton. Expect smoke lifting by mid-afternoon, returning overnight with drainage winds. Today will be the last overall clean day in the region as smoke concentrations increase throughout the rest of the week due to high pressure building in, limiting atmospheric mixing and increasing fire activity.



Daily AQI Forecast* for Oct 13, 2020

Station	Yesterday hourly	Mon 10/12	Forecast* Comment for Today -- Tue, Oct 13	Tue 10/13	Wed 10/14
Lee Vining			Good conditions in AM increasing to Moderate by midday.		
Mammoth Lakes			Hazardous conditions expected today & tomorrow.		
Bishop	No hourly data		Unhealthy conditions building to Very Unhealthy by evening.		
Tuolumne Meadows			Good conditions with periods of Moderate in the afternoon.		
Yosemite Village			Good conditions throughout today & increasing tomorrow.		
El Portal			Moderate conditions in AM, improving throughout the day.		
Wawona			Good conditions with periods of Moderate in the afternoon.		
Mariposa			Moderate conditions in AM, improving throughout the day.		
Ponderosa Basin			Overall Moderate conditions today, periods of Good in the PM.		
Oakhurst			Moderate conditions in AM with periods of USG midday.		
North Fork			Moderate in AM, USG conditions expected by evening.		
Prather			Overall Moderate conditions with intermittent USG periods.		
Millerton			Overall Moderate conditions today & increasing tomorrow.		

Issued 2020-10-13 08:35 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>
Great Basin Unified APCD -- <https://www.gbuapcd.org/>
Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/14 - 10/15
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-14 08:32 PDT

Special Statement

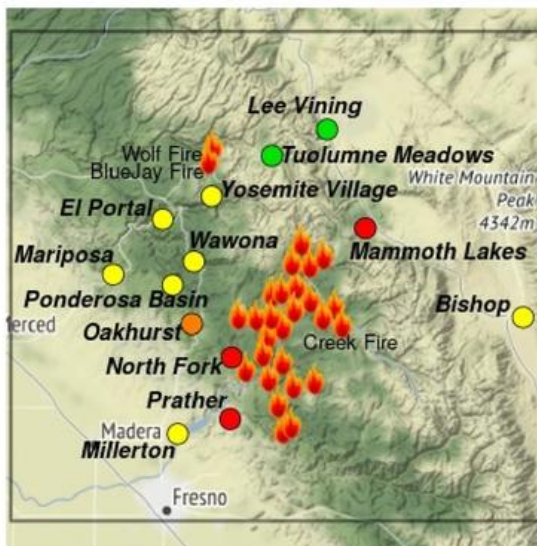
For information on local air quality, see the links below.

Fire

Active fire continued near Rattlesnake Lake and within the fire perimeter. A warming trend with temperatures and lower RHs will increase activity and smoke production today through Friday. Detailed fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

This afternoon, high pressure settling in over the Great Basin will bring shifting winds, providing much needed relief to the east side of the Sierra Crest, including Lee Vining, Mammoth Lakes, and Bishop by this afternoon. However, this will limit smoke ventilation and increase concentrations to the west of the fire. Areas immediately west and south of the fire will see heaviest impacts, such as North Fork, Prather, and building into Oakhurst by afternoon. Smoke will increase during the evening and overnight hours in foothills locations starting from south to north, with heavy impacts to Ponderosa Basin, Mariposa, Wawona, and El Portal by tomorrow morning. Overall, concentrations west and south of the fire will build over the next 24-48 hours until the weather pattern shifts.



Daily AQI Forecast* for Oct 14, 2020

Station	Yesterday hourly			Tue 10/13	Forecast* Comment for Today -- Wed, Oct 14	Wed 10/14	Thu 10/15
	6a	noon	6p				
Lee Vining					Period of Moderate in AM improving to Good by midday.		
Mammoth Lakes					Very Unhealthy conditions in AM, improving throughout the day.		
Bishop					Starting USG in the AM and cleaning to Moderate by evening.		
Tuolumne Meadows					Good conditions with periods of Moderate in the afternoon.		
Yosemite Village					Moderate conditions with USG possible during midday hours.		
El Portal					Moderate conditions in AM, worsening evening into overnight.		
Wawona					Good conditions in AM, worsening evening into overnight.		
Mariposa					Moderate conditions in AM, worsening evening into overnight.		
Ponderosa Basin					Moderate conditions in AM, worsening evening into overnight.		
Oakhurst					Moderate conditions in AM, worsening evening into overnight.		
North Fork					USG in AM, Unhealthy conditions expected by evening.		
Prather					USG in AM, Unhealthy conditions expected by evening.		
Millerton					Overall Moderate conditions today & increasing tomorrow.		

Issued 2020-10-14 08:32 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

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Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>

Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/15 - 10/16
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-15 12:36 PDT

Special Statement

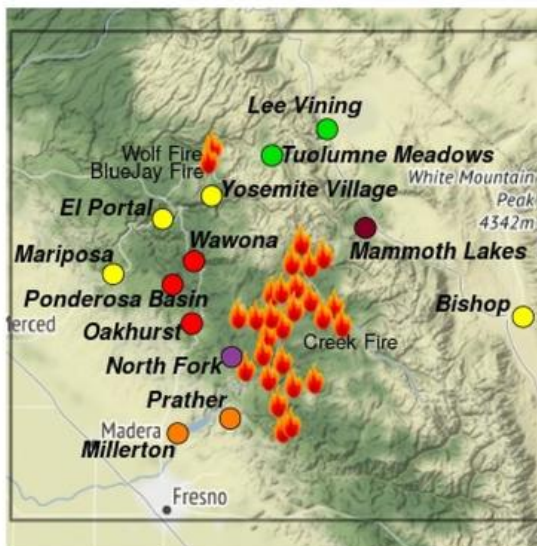
UPDATED: Forecast updated at 1230 PDT. For information on local air quality, see the links below.

Fire

Yesterday, tactical firing operations were initiated to maintain containment ahead of the fire's natural progression between Rattlesnake Lake and Pincushion Peak. While overall acres hasn't significantly increased, heavy fuels in the area contributed to intense smoke production. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Today, heaviest smoke impacts are expected in Mammoth Lakes as smoke spills over the Sierra Crest. Areas directly west of the fire will see heavy smoke impacts today, including Oakhurst and Ponderosa Basin. North of the fire and high elevation locations, such as Tuolumne Meadows and Lee Vining, will see the cleanest air today. The smoke column will be visible both in the broader San Joaquin Valley and in the Great Basin. Overall, expect smoke to increase across the region as weather conditions will allow increased fire activity and smoke production.



Daily AQI Forecast* for Oct 15, 2020

Station	Yesterday	Wed	Forecast*	Thu	Fri
	hourly	10/14		10/15	10/16
	6a noon 6p		Comment for Today -- Thu, Oct 15		
Lee Vining			Good conditions, tomorrow increasing to Moderate.		
Mammoth Lakes			Hazardous today, intermittent Very Unhealthy		
Bishop			Moderate overall, increasing to USG throughout the day.		
Tuolumne Meadows			Good conditions today, increasing tomorrow.		
Yosemite Village			Moderate conditions today, increasing tomorrow.		
El Portal			Moderate conditions in AM, increasing during the afternoon.		
Wawona			Unhealthy conditions today & tomorrow.		
Mariposa			Moderate conditions in AM, worsening evening into overnight.		
Ponderosa Basin			Unhealthy conditions throughout today & tomorrow.		
Oakhurst			Unhealthy with periods of USG.		
North Fork			Very Unhealthy throughout the day & tomorrow.		
Prather			USG throughout the day, increasing tomorrow.		
Millerton			Overall USG conditions today & tomorrow.		

Issued 2020-10-15 12:36 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapccd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/16 - 10/17
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-16 09:27 PDT

Special Statement

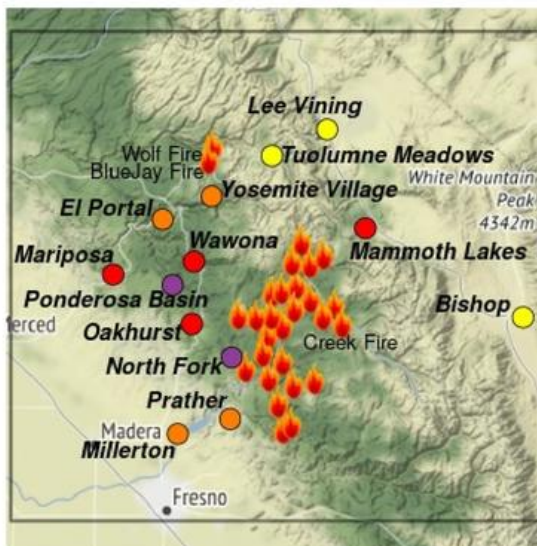
For information on local air quality, see the links below.

Fire

The fire continues to remain active along the northeastern perimeter. Heavy fuels in the area combined with unseasonably high temperatures will result in intense smoke production throughout the day. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Overall smoke concentrations will build today as hot and dry conditions allow fire activity and smoke production to continue. Mammoth Lakes will see clean air in the morning, heavier smoke impacts building throughout the day. Heaviest smoke impacts are expected in foothills locations and areas west of the fire, including North Fork, Ponderosa Basin, Oakhurst, Wawona, and Mariposa. The Yosemite Valley will see smoke impacts increasing throughout the day from El Portal to Yosemite Village. North of the fire and high elevation locations, such as Tuolumne Meadows and Lee Vining, will see the cleanest air today. The smoke column will be visible both in the broader San Joaquin Valley and in the Great Basin. This pattern persists through tomorrow until more seasonable weather arrives.



Daily AQI Forecast* for Oct 16, 2020

Station	Yesterday hourly	Thu 10/15	Forecast* Comment for Today -- Fri, Oct 16	Fri 10/16	Sat 10/17
Lee Vining	6a noon 6p	●	Moderate conditions today and tomorrow	●	●
Mammoth Lakes		●	Clean in the morning, periods of Hazardous this afternoon.	●	●
Bishop		●	Starting off Good, periods of Moderate throughout the day	●	●
Tuolumne Meadows		●	Moderate today and tomorrow, late afternoon clearing.	●	●
Yosemite Village		●	USG conditions today, intermittent Unhealthy periods.	●	●
El Portal		●	Moderate conditions in AM, increasing during the afternoon.	●	●
Wawona		●	Unhealthy conditions today & tomorrow.	●	●
Mariposa		●	USG conditions in AM, worsening evening into overnight.	●	●
Ponderosa Basin		●	Very Unhealthy in the AM, periods of Unhealthy in afternoon	●	●
Oakhurst		●	Unhealthy with periods of Very Unhealthy	●	●
North Fork		●	Very Unhealthy throughout the day & tomorrow.	●	●
Prather		●	USG throughout today & tomorrow.	●	●
Millerton		●	Overall USG conditions today & tomorrow.	●	●

Issued 2020-10-16 09:27 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>

Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/17 - 10/18
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-17 08:29 PDT

Special Statement

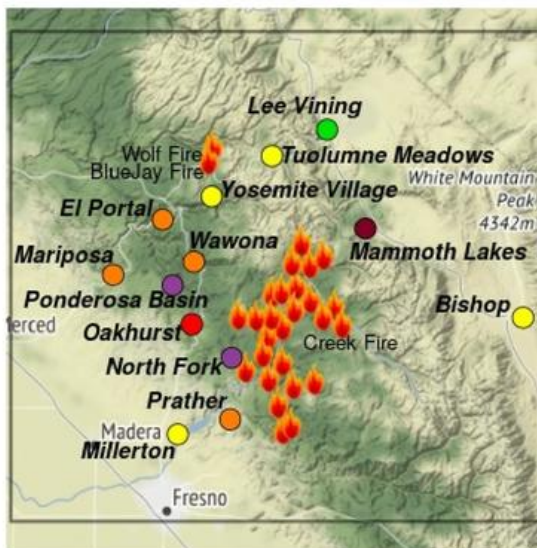
For information on local air quality, see the links below.

Fire

Northeastern and eastern portions of the fire are active, along with hot spots within the interior of the fire perimeter. Unseasonably high temperatures peak today. As the fire continues working through heavy fuels, intense smoke production is expected. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Smoke will continue to move up and down terrain with the upslope and down valley diurnal winds today. Mammoth Lakes will see heaviest smoke impacts with Hazardous conditions in the morning and much of the day, with some relief by late evening. Areas to the west of the perimeter will see Very Unhealthy to Unhealthy conditions, including Ponderosa Basin, North Fork, and Oakhurst. Foothills locations from Mariposa, El Portal, and Wawona down to Prather will see Unhealthy for Sensitive Groups conditions throughout the day with periods of Moderate in the later evening hours. Tomorrow, a similar diurnal wind pattern will dominate smoke trajectories with slightly lower smoke concentrations than today.



Daily AQI Forecast* for Oct 17, 2020

Station	Yesterday hourly			Fri 10/16	Forecast* Comment for Today -- Sat, Oct 17	Sat 10/17	Sun 10/18
	6a	noon	6p				
Lee Vining	[Bar chart showing AQI values]			●	Good conditions today and tomorrow	●	●
Mammoth Lakes	[Bar chart showing AQI values]			●	Hazardous throughout the day, slight relief in the evening.	●	●
Bishop	[Bar chart showing AQI values]			●	Starting off Good, periods of Moderate throughout the day	●	●
Tuolumne Meadows	[Bar chart showing AQI values]			●	Moderate today and tomorrow, overnight clearing.	●	●
Yosemite Village	[Bar chart showing AQI values]			●	Overall Moderate conditions, intermittent periods of USG.	●	●
El Portal	[Bar chart showing AQI values]			●	Moderate conditions in AM, increasing during the afternoon.	●	●
Wawona	[Bar chart showing AQI values]			●	USG conditions today & tomorrow.	●	●
Mariposa	[Bar chart showing AQI values]			●	USG in AM, worsening midday and lessening in evening.	●	●
Ponderosa Basin	[Bar chart showing AQI values]			●	Very Unhealthy in the AM, periods of Unhealthy in afternoon	●	●
Oakhurst	[Bar chart showing AQI values]			●	Unhealthy with periods of USG	●	●
North Fork	[Bar chart showing AQI values]			●	Very Unhealthy in the AM, lessening by evening.	●	●
Prather	[Bar chart showing AQI values]			●	USG throughout today & tomorrow.	●	●
Millerton	[Bar chart showing AQI values]			●	Moderate in AM, USG periods midday, lessening by evening	●	●

Issued 2020-10-17 08:29 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/18 - 10/19
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-18 09:13 PDT

Special Statement

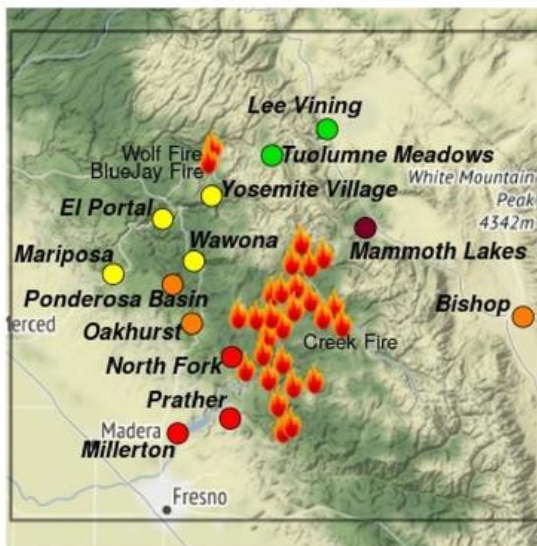
For information on local air quality, see the links below.

Fire

Northeastern and eastern portions of the fire remain active, as well as hot spots within the interior of the fire perimeter. If necessary, strategic firing operations to protect structures near Edison Lake may occur this evening. Additional smoke impacts are expected to be minimal. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Mammoth Lakes will see heaviest smoke with Hazardous conditions for much of the day. Smoke will make its way to Bishop where USG conditions are expected. Areas immediately south and west of the fire will see Unhealthy for Sensitive Groups to Unhealthy concentrations today from Ponderosa Basin to Millerton. Highest levels are expected in locations nearest the fire, such as North Fork and nearby communities. Lee Vining, Tuolumne Meadows, and high elevation locations north of the fire will be the cleanest today and tomorrow. This pattern will persist through Monday; however, northern areas of the forecast region may see some relief tomorrow evening.



Daily AQI Forecast* for Oct 18, 2020

Station	Yesterday	Sat	Forecast*	Sun	Mon
	hourly	10/17		Comment for Today -- Sun, Oct 18	10/18
Lee Vining	6a noon 6p	●	Good conditions today and tomorrow	●	●
Mammoth Lakes		●	Hazardous throughout the day, slight relief in the evening.	●	●
Bishop		●	USG conditions in the morning, periods of Unhealthy.	●	●
Tuolumne Meadows		●	Good today and tomorrow, intermittent Moderate midday.	●	●
Yosemite Village		●	Overall Moderate conditions, intermittent periods of USG.	●	●
El Portal		●	Moderate conditions in AM, periods of USG midday.	●	●
Wawona		●	Moderate conditions today & decreasing in the evening.	●	●
Mariposa		●	Moderate overall, worsening midday and lessening in evening.	●	●
Ponderosa Basin		●	Moderate in the AM, periods of USG in afternoon	●	●
Oakhurst		●	Moderate in AM, building to USG throughout today	●	●
North Fork		●	Unhealthy in the AM, afternoon peak into Very Unhealthy	●	●
Prather		●	Unhealthy throughout today, late afternoon decrease.	●	●
Millerton		●	Unhealthy in AM, USG periods midday, lessening by evening.	●	●

Issued 2020-10-18 09:13 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/19 - 10/20
San Joaquin-Yosemite Area (Creek Fire)
 Issued at: 2020-10-19 08:46 PDT

Special Statement

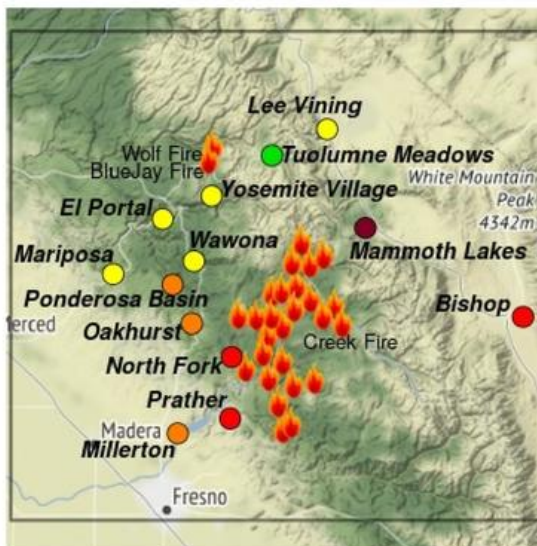
For information on local air quality, see the links below.

Fire

Northeastern and eastern portions of the fire remain active. Strategic firing operations were initiated yesterday evening to protect structures near Edison Lake. Mop up and continued suppression efforts are expected in that area. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Heaviest smoke will be seen from Mammoth Lakes to Bishop, with slight relief overnight. Areas north of the fire and at higher elevations, such as Tuolumne Meadows and Lee Vining will see cleanest air today and tomorrow. Areas immediately southwest of the fire will see moderate to heavy smoke, such as North Fork, Prather, and nearby locations. Foothills areas will see Moderate to Unhealthy for Sensitive Groups conditions, depending on proximity to the fire and localized winds. Cooler temperatures are expected later in the week, reducing overall fire activity and lessen new smoke production.



Daily AQI Forecast* for Oct 19, 2020

Station	Yesterday	Sun 10/18	Forecast* Comment for Today -- Mon, Oct 19	Mon	Tue
	hourly			10/19	10/20
Lee Vining	6a noon 6p	●	Good AM, afternoon peak in Moderate.	●	●
Mammoth Lakes		●	Hazardous throughout the day, slight relief in the evening.	●	●
Bishop		●	Very Unhealthy in the AM, slight relief in the afternoon.	●	●
Tuolumne Meadows		●	Good today and tomorrow, intermittent Moderate midday.	●	●
Yosemite Village		●	Overall Moderate conditions, clearing in the late evening.	●	●
El Portal		●	Moderate conditions today & tomorrow.	●	●
Wawona		●	Moderate conditions today, evening peak to USG.	●	●
Mariposa		●	Moderate conditions today & tomorrow.	●	●
Ponderosa Basin		●	Moderate in the AM, periods of USG in afternoon.	●	●
Oakhurst		●	Moderate in AM, building to USG throughout today.	●	●
North Fork		●	Unhealthy in the AM, afternoon peak into Very Unhealthy.	●	●
Prather		●	Unhealthy in the AM, afternoon peak into Very Unhealthy.	●	●
Millerton		●	Good in AM, USG periods midday, lessening by evening.	●	●

Issued 2020-10-19 08:46 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/20 - 10/21
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-20 09:25 PDT

Special Statement

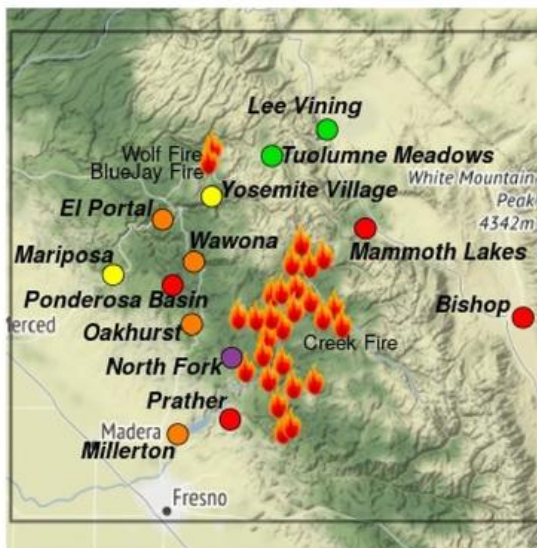
For information on local air quality, see the links below.

Fire

Northeastern portions of the fire remain the most active, though internal hotspots continue as pockets of heavy fuels burn. As temperatures moderate this week, fire activity is not expected to pick up significantly. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Mammoth Lakes is seeing some much needed relief this morning. However, smoke will settle into the area by this evening. Bishop will also see a decrease in smoke this morning before levels increase again with today's fire activity. We will see daily pooling of smoke along the mouth of the San Joaquin River drainage and along the foothills west of the fire perimeter, from Prather and North Fork, to Oakhurst, Ponderosa Basin, El Portal, and Wawona. Highest concentrations will be late morning to afternoon. High elevation locations and areas north of the fire will see the cleanest air, such as Yosemite Village, Tuolumne Meadows, and Lee Vining. This pattern will continue for the next few days before a more active weather pattern moves into the region.



Daily AQI Forecast* for Oct 20, 2020

Station	Yesterday	Mon 10/19	Forecast* Comment for Today -- Tue, Oct 20	Tue	Wed
	hourly			10/20	10/21
Lee Vining			Good AM, afternoon Moderate, slight increase tomorrow.		
Mammoth Lakes			Good AM, plume coming through during the late afternoon.		
Bishop			USG in the AM, building to Very Unhealthy late evening.		
Tuolumne Meadows			Good today and tomorrow, intermittent Moderate midday.		
Yosemite Village			Overall Moderate conditions, intermittent USG periods midday.		
El Portal			USG conditions today & tomorrow.		
Wawona			Moderate in the AM, evening peak to USG and Unhealthy.		
Mariposa			Good AM, building to Moderate with a USG peak midday.		
Ponderosa Basin			USG in the AM, building to Unhealthy in afternoon.		
Oakhurst			USG in AM, building to USG throughout today.		
North Fork			Very Unhealthy until the evening hours.		
Prather			Very Unhealthy in the AM, decreasing in the evening.		
Millerton			USG to Unhealthy throughout the day.		

Issued 2020-10-20 09:25 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/21 - 10/22
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-21 07:55 PDT

Special Statement

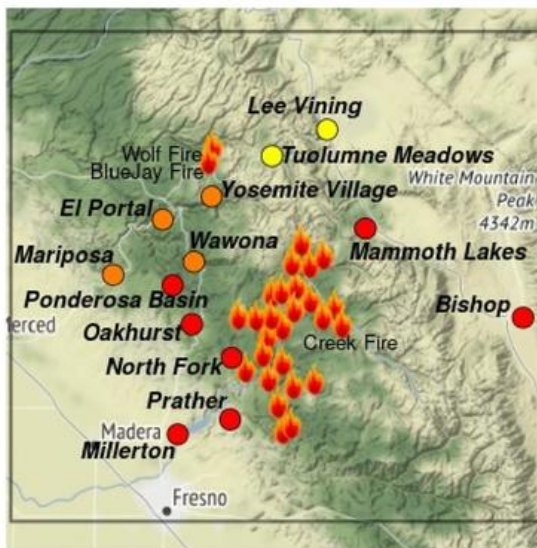
For information on local air quality, see the links below.

Fire

Yesterday, the fire was active along the northeastern edge of the perimeter. Persistent dry and warm conditions will keep this edge active until more seasonal conditions arrive this weekend. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

With light winds aloft, smoke has spread into drainages north of the fire, having a bigger impact on Yosemite and Tuolumne Meadows than previous days. Widespread Unhealthy conditions on both western and eastern portions of the region is expected today. Smoke will lay in drainages overnight and lift midday. Areas west of the fire along the foothills will see significant smoke impacts. Smoke will increase during the afternoon and decrease by the evening hours, following the upslope-down-valley diurnal wind pattern. Mammoth Lakes and Bishop will see smoke building today into tomorrow. Similar conditions will prevail tomorrow; however, areas in the northwestern part of the forecast area will see some slight relief.



Daily AQI Forecast* for Oct 21, 2020

Station	Yesterday	Tue 10/20	Forecast*	Wed 10/21	Thu 10/22
	hourly				
	6a noon 6p				
Lee Vining			Moderate conditions overall with intermittent USG possible.		
Mammoth Lakes			Moderate AM, increasing late afternoon into evening.		
Bishop			USG in the AM, building to Unhealthy late evening.		
Tuolumne Meadows			Moderate in the AM, intermittent USG in the afternoon.		
Yosemite Village			USG conditions overall, periods of Unhealthy possible.		
El Portal			USG conditions overall, slight clearing in the later afternoon.		
Wawona			Unhealthy in the AM, USG to Moderate in the later afternoon.		
Mariposa			Moderate in the AM, afternoon peak into USG.		
Ponderosa Basin			Unhealthy conditions today and USG tomorrow.		
Oakhurst			Unhealthy conditions today and USG tomorrow.		
North Fork			Unhealthy in the AM, peak to Very Unhealthy midday.		
Prather			Very Unhealthy in the AM, decreasing in the evening.		
Millerton			Unhealthy in the AM, peak to Very Unhealthy midday.		

Issued 2020-10-21 07:55 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/22 - 10/23
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-22 10:12 PDT

Special Statement

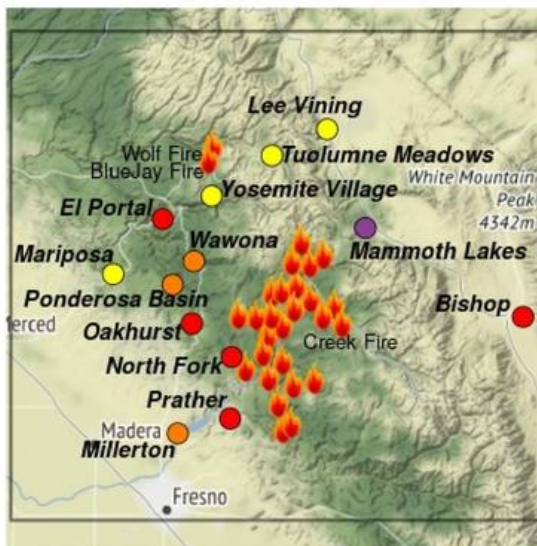
For information on local air quality, see the links below.

Fire

The fire is most active along the northeastern edge of the perimeter and within the interior as hotspots remain active. Ongoing smoldering of heavy fuels, stumps, and roots will persist. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Smoky conditions continue across the forecast region as weather conditions remain unchanged. The San Joaquin River drainages and low laying areas in and around the fire perimeter will see heaviest smoke impacts today. Mammoth Lakes and Bishop will see Unhealthy to Very Unhealthy conditions. Areas along the western foothills will see Unhealthy for Sensitive Groups to Unhealthy levels today, including El Portal, Wawona, Ponderosa Basin, Oakhurst, North Fork, Prather, and Millerton. Yosemite, Tuolumne Meadows, and Lee Vining will see Moderate conditions, with intermittent USG possible. Weather conditions shift this weekend and much needed relief from smoke is expected by early next week.



Daily AQI Forecast* for Oct 22, 2020

Station	Yesterday	Wed	Forecast*	Thu	Fri
	hourly	10/21		10/22	10/23
	6a noon 6p		Comment for Today -- Thu, Oct 22		
Lee Vining			Moderate conditions overall with intermittent USG possible.		
Mammoth Lakes			Very Unhealthy overall, periods of Unhealthy to USG midday.		
Bishop			Unhealthy throughout the day today & tomorrow.		
Tuolumne Meadows			Good in the AM, midday peak in Moderate to USG.		
Yosemite Village			Moderate in the AM, decreasing throughout the day.		
El Portal			Unhealthy conditions today, improvement overnight.		
Wawona			USG conditions overall, afternoon peak to Unhealthy.		
Mariposa			Moderate conditions overall, afternoon peak into USG.		
Ponderosa Basin			USG conditions today and tomorrow.		
Oakhurst			Unhealthy conditions today and USG tomorrow.		
North Fork			Unhealthy overall, peaking midday, decreasing in the evening.		
Prather			Very Unhealthy in the AM, decreasing in the evening.		
Millerton			Unhealthy overall, peaking midday, decreasing in the evening.		

Issued 2020-10-22 10:12 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links
 Fire and Smoke Map -- <https://fire.airnow.gov/>
 Great Basin Unified APCD -- <https://www.gbuapcd.org/>
 Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
 San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
 Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
 CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>

Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
 San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
 *Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/23 - 10/24
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-23 09:07 PDT

Special Statement

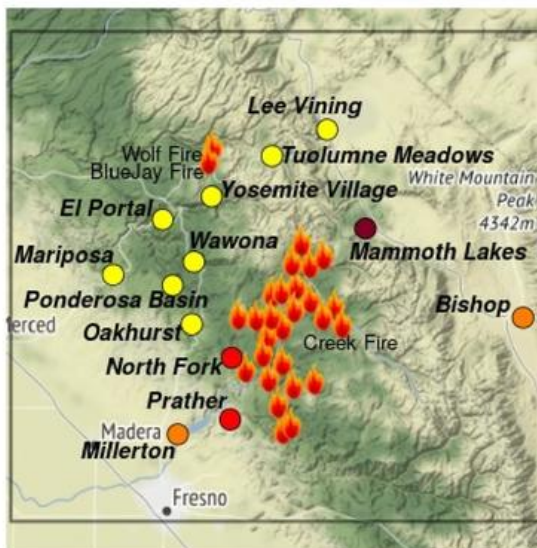
For information on local air quality, see the links below.

Fire

The most active part of the fire is the northeastern edge. Heavy smoke has lessened aggressive fire behavior. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Smoke is persistent in low laying areas and drainages near the fire perimeter. Mammoth Lakes will see heaviest smoke impacts today and tomorrow, with some slight relief each night into the early morning hours. High elevation locations north of the fire will see the cleanest air in the forecast region, including Lee Vining, Tuolumne Meadows, and Yosemite Village. Foothills locations west of the fire will see Moderate to Unhealthy for Sensitive Groups levels today and tomorrow. As smoke settles along the San Joaquin River drainage, locations southwest of the fire will see Unhealthy for Sensitive Groups to Unhealthy conditions, most pronounced in North Fork, Prather, and nearby communities. A weather system is forecast to come through late Sunday. With breezy conditions and lower temperatures, some much needed relief from smoke for a few days is expected across the forecast area.



Daily AQI Forecast* for Oct 23, 2020

Station	Yesterday	Thu 10/22	Forecast*	Fri 10/23	Sat 10/24
	hourly				
	6a noon 6p		Comment for Today -- Fri, Oct 23		
Lee Vining			Moderate conditions expected today & tomorrow.		
Mammoth Lakes			Hazardous today with slight relief in the late evening hours.		
Bishop			USG throughout the day today & decreasing tomorrow.		
Tuolumne Meadows			Good in the AM, midday peak in Moderate to USG.		
Yosemite Village			Moderate in the AM, intermittent periods of USG.		
El Portal			Moderate conditions today & tomorrow.		
Wawona			Moderate conditions overall, periods of USG possible.		
Mariposa			Moderate conditions overall, afternoon peak into USG.		
Ponderosa Basin			Moderate conditions overall, afternoon peak into USG.		
Oakhurst			USG throughout the day today & decreasing tomorrow.		
North Fork			Unhealthy overall, peaking midday, decreasing in the evening.		
Prather			Unhealthy overall, peaking midday, decreasing in the evening.		
Millerton			USG overall, clean in the AM, building to Unhealthy midday.		

Issued 2020-10-23 09:07 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/24 - 10/25
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-24 08:46 PDT

Special Statement

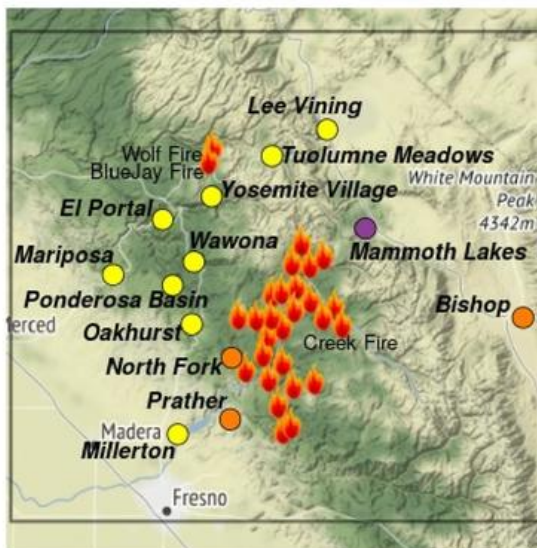
For information on local air quality, see the links below.

Fire

The northeastern fire perimeter remains active from Pincushion Peak to Edison Lake. Intense smoke production continues with high fuel loading including a lot of dead and down material. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

Heavy smoke continues in Mammoth Lakes. Given the proximity to the fire perimeter, as well as local winds and topography, smoke settled into this area and will remain until northeasterly winds develop late Sunday. Other areas of significant smoke impacts include Bishop and locations southwest of the fire, such as North Fork and Prather, as well as low laying areas in the San Joaquin River drainage. Today, we will see lessening smoke impacts to the foothills. Overall Moderate conditions with a midday peak to Unhealthy to Sensitive Groups is expected. As a weather system moves through the area late Sunday into Monday, much needed relief from smoke is expected - particularly in Mammoth Lakes and surrounding areas.



Daily AQI Forecast* for Oct 24, 2020

Station	Yesterday hourly	Fri 10/23	Forecast* Comment for Today -- Sat, Oct 24	Sat 10/24	Sun 10/25
Lee Vining			Moderate conditions expected today, decreasing tomorrow.		
Mammoth Lakes			Very Healthy conditions today, decreasing tomorrow.		
Bishop			Moderate conditions today, with evening peak to USG.		
Tuolumne Meadows			Good in the AM, midday peak in Moderate to USG.		
Yosemite Village			Moderate in the AM, intermittent periods of USG.		
El Portal			Moderate conditions today & tomorrow.		
Wawona			Moderate conditions overall, periods of USG possible.		
Mariposa			Moderate conditions overall, afternoon peak into USG.		
Ponderosa Basin			Moderate conditions overall, afternoon peak into USG.		
Oakhurst			Moderate conditions overall, afternoon peak into USG.		
North Fork			USG overall, peaking midday, decreasing in the evening.		
Prather			USG overall, peaking midday, decreasing in the evening.		
Millerton			Moderate conditions today & tomorrow.		

Issued 2020-10-24 08:46 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

- Fire and Smoke Map -- <https://fire.airnow.gov/>
- Great Basin Unified APCD -- <https://www.gbuapcd.org/>
- Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>
- San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>
- Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>
- CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net
San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite
*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Smoke Outlook for 10/25 - 10/26
San Joaquin-Yosemite Area (Creek Fire)
Issued at: 2020-10-25 09:20 PDT

Special Statement

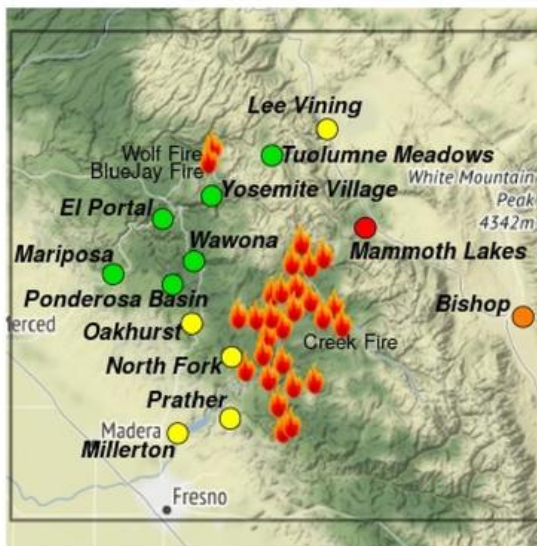
For information on local air quality, see the links below.

Fire

The northeastern edge of the fire perimeter remains most active. Smoldering and hotspots continue within the interior. A Red Flag warning for the region may increase fire activity, though the winds are expected to push the fire back onto itself. Fire information can be found at: inciweb.nwcg.gov/incident/7147/

Smoke

As a weather system moves through the region Sunday into Monday, much needed smoke relief is in store. While locations on the west side of the fire perimeter got some relief yesterday, locations on the east side, such as Mammoth Lakes and Bishop, will see cleaner conditions by this evening. With breezy easterly winds throughout Monday, Good to Moderate conditions are expected across the forecast area. Cleaner air will remain during the early part of the week. Smoke concentrations mid-to-late week will depend on fire activity and prevailing winds.



Daily AQI Forecast* for Oct 25, 2020

Station	Yesterday hourly	Sat 10/24	Forecast* Comment for Today -- Sun, Oct 25	Sun 10/25	Mon 10/26
Lee Vining	6a noon 6p	●	Good conditions today and tomorrow.	●	●
Mammoth Lakes		●	Very Healthy in the AM, relief expected by nightfall.	●	●
Bishop		●	Unhealthy in the AM, decreasing throughout the day.	●	●
Tuolumne Meadows		●	Good conditions today and tomorrow.	●	●
Yosemite Village		●	Moderate in the AM, decreasing throughout the day.	●	●
El Portal		●	Good conditions overall, intermittent periods of moderate.	●	●
Wawona		●	Good conditions overall, intermittent periods of moderate.	●	●
Mariposa		●	Good conditions overall, intermittent periods of moderate.	●	●
Ponderosa Basin		●	Good conditions overall, intermittent periods of moderate.	●	●
Oakhurst		●	Moderate conditions overall, decreasing throughout the day.	●	●
North Fork		●	Moderate overall, afternoon peak to USG.	●	●
Prather		●	Moderate conditions overall, intermittent periods of USG.	●	●
Millerton		●	Moderate conditions today & tomorrow.	●	●

Issued 2020-10-25 09:20 PDT by Amber Ortega (ARA), amber.ortega@usda.gov

Air Quality Index (AQI)	Actions to Protect Yourself
● Good	None
● Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
● USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
● Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
● Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
● Hazardous	Everyone should avoid any outdoor activity.

*Disclaimer: This forecast is based on fine particulates only; ozone is not included. Forecasts may be wrong; use at own risk. Use caution as conditions can change quickly. See your health professional as needed. Smoke sensitive groups should take appropriate precautions.

Additional Links

Fire and Smoke Map -- <https://fire.airnow.gov/>

Great Basin Unified APCD -- <https://www.gbuapcd.org/>

Tuolumne County APCD -- <https://www.tuolumnecounty.ca.gov/364/Air-Pollution-Control-District>

San Joaquin Valley APCD (activity advisories) -- <https://www.valleyair.org/myraan/>

Mariposa County APCD -- <https://www.mariposacounty.org/433/Air-Pollution-Control-District>

CA Smoke Blog -- <http://californiasmokeinfo.blogspot.com/>



Issued by USFS Wildland Fire Air Quality Response Program -- www.wildlandfiresmoke.net

San Joaquin-Yosemite Current Outlook -- tools.airfire.org/outlooks/SanJoaquin-Yosemite

*Smoke and Health Info -- www.airnow.gov/index.cfm?action=smoke.index

Appendix H: Public Comment web posting, CARB email notice, and public comments and responses

No comments were received on this document during the public comment period, August 2, 2023 through September 7, 2023.

Below is the email from GBUAPCD to CARB and EPA sent August 2, 2023, announcing the public comment period:



Chris Howard <choward@gbuapcd.org>

Public Comment Period Open- Town of Mammoth Lakes 2nd 10 Year Maintenance Plan and EED

Ann Logan <ann@gbuapcd.org>

Wed, Aug 2, 2023 at 2:34 PM

To: "Ledezma, Ernesto (he/him/his)" <Ledezma.Ernesto@epa.gov>, "Lee, Anita" <Lee.Anita@epa.gov>, "Najita, Theresa@ARB" <theresa.najita@arb.ca.gov>, "Wickersham, Lindsay (she/her)" <wickersham.lindsay@epa.gov>, "Tsai, Sheila" <Tsai.Sheila@epa.gov>, "Johnson, Martin@ARB" <martin.johnson@arb.ca.gov>, "Vanderspek, Sylvia@ARB" <sylvia.vanderspek@arb.ca.gov>, "Kalandiyur, Nesamani@ARB" <nesamani.kalandiyur@arb.ca.gov>, "Forestieri, Sara@ARB" <Sara.Forestieri@arb.ca.gov>, "Adams, Alicia@ARB" <Alicia.Adams@arb.ca.gov>, "Scott, Klaus@ARB" <klaus.scott@arb.ca.gov>, "Hendrawan, Kevin@ARB" <Kevin.Hendrawan@arb.ca.gov>, "Huber, Stephanie@ARB" <stephanie.huber@arb.ca.gov>, "Schluter, Catherine (she/her/hers)" <Schluter.Catherine@epa.gov>, "Carlstad, Julia" <Carlstad.Julia@epa.gov>

Cc: Phill Kiddoo <pkiddoo@gbuapcd.org>, Chris Lanane <clanane@gbuapcd.org>, Chris Howard <choward@gbuapcd.org>

Good afternoon,

The public comment period for the Town of Mammoth Lakes 2nd 10 Year Maintenance Plan and associated Exceptional Event Demonstration has opened. The public notice and documents are attached and are also available at <https://gbuapcd.org/District/PublicNotice/>. These are scheduled to go to our Governing Board on September 7, 2023. Thanks to CARB and EPA for the wrap up call today, please let us know if you have any questions or need anything further.


Ann

 20230802_2023TML_EE_Demo_Draft.pdf

Ann Logan
Deputy Air Pollution Control Officer
Great Basin Unified Air Pollution Control District
157 Short Street Bishop, California 93514
(760) 872-8211
www.gbuapcd.org

2 attachments

 20230802_Public Notice_TML.pdf
168K

 20230802_2023TML2nd10YrMaintenancePlan.pdf
4214K

Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020

Below is the GBUAPCD webpage (<https://www.gbuapcd.org/>) on August 2, 2023, announcing the EE demonstration public comment period:

The screenshot shows the homepage of the Great Basin Unified Air Pollution Control District (GBUAPCD). The navigation menu includes: District, Air Monitoring Data, Owens Lake, and Permitting & Rules. A search bar is located in the top right corner.

On the left side, there are five blue buttons: Current Concentrations, Current AQI NowCasts, Health Advisories, Air Quality Cameras, and Governing Board.

Below these buttons are two tables showing AQI NowCast data:

Emergency Monitors	AQI NowCast
PM2.5 Mammoth Lakes	Good

Towns	AQI NowCast	
	PM ₁₀	PM _{2.5}
Keeler	Good	Good
Coso Junction	Good	
Lee Vining	Good	Good
Lone Pine	Good	
Mammoth Lakes	Good	
Olancho	Good	

Regions	AQI NowCast
Bishop Area	Good
Death Valley	Good
Mono Lake	Good
Owens Lake	Good

The main content area on the right includes a logo for Alpine, Mono, and Inyo counties, a description of the district's mission, and a 'What's New' section. The 'What's New' section lists three items:

- 8/2/2023**: Funds to replace older vehicles and equipment used for agricultural operations available. Apply by August 31st. [More Information](#)
- 8/2/2023**: The Great Basin Unified Air Pollution Control District seeks proposals for the design and replacement of the off-grid solar power station at its Mono Shore monitoring station. This station is located on the east shore of Mono Lake and is accessed via Ten Mile Road east of the junction of US Highway 395 and CA Highway 167, at Mono Lake, California. [Public Notice](#) [Request For Proposal \(RFP\)](#)
- 8/2/2023**: Notice of Public Hearing: Great Basin Air Pollution Control District consideration of renewal of residential burning exemptions will be conducted at 10:00 am on September 7, 2023. [Public Notice](#)

The bottom-most item in the 'What's New' section is highlighted with a yellow circle:

- 8/2/2023**: Notice of Public Hearing and Public Comment Period: Adoption and approval of the Town of Mammoth Lakes PM10 Planning Area Second 10-Year Maintenance Plan and the Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in September and October 2020 will be conducted at 10:00 am on September 7, 2023. [Public Notice](#) [Town of Mammoth Lakes PM10 Planning Area Second 10-Year Maintenance Plan](#) [Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in September and October 2020](#)

Below is the public notice related to the public comment period, distributed August 2, 2023:

Phillip L. Kiddoo
Air Pollution Control Officer



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT
157 Short Street, Bishop, California 93514-3537
Tel: 760-872-8211 www.gbuapcd.org

NOTICE OF PUBLIC HEARING and PUBLIC COMMENT PERIOD
Adoption And Approval of the Town of Mammoth Lakes PM10
Planning Area Second 10-Year Maintenance Plan and the
Exceptional Event Demonstration for Wildfire Smoke Impacts to
Mammoth Lakes PM10 Monitors in September and October 2020

The Governing Board of the Great Basin Unified Air Pollution Control District (District) will conduct a public hearing and will consider for approval and adoption the Town of Mammoth Lakes PM10 Planning Area Second 10-Year Maintenance Plan (Plan) and the Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in September and October 2020 (Exceptional Event Demonstration). The public hearing and the Governing Board's consideration for approval and adoption will occur at the District Governing Board's regular meeting on **Thursday September 7, 2023, at 10:00 a.m.** The meeting will occur at the Mono County Board of Supervisors Chamber (2nd Floor) at the Mono County Courthouse located at 278 Main Street (U.S. Highway 395) in Bridgeport, California.

The Mammoth Plan includes a second maintenance plan that contains requirements to ensure the National Ambient Air Quality Standard for PM10 (federal standard) will not be violated in the future. Other actions related to the adoption of the Mammoth Plan may also be taken at the meeting. Copies of the Plan and Exceptional Event Demonstration documents are available for public review and comment at the District's website at www.gbuapcd.org, under "What's New". The documents are also available in hard copy format for review at the District's Bishop office. Written comments should be sent via email to ann@gbuapcd.org. Written comments received by August 14, 2023, will be included in the staff report in the Board packet. Comments received after this date will be provided to the Board at the meeting. Written and verbal comments will also be taken at the Board meeting. For further information, contact Ann Logan, Deputy Air Pollution Control Officer, at (760) 872-8211 or ann@gbuapcd.org.

Distribution Date: 2023-08-02

Publication Dates

Inyo Register August 3, 2023
The Sheet August 5, 2023 & August 12, 2023
Mammoth Times August 3, 2023 & August 10, 2023

Mail List: Public Notice

Appendix I: National Oceanic and Atmospheric Administration text-based satellite imagery analyses

Observed dust and smoke over the United States on all POC 5 FRM EE days:

9/6/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020I070304.html>

Sunday, September 6, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0305Z Sunday, September 7, 2020

SMOKE:

Western U.S. into Central U.S...

An area of extremely thick smoke was observed over most of California and Oregon before turning east over Idaho, Wyoming and into the central plains including Kansas, Colorado and northern Texas. A combination of new smoke due to a number of very large fire complexes and stagnant remnant smoke from previous days was to blame. Moderate to light density smoke also related to the widespread fire activity also extended off of the Pacific coast of California, over much of the western U.S. and across the northern and central plains prior to engulfing the Great Lakes region and Mississippi Valley. Additional scattered fire activity throughout Colorado, Washington, Oregon and Idaho added to the increased volume of smoke encompassing much of the United States.

DUST:

Pacific Northwest...

Waves of light blowing dust were observed moving through far southwestern Canada into Washington state and northern Oregon.

JL

9/15/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020I160151.html>

Tuesday, September 15, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0151Z September 16, 2020

SMOKE:

Due to the absolutely expansive coverage of smoke throughout the U.S, the pattern remains mostly unchanged from earlier analysis below with just a slight expansion of medium density smoke in the Pacific Ocean as it wraps into a weather system north of Hawaii. Heavy smoke continued to blanket almost the entirety of the United States, southern portions of the Canadian border and northern portions of the Mexican border while also extending hundreds of miles into both the Atlantic and the Pacific Oceans.

DUST:

Saharan dust was observed blowing to the southwest across the Caribbean nearing the Yucatan Peninsula and across the central Atlantic.

EARLIER TODAY...

SMOKE:

Eastern Pacific/Lower 48/Southern Canada/Northwestern Mexico/Atlantic East of the Mid-Atlantic and Northeastern U.S...

The ongoing large wildfires burning in the Western U.S. was responsible for a continuing extremely big area of smoke which covers portions of the eastern Pacific and much of the lower 48 with the exception of the far Southern and Southeastern U.S. from central and southern Texas eastward to Georgia and Florida. Also, a small sliver of western Washington may be relatively smoke free. The huge mass of smoke also covers southern Canada and offshore of the Mid-Atlantic and Northeastern U.S. and east of the Canadian Maritimes, along with northwestern Mexico. Thick smoke covered an unusually large region stretching from off the Pacific Northwest coast and off the coast of California and Baja eastward and inland over much of the Western U.S. with the thicker smoke also appearing over much of the northern half of the U.S. and southern Canada.

DUST:

Atlantic...

Areas of Saharan dust were visible over portions of the central, south central, and eastern Atlantic.

JL

9/21/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020I220343.html>

Monday, September 21, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0220Z September 22, 2020

SMOKE:

CONUS, Central and Eastern Canada, and Northeastern Mexico...

The wildfire activity over the western United States was continuing to produce a very large smoke plume that extended over most of the United States, central and eastern Canada. The highest density smoke extended from portions of eastern Canada southwest through Midwestern States towards the Southern Plains. Further to the west, moderate to high density smoke was also seen extending from northern Utah and southern Idaho southwest through southern Oregon, northern Nevada and most of California.

Central and Eastern Atlantic Ocean...

An area of light density smoke extended from the northern Atlantic Ocean south to portions of the north central Atlantic Ocean and then curving back northeast towards portions of western Europe.

Hanna

9/24/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020I251616.html>

Friday September 25, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1615Z September 25, 2020

SMOKE:

Western, Central and Northern United States, Northern Mexico, Western
Gulf of Mexico, North Atlantic...

Smoke from wildfires in western U.S. continues to impact a large swath
of the country. Moderate-to-heavy smoke dominates central California in
the areas around the Creek, SQF, Rattlesnake and Moraine wildfires, with
plumes extending out to the northeast and into south-southeastern Nevada
and western Utah. Additional moderate density residual smoke is found over
northwestern Texas. Lighter density smoke covers most of the western U.S.,
with the exception of Washington, northern Idaho and Montana, southeastern
Utah, southern Colorado, New Mexico, and northeastern Arizona where smoke
has by and large cleared out. The lighter density extends eastward across
the northern U.S. including South Dakota, Nebraska, Iowa, the Great
Lakes region, and further into New England, while also dipping towards
the southern Great Plains over Kansas, Oklahoma, and northern Texas, the
western Gulf of Mexico, and the Gulf of California. A secondary plume
of light-to-moderate residual smoke stretches over the central-north
Atlantic to the west, south and east of Bermuda.

WS

10/12/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020J130235.html>

Monday, October 12, 2020

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0200Z October 13, 2020

SMOKE:

Western Nevada/California...

Thick smoke from the Creek Fire in east central California spread to the east during the afternoon passing over the border into western Nevada. A swath of thin to moderately dense smoke from this fire with some contribution from the SQF Complex farther to the south extended to the southwest passing over Santa Barbara and Pt Conception before spreading well of the coast of southern California. Farther to the north relatively small patches of smoke were seen with leftovers of the once very large August Complex and Red Salmon Complex. In addition, a cluster of agricultural fires in the Sacramento Valley were producing numerous mainly thin density smoke plumes which spread quickly to the southeast.

Arizona/New Mexico...

Moderate to thick density smoke from the Cow Canyon Fire near the border of east-central Arizona and west-central New Mexico spread to the south and east during the afternoon.

Central, South Central, and Southeastern U.S./Northeastern and Eastern Mexico/Gulf of Mexico...

A large area of leftover primarily thin density smoke from the Western U.S. wildfire activity could be seen later this afternoon and early evening stretching from central and eastern Texas across the Lower and Middle Mississippi Valley and over a portion of the Southeastern U.S. The smoke also appeared over the central and northern Gulf of Mexico and also over the far western and southwestern Gulf of Mexico and inland over eastern and northeastern Mexico. In addition, a few agricultural fires over northeastern Arkansas and southeastern Missouri produced thin density smoke plumes which moved off to the southeast.

North Dakota/Minnesota/South Central Canada...

More agricultural/seasonal fires were concentrated over northern and eastern North Dakota, northwestern Minnesota, and the southern portions of Saskatchewan and Manitoba. Extensive cloud cover did move over this area later in the afternoon which significantly limited smoke detection in satellite imagery though a swath of thin density smoke was seen out ahead of the clouds over southeastern Manitoba, far northwestern Minnesota, and into southwestern Ontario.

Central and Eastern Canada/Maine/Canadian Maritimes...

A large batch of mainly thin density smoke leftover from the Western U.S. wildfires was seen over Hudson Bay, northern Ontario, a good part of Quebec, northern Maine, and extending over the Canadian Maritimes and off the coast over the far western Atlantic.

JS

10/18/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020J190003.html>

Sunday, October 18, 2020

**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 0005Z October 19, 2020**

SMOKE:

California, Southwestern U.S. Northern Mexico, New England, New Brunswick,
Nova Scotia and Northwestern Atlantic Ocean

The Red Salmon Fire in northern California and the Creek Fire in southern Sierra Nevada Mountains continue to emit smoke resulting in moderate-to-heavy concentrations near their sources. Moderate smoke from the Creek Fire spills over the San Joaquin Valley and the Owens Valley, whereas a larger plume consisting of light smoke but also including pockets of moderate-density smoke extends over most of central-southern California and areas off the coast of Santa Barbara, and into southern Nevada, central-southern Arizona, southern New Mexico, western Texas, and northern Mexico. Another large plume which originated primarily from the Cameron Peak Fire in northern Colorado over the weekend has been pushed eastward by strong winds and now travels over New England and into New Brunswick and Nova Scotia, reaching the northwestern Atlantic ocean.

WS

10/24/2020 <https://www.ssd.noaa.gov/PS/FIRE/DATA/SMOKE/2020/2020J241627.html>

Saturday, October 24, 2020

**DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY
THROUGH 1630Z October 24, 2020**

SMOKE:

California, Nevada, Colorado , and Utah...

Wild fires in central California continue to emit smoke resulting in moderate-to-heavy concentrations near their sources. A narrow plume of medium and light density smoke is observed moving eastward from these fires across southern Nevada, southern Utah, and into southwestern Colorado. The ongoing wild fires in northern Colorado continue to burn vigorously emitting heavy smoke to the east but, this area lays on the edge of a weather system that conceals the extent of the smoke concentrations and distance it is traveling. Most of the northern, central, and northeastern United States, and Canada are obstructed by cloud cover which prevents any further smoke analysis at this time.

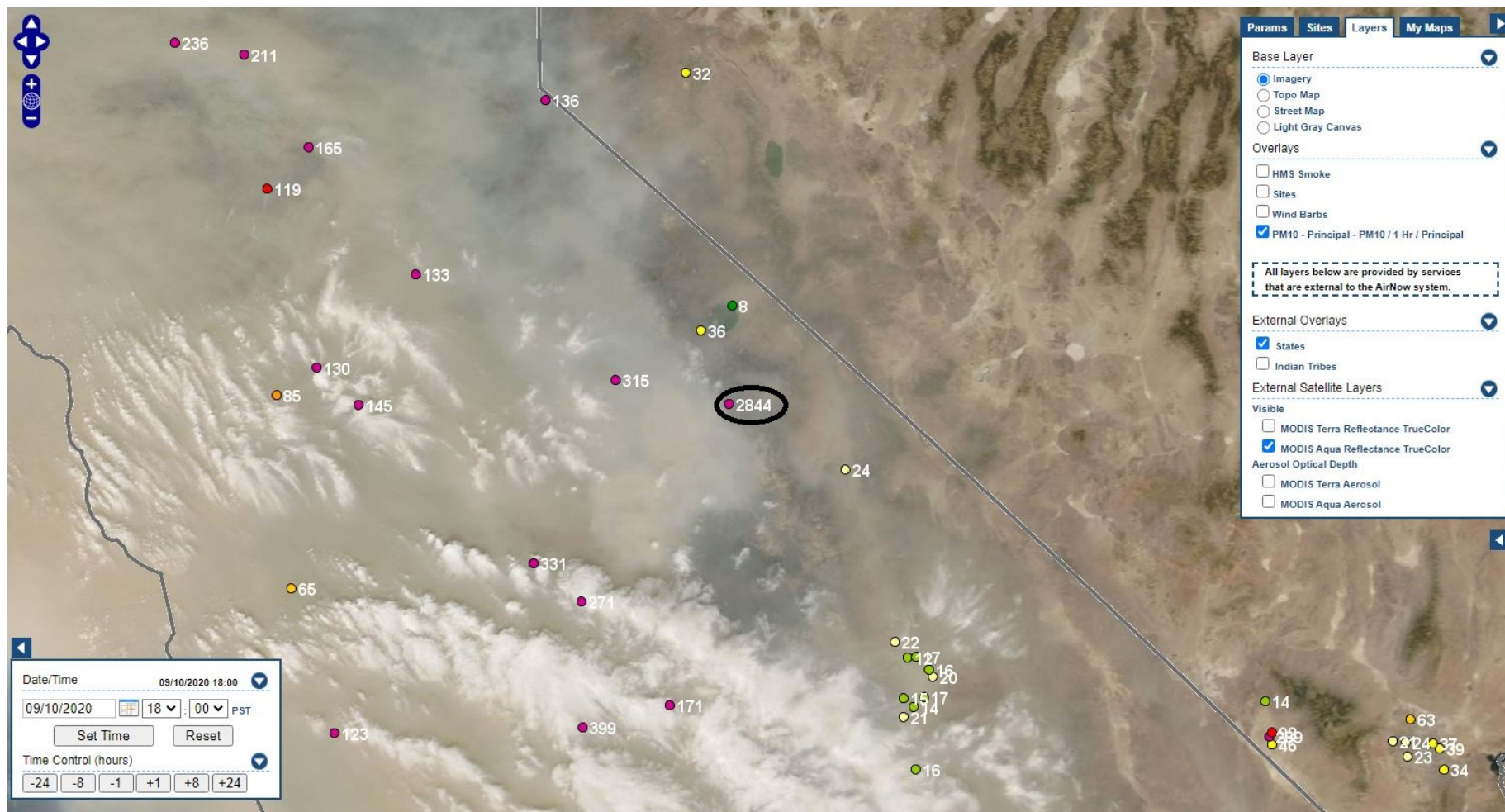
Eglin

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Appendix J: AirNowTech Navigator maps of POC 6 FEM T640x SPM-only EE days

Showing the smoke plumes impacting Mammoth Lakes, detected hotspots, and regional hourly monitored PM10 concentrations. The Mammoth Lakes monitoring site is circled in black.

9/10/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/11/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/12/2020 18:00 PST:



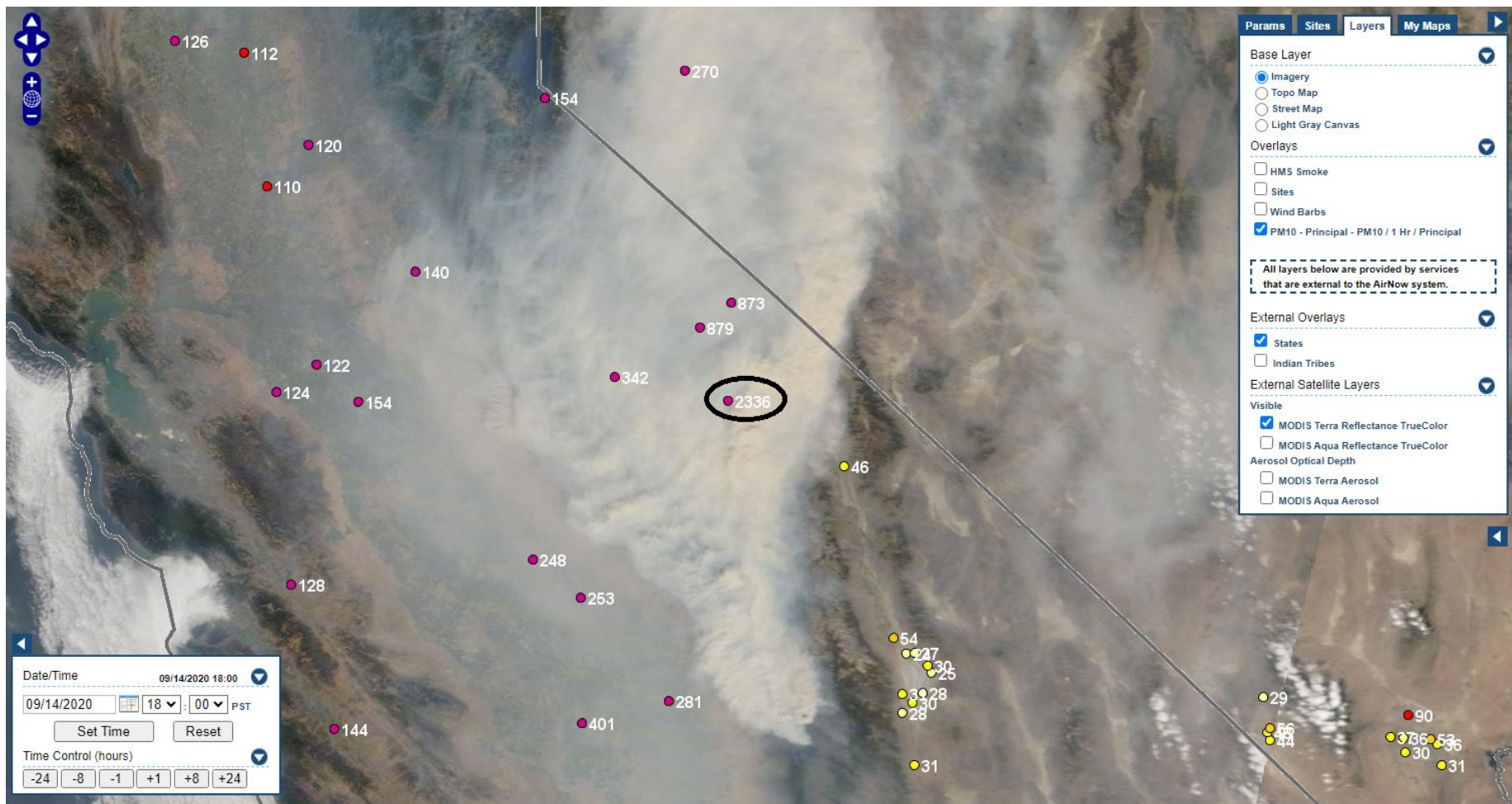
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

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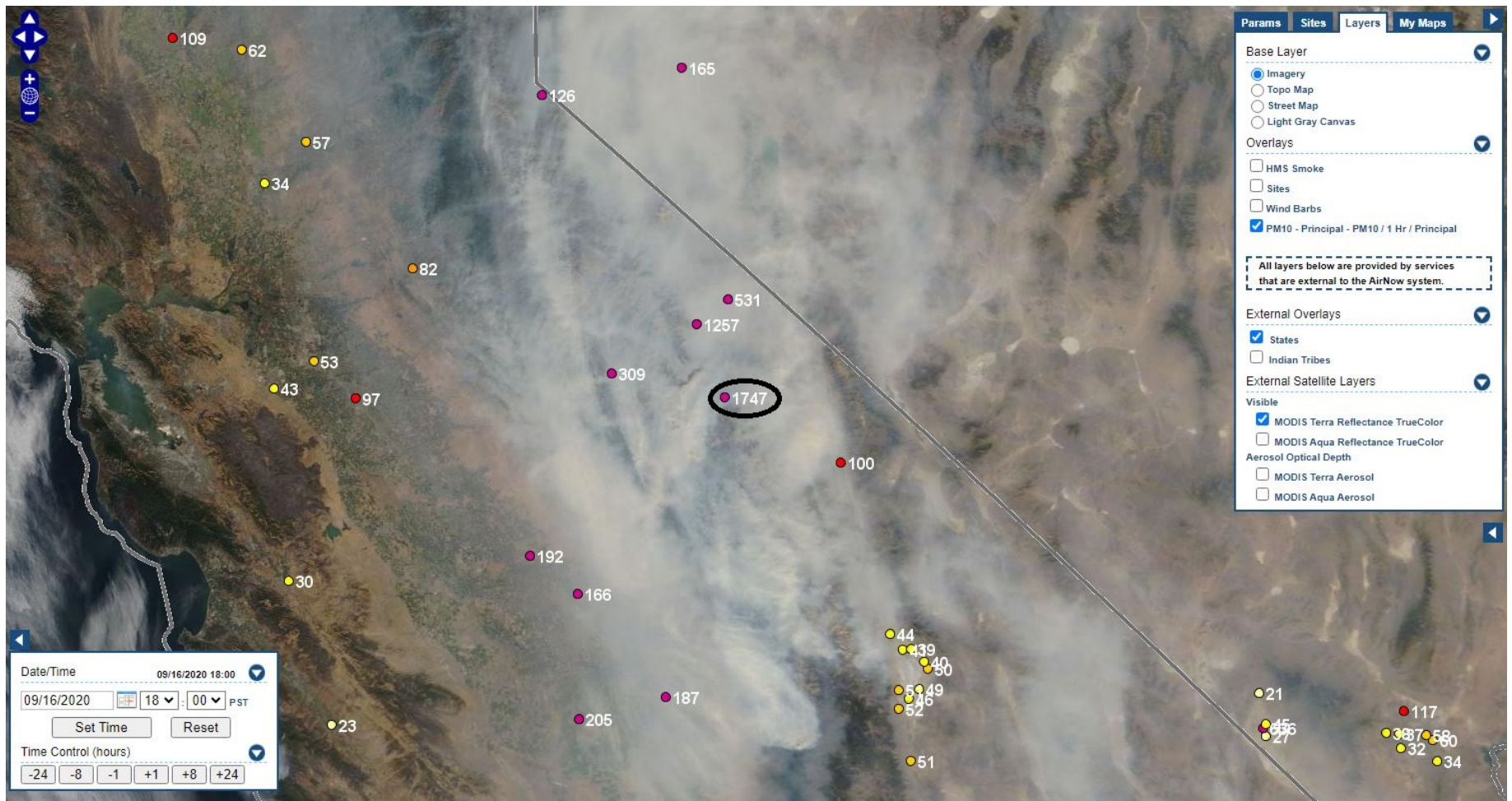
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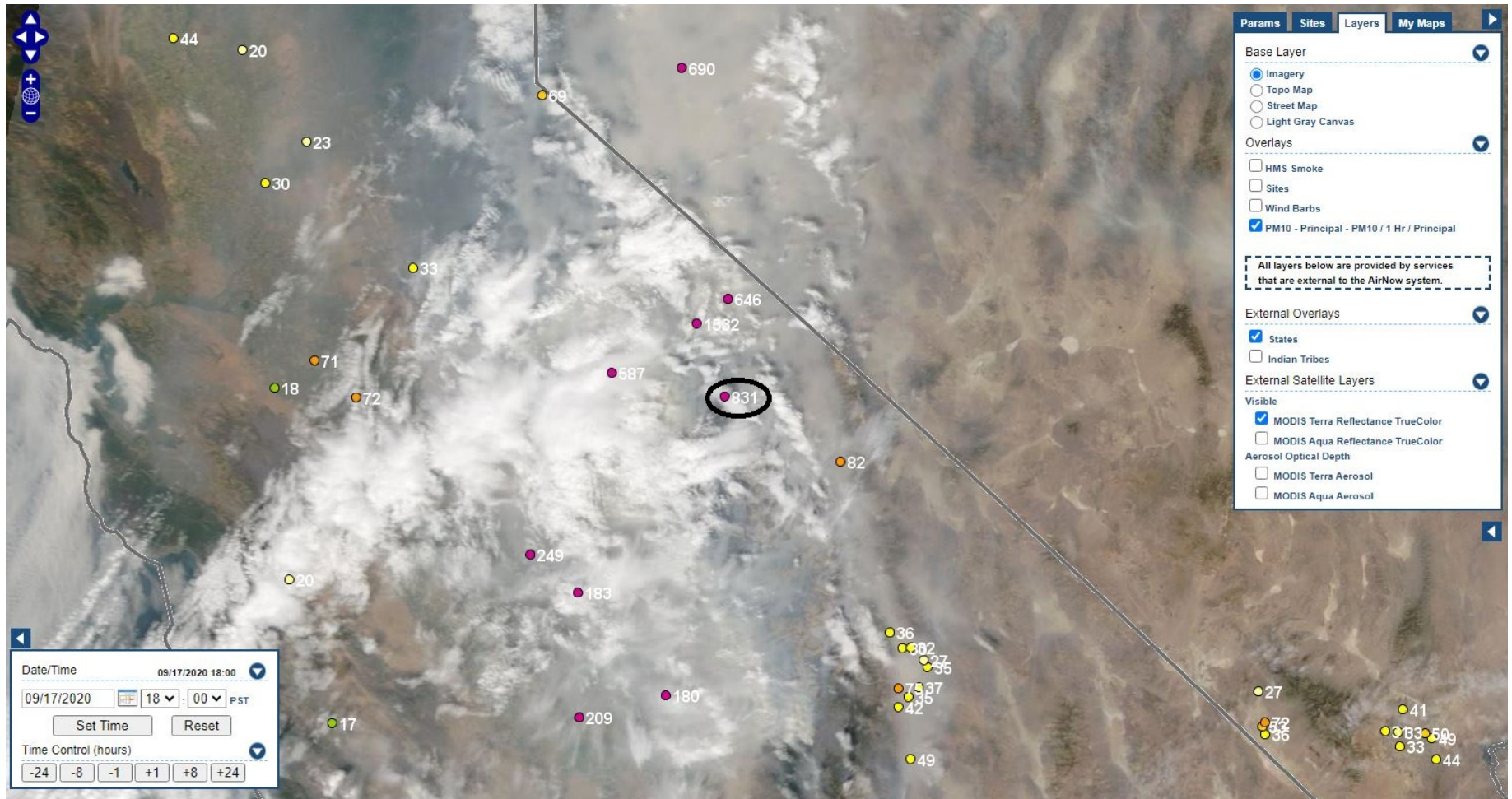
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

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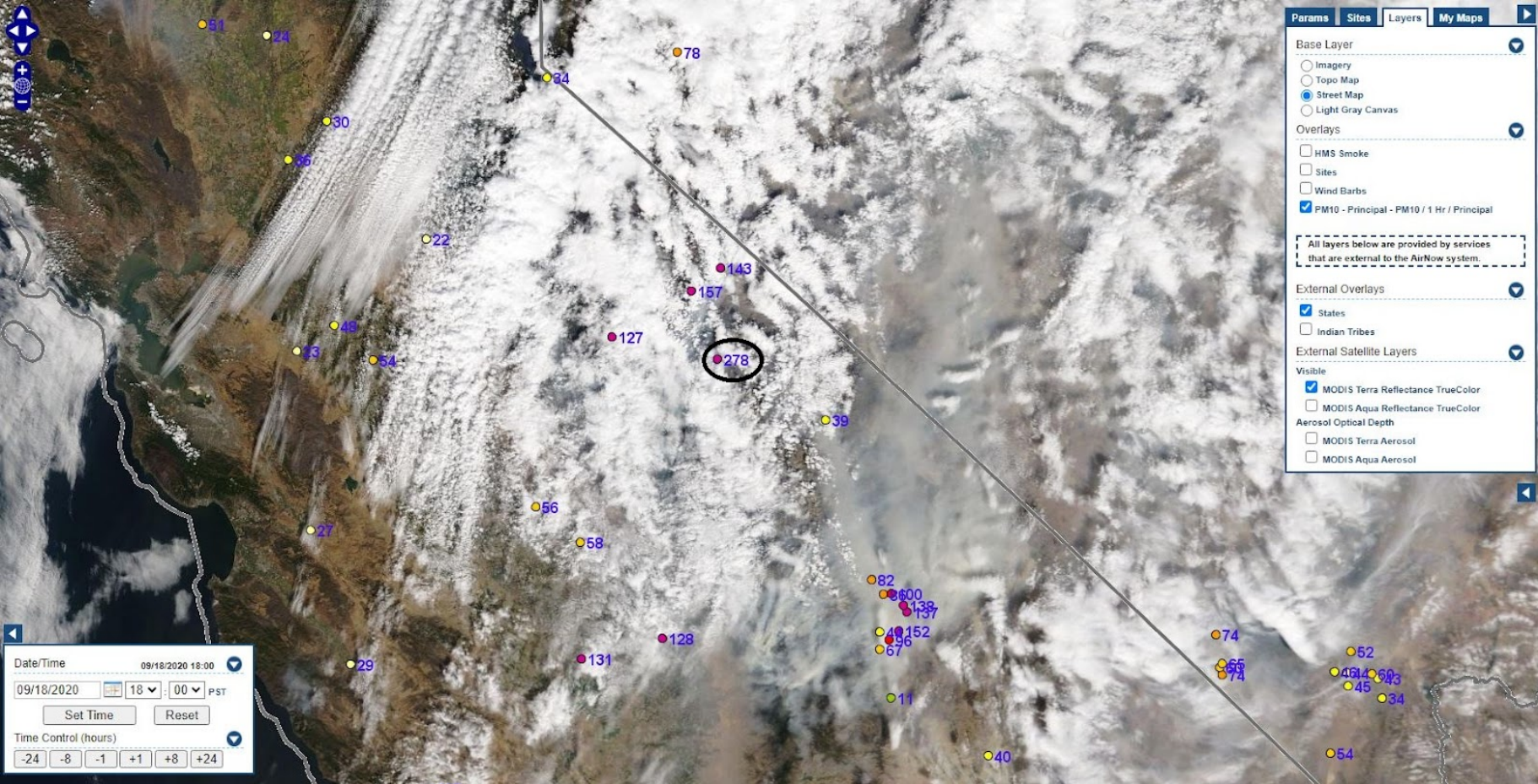
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

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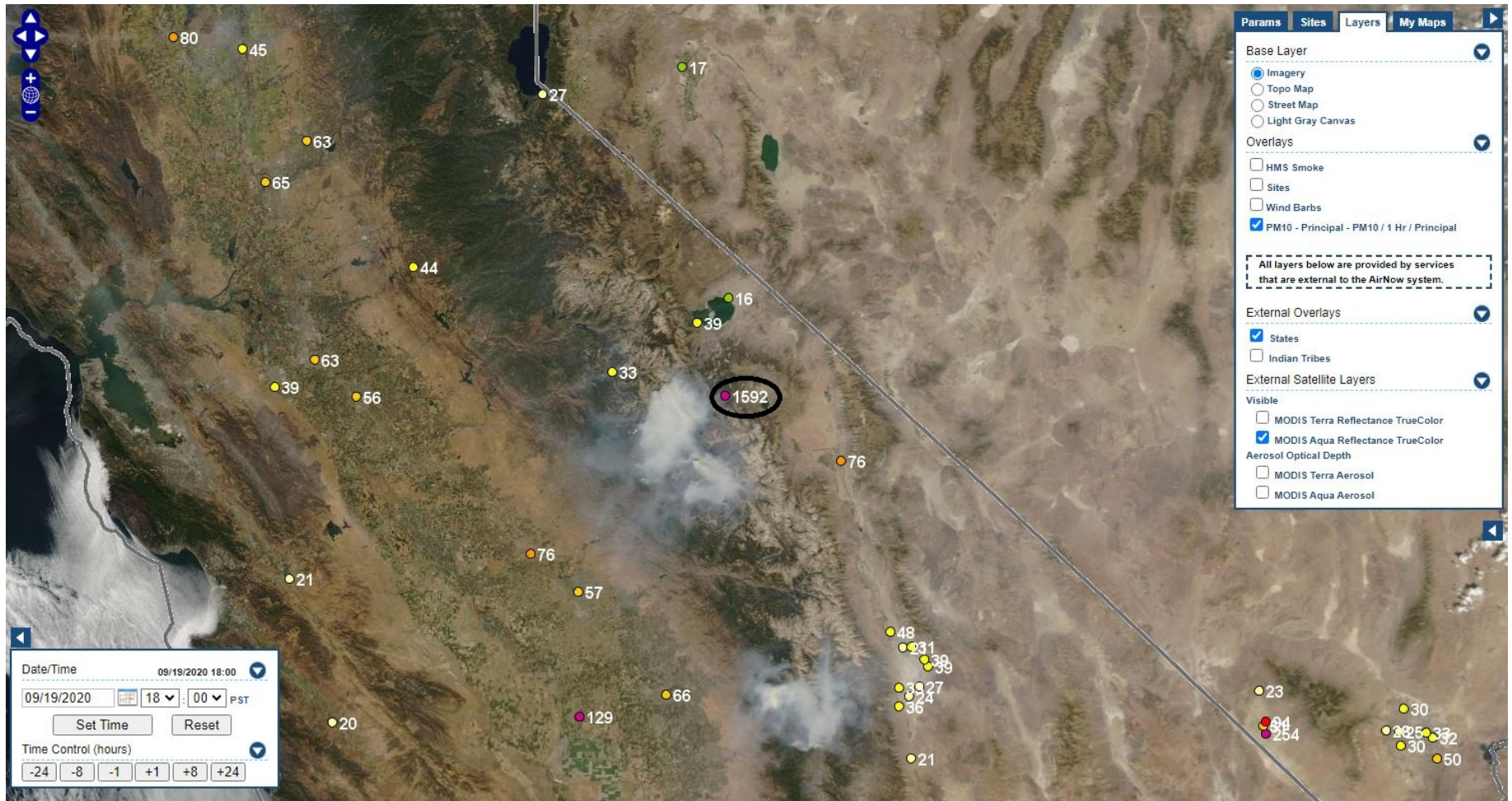
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

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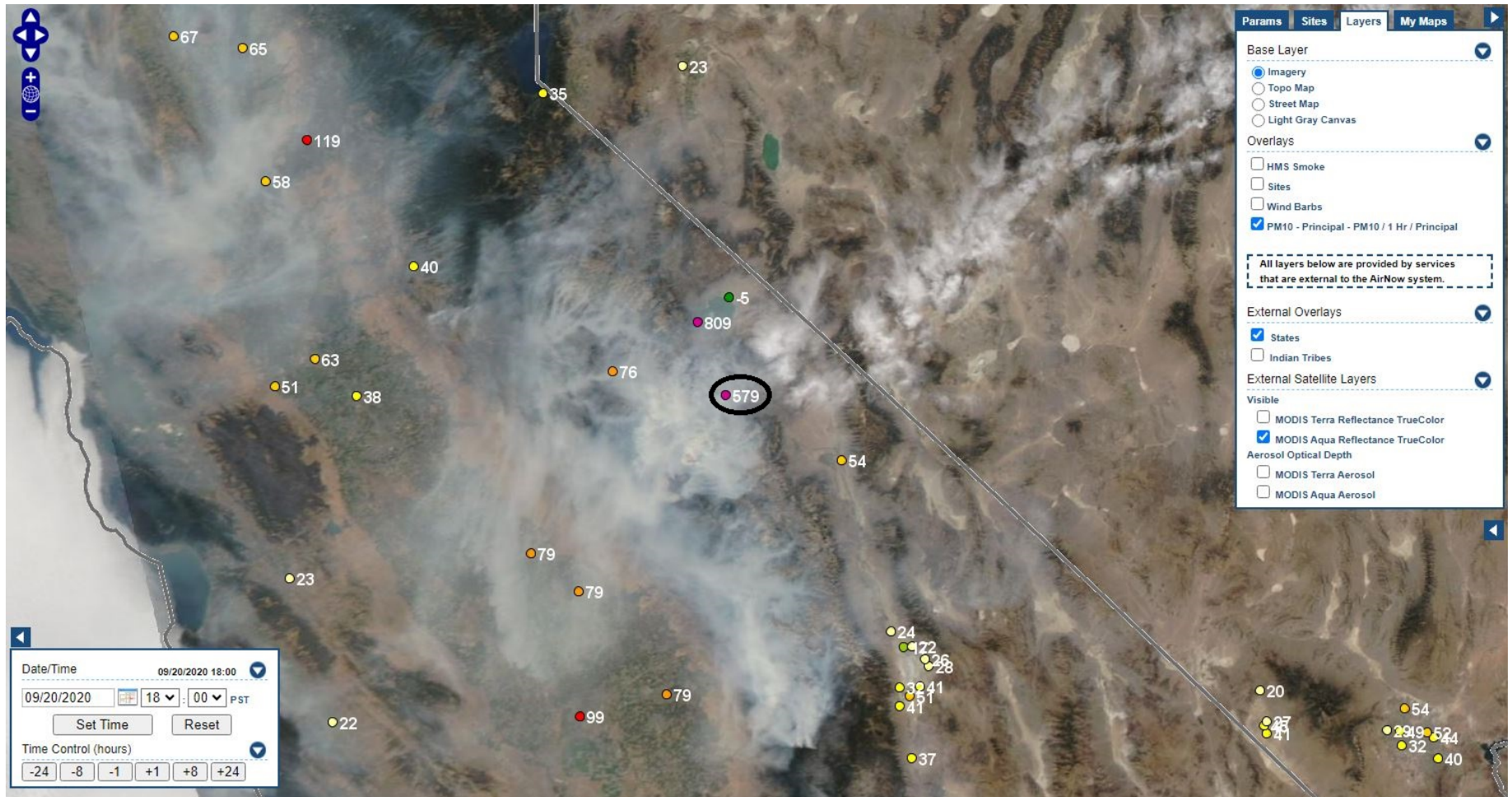
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/19/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/20/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/22/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/23/2020 18:00 PST:



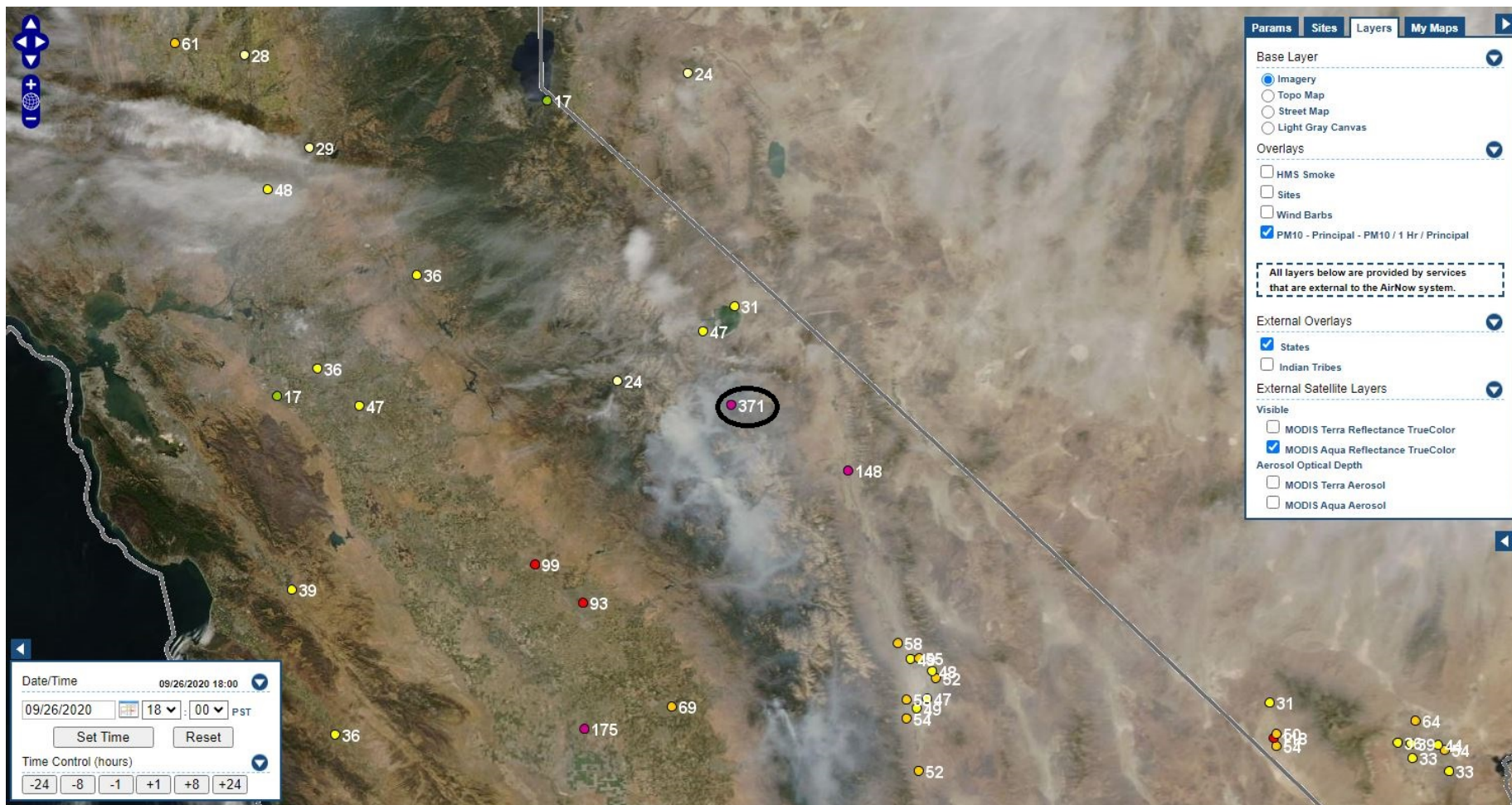
Exceptional Event Demonstration for
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9/25/2020 18:00 PST:



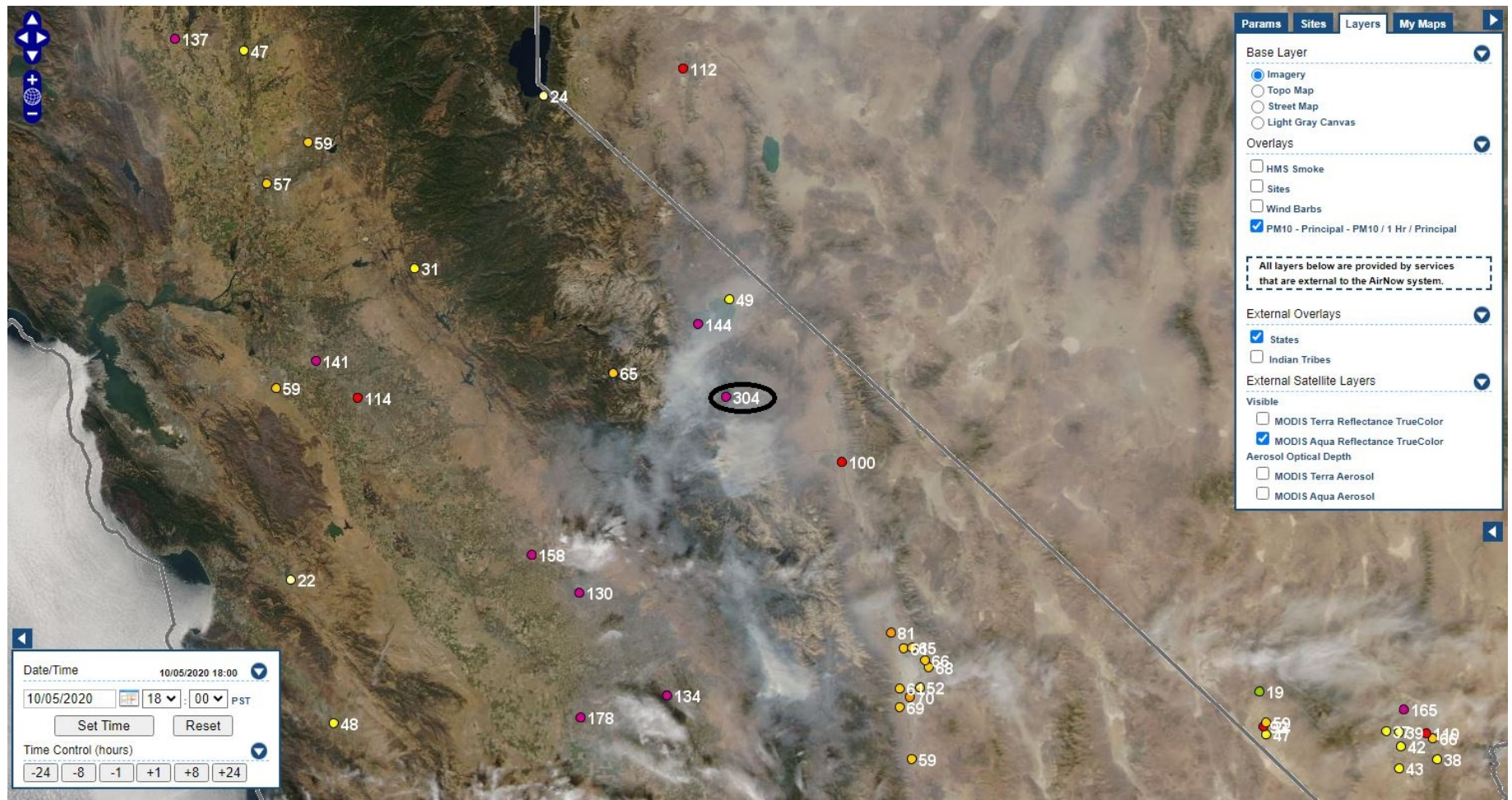
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

9/26/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

10/05/2020 18:00 PST:



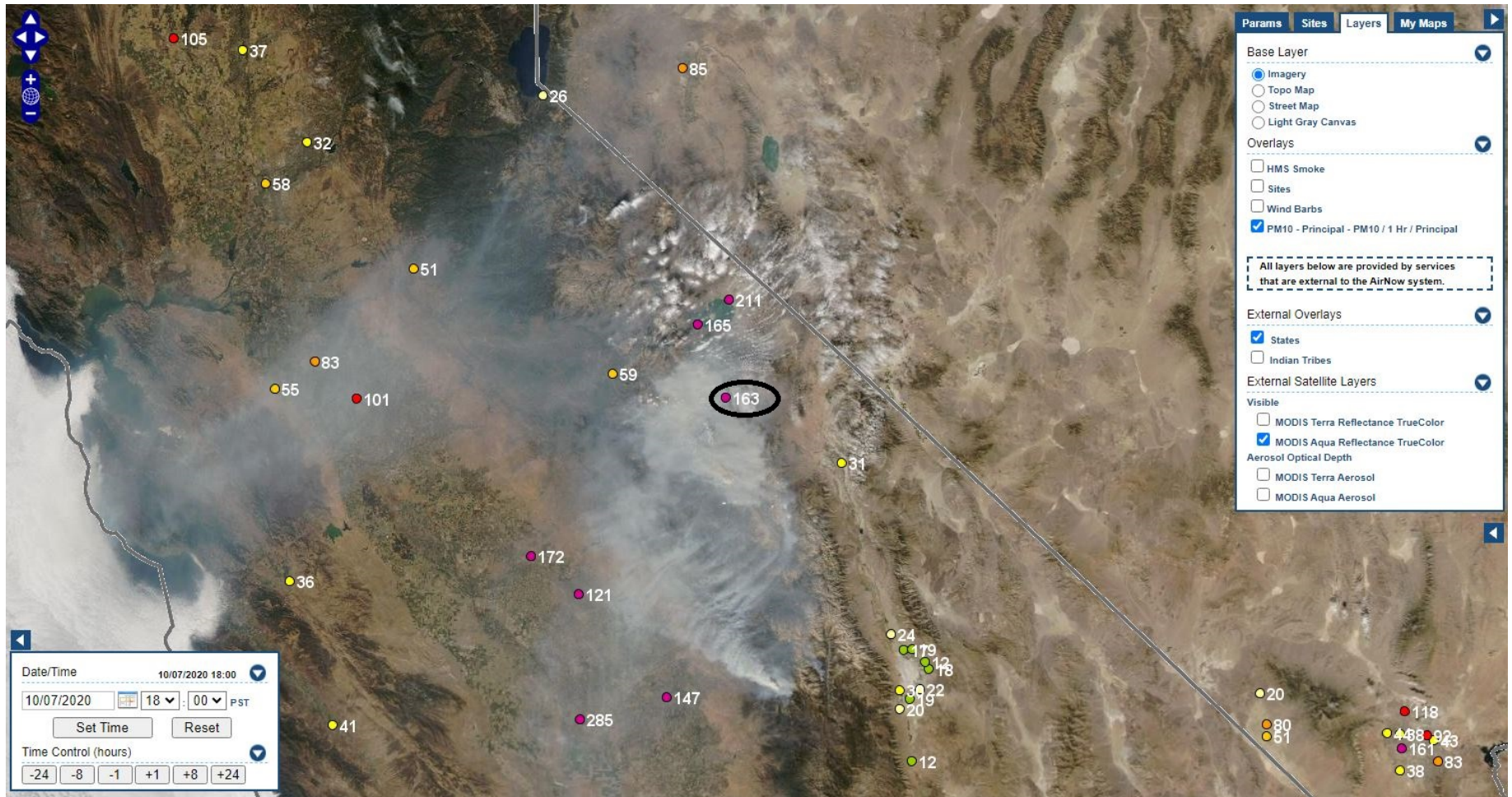
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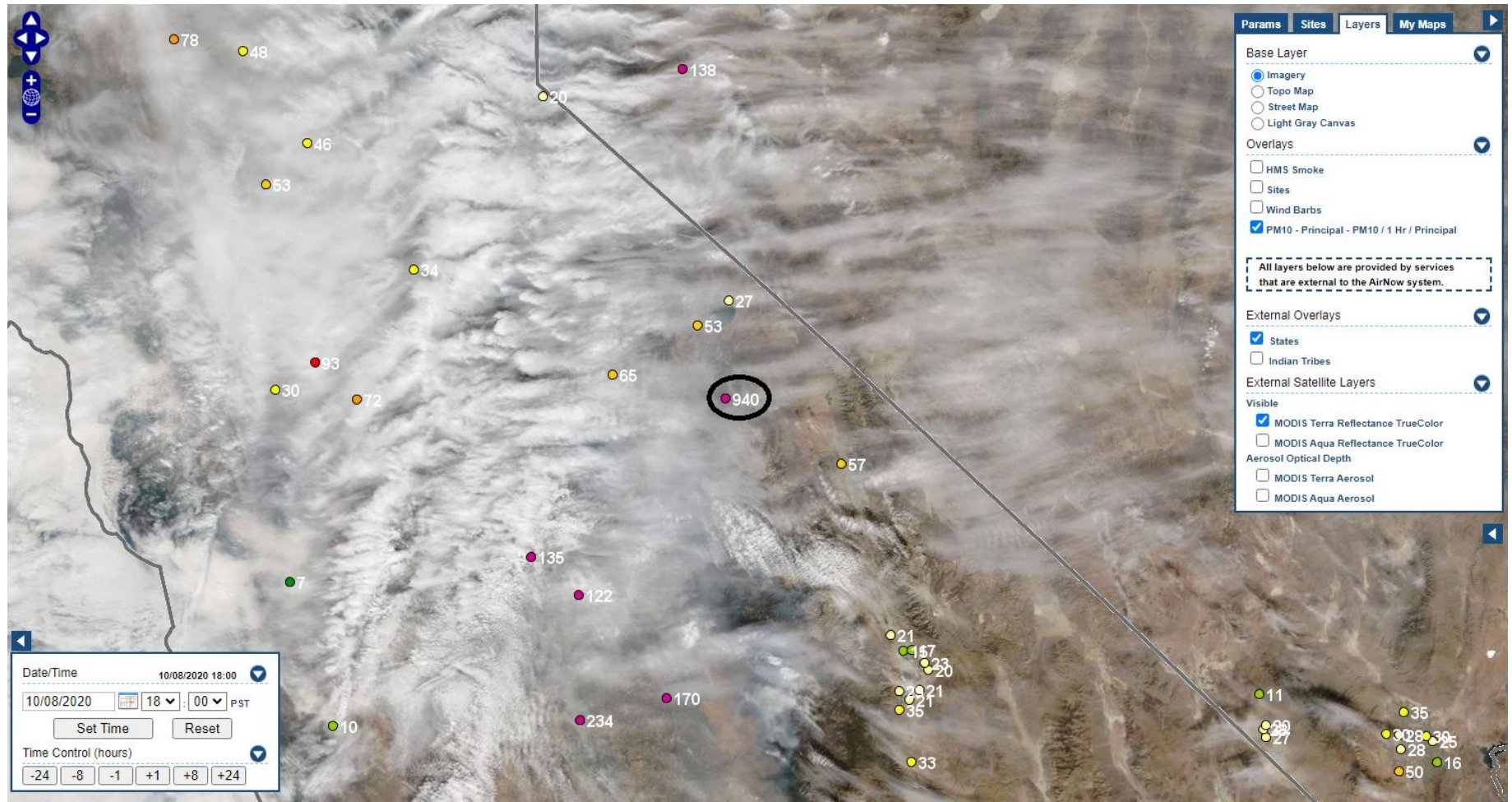
Exceptional Event Demonstration for
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10/07/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

10/08/2020 18:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

10/13/2020 18:00 PST:



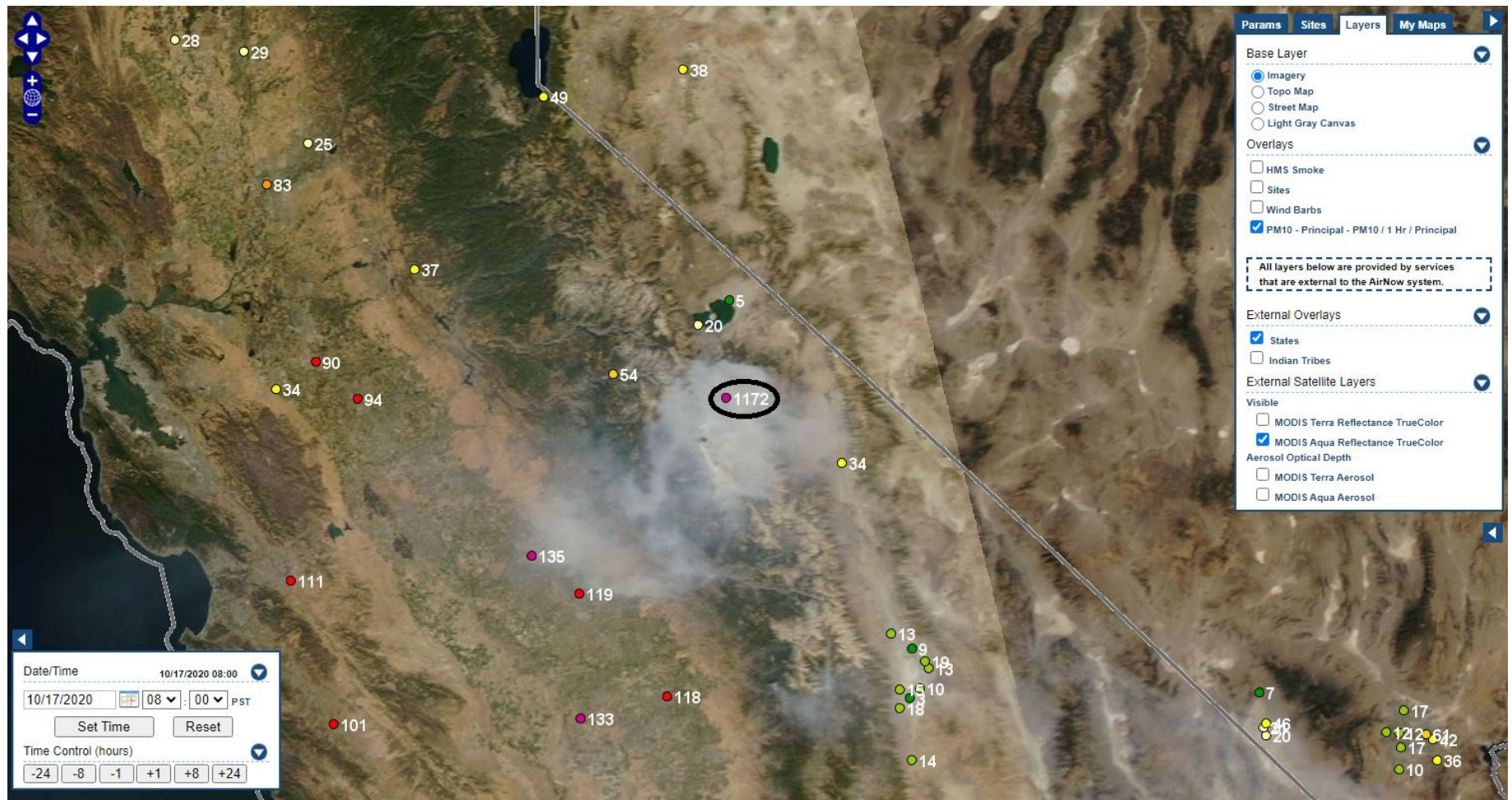
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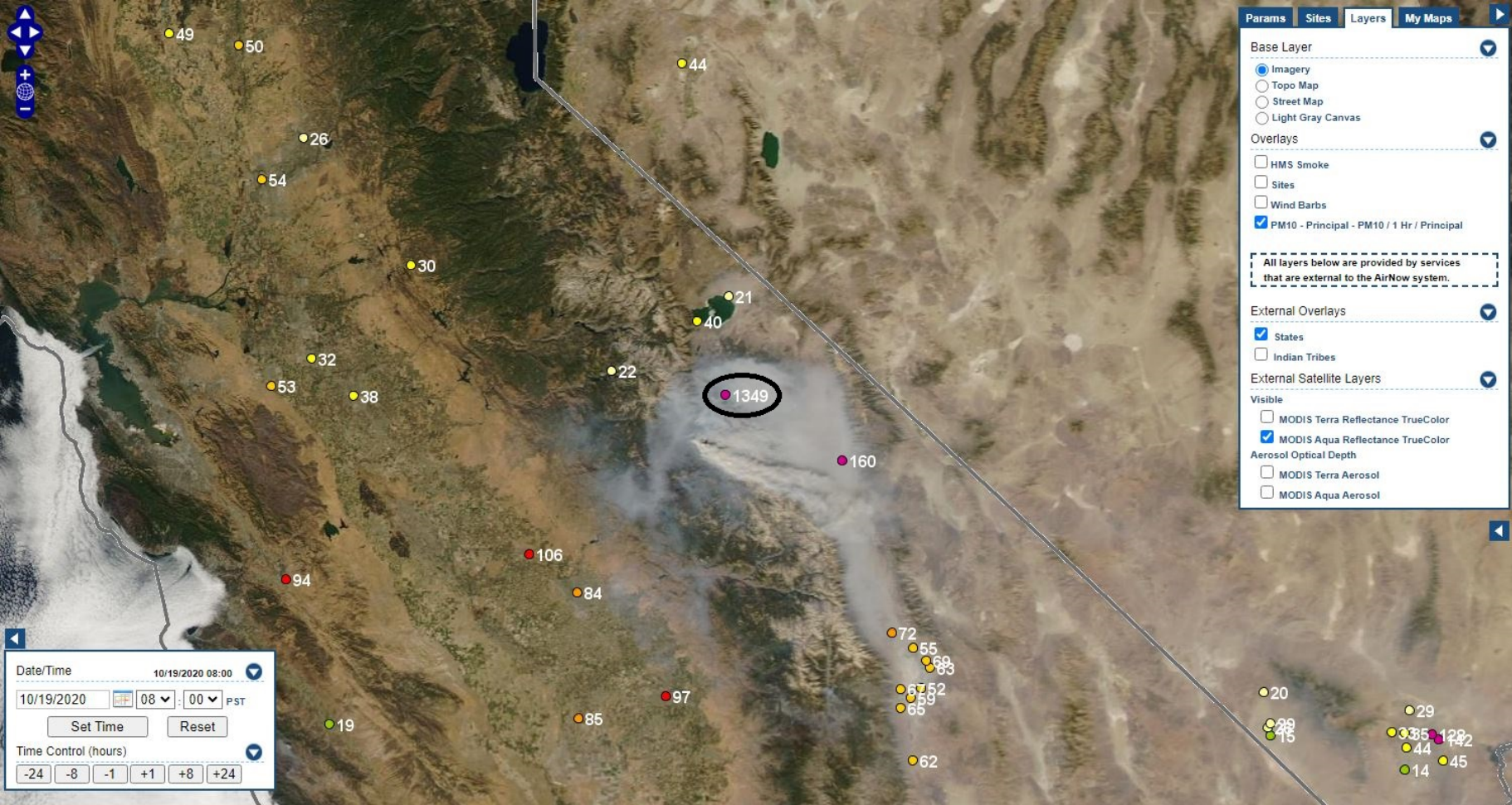
Exceptional Event Demonstration for
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10/17/2020 08:00 PST:



Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020

10/19/2020 08:00 PST:



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

10/21/2020 08:00 PST:



Exceptional Event Demonstration for Mammoth Lakes PM10 in September and October 2020

10/22/2020 16:00 PST:



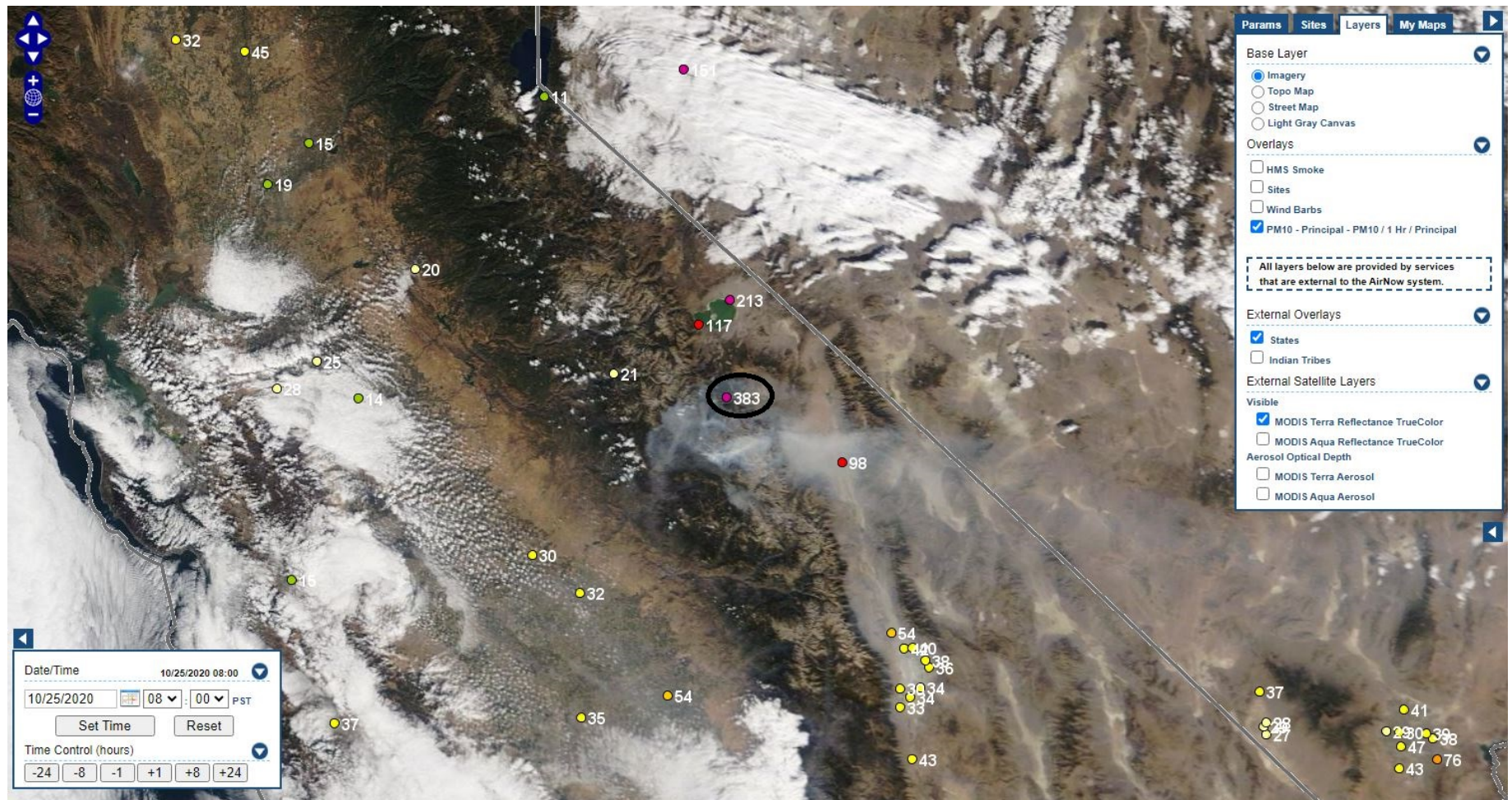
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

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Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

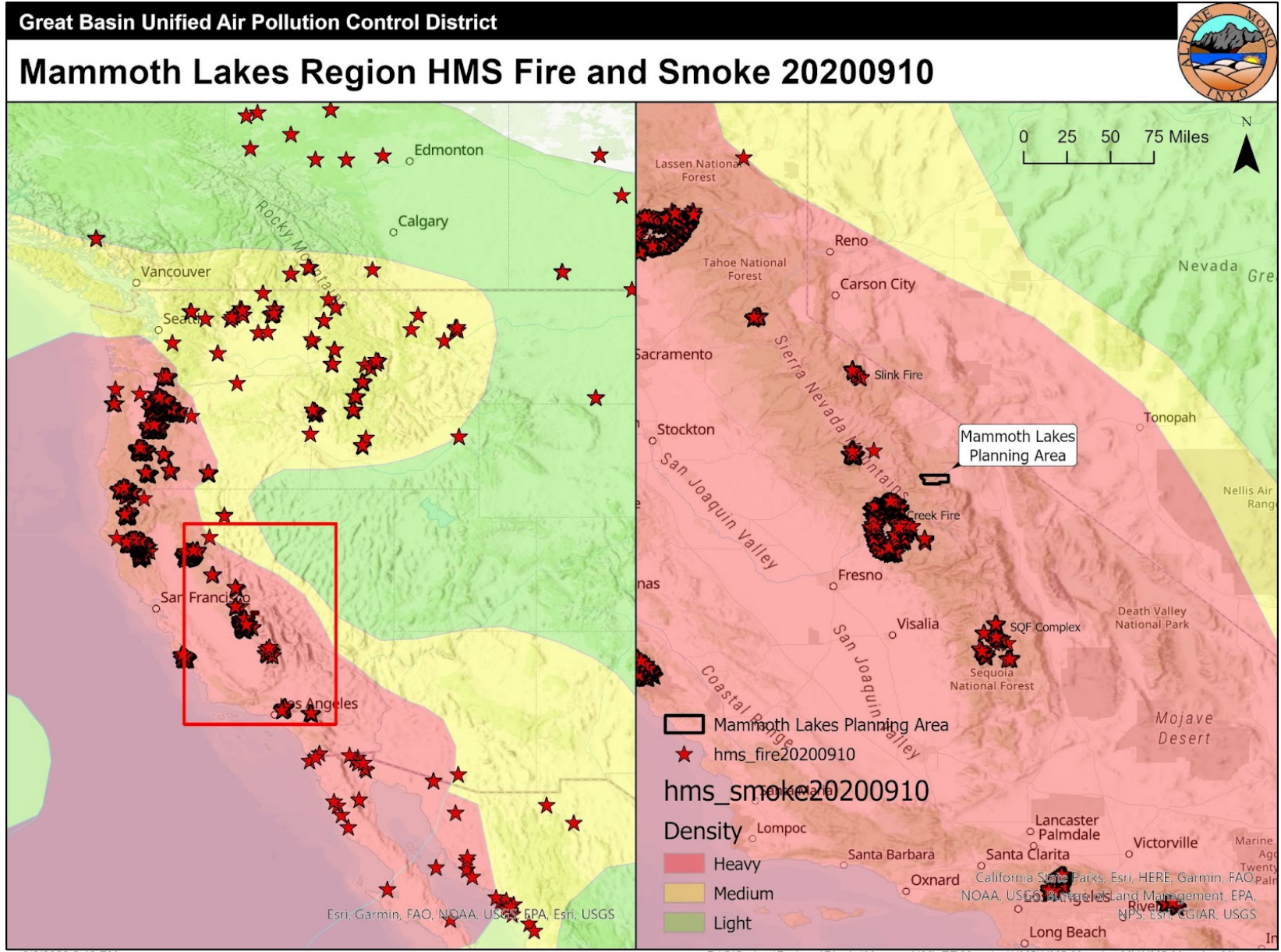
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Appendix K: Hazard Mapping System (HMS) Smoke Plume maps on all POC 6 FEM T640x SPM-only EE days

Showing modeled smoke plume density and satellite-detected hotspots in California and the Mammoth Lakes area as registered by the SPM T640x.

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

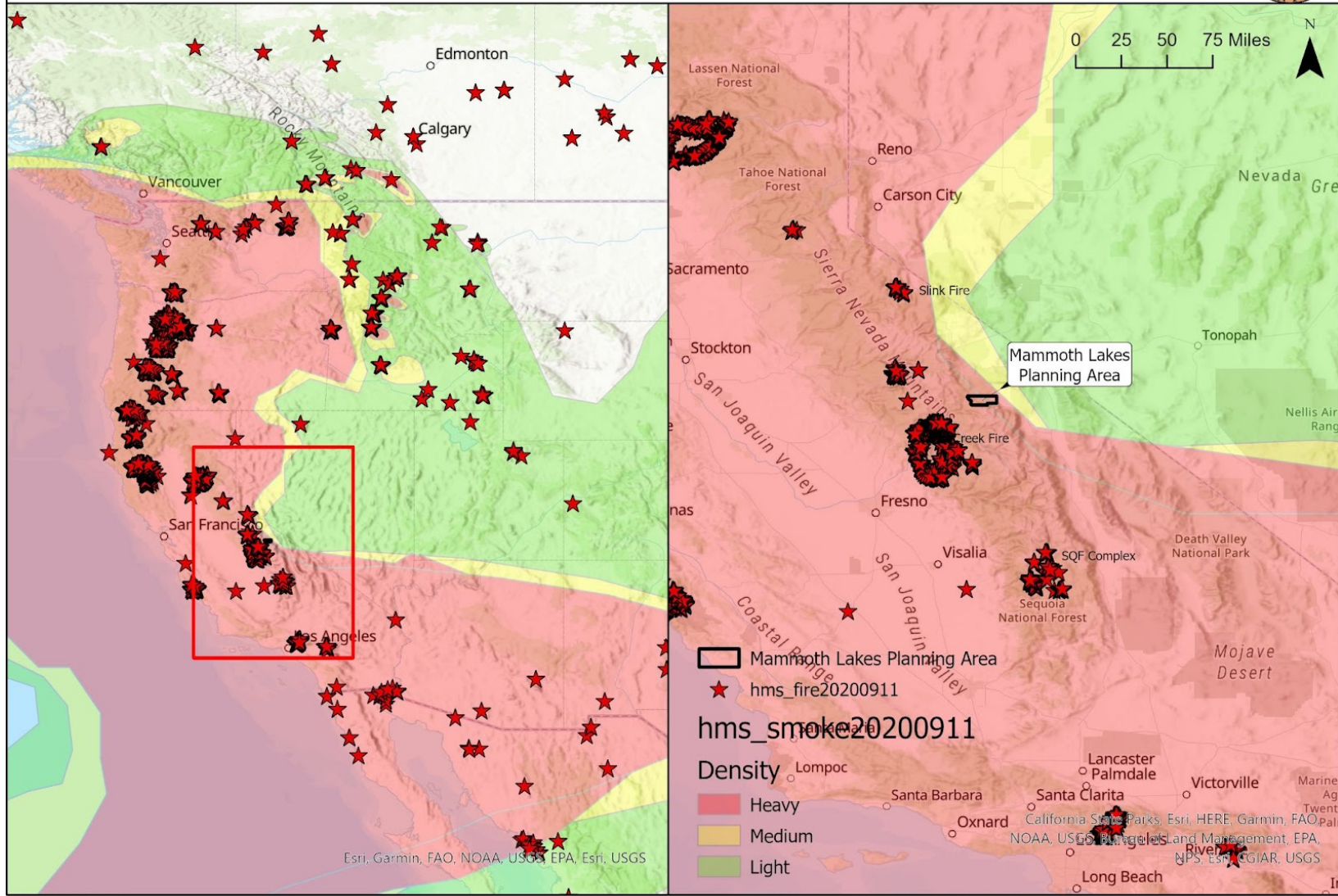


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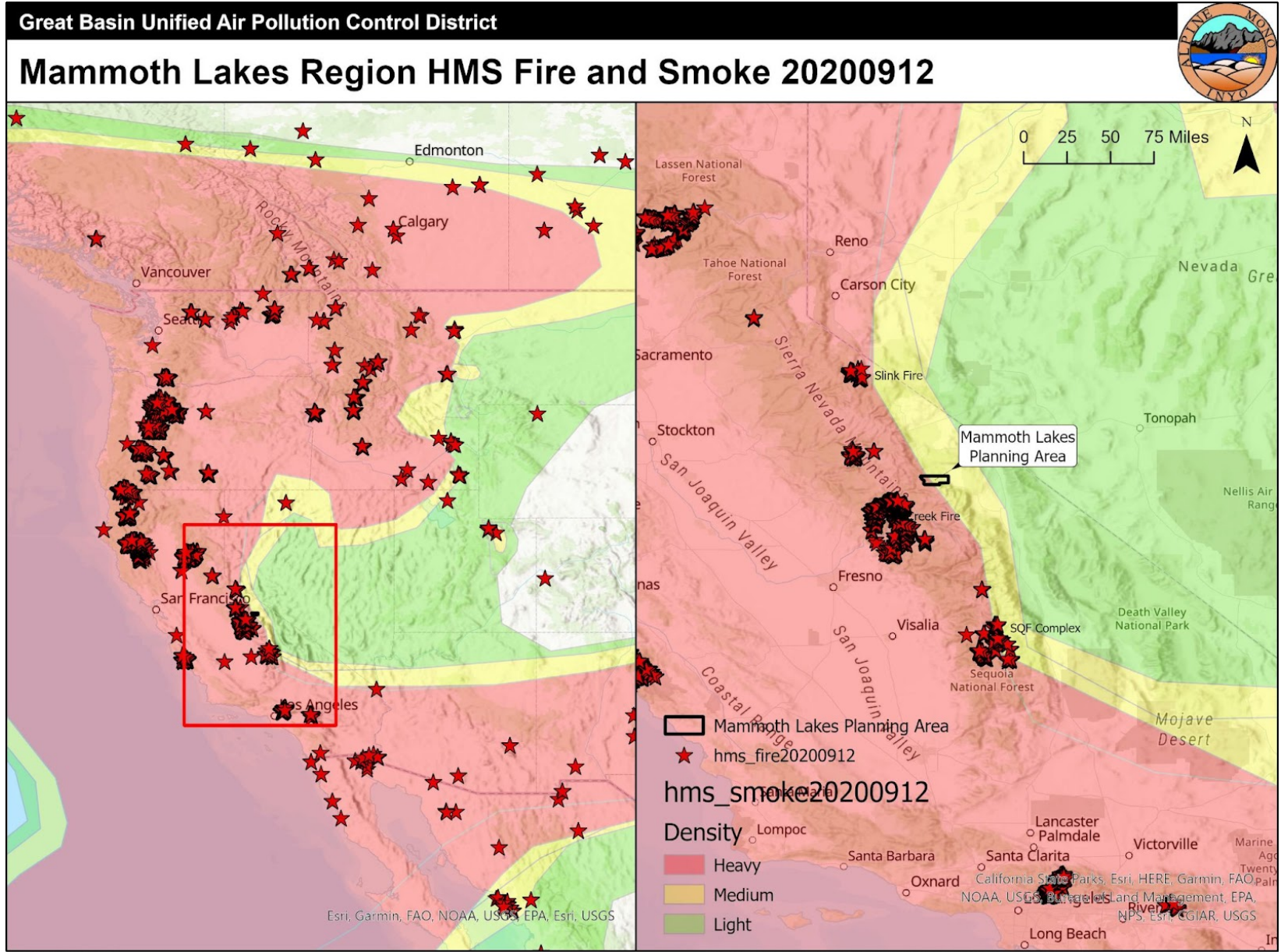
Great Basin Unified Air Pollution Control District



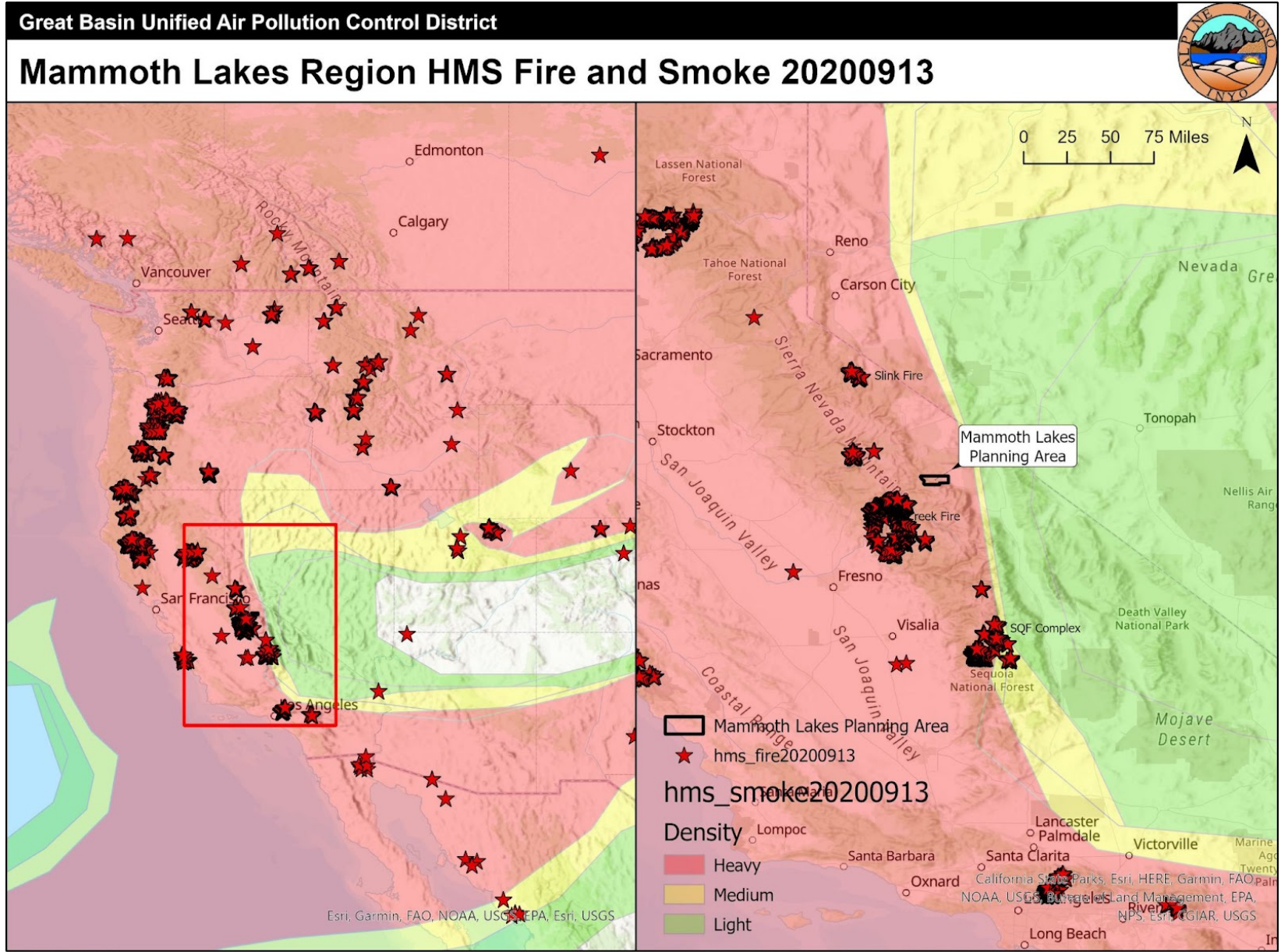
Mammoth Lakes Region HMS Fire and Smoke 20200911



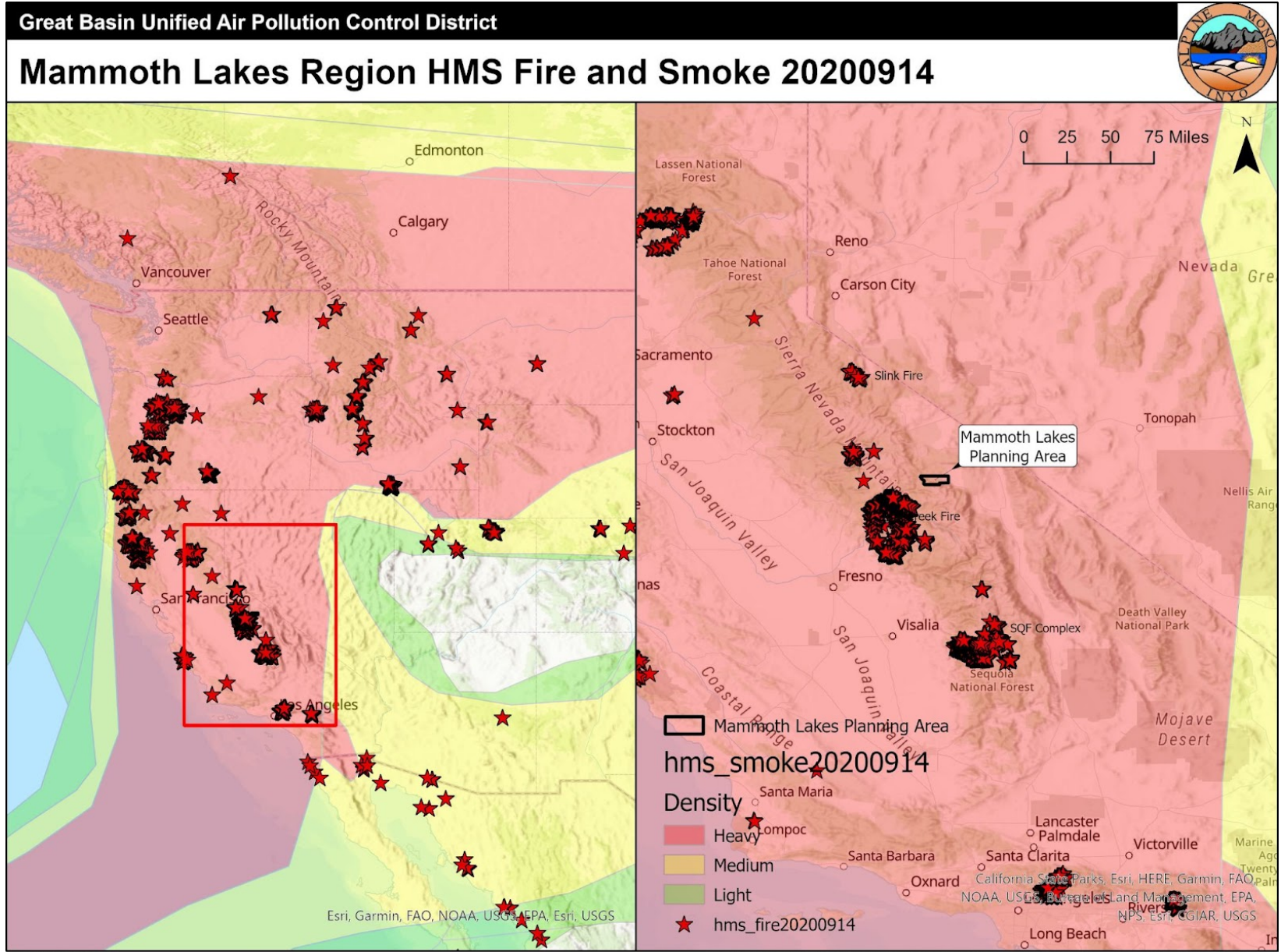
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



6/6/2023 2:58 PM



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



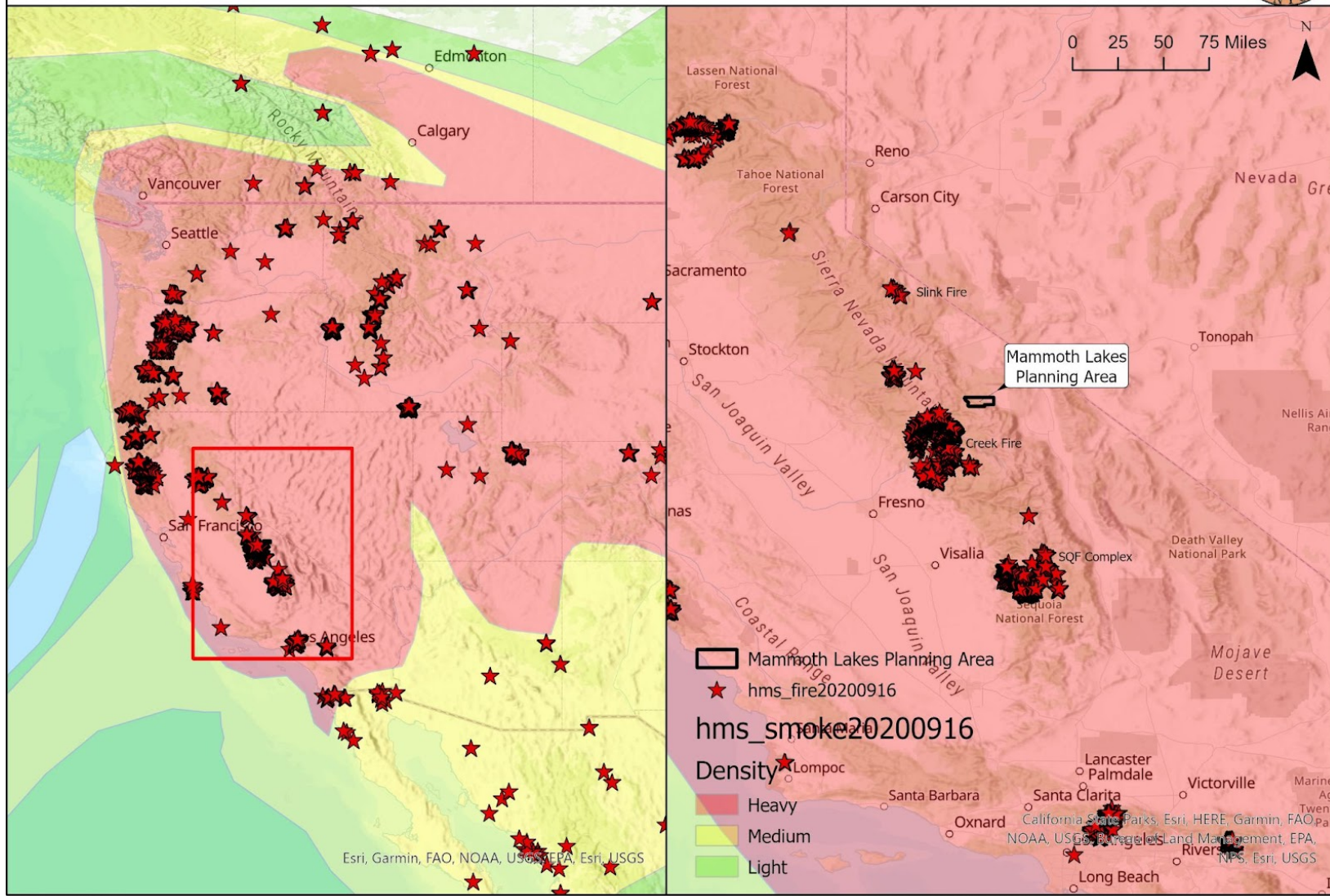
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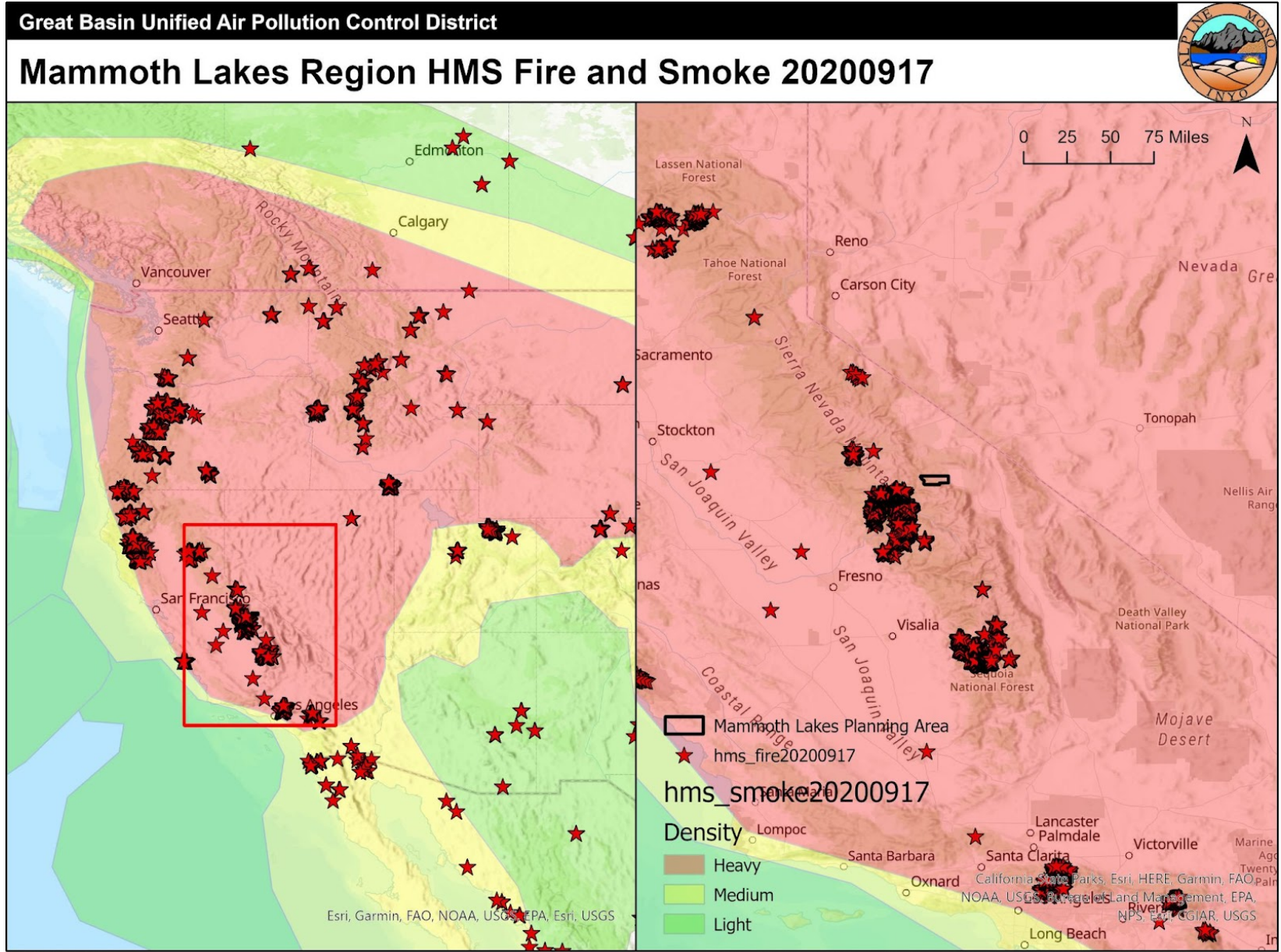
Great Basin Unified Air Pollution Control District



Mammoth Lakes Region HMS Fire and Smoke 20200916

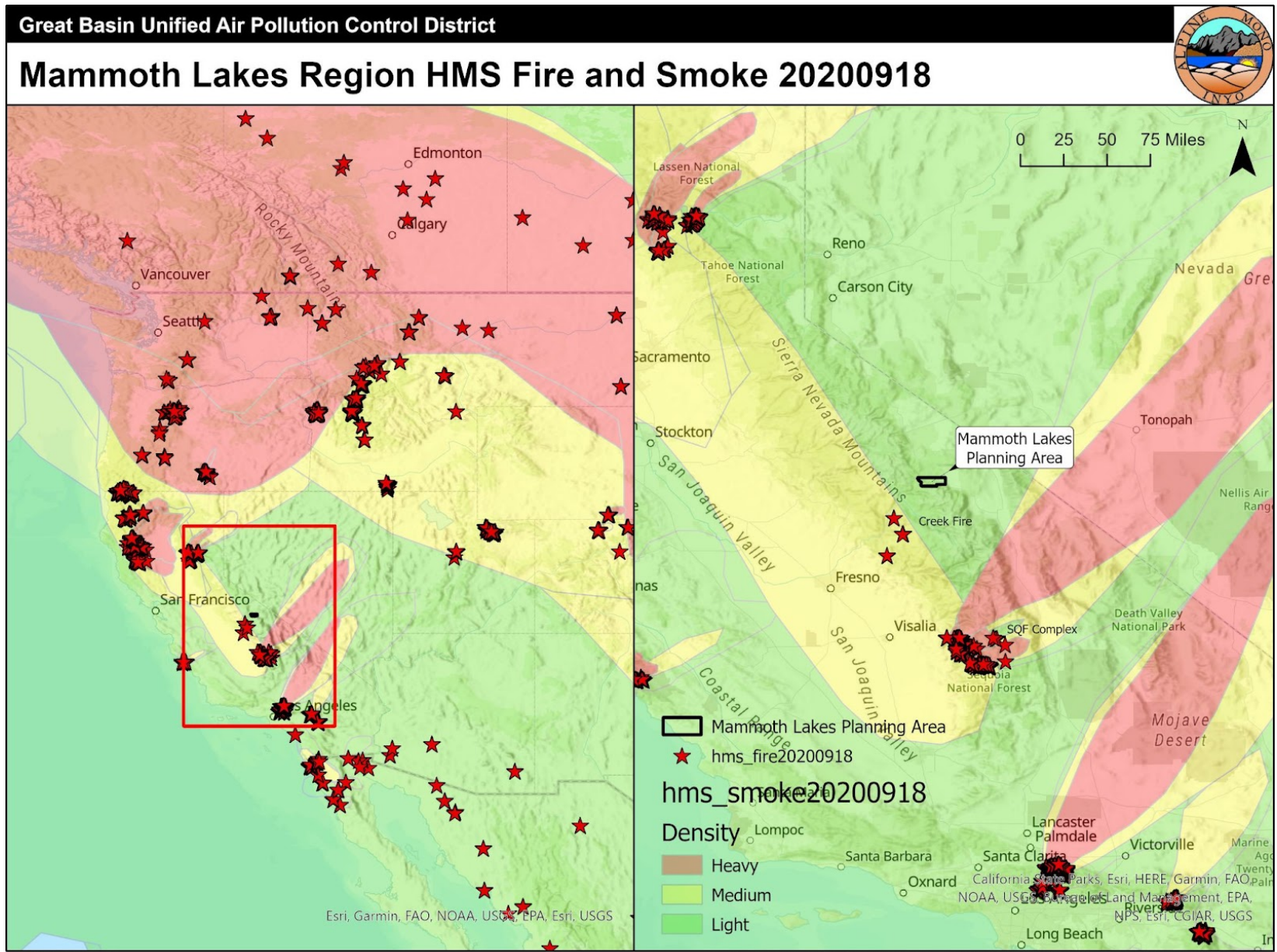


Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



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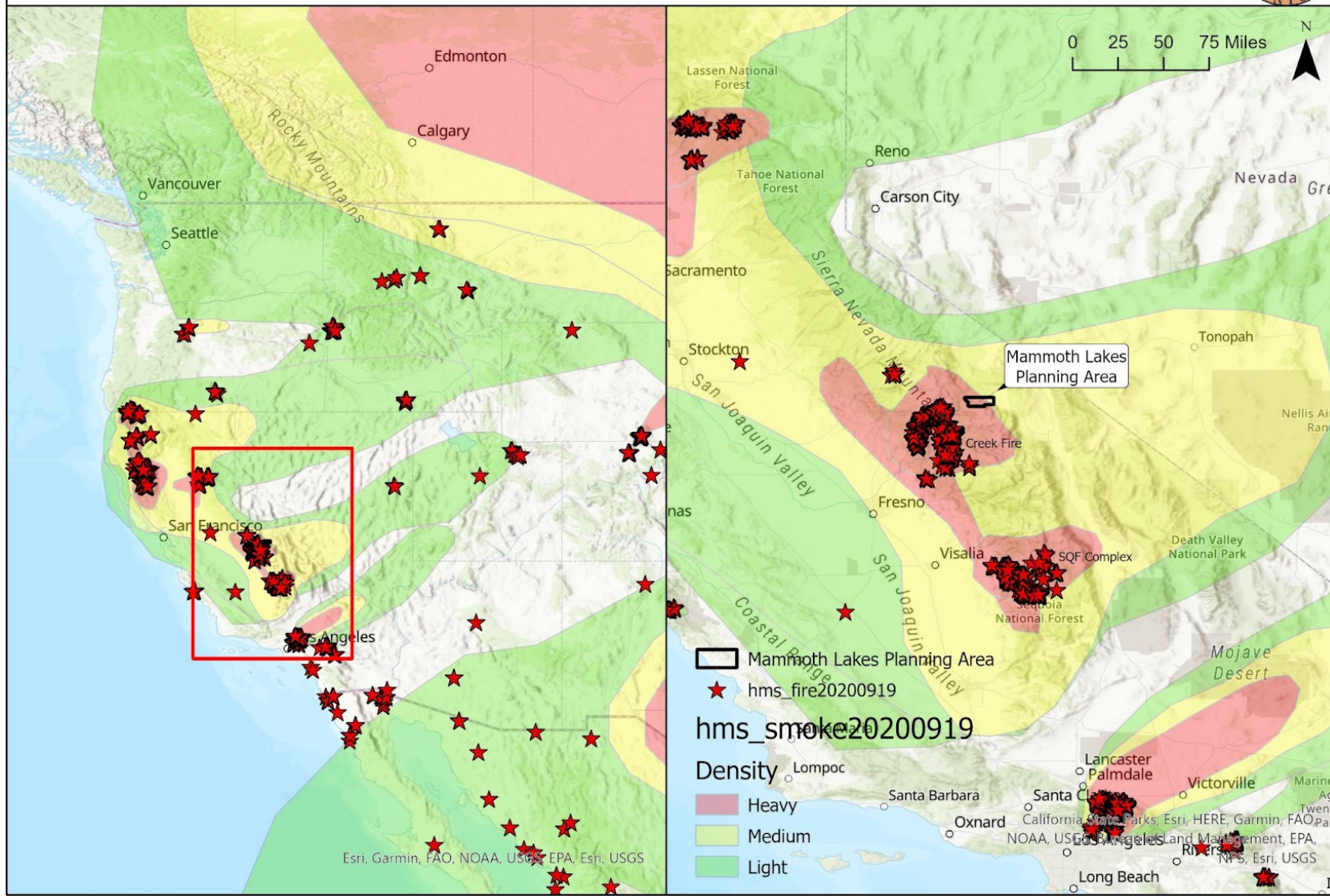
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Great Basin Unified Air Pollution Control District



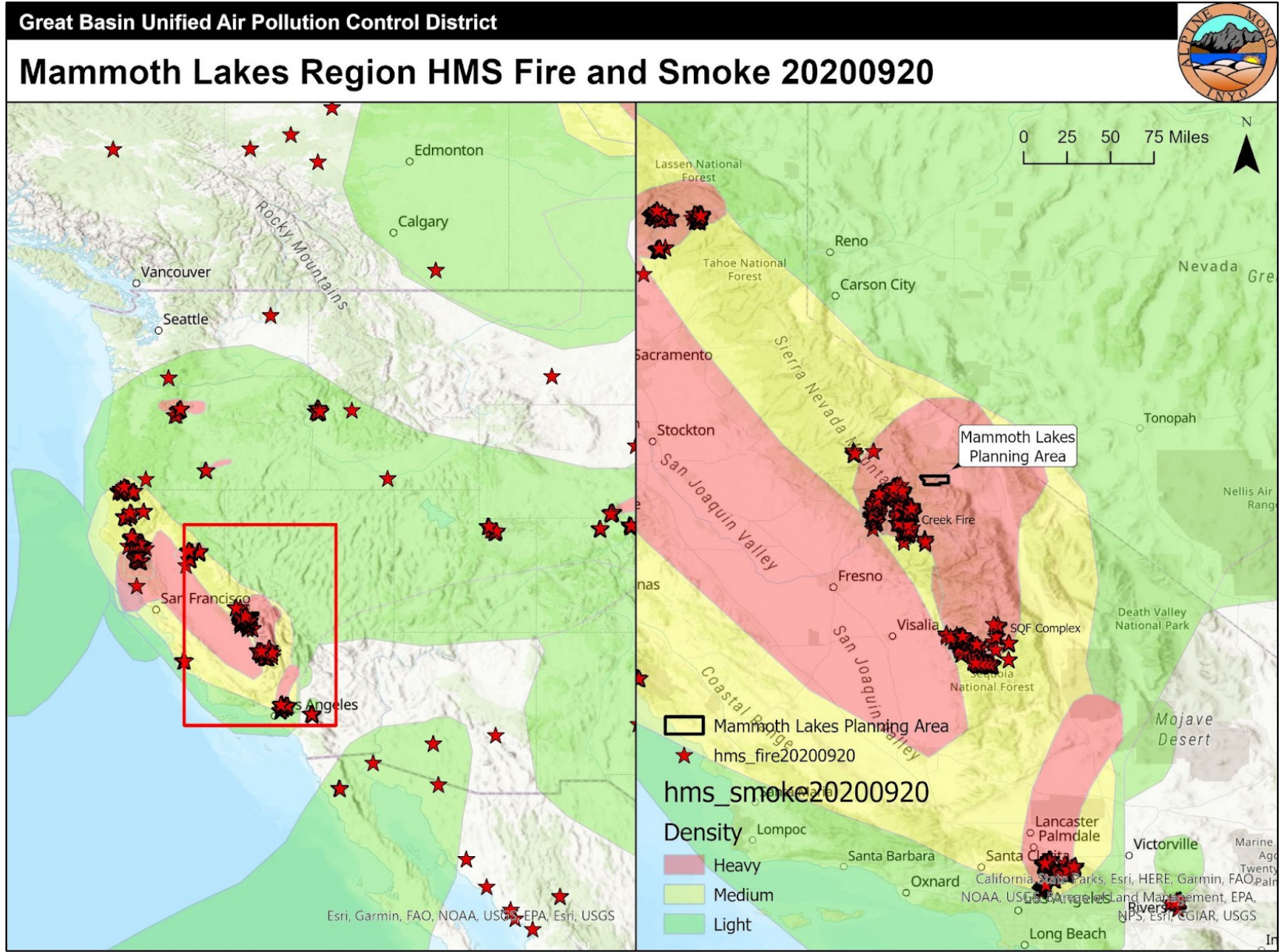
Mammoth Lakes Region HMS Fire and Smoke 20200919



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Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

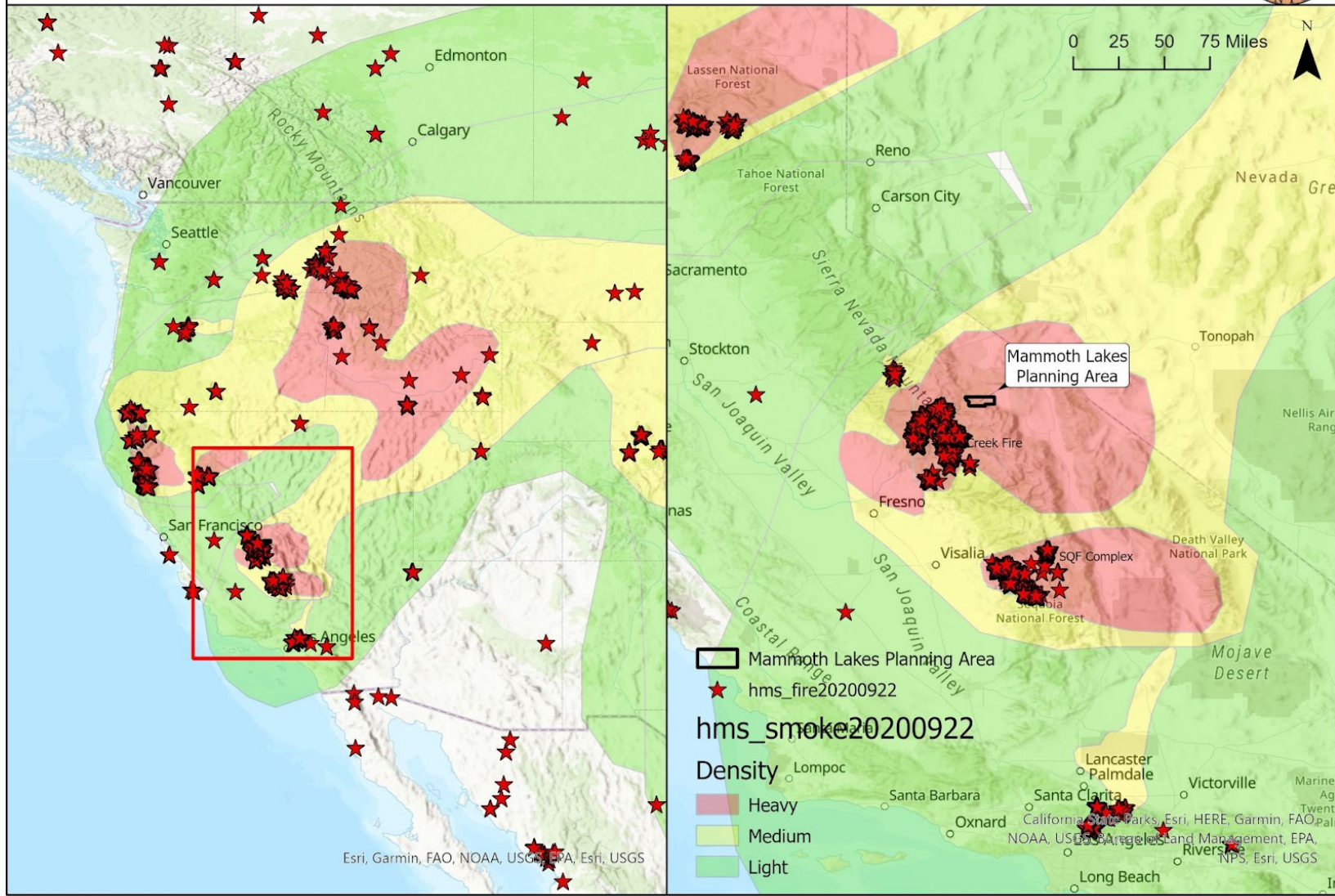


Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Great Basin Unified Air Pollution Control District

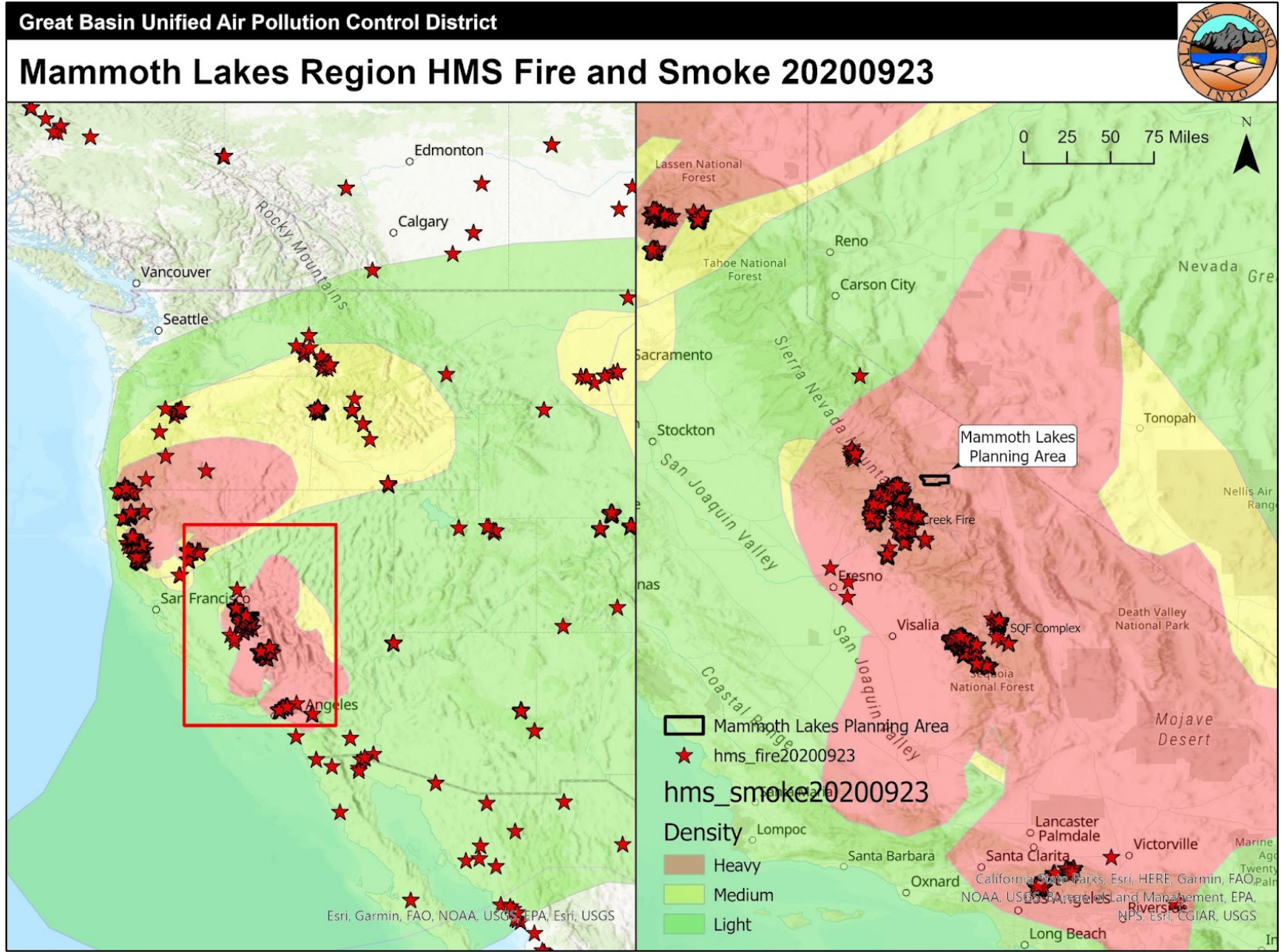


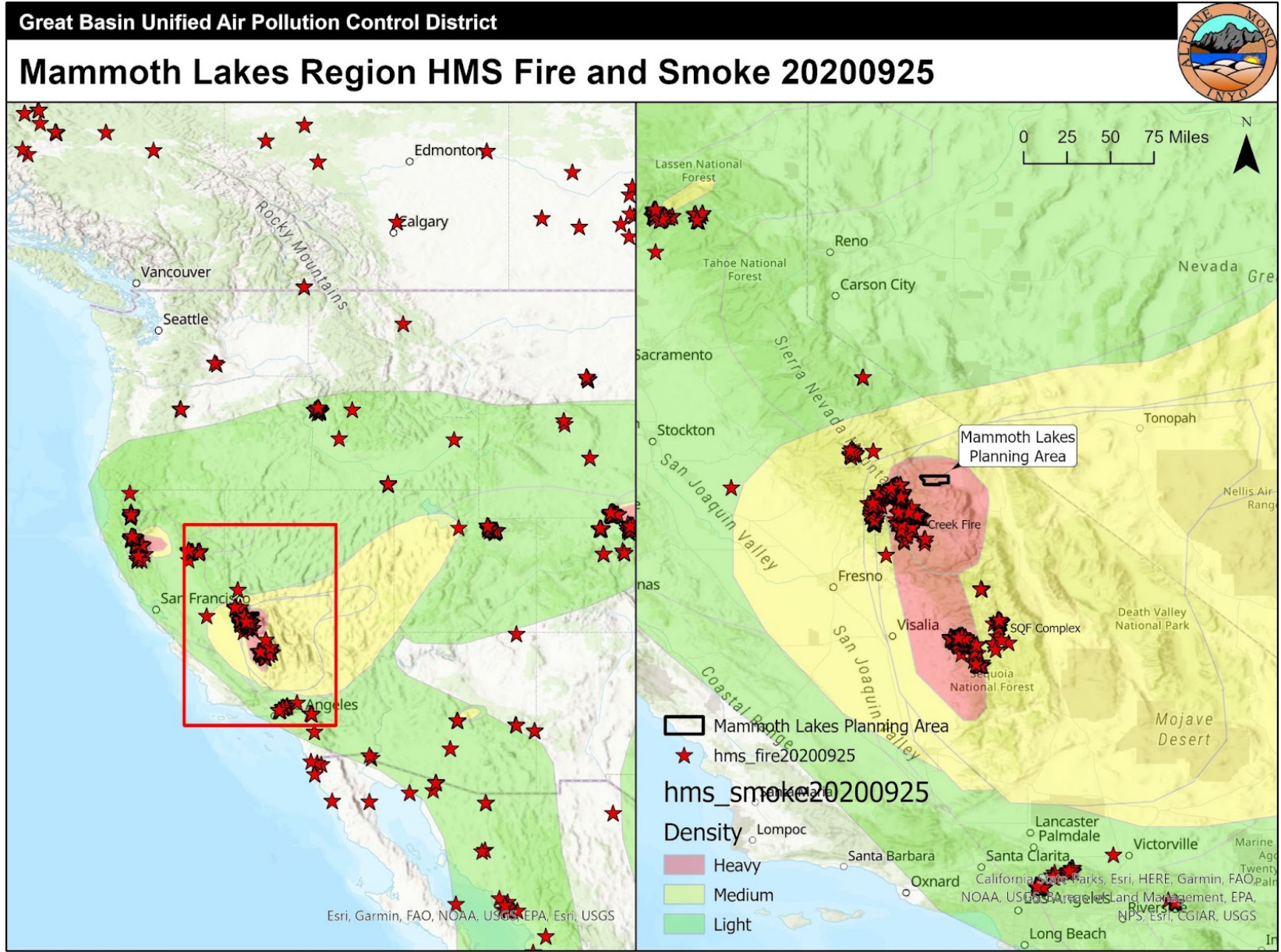
Mammoth Lakes Region HMS Fire and Smoke 20200922



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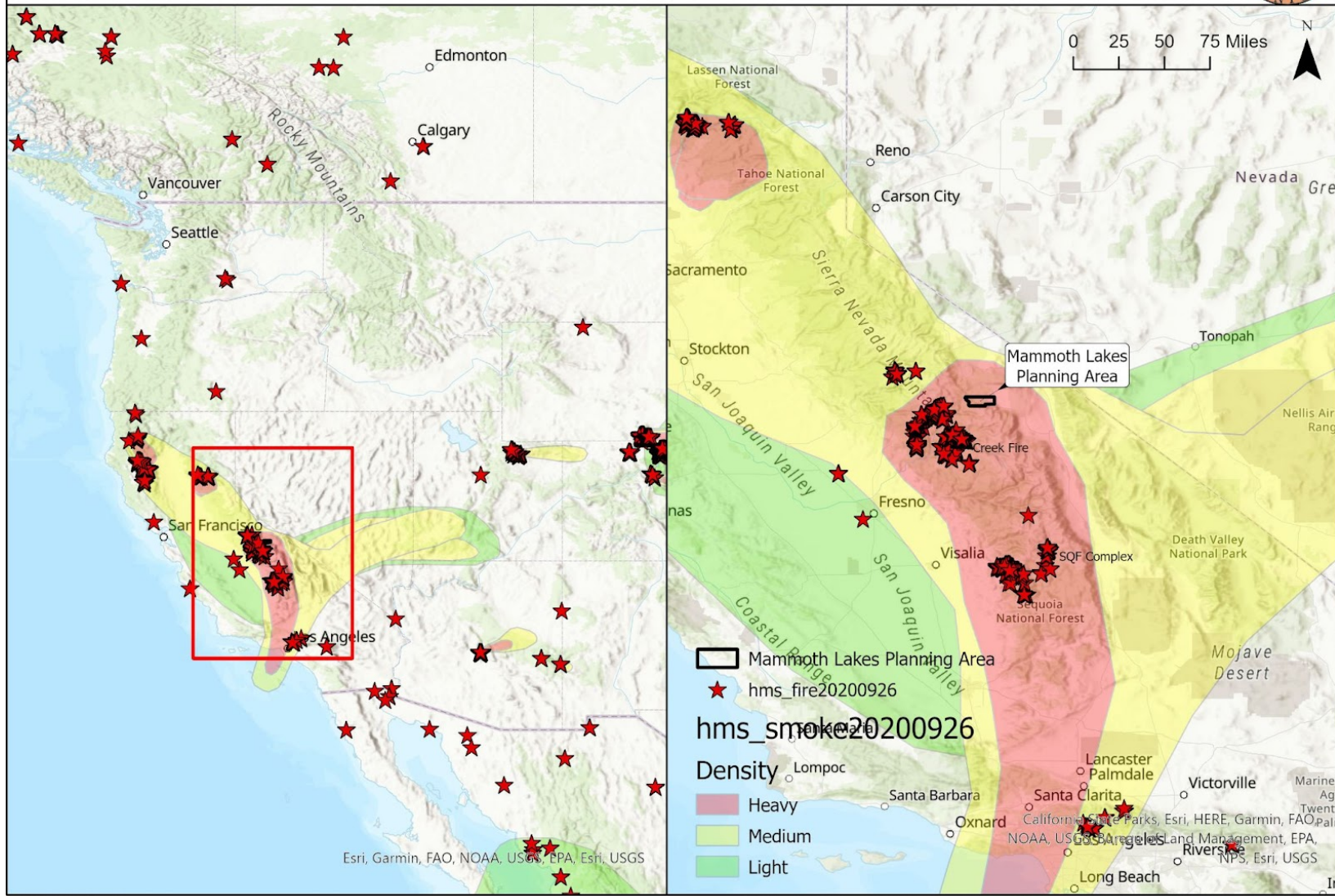




Great Basin Unified Air Pollution Control District



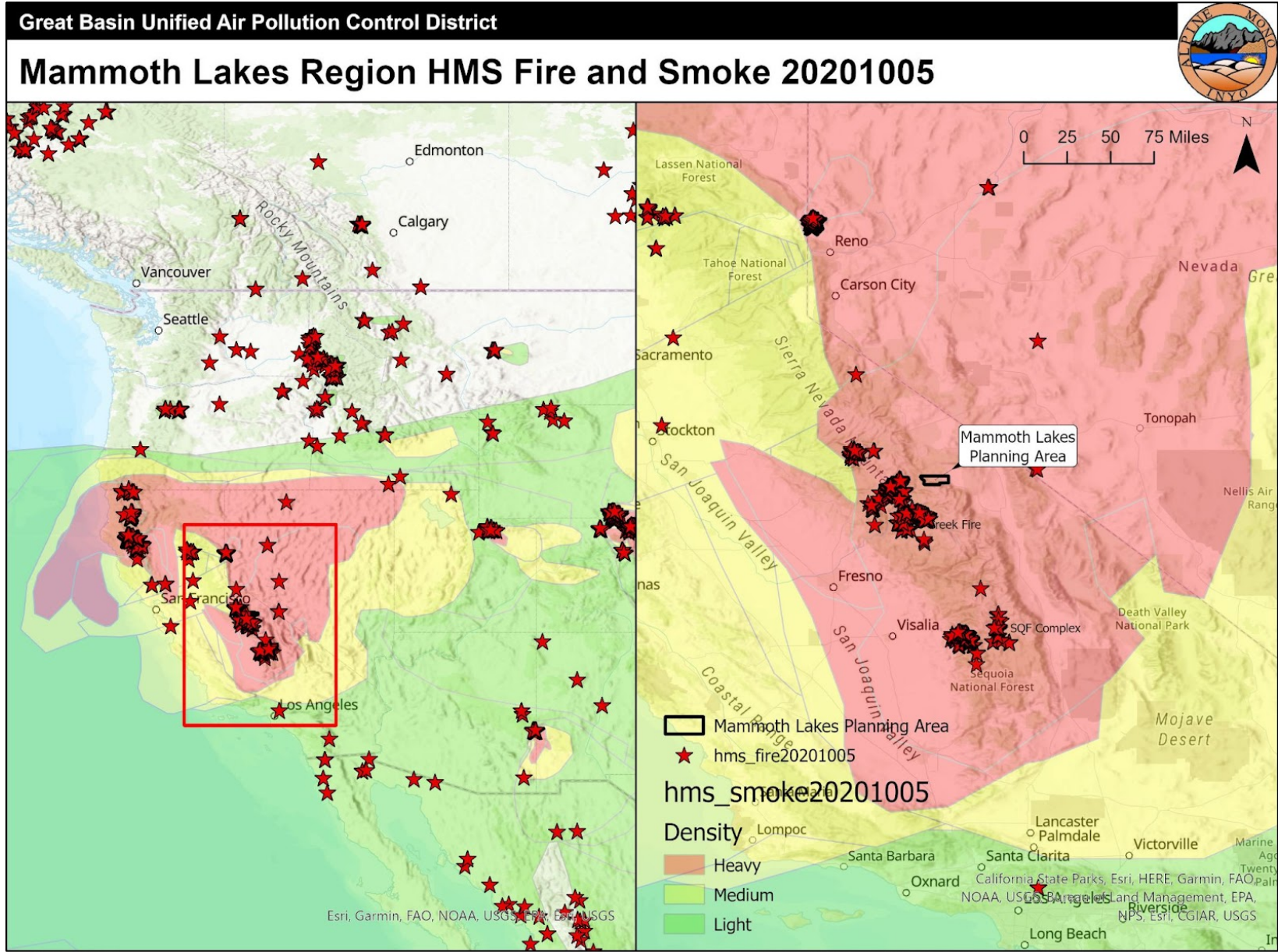
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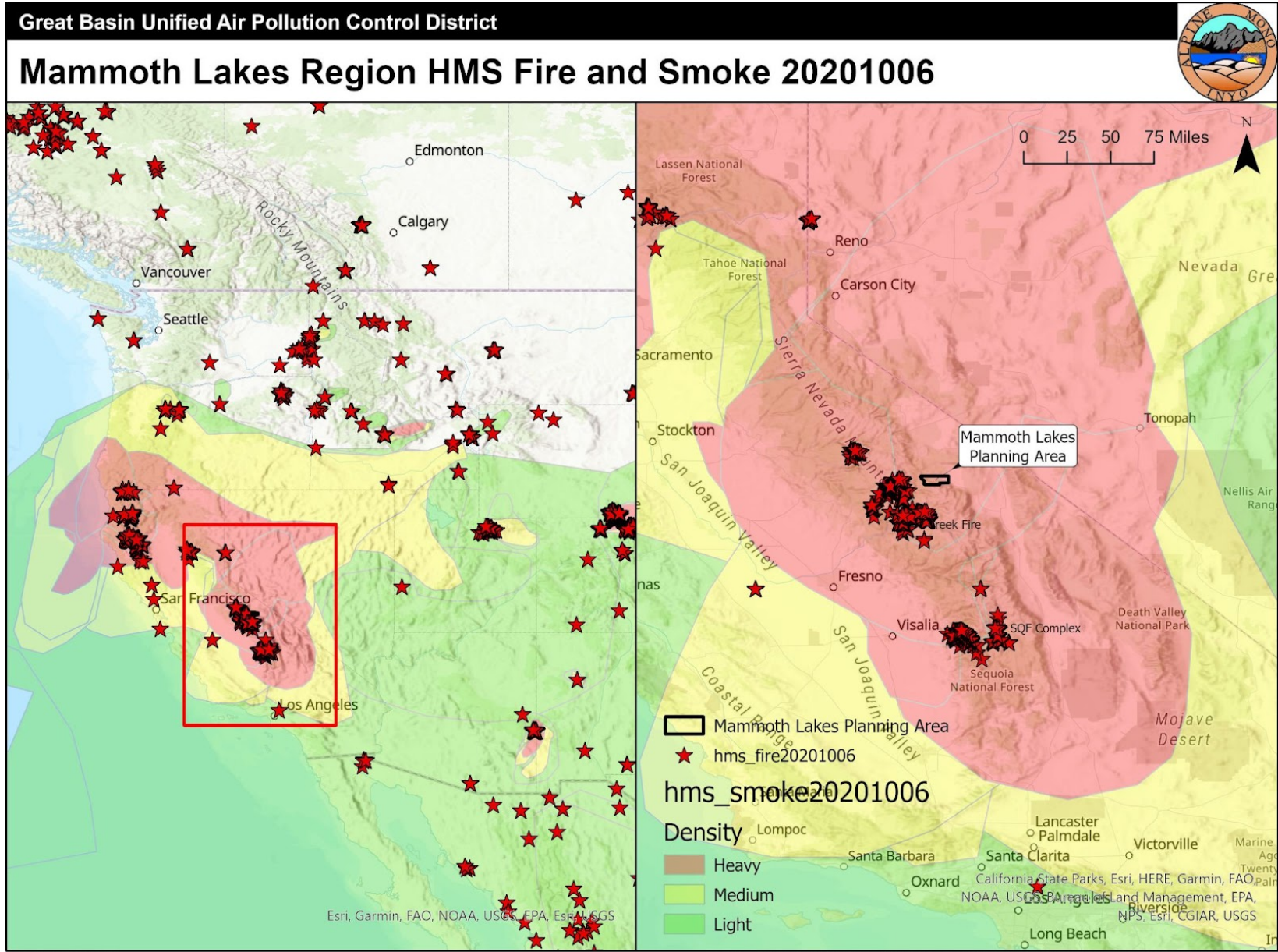
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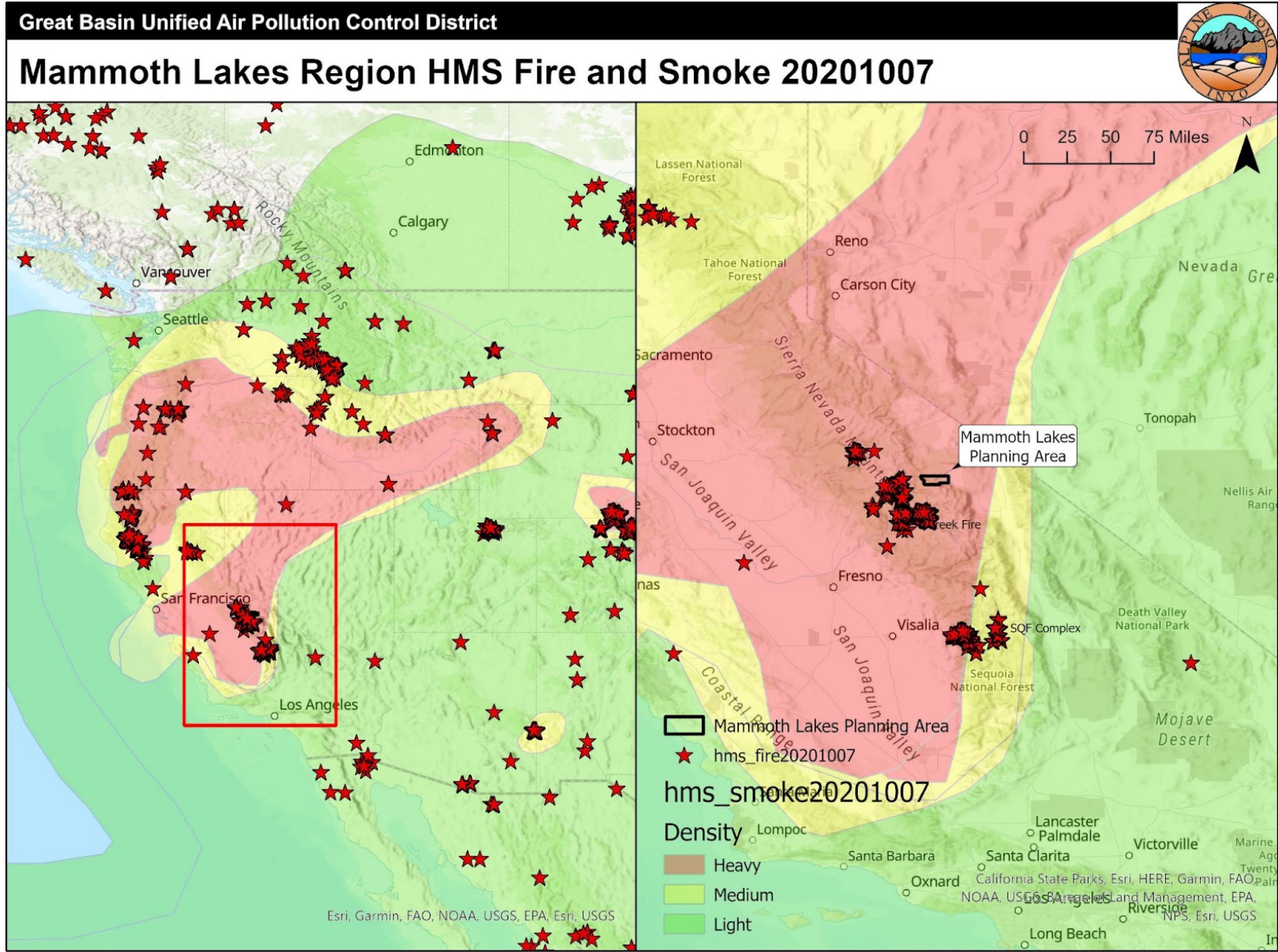
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

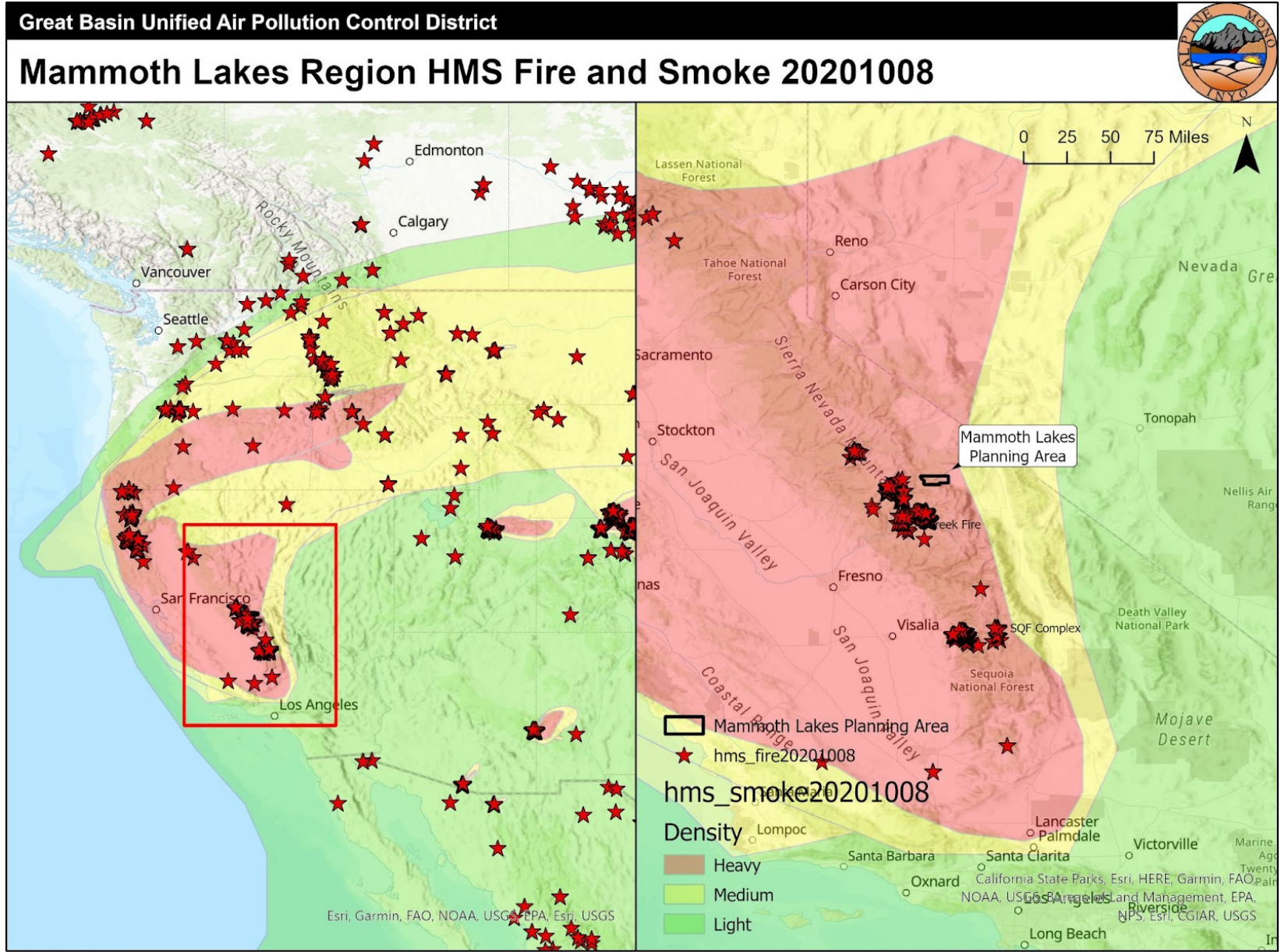


Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



6/6/2023 5:28 PM

Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



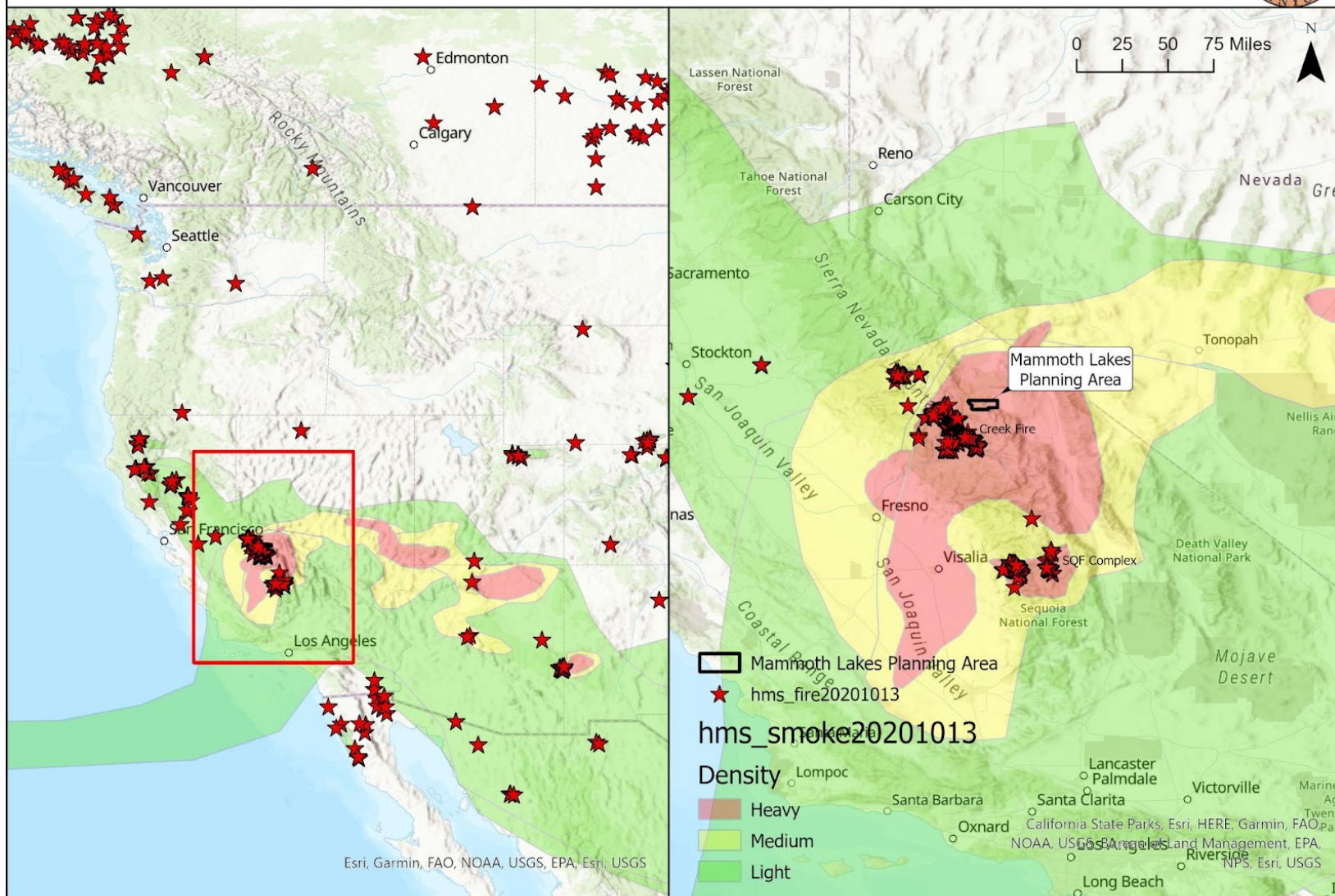
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Great Basin Unified Air Pollution Control District

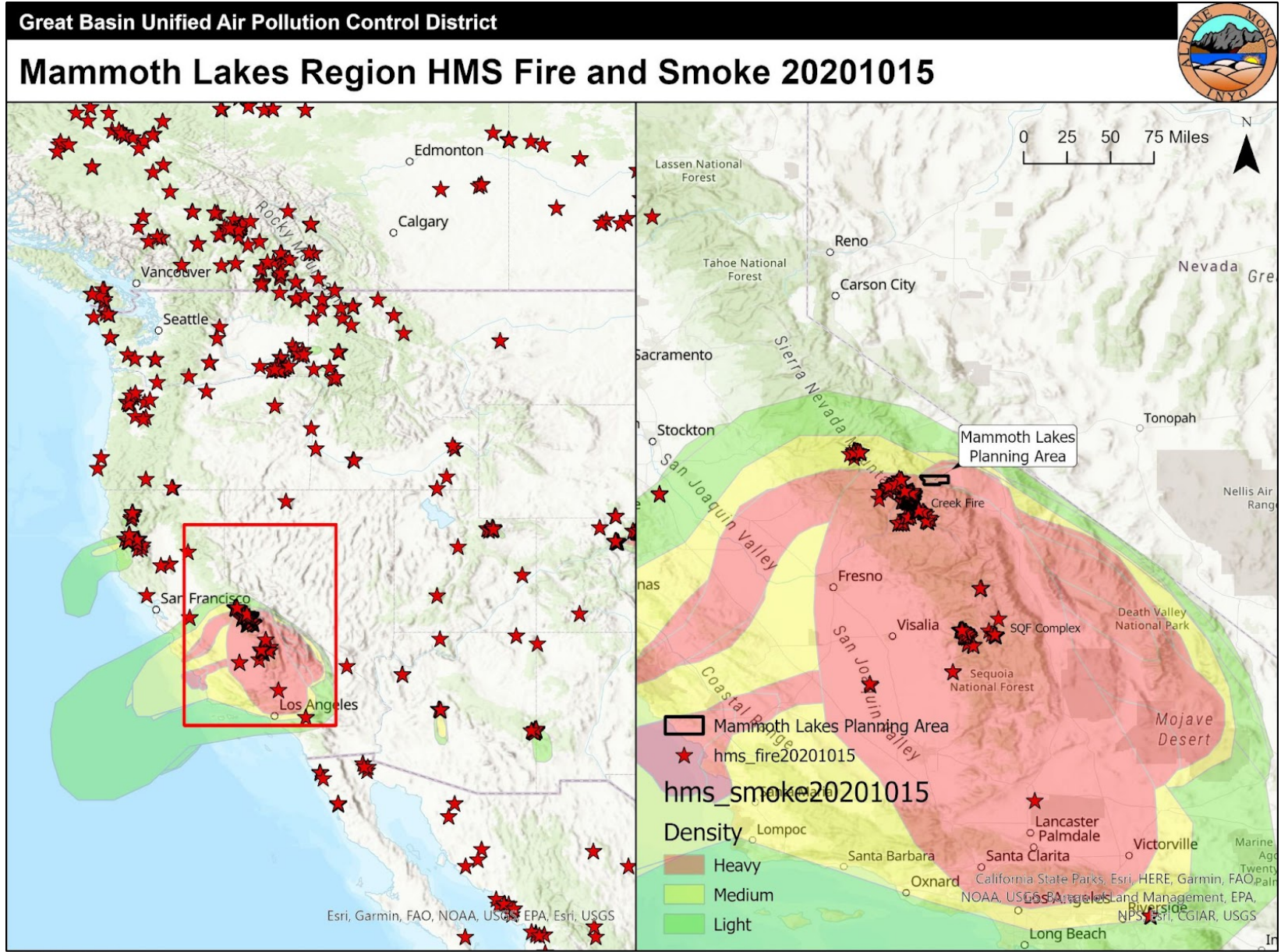


Mammoth Lakes Region HMS Fire and Smoke 20201013

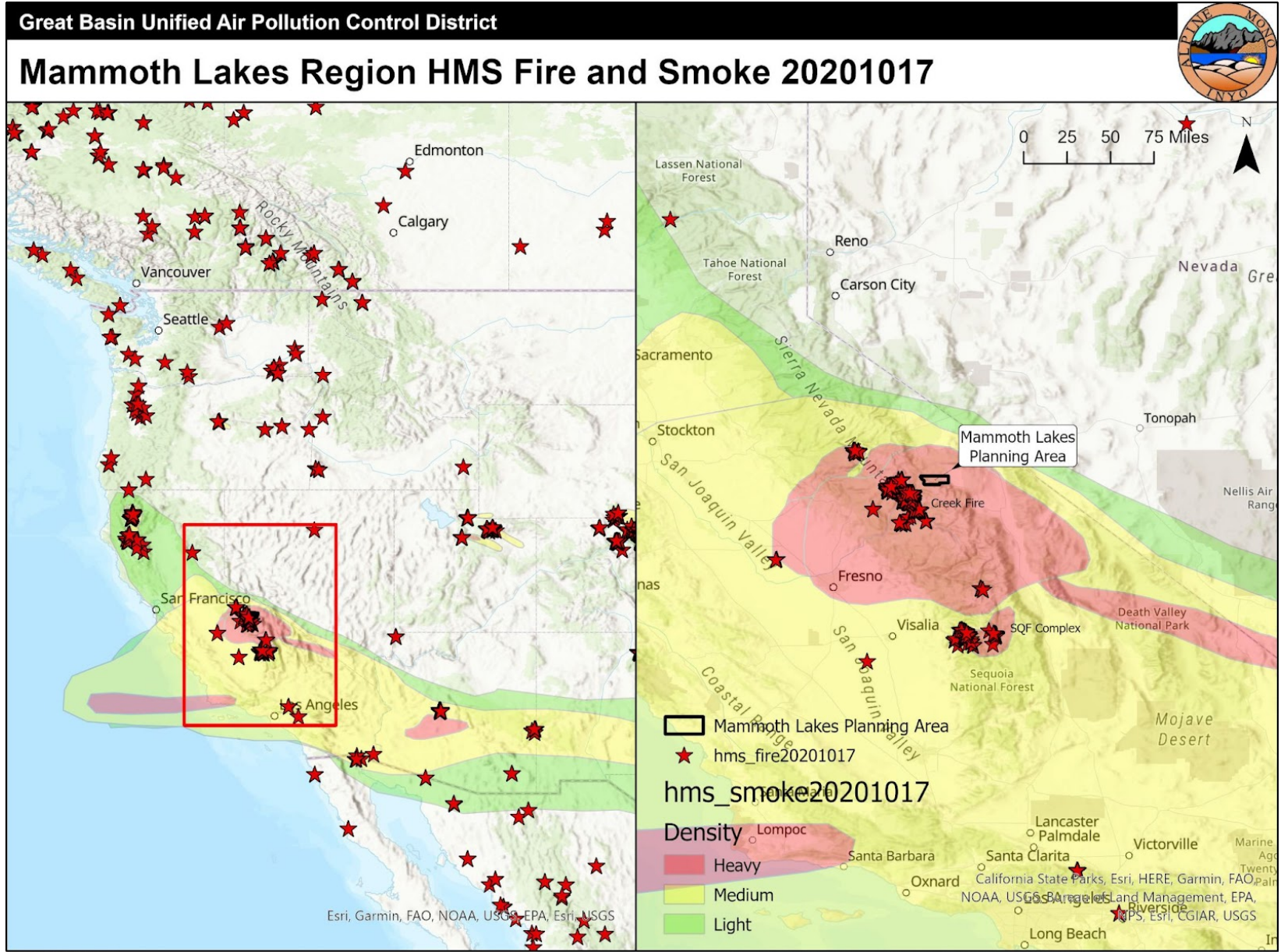


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Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

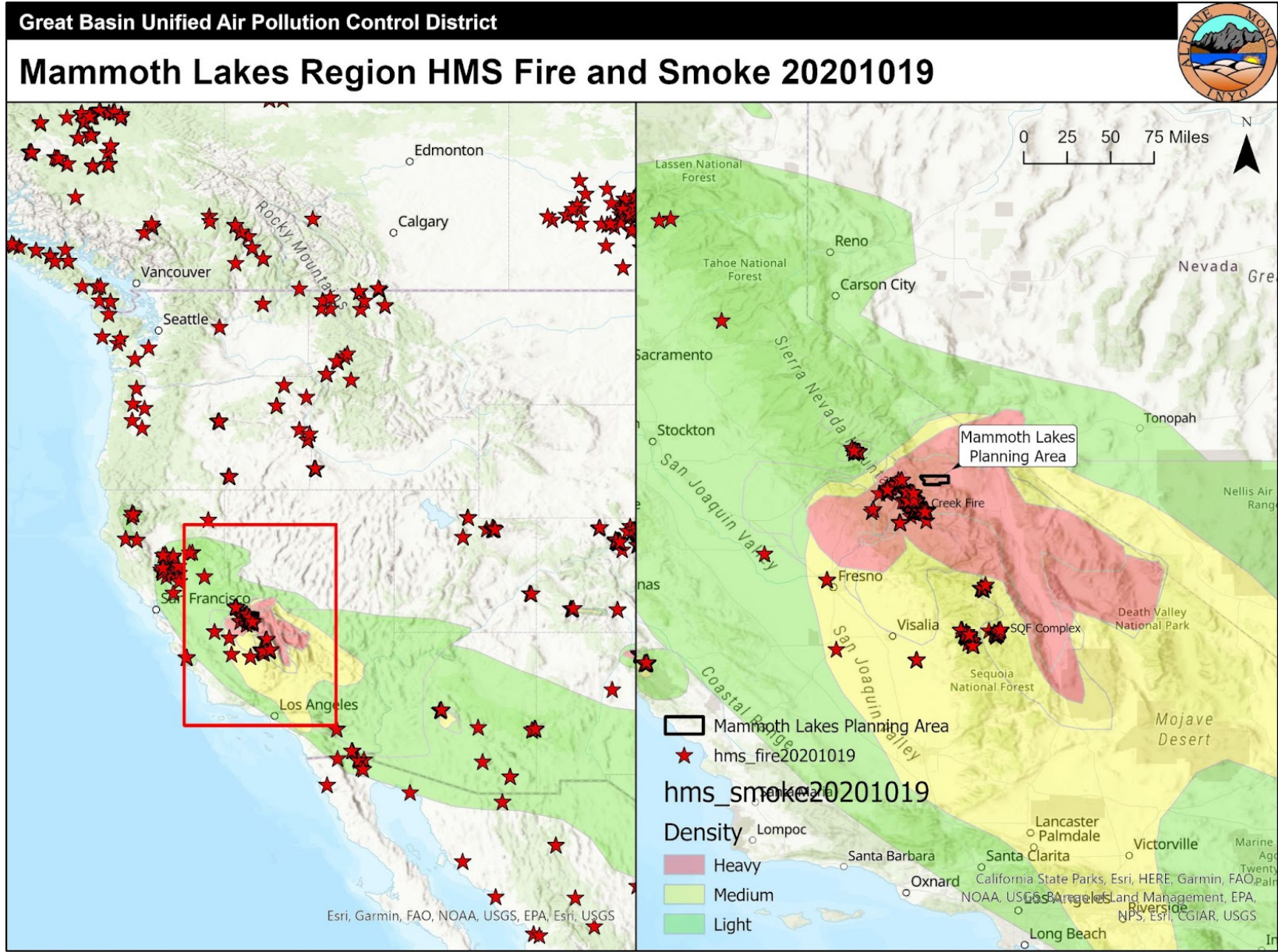


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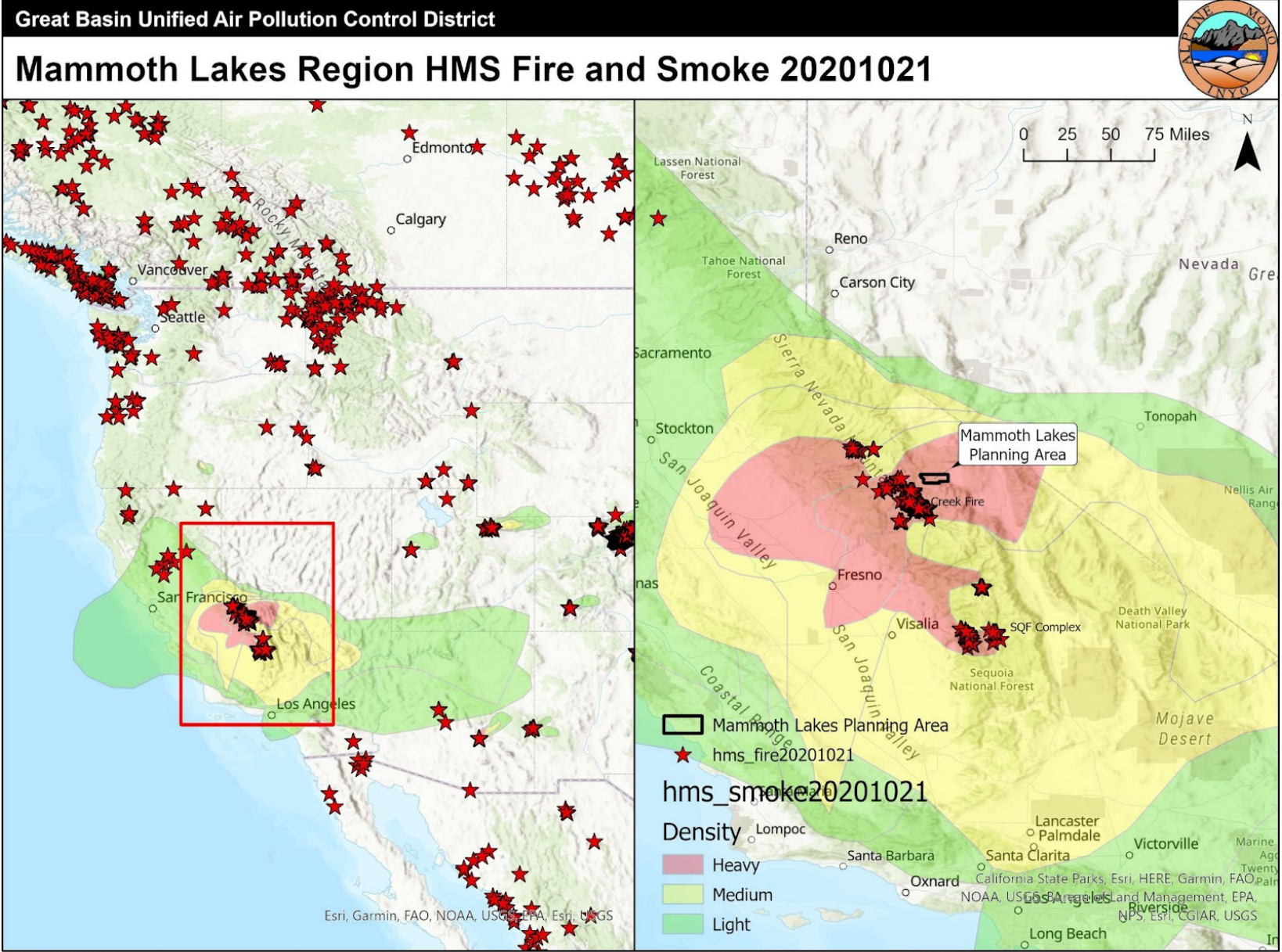


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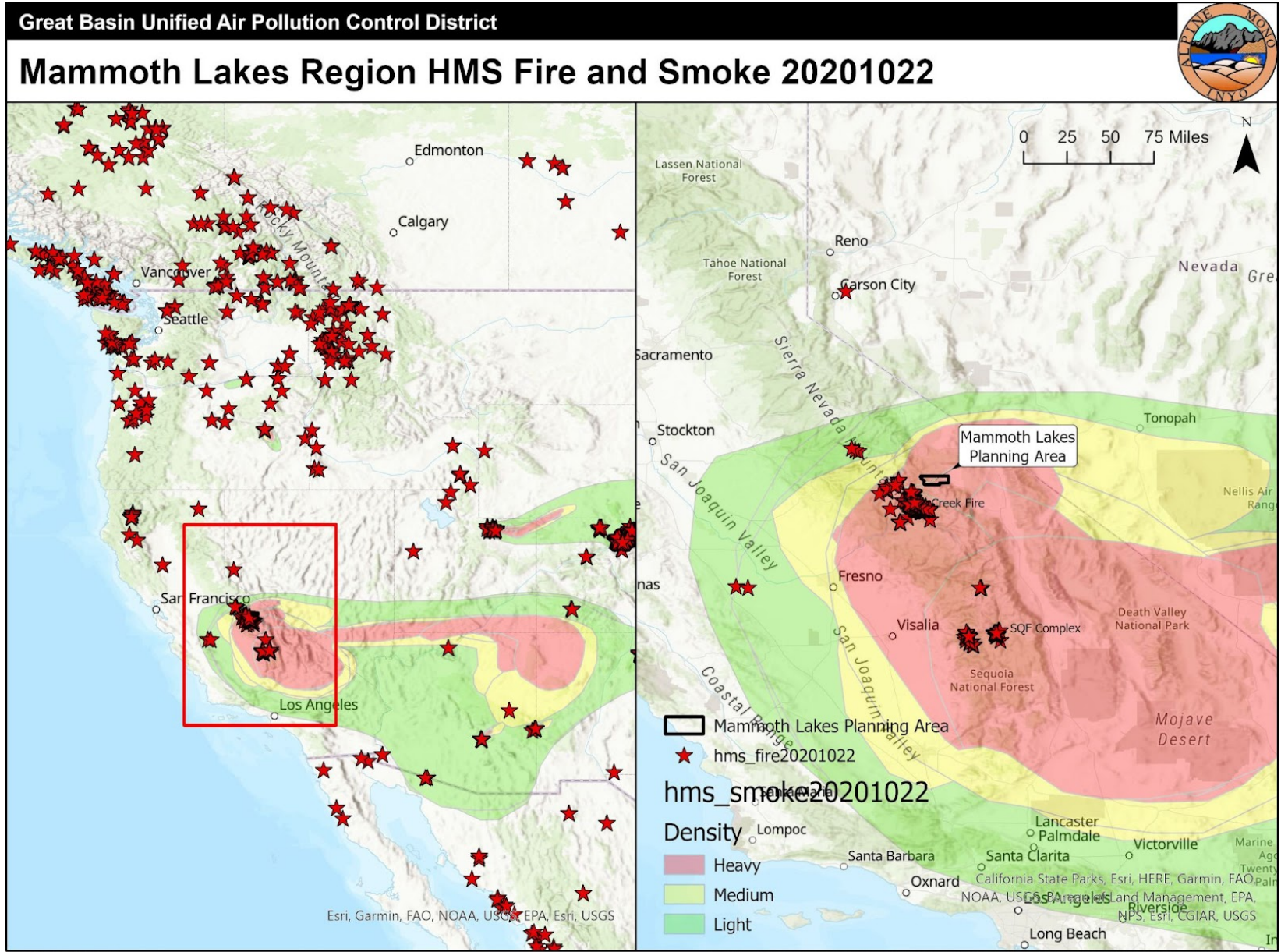
Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

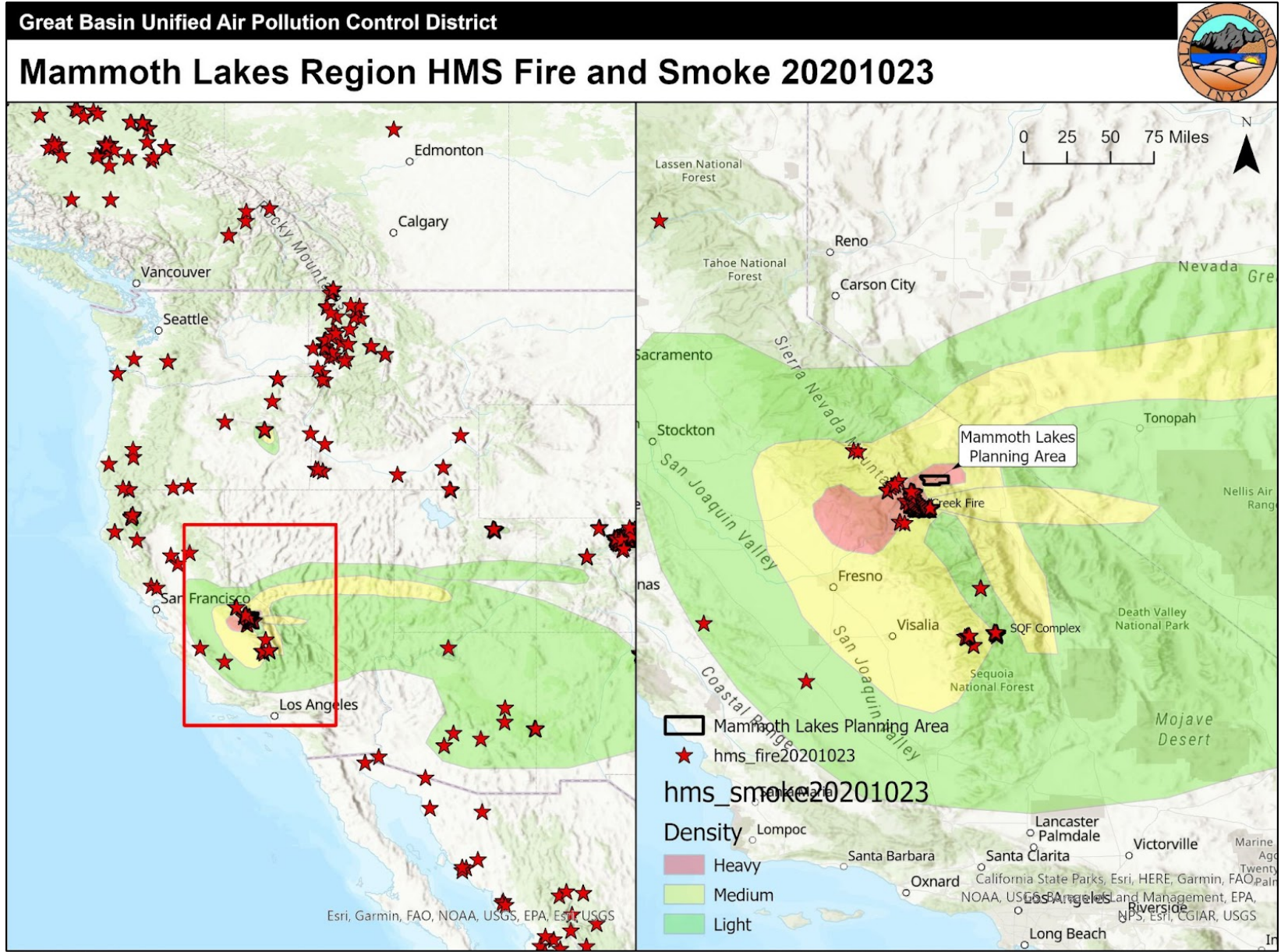


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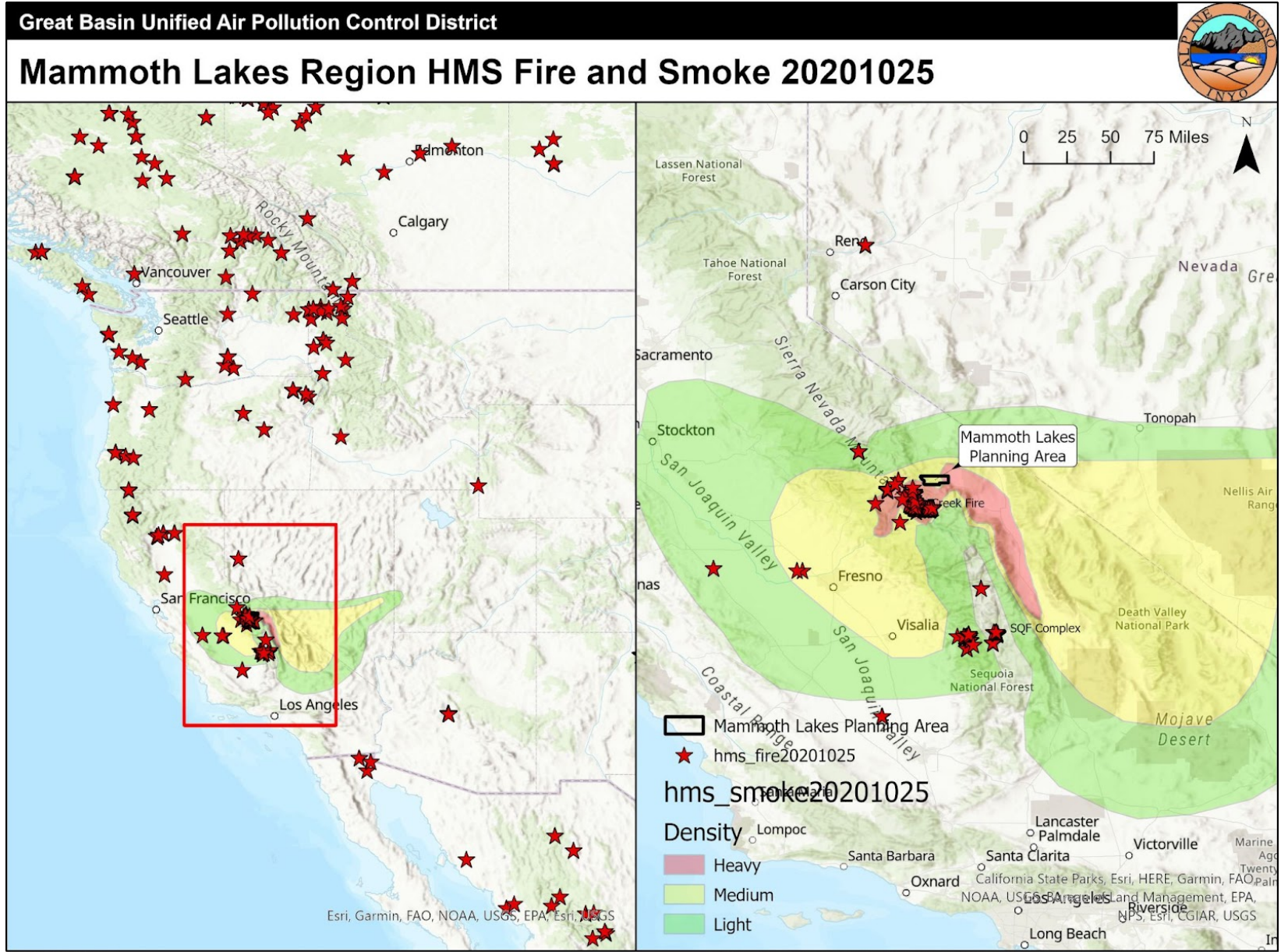
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Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020





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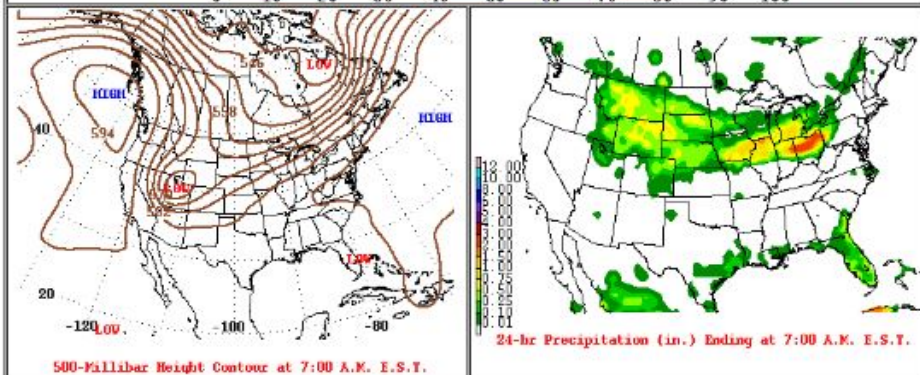
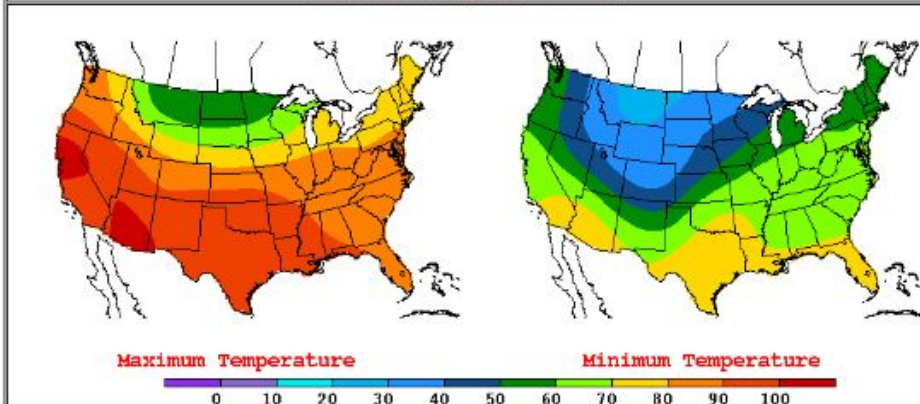
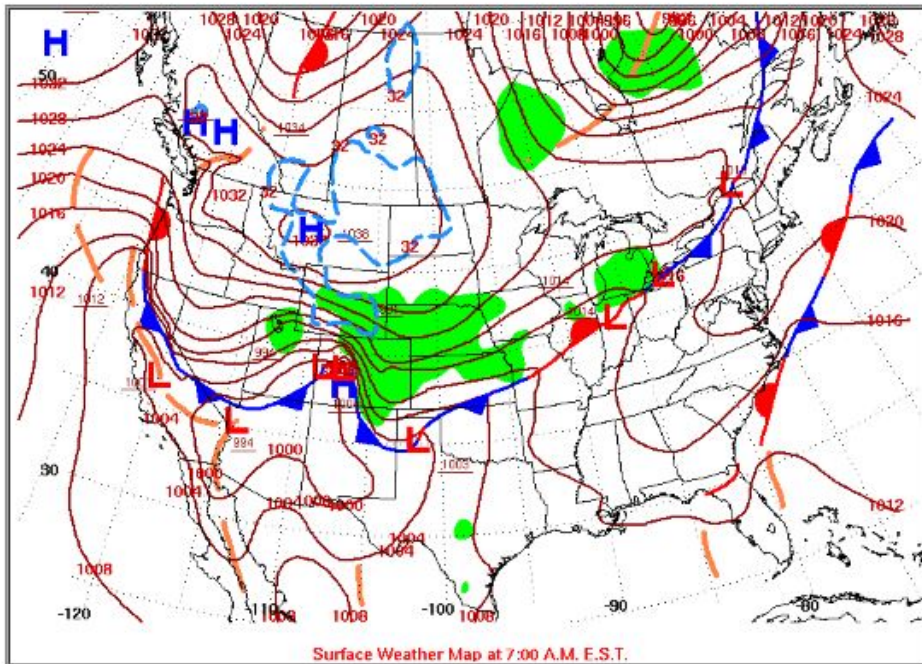


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Appendix L: Surface Weather maps on the POC 6 FEM T640x SPM-only EE dates

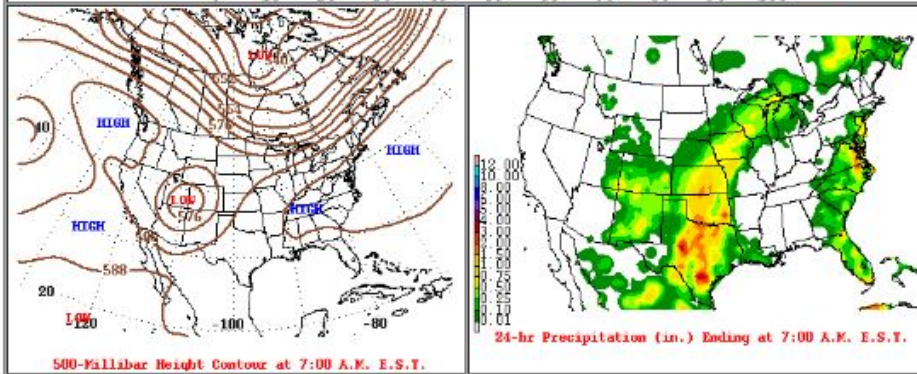
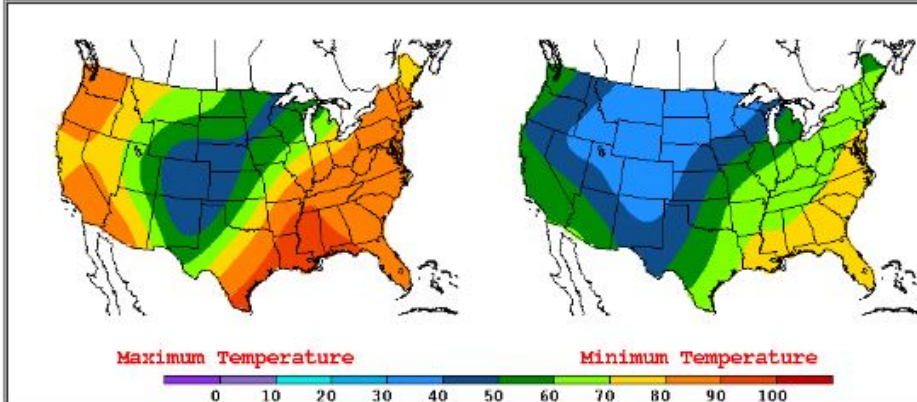
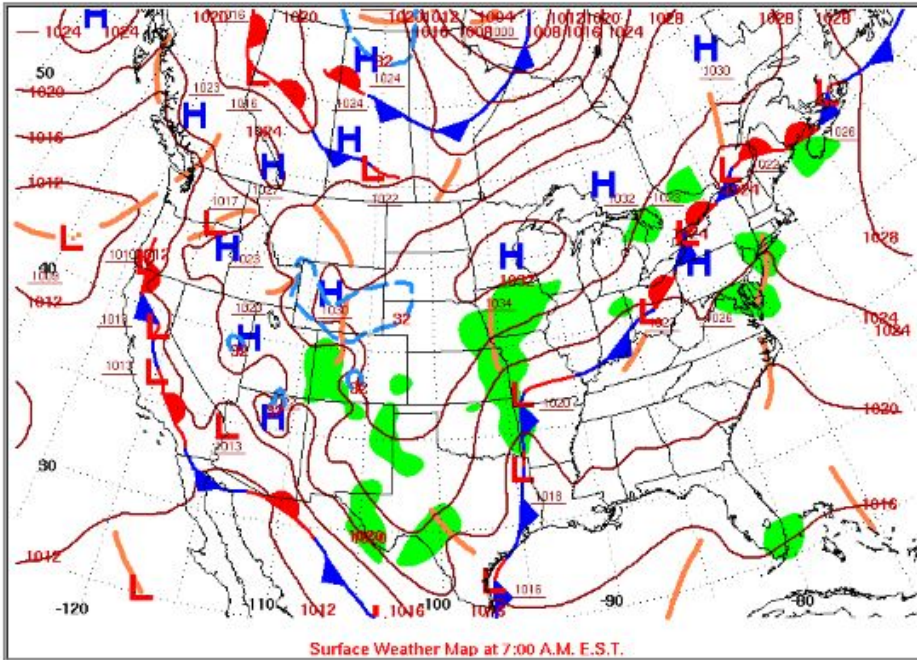
Daily Weather Maps

TUESDAY SEPTEMBER 8, 2020



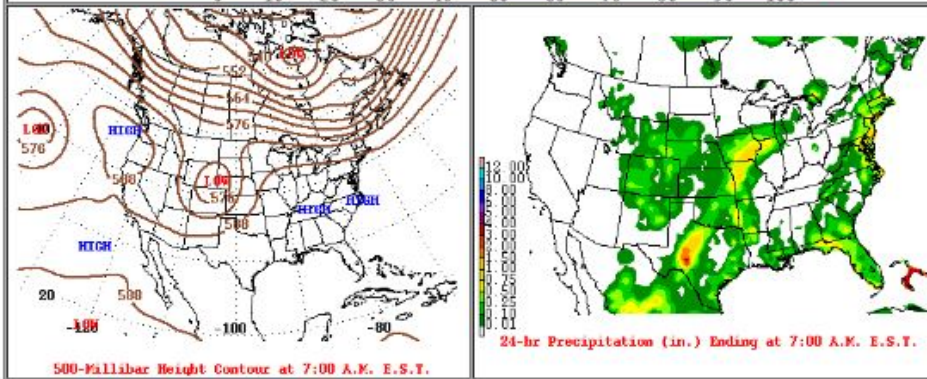
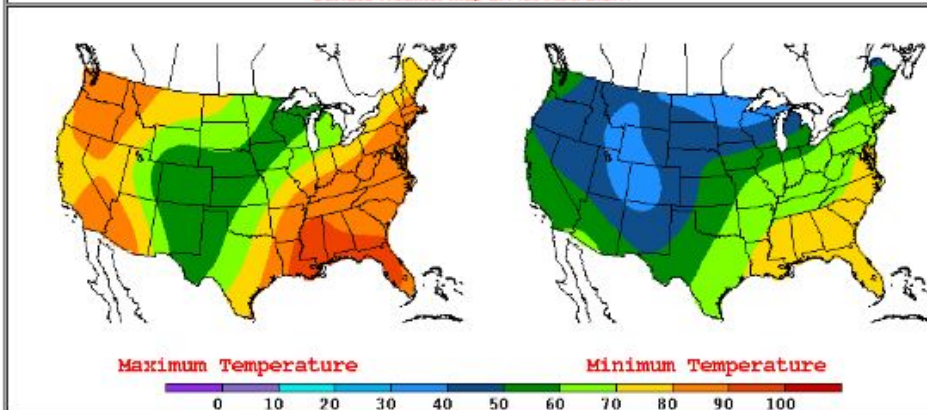
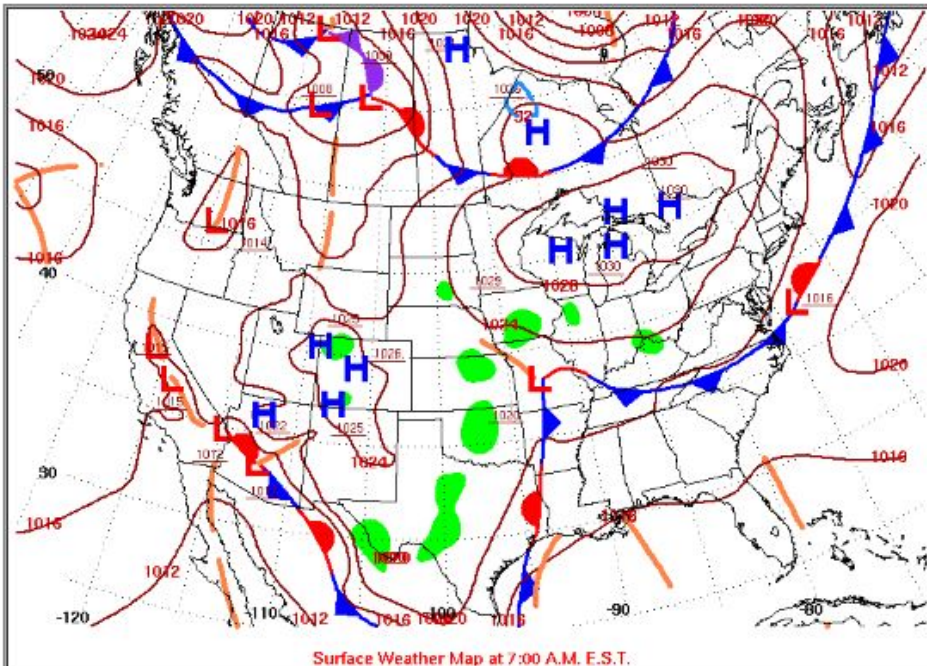
Daily Weather Maps

THURSDAY SEPTEMBER 10, 2020



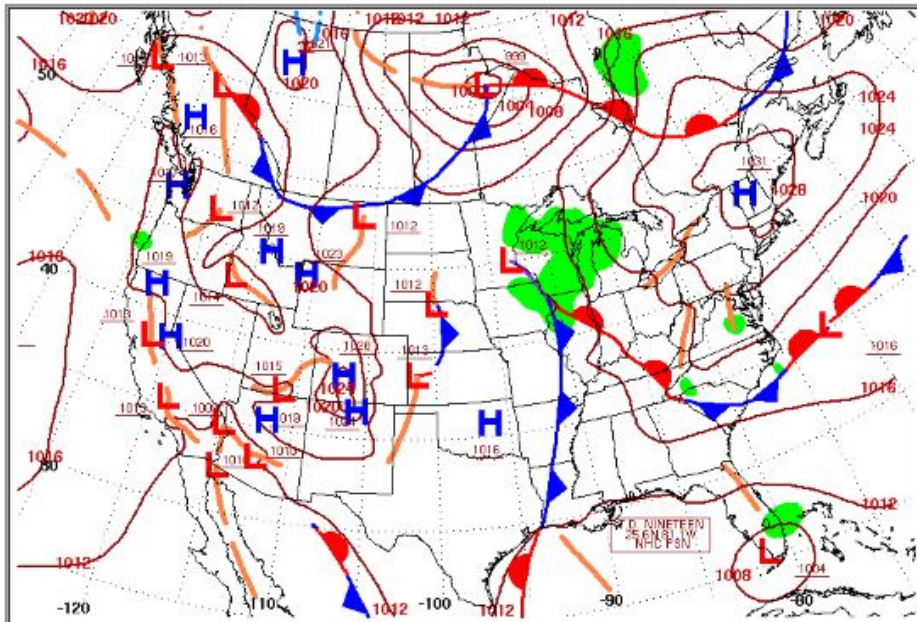
Daily Weather Maps

FRIDAY SEPTEMBER 11, 2020

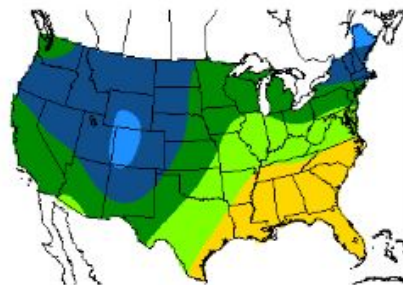
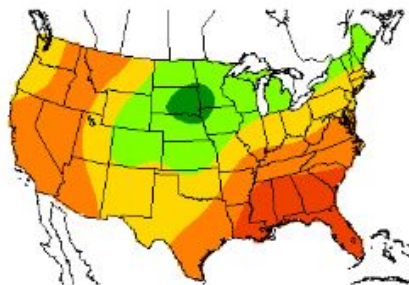


Daily Weather Maps

SATURDAY SEPTEMBER 12, 2020

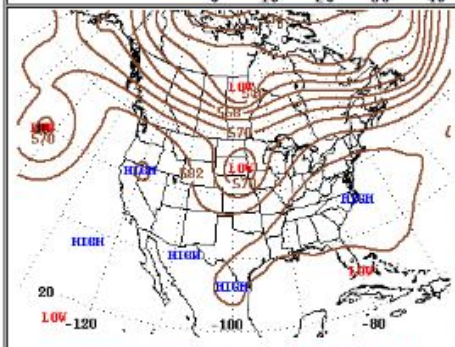
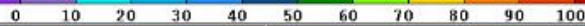


Surface Weather Map at 7:00 A.M. E.S.T.

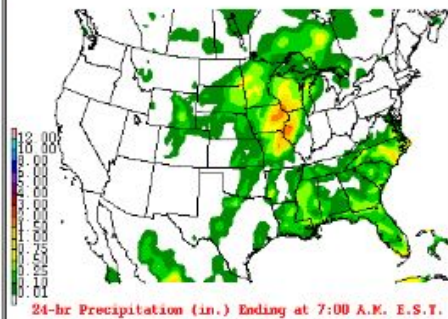


Maximum Temperature

Minimum Temperature



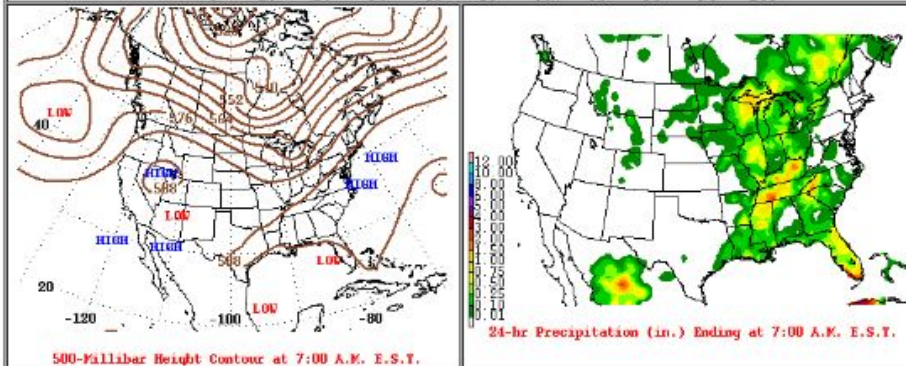
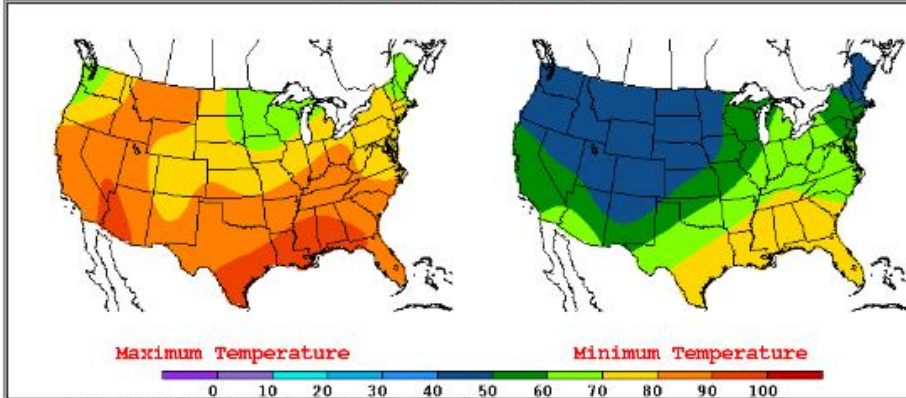
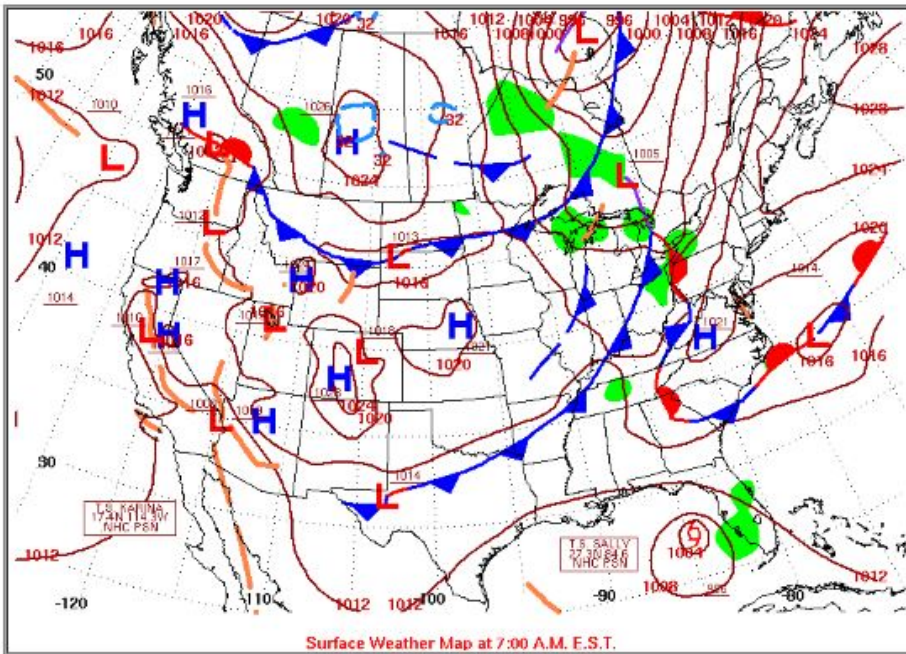
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

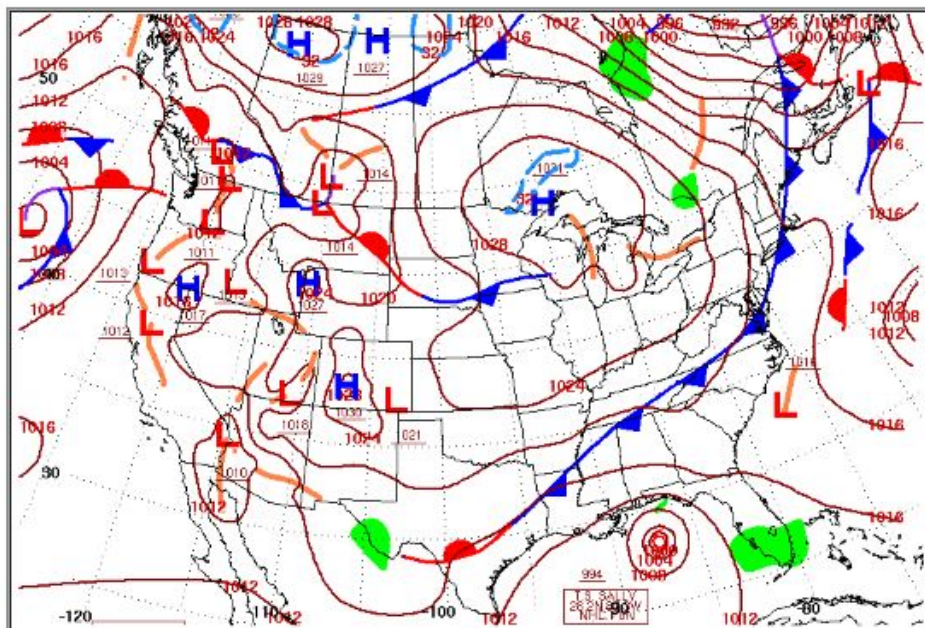
Daily Weather Maps

SUNDAY SEPTEMBER 13, 2020

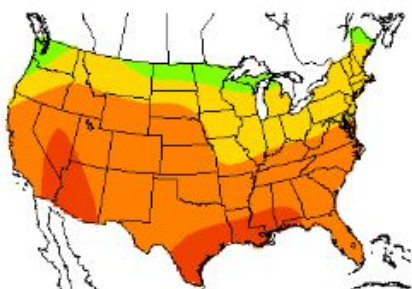


Daily Weather Maps

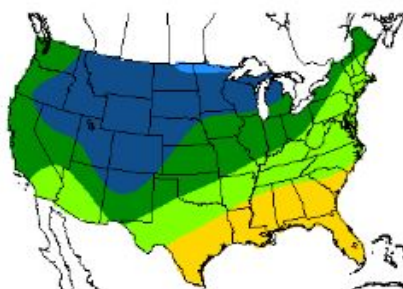
MONDAY SEPTEMBER 14, 2020



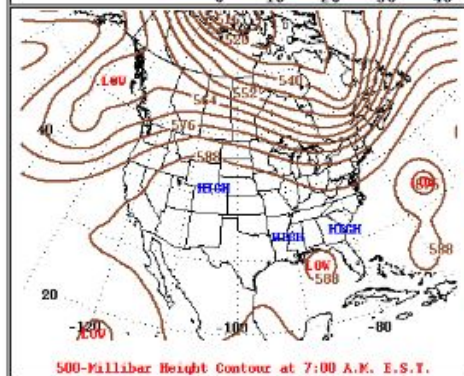
Surface Weather Map at 7:00 A.M. F.S.T.



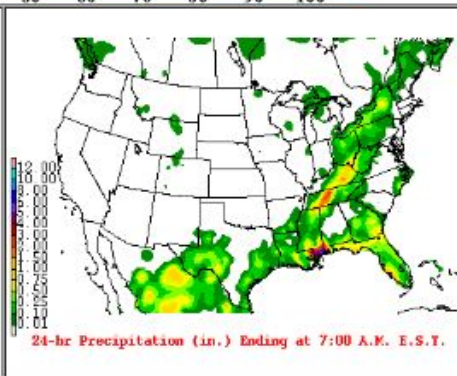
Maximum Temperature



Minimum Temperature



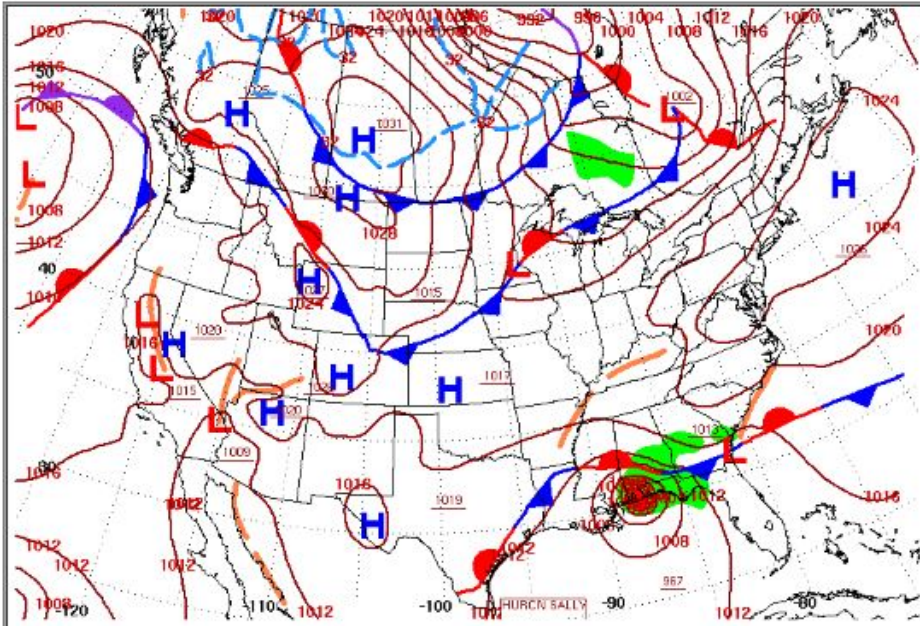
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

Daily Weather Maps

WEDNESDAY SEPTEMBER 16, 2020



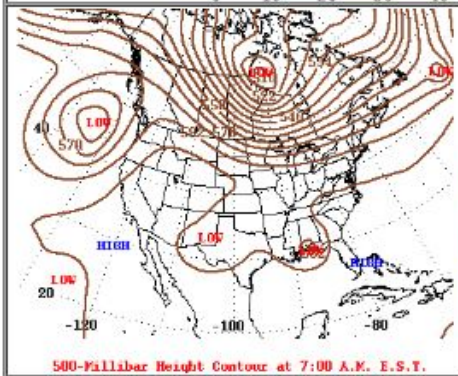
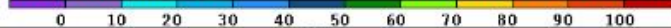
Surface Weather Map at 7:00 A.M. E.S.T.



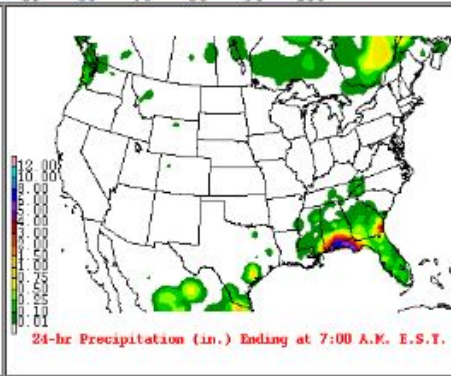
Maximum Temperature



Minimum Temperature



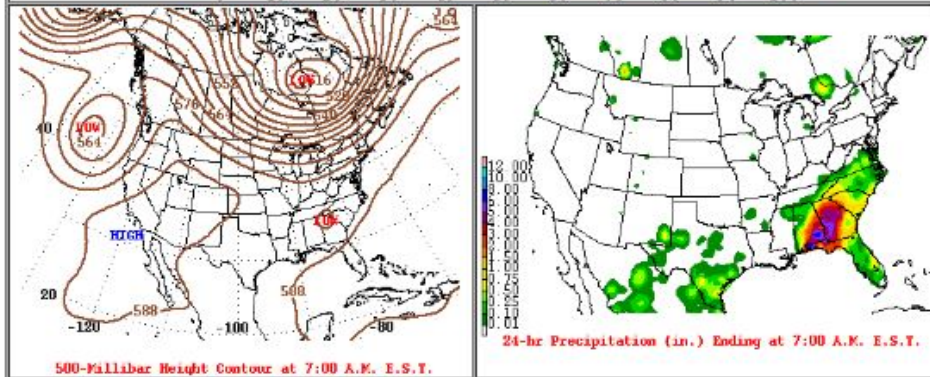
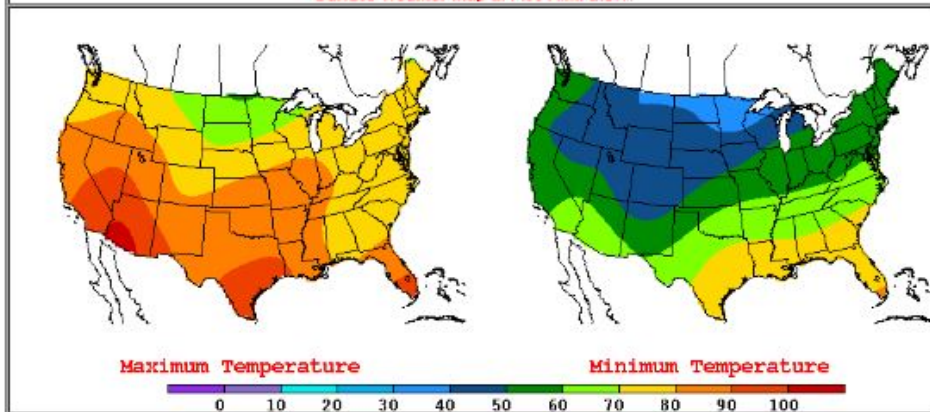
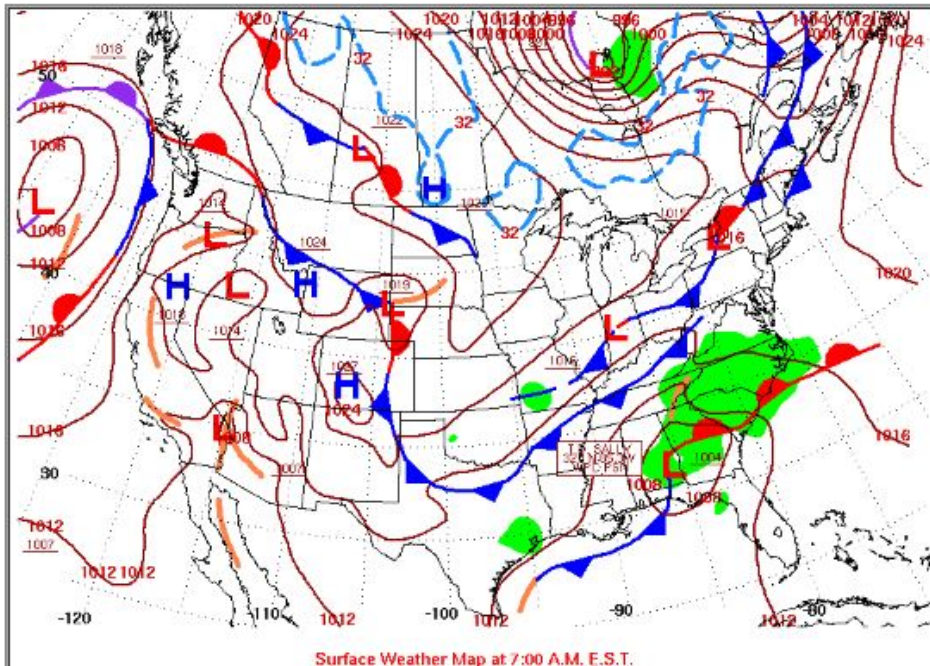
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

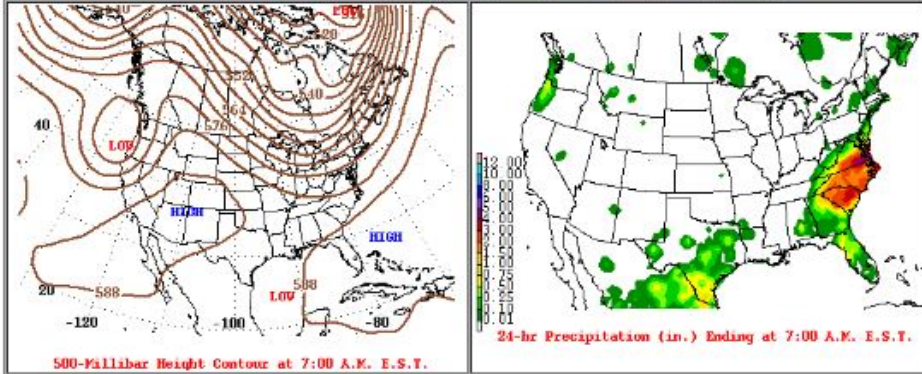
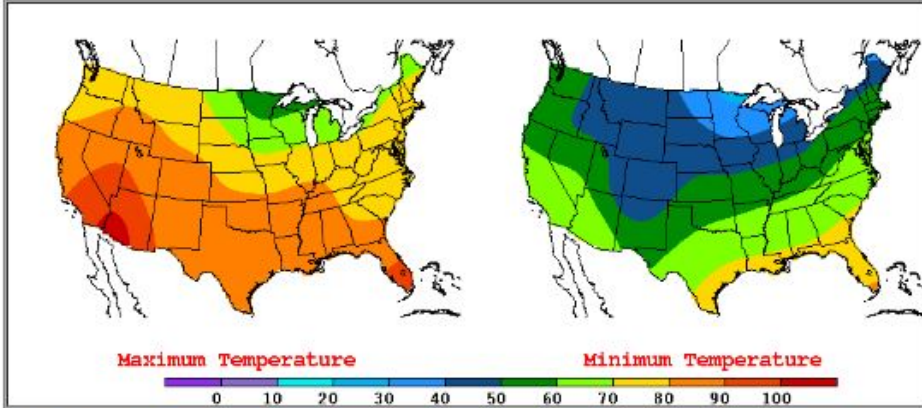
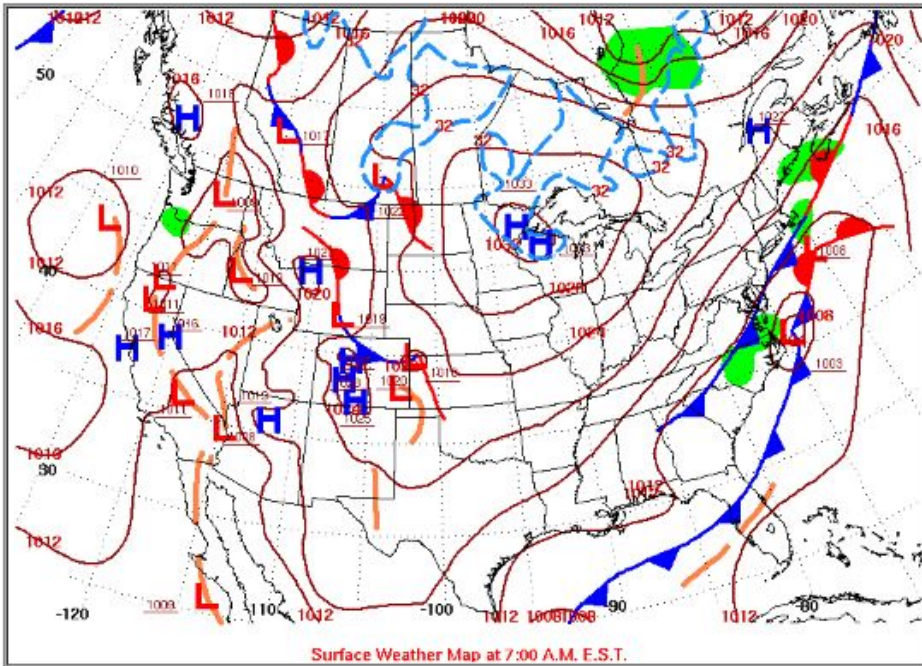
Daily Weather Maps

THURSDAY SEPTEMBER 17, 2020



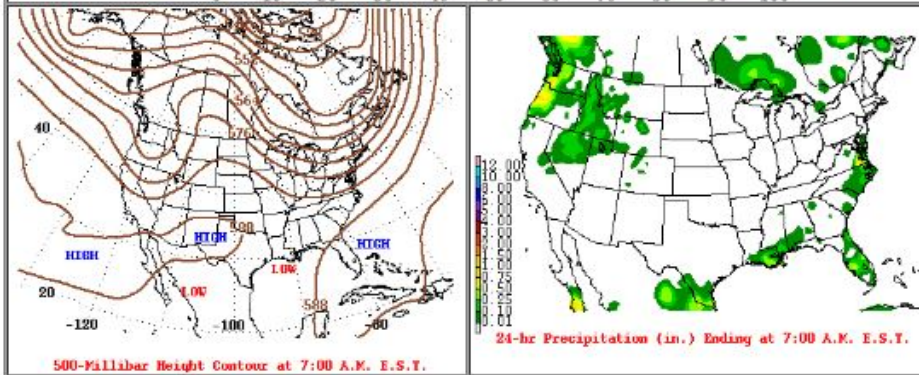
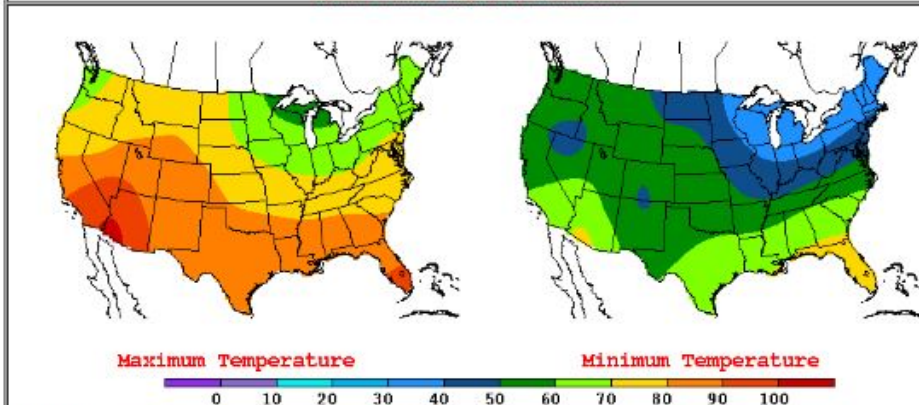
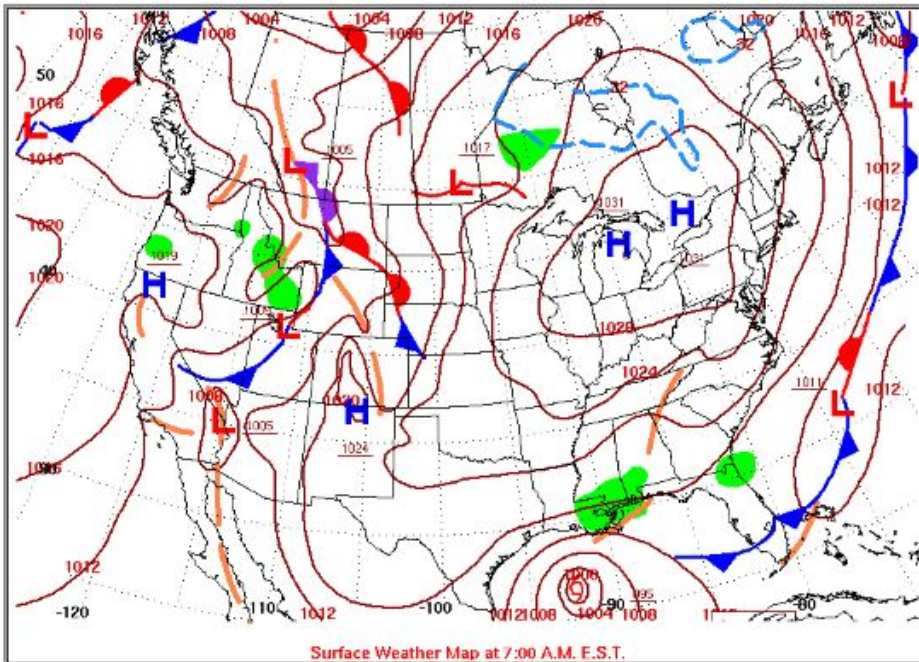
Daily Weather Maps

FRIDAY SEPTEMBER 18, 2020



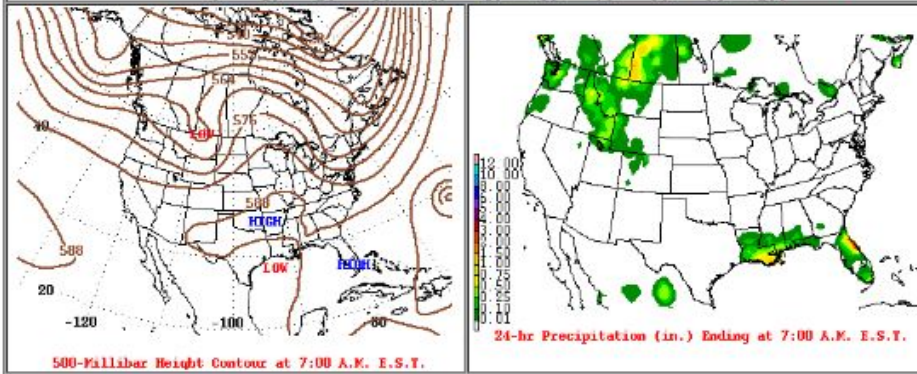
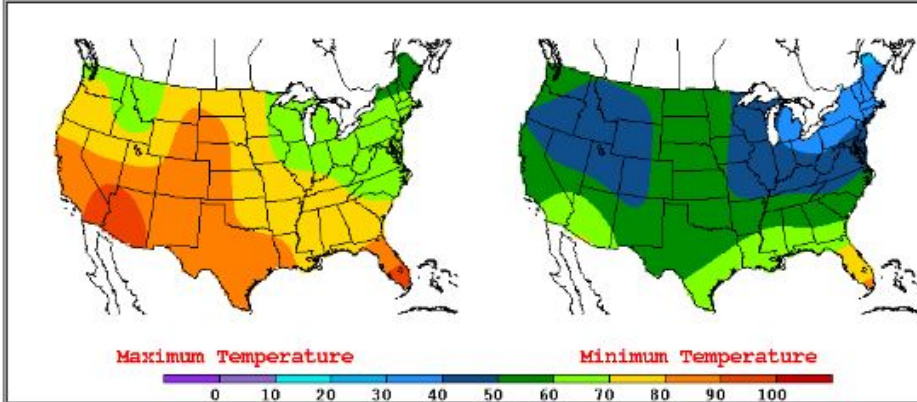
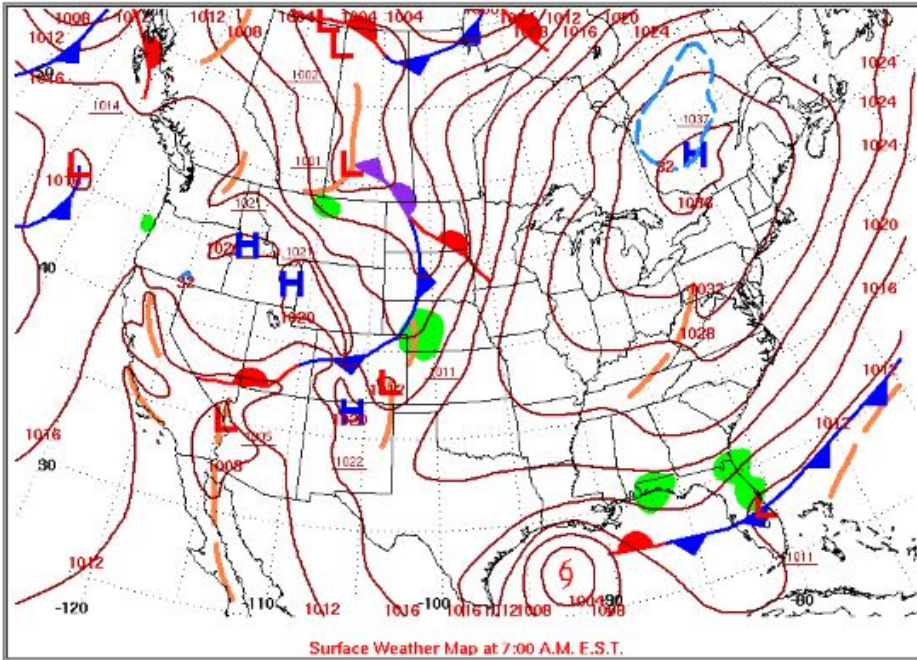
Daily Weather Maps

SATURDAY SEPTEMBER 19, 2020



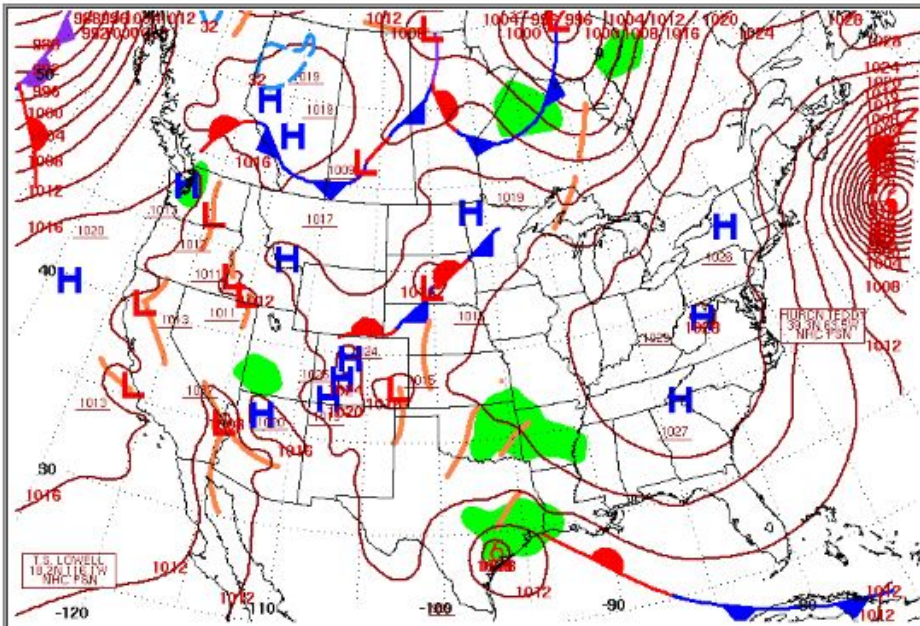
Daily Weather Maps

SUNDAY SEPTEMBER 20, 2020

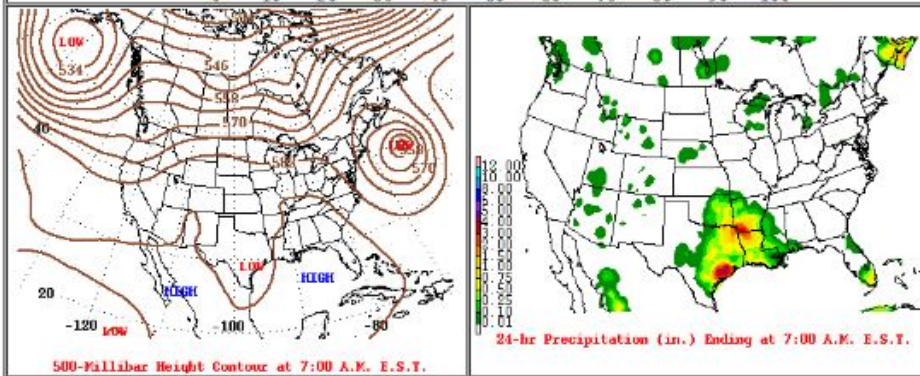
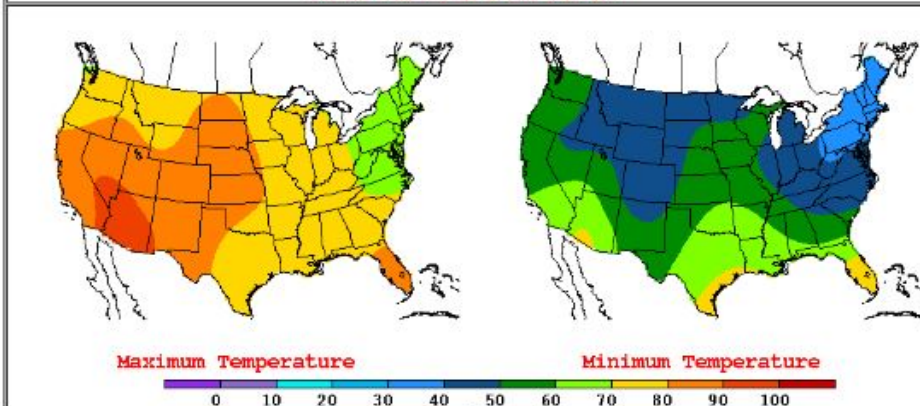


Daily Weather Maps

TUESDAY SEPTEMBER 22, 2020

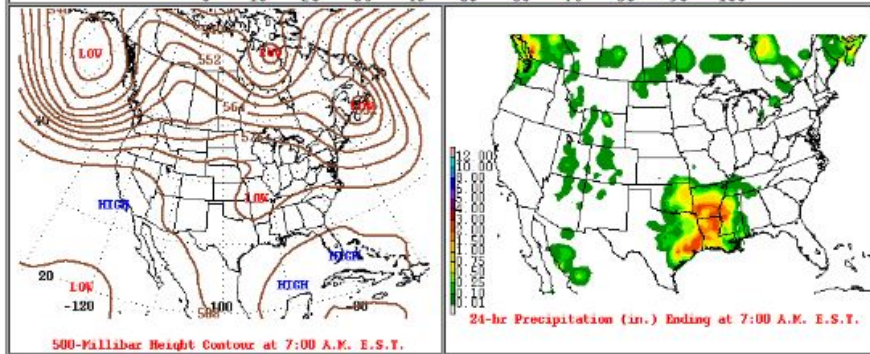
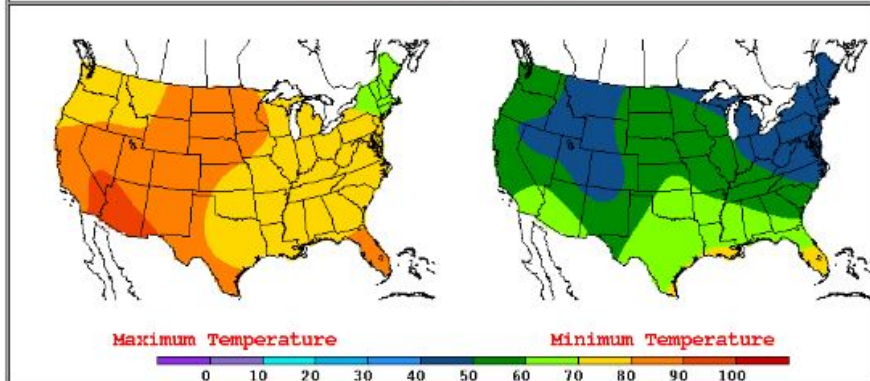
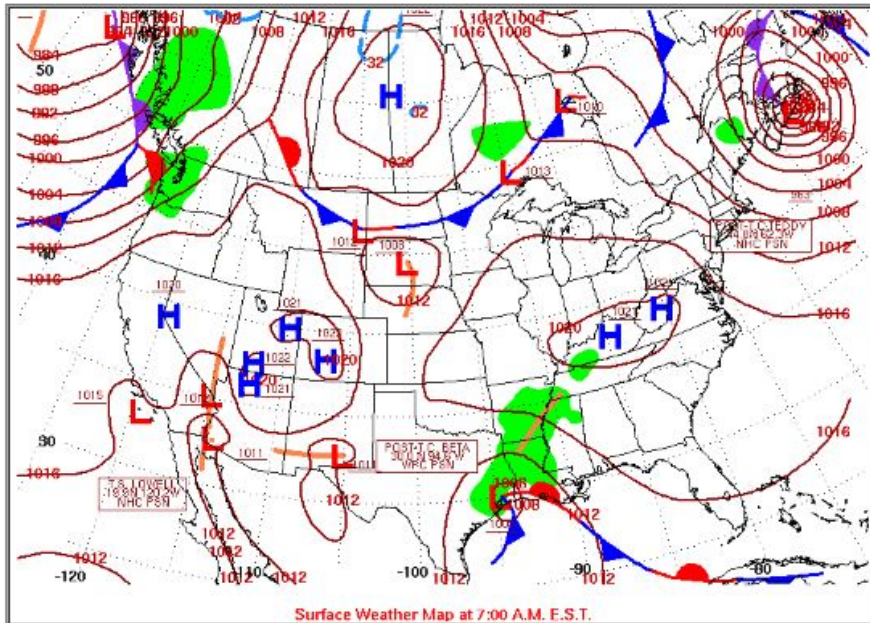


Surface Weather Map at 7:00 A.M. E.S.T.



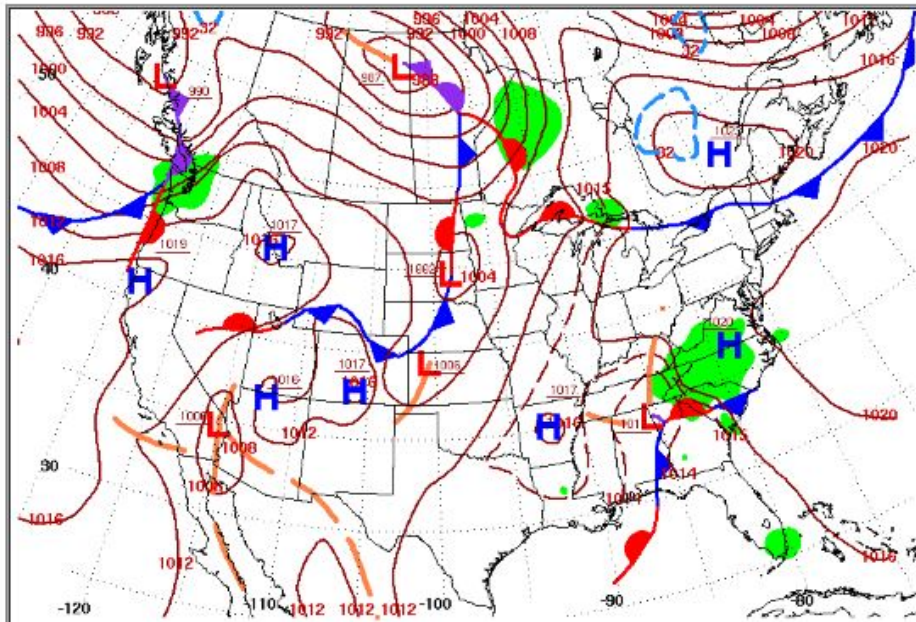
Daily Weather Maps

WEDNESDAY SEPTEMBER 23, 2020

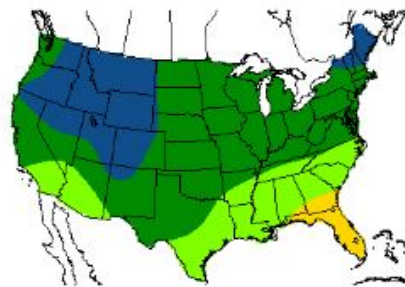
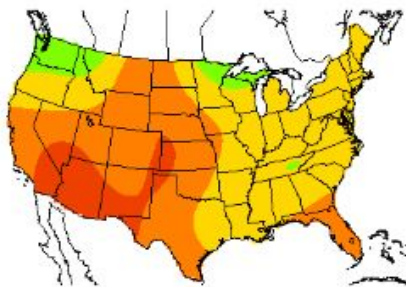


Daily Weather Maps

FRIDAY SEPTEMBER 25, 2020

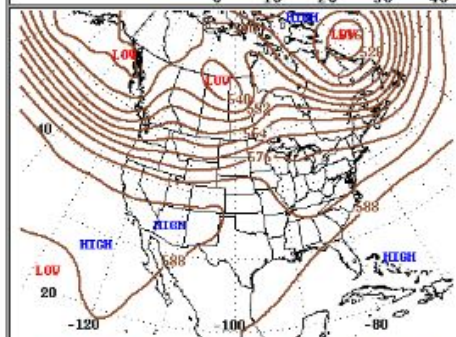


Surface Weather Map at 7:00 A.M. E.S.T.

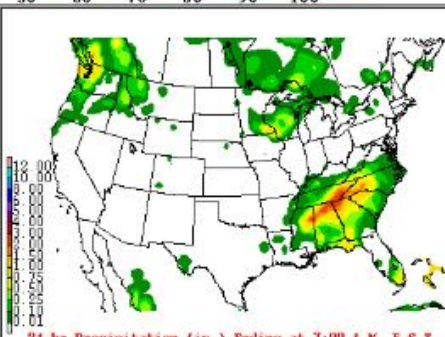


Maximum Temperature

Minimum Temperature



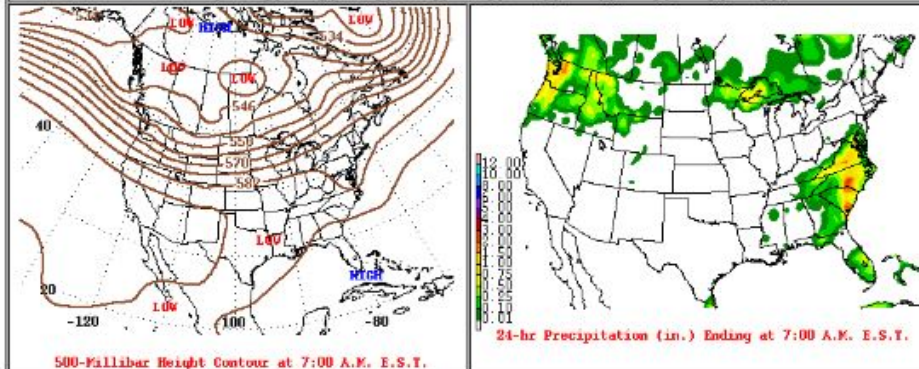
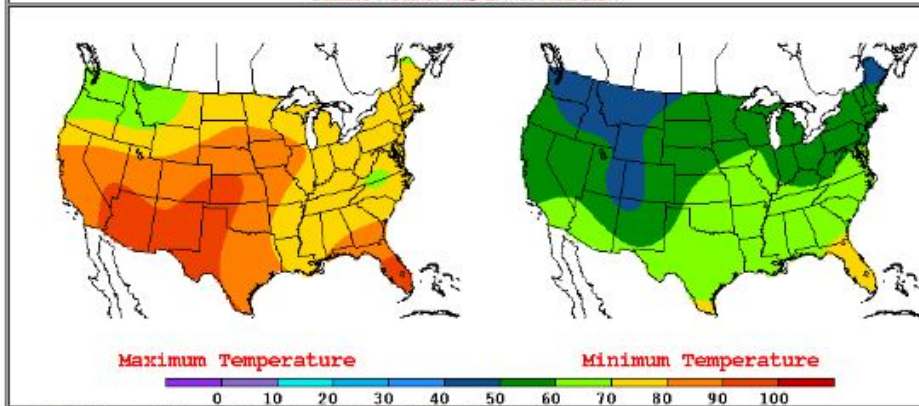
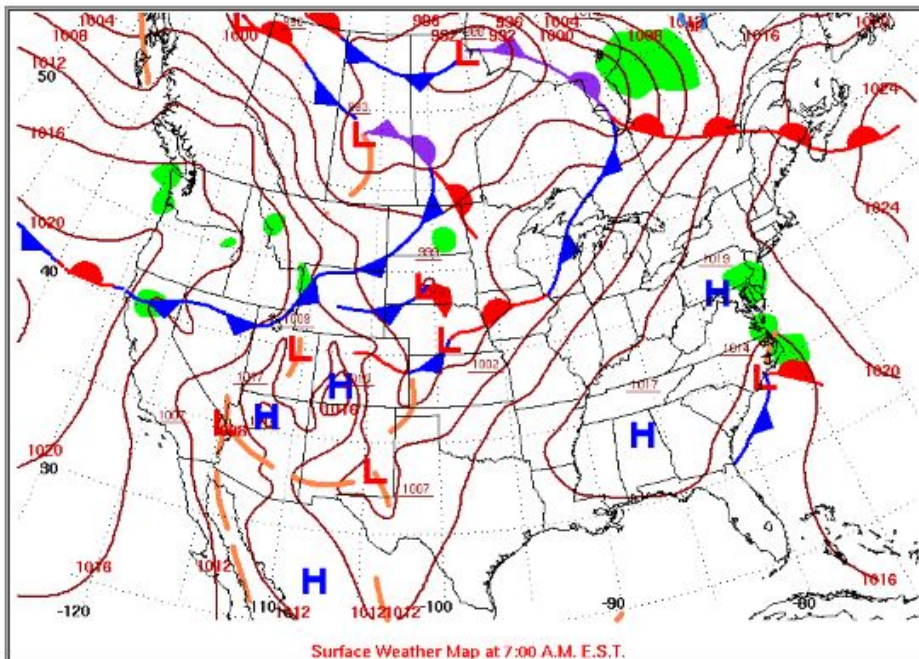
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

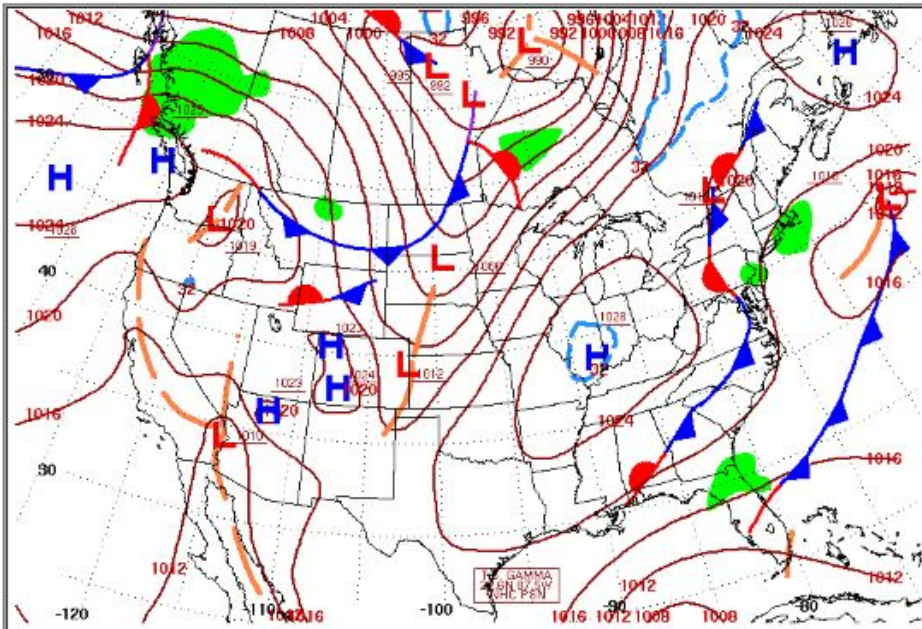
Daily Weather Maps

SATURDAY SEPTEMBER 26, 2020

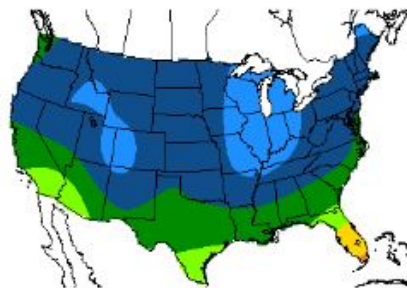
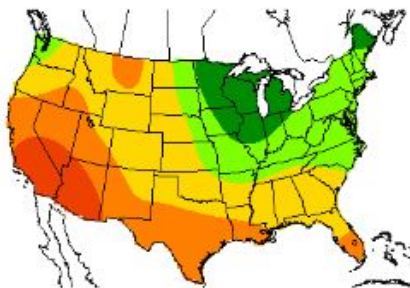


Daily Weather Maps

MONDAY OCTOBER 5, 2020

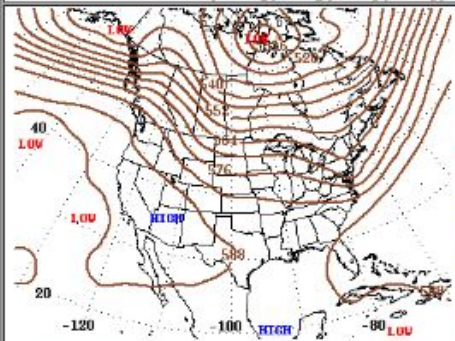
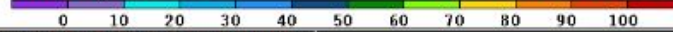


Surface Weather Map at 7:00 A.M. E.S.T.



Maximum Temperature

Minimum Temperature



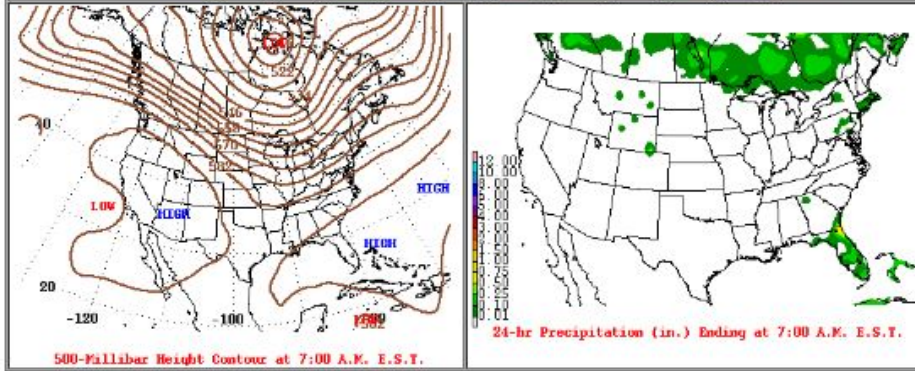
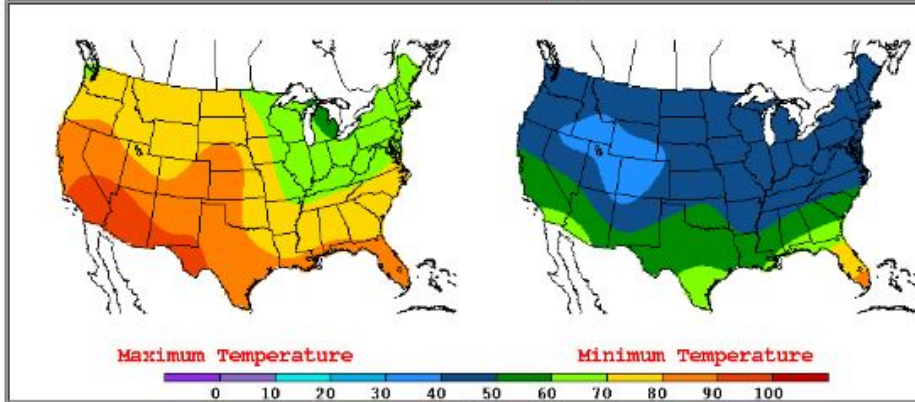
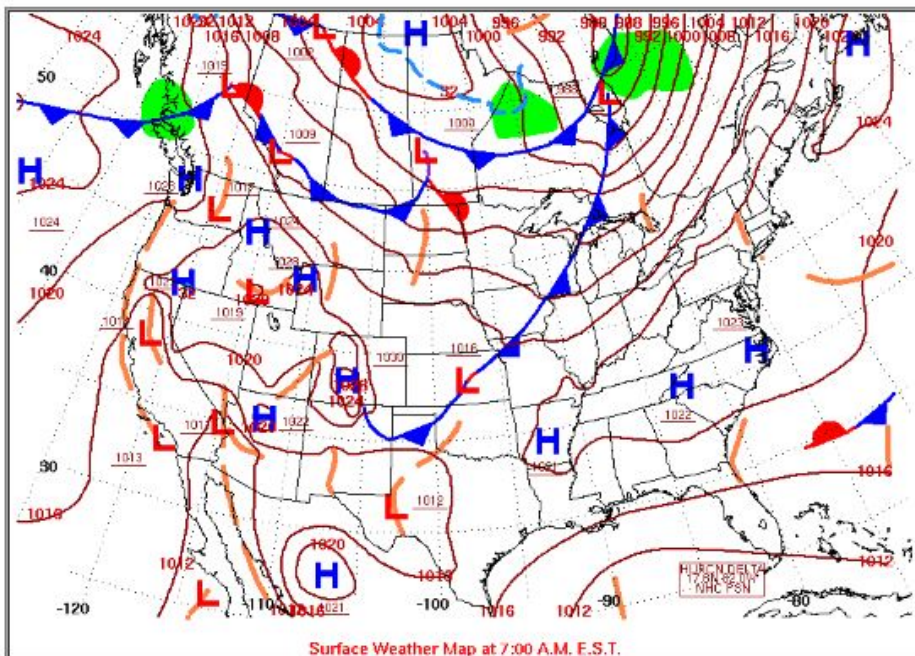
500-millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

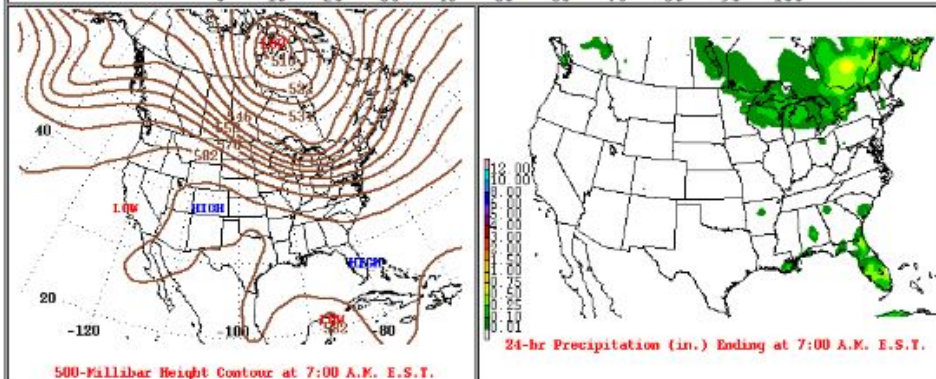
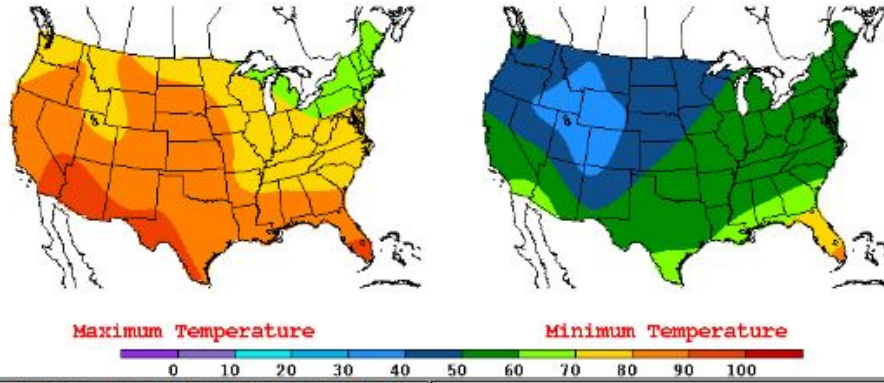
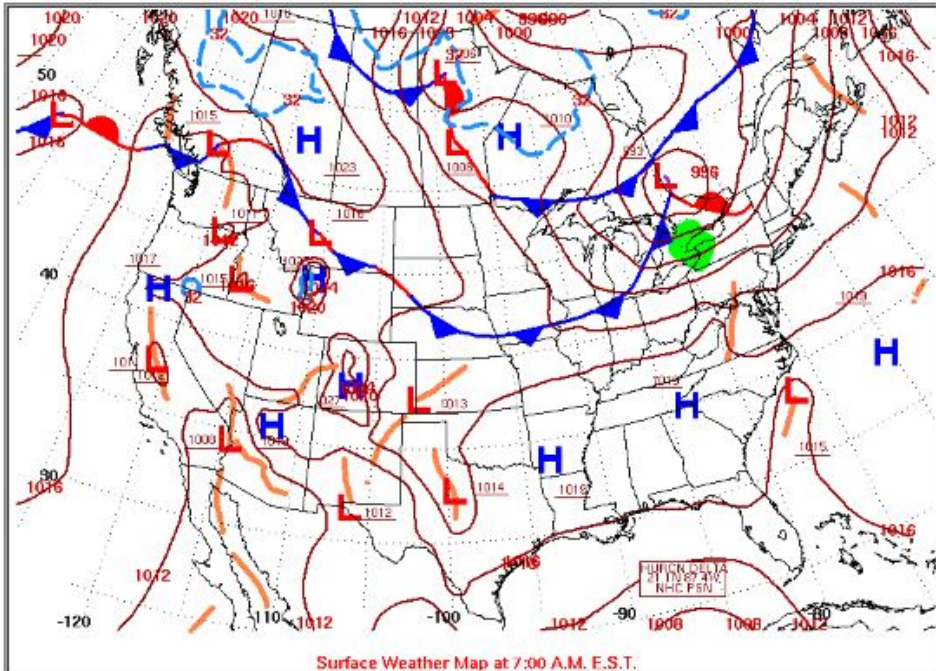
Daily Weather Maps

TUESDAY OCTOBER 6, 2020



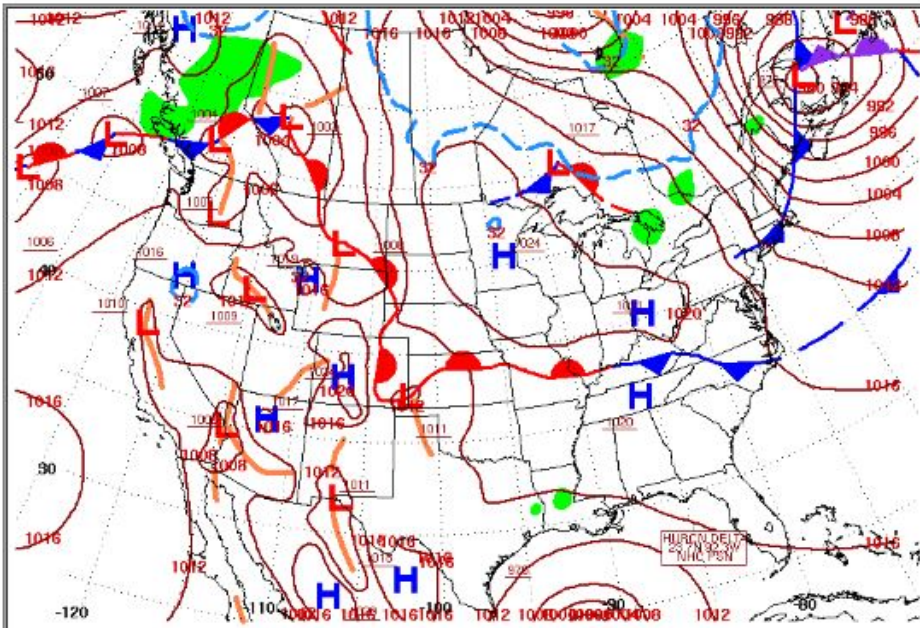
Daily Weather Maps

WEDNESDAY OCTOBER 7, 2020



Daily Weather Maps

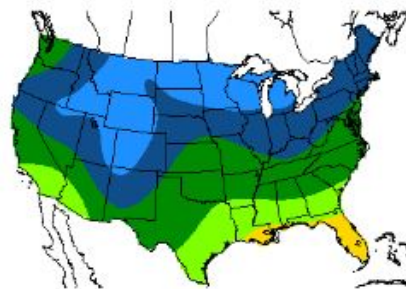
THURSDAY OCTOBER 8, 2020



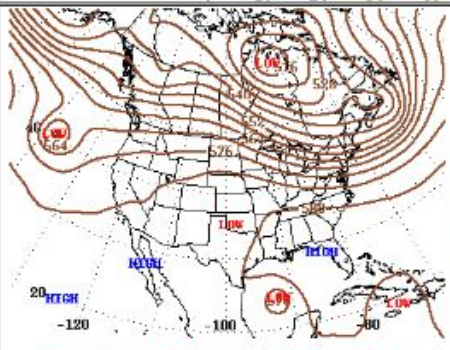
Surface Weather Map at 7:00 A.M. E.S.T.



Maximum Temperature



Minimum Temperature



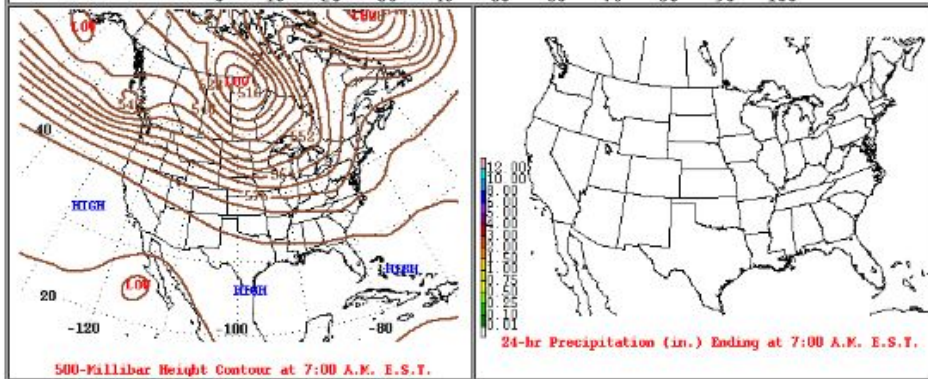
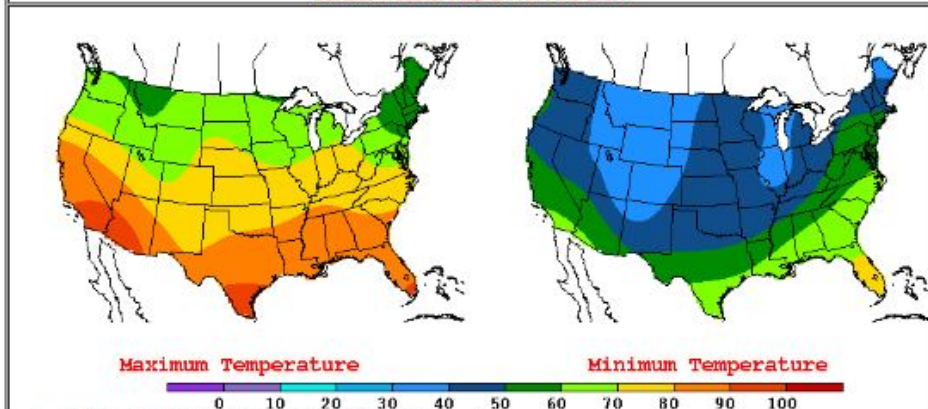
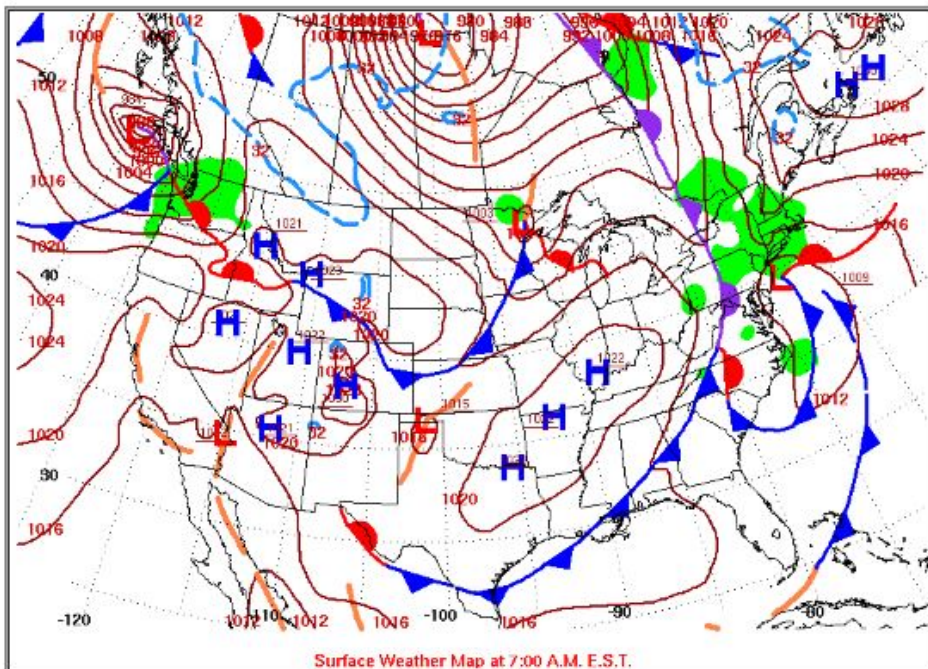
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

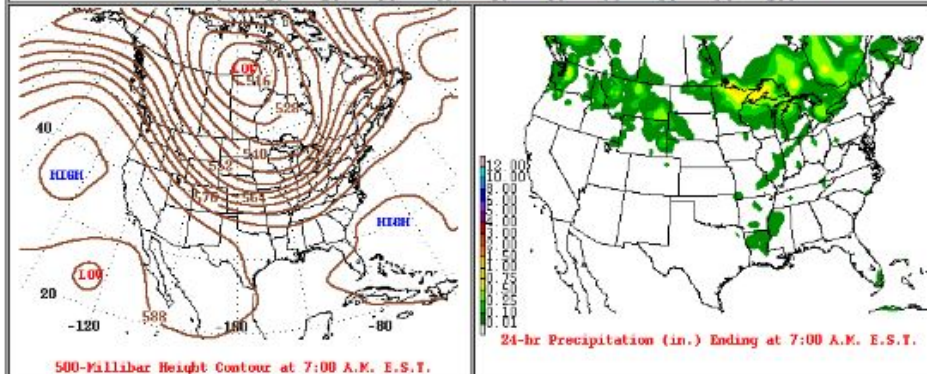
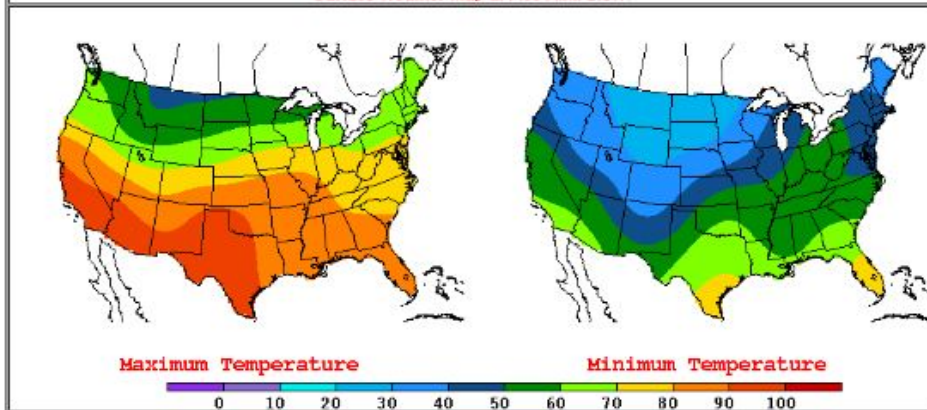
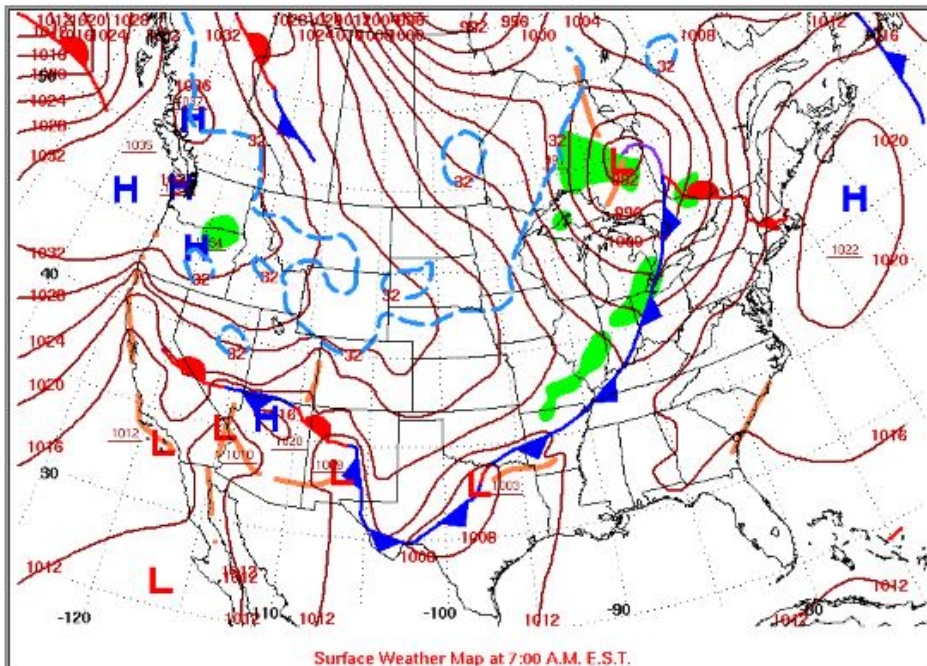
Daily Weather Maps

TUESDAY OCTOBER 13, 2020



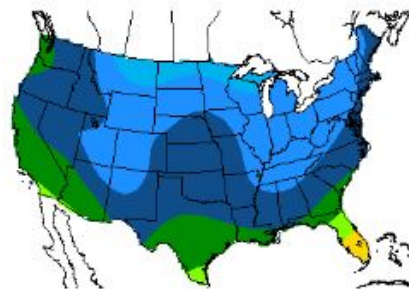
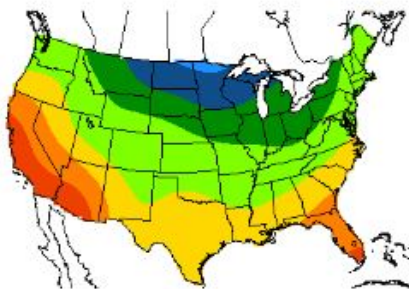
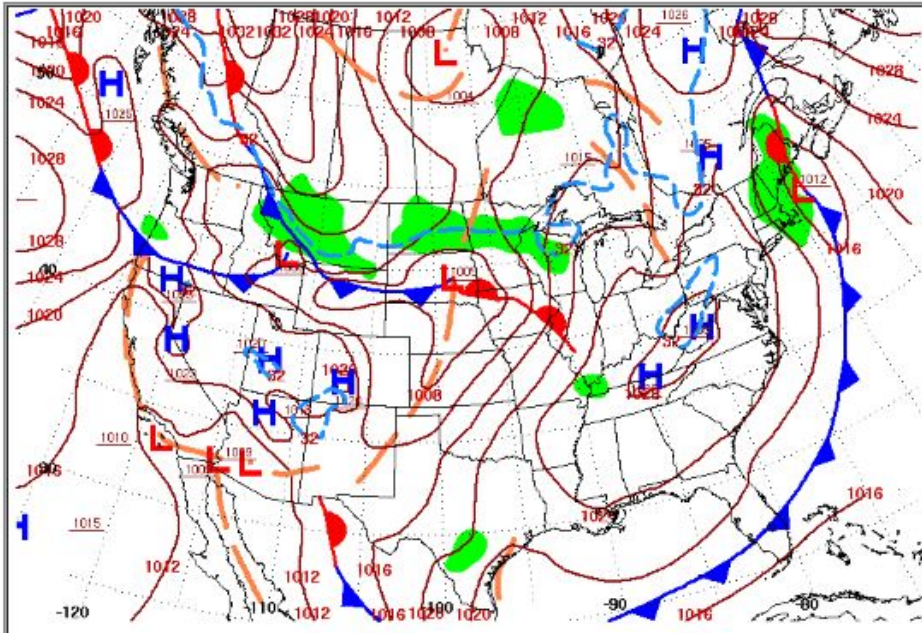
Daily Weather Maps

THURSDAY OCTOBER 15, 2020



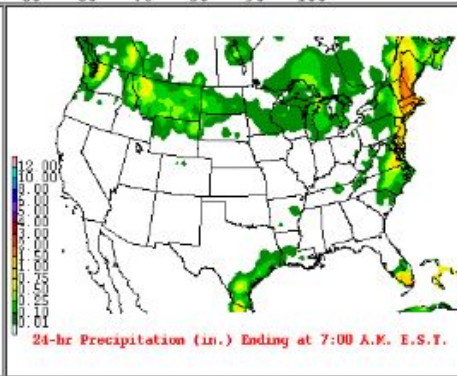
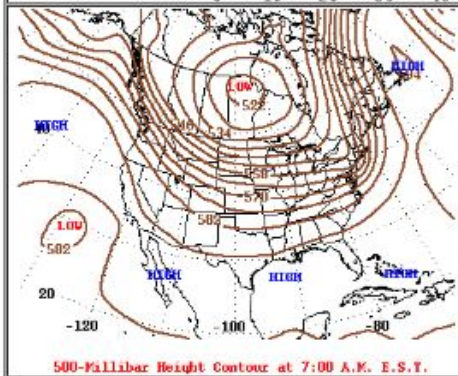
Daily Weather Maps

SATURDAY OCTOBER 17, 2020



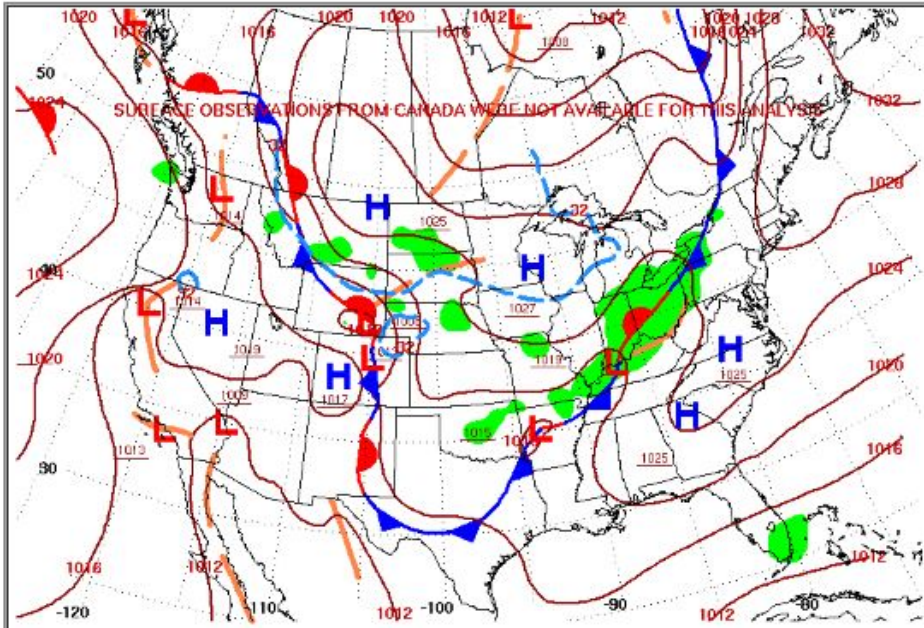
Maximum Temperature

Minimum Temperature



Daily Weather Maps

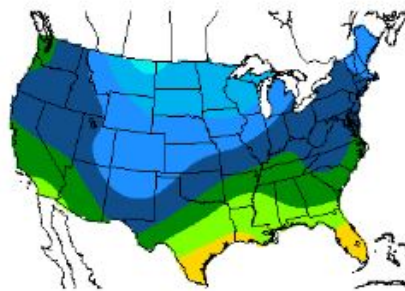
MONDAY OCTOBER 19, 2020



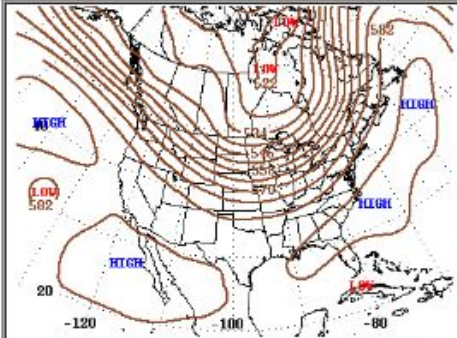
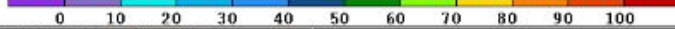
Surface Weather Map at 7:00 A.M. E.S.T.



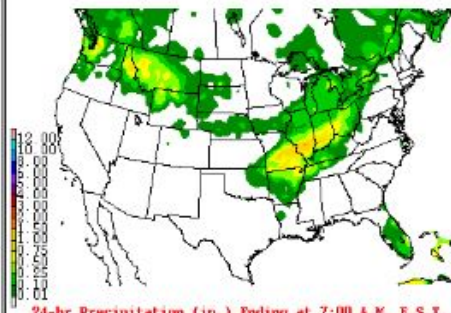
Maximum Temperature



Minimum Temperature



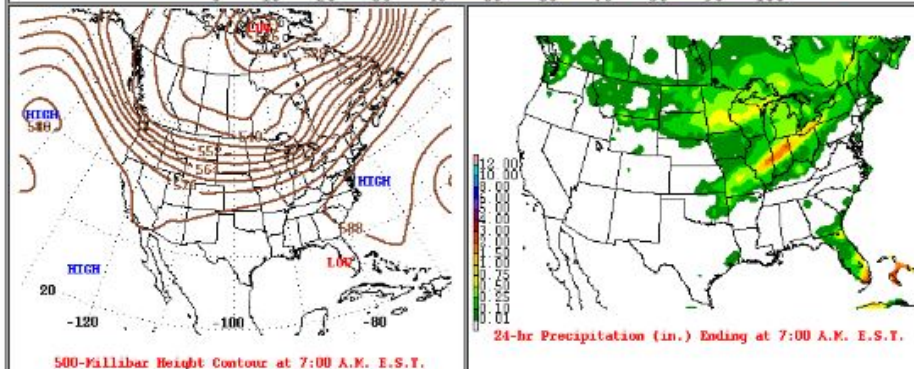
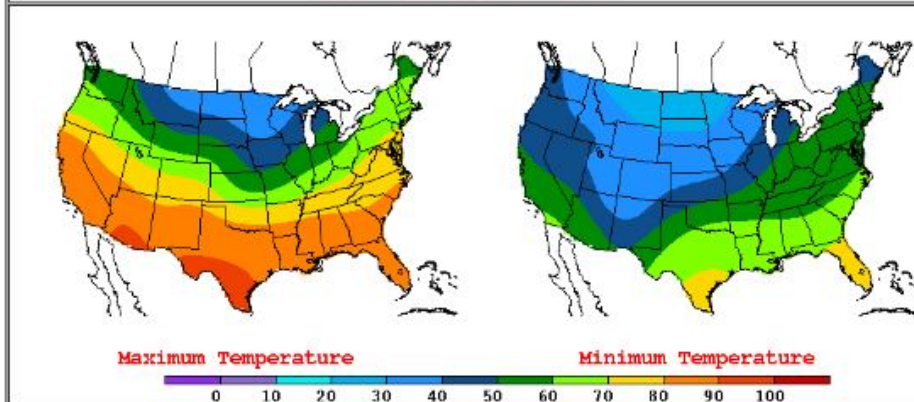
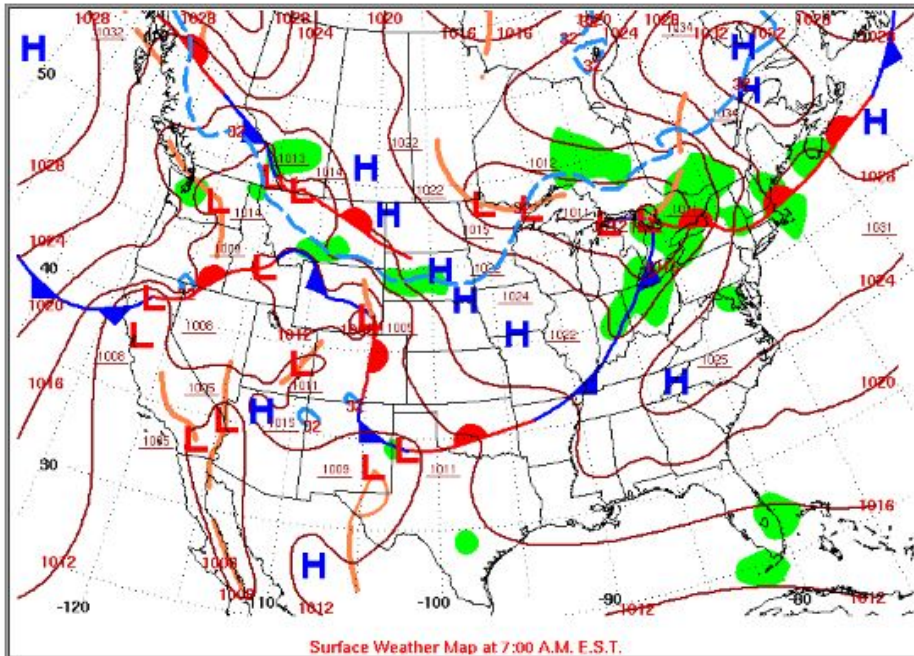
500-Millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

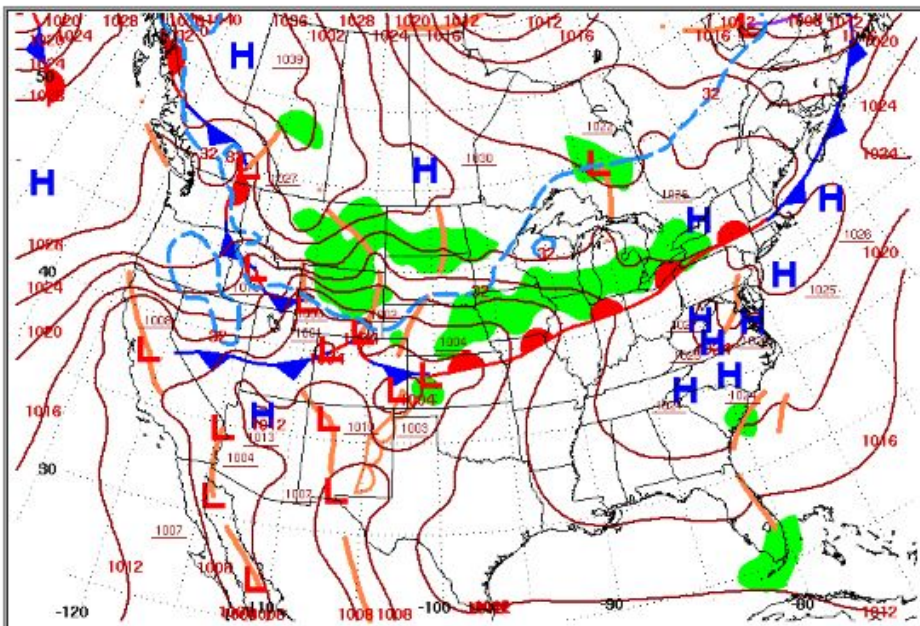
Daily Weather Maps

WEDNESDAY OCTOBER 21, 2020

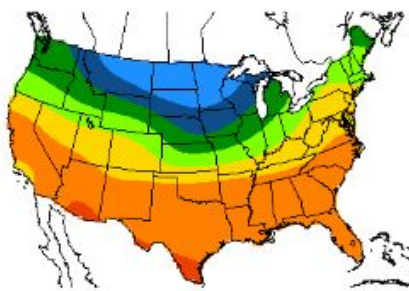


Daily Weather Maps

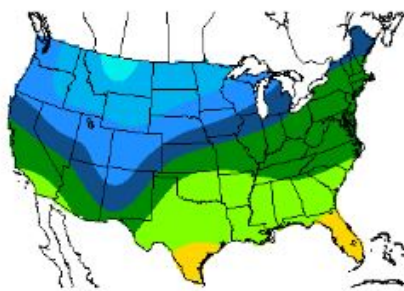
THURSDAY OCTOBER 22, 2020



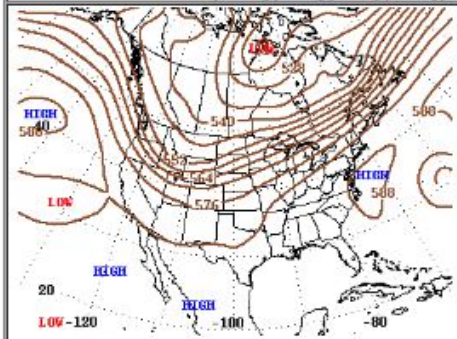
Surface Weather Map at 7:00 A.M. E.S.T.



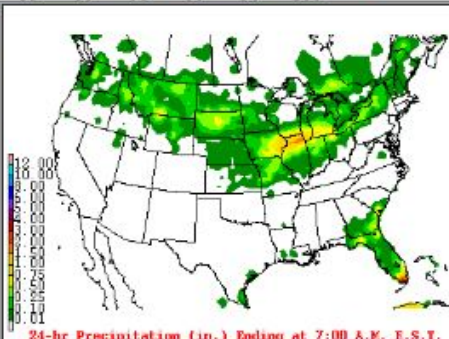
Maximum Temperature



Minimum Temperature



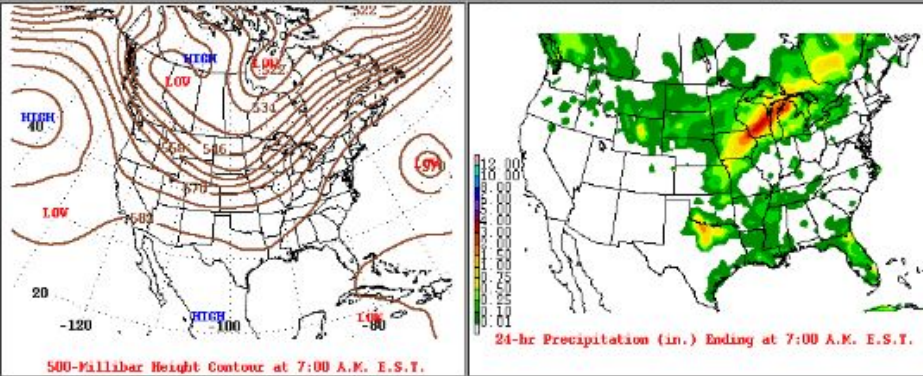
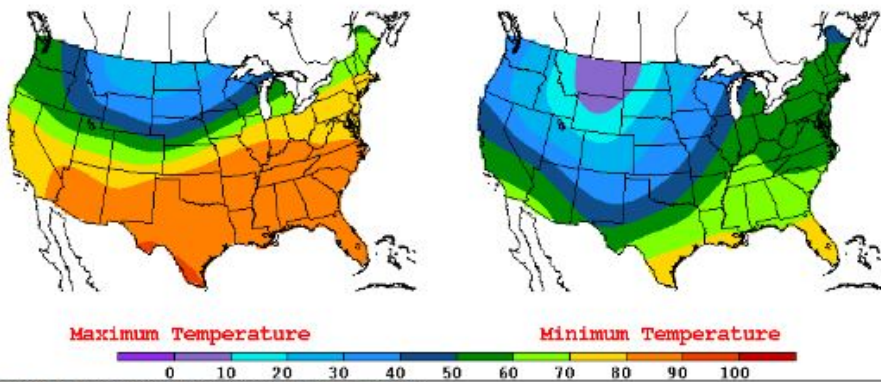
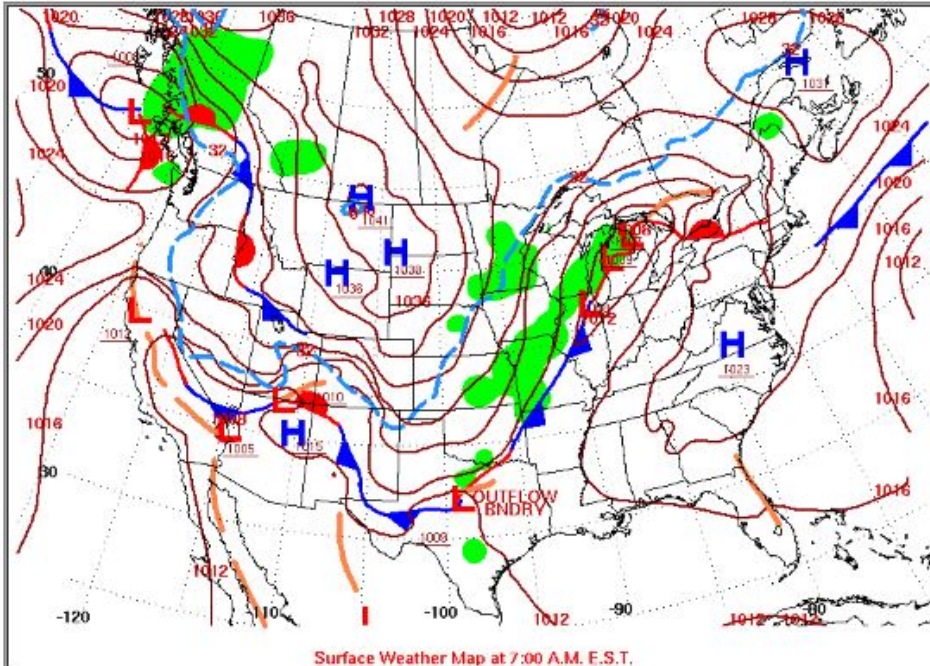
500-millibar Height Contour at 7:00 A.M. E.S.T.



24-hr Precipitation (in.) Ending at 7:00 A.M. E.S.T.

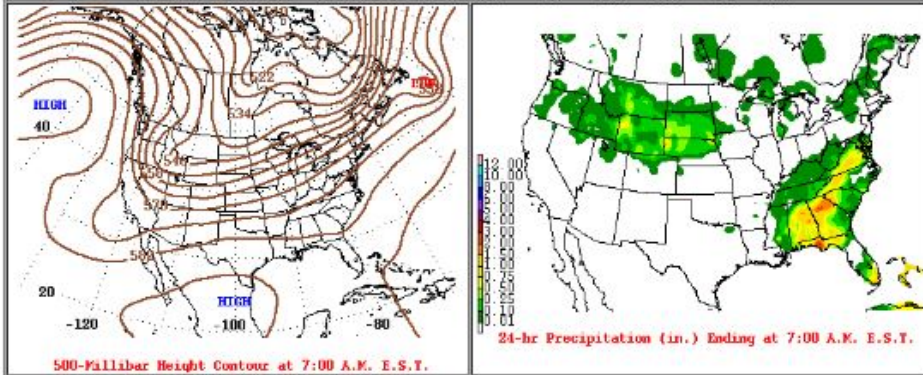
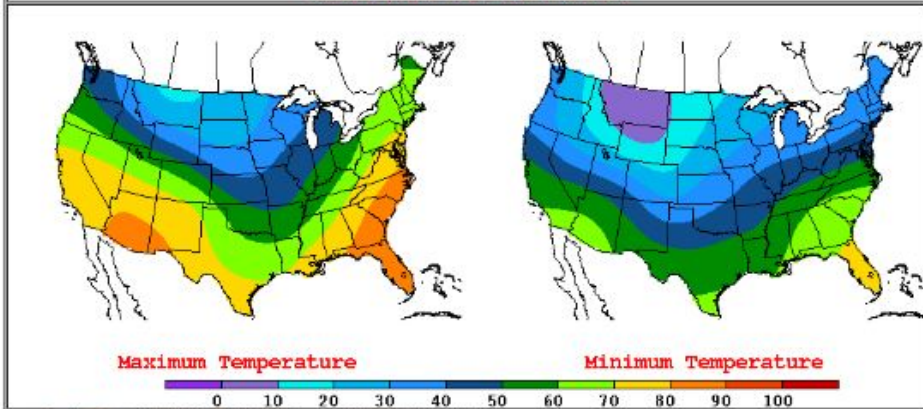
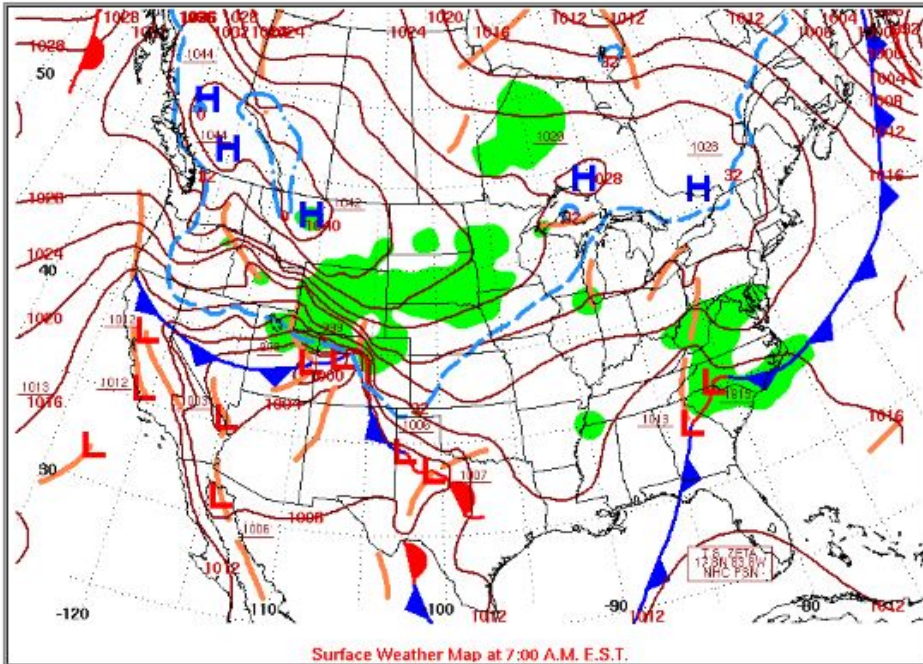
Daily Weather Maps

FRIDAY OCTOBER 23, 2020



Daily Weather Maps

SUNDAY OCTOBER 25, 2020



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020

Appendix M: Still image captures from the Mammoth Lakes camera on POC 6 FEM T640x
SPM-only EE days



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



Exceptional Event Demonstration for
Mammoth Lakes PM10 in September and October 2020



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Mammoth Lakes PM10 in September and October 2020



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Mammoth Lakes PM10 in September and October 2020



Exceptional Event Demonstration for
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End of document:

*Exceptional Event Demonstration for Wildfire Smoke Impacts to Mammoth Lakes PM10 Monitors in
September and October 2020*