

Appendix A. Columbus-Baker Prescribed Fire Exceptional Events Plots

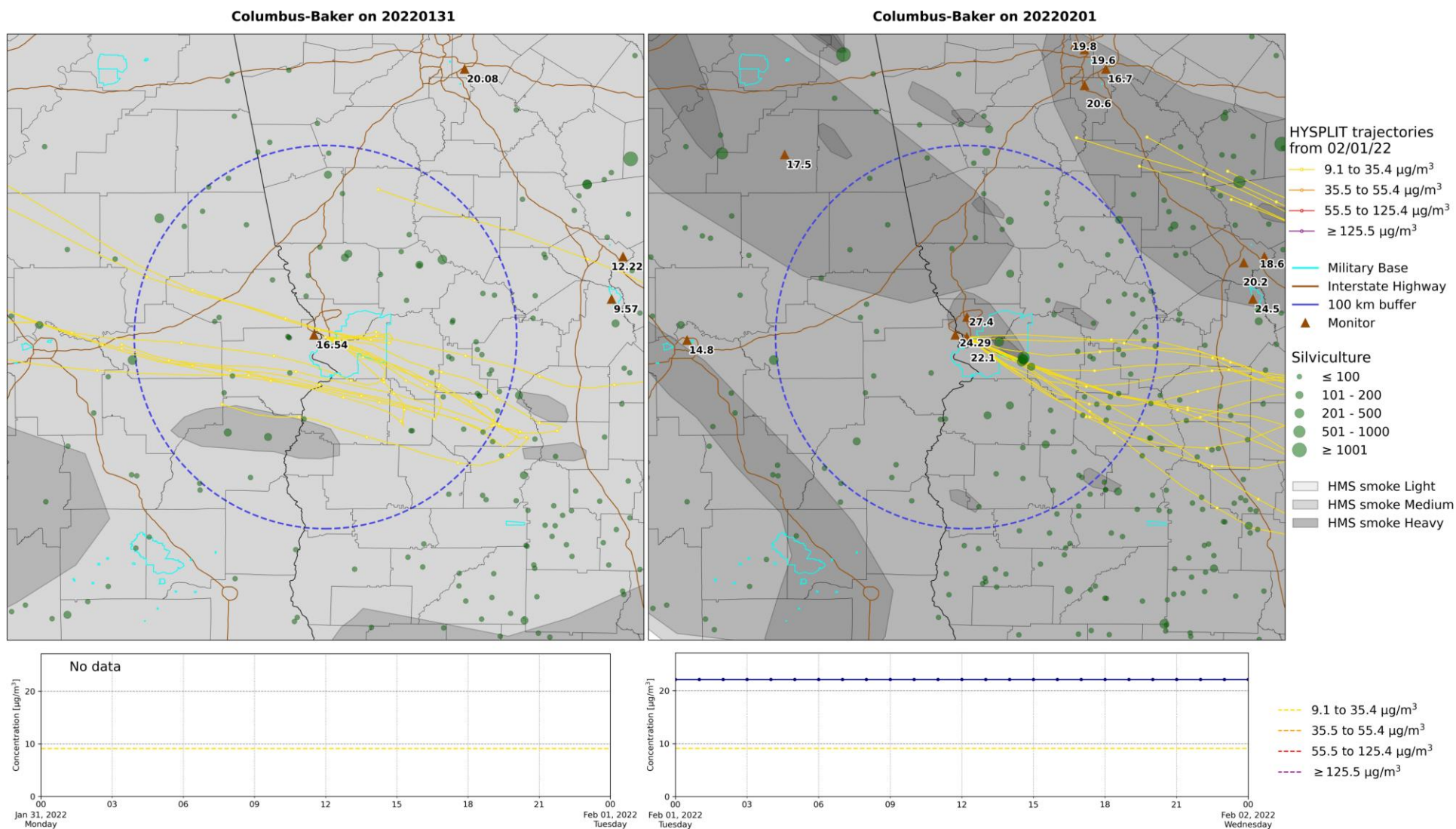
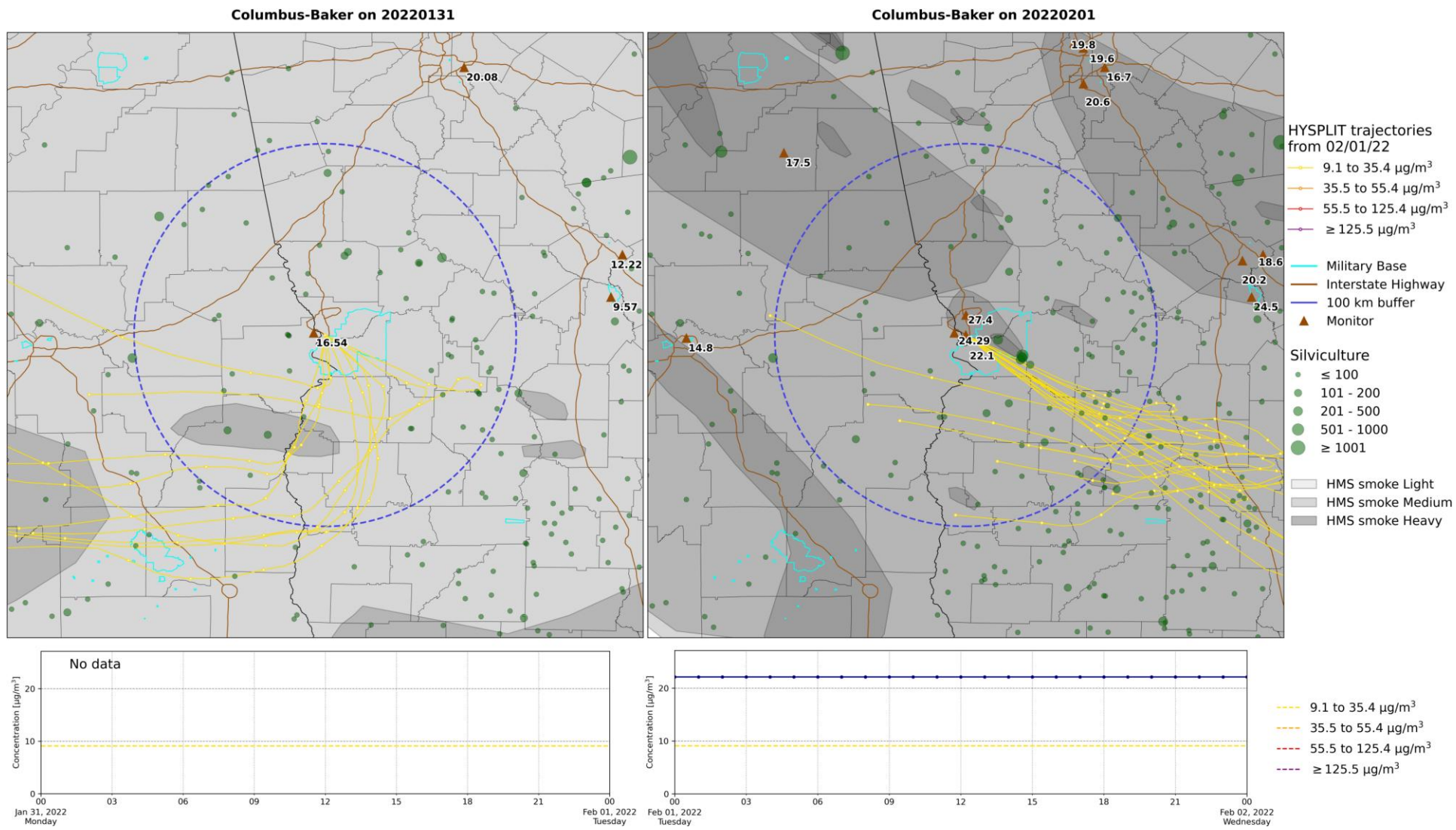


Figure 1A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Columbus-Baker PM_{2.5} monitor on January 31, 2022. The top right map contains the same information for February 1, 2022. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker PM_{2.5} monitor on February 1, 2022. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



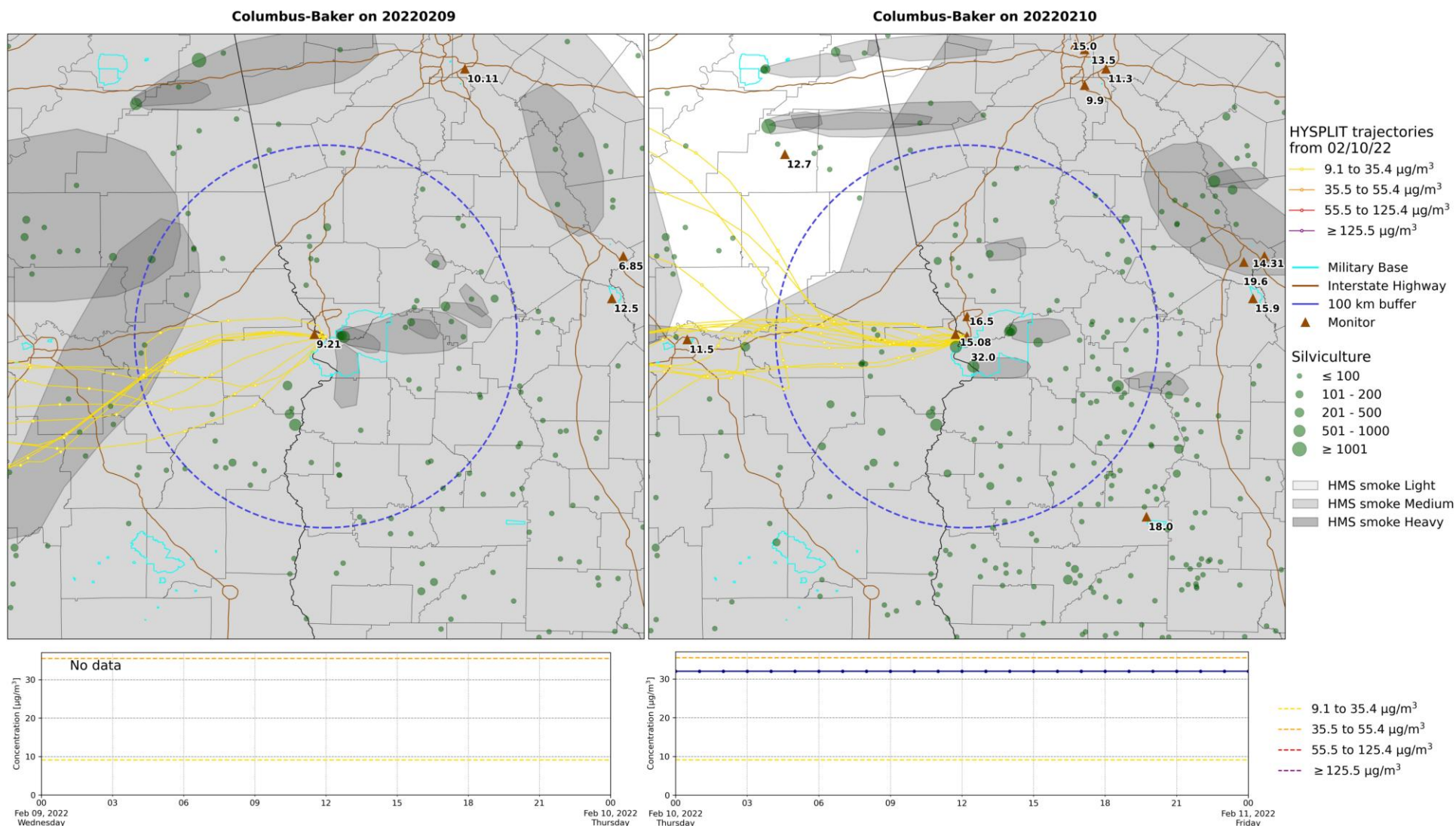
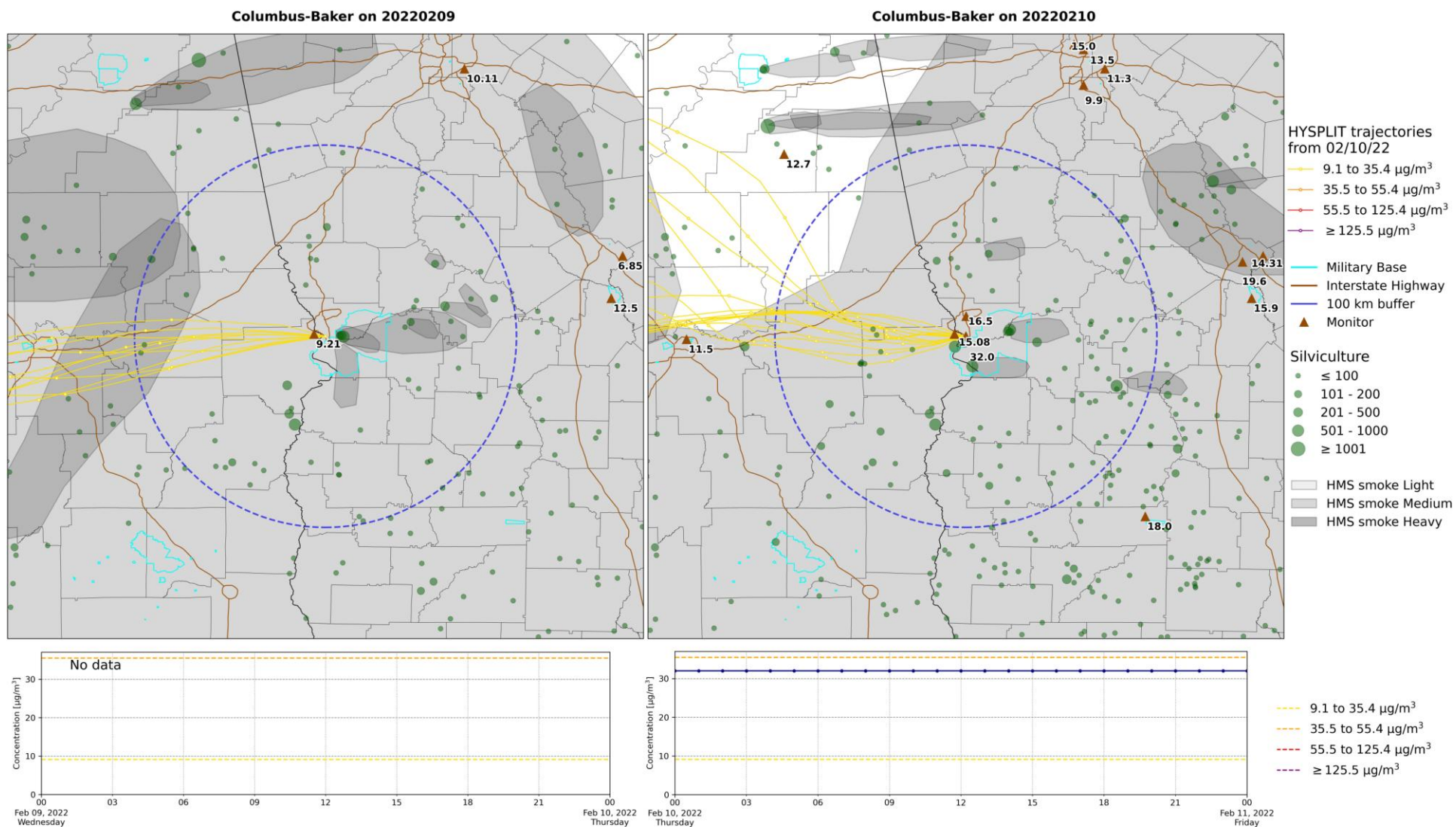


Figure 2A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Columbus-Baker PM_{2.5} monitor on February 9, 2022. The top right map contains the same information for February 10, 2022. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker PM_{2.5} monitor on February 10, 2022. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



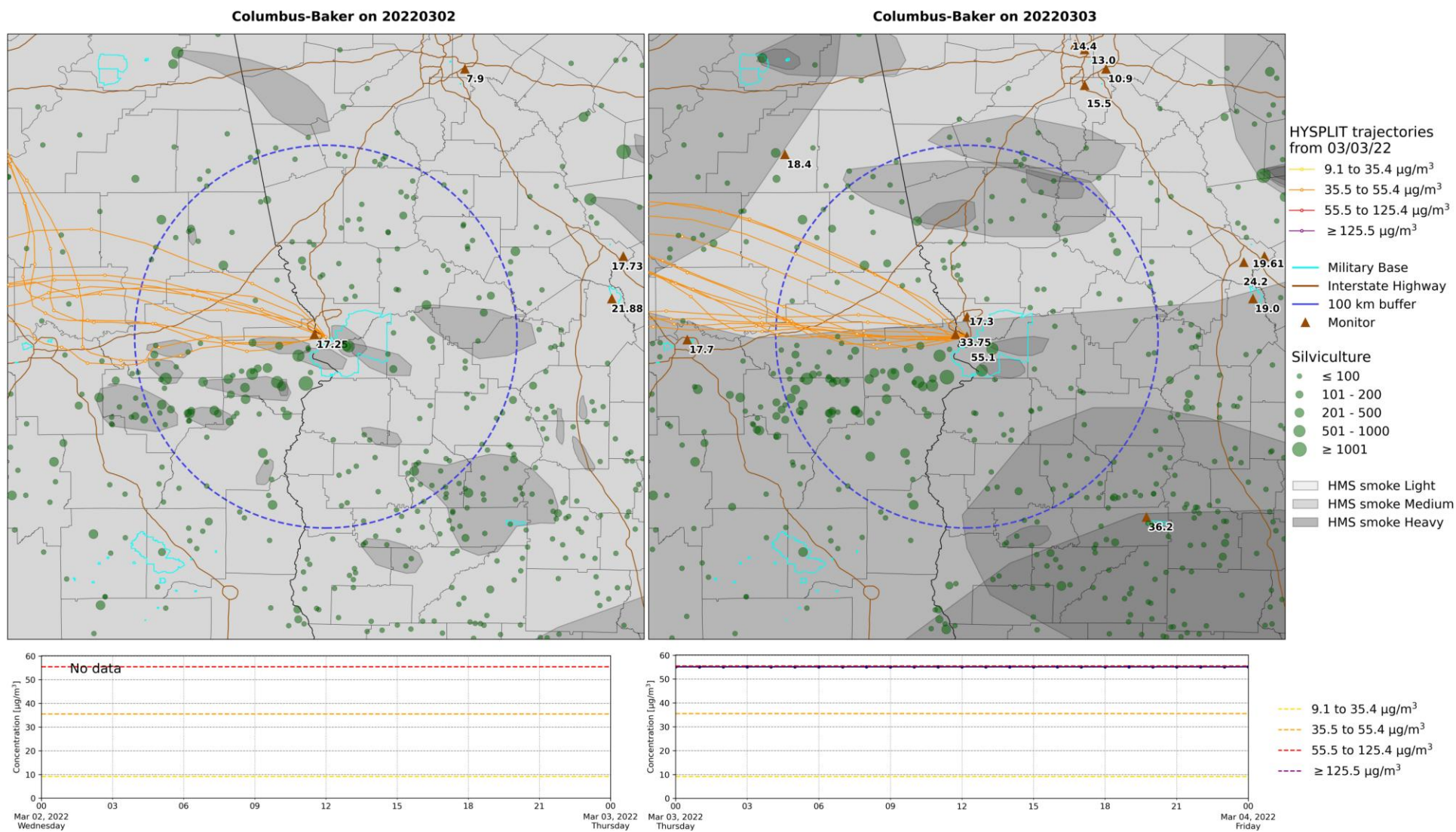
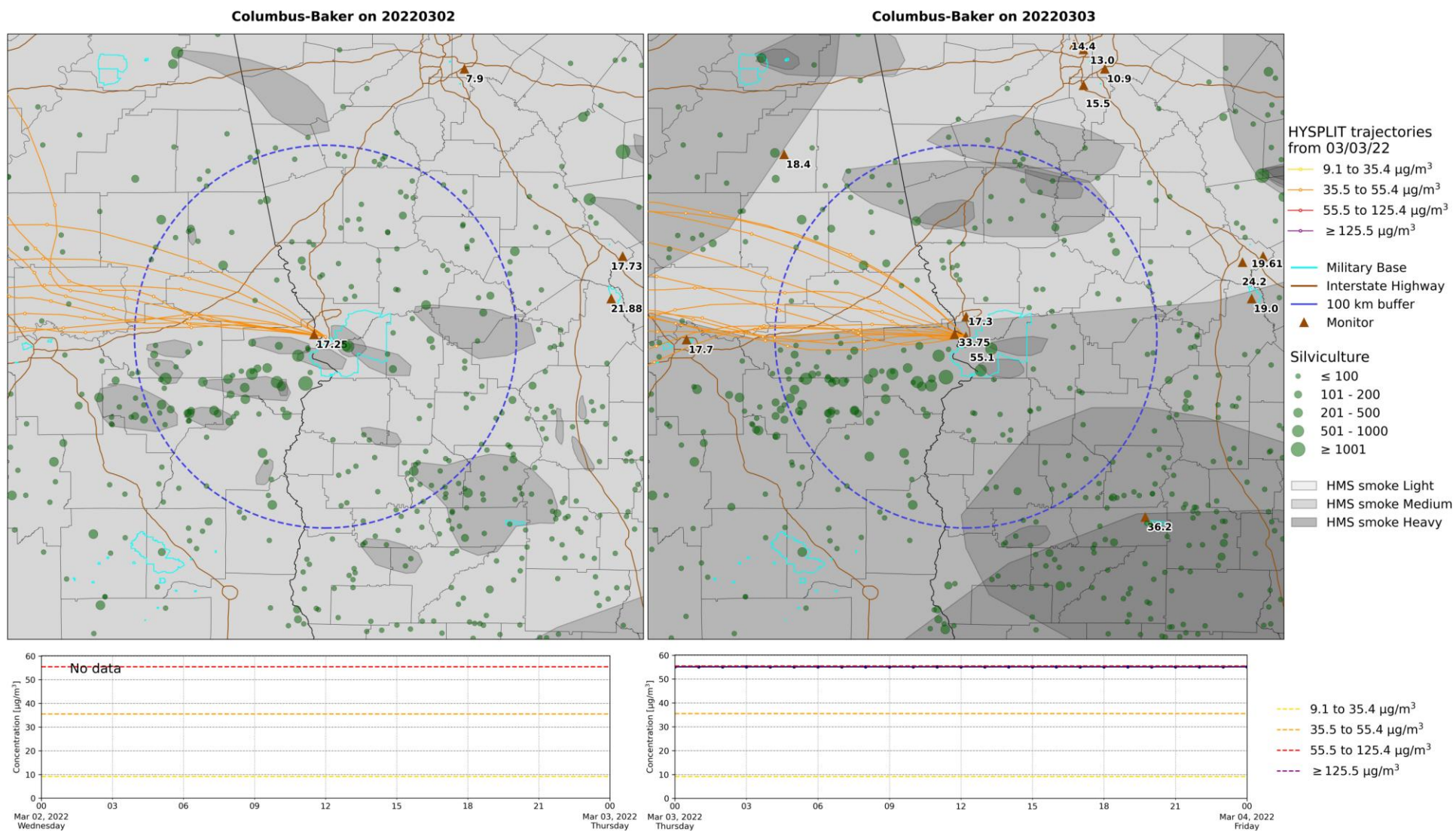
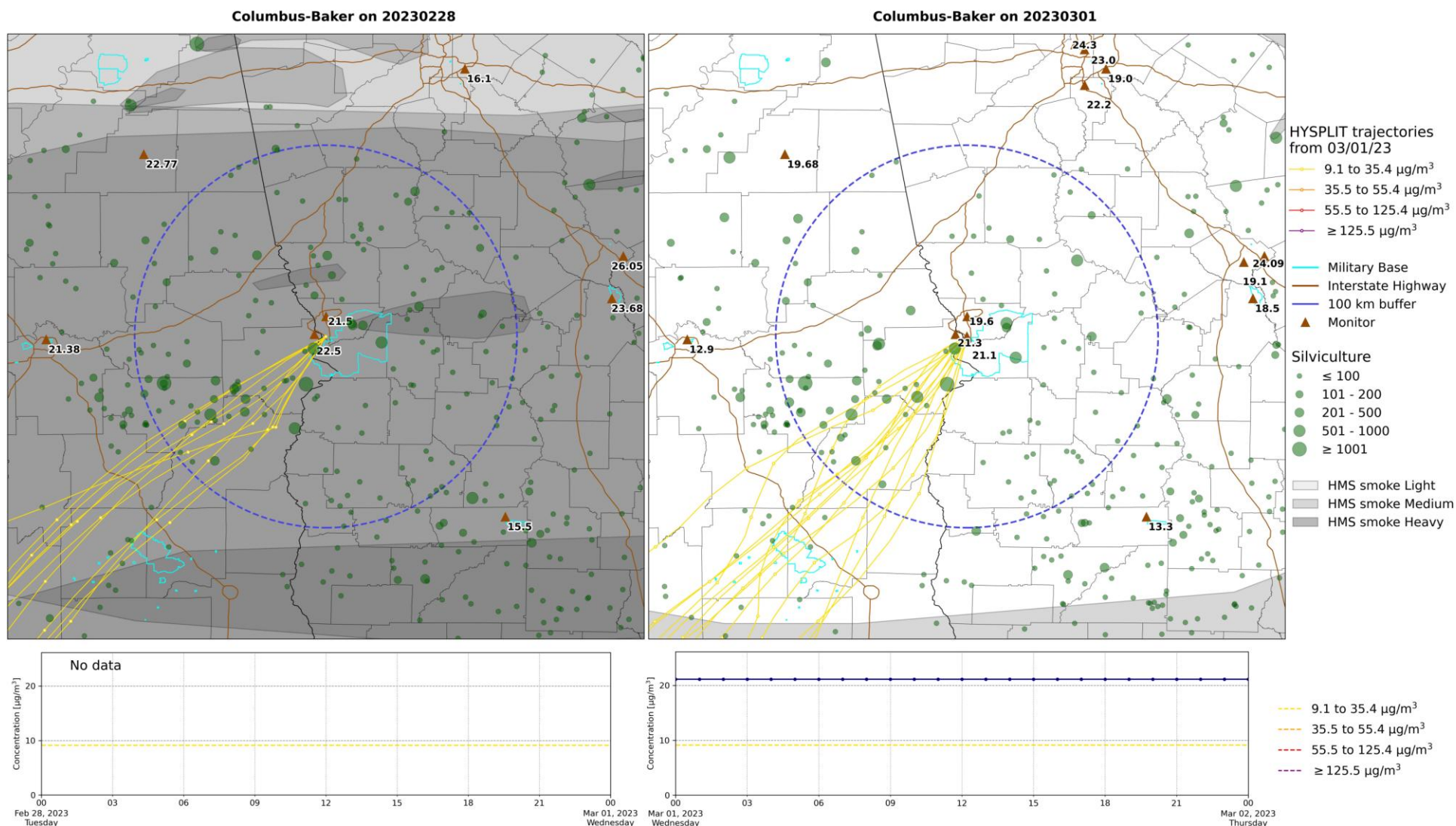


Figure 3A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Columbus-Baker PM_{2.5} monitor on March 2, 2022. The top right map contains the same information for March 3, 2022. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker PM_{2.5} monitor on March 3, 2022. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.





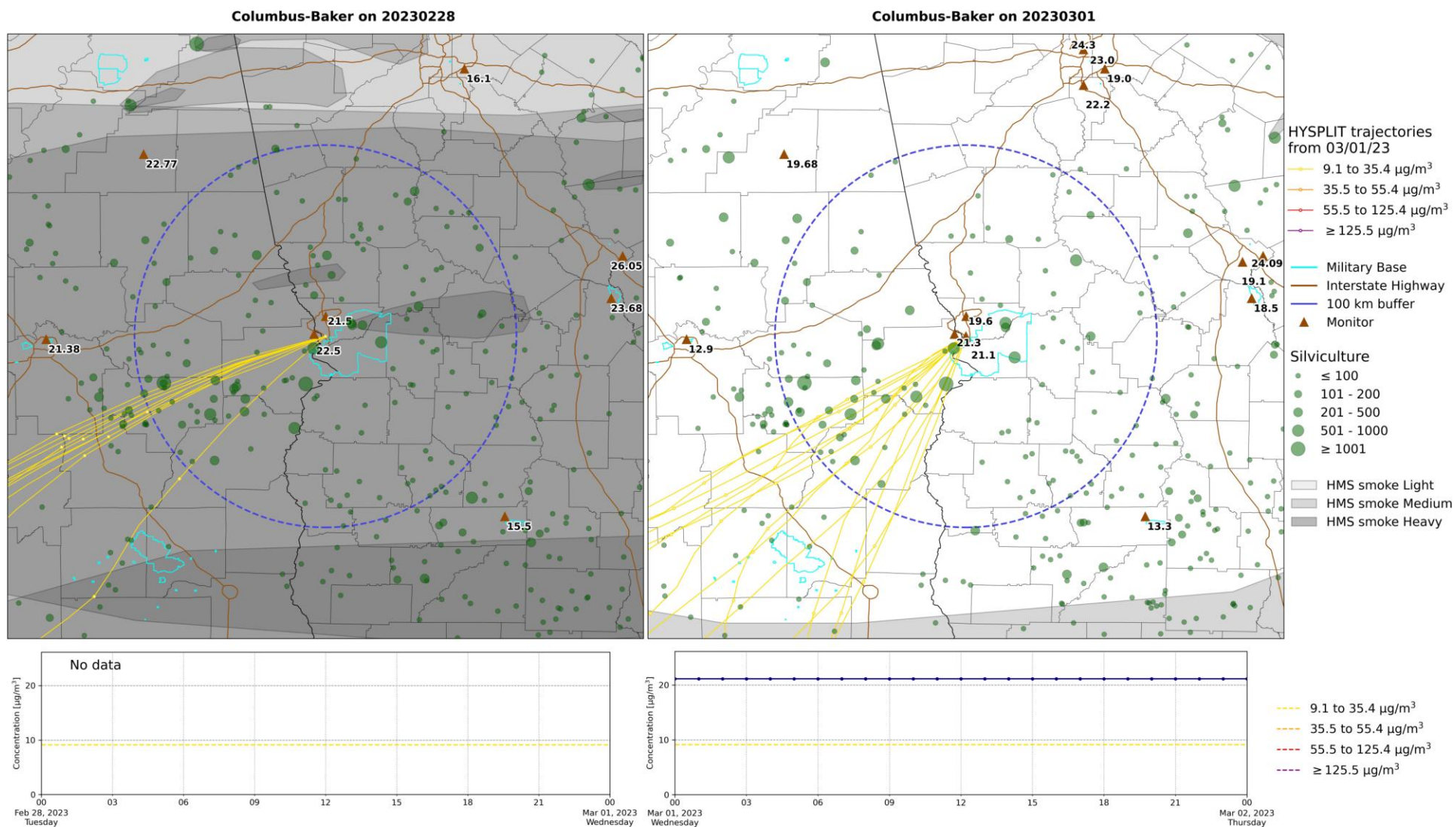


Figure 4B. The same as Figure 4A except HYSPLIT back trajectories are released at 500 m from the Columbus-Baker $\text{PM}_{2.5}$ monitor.

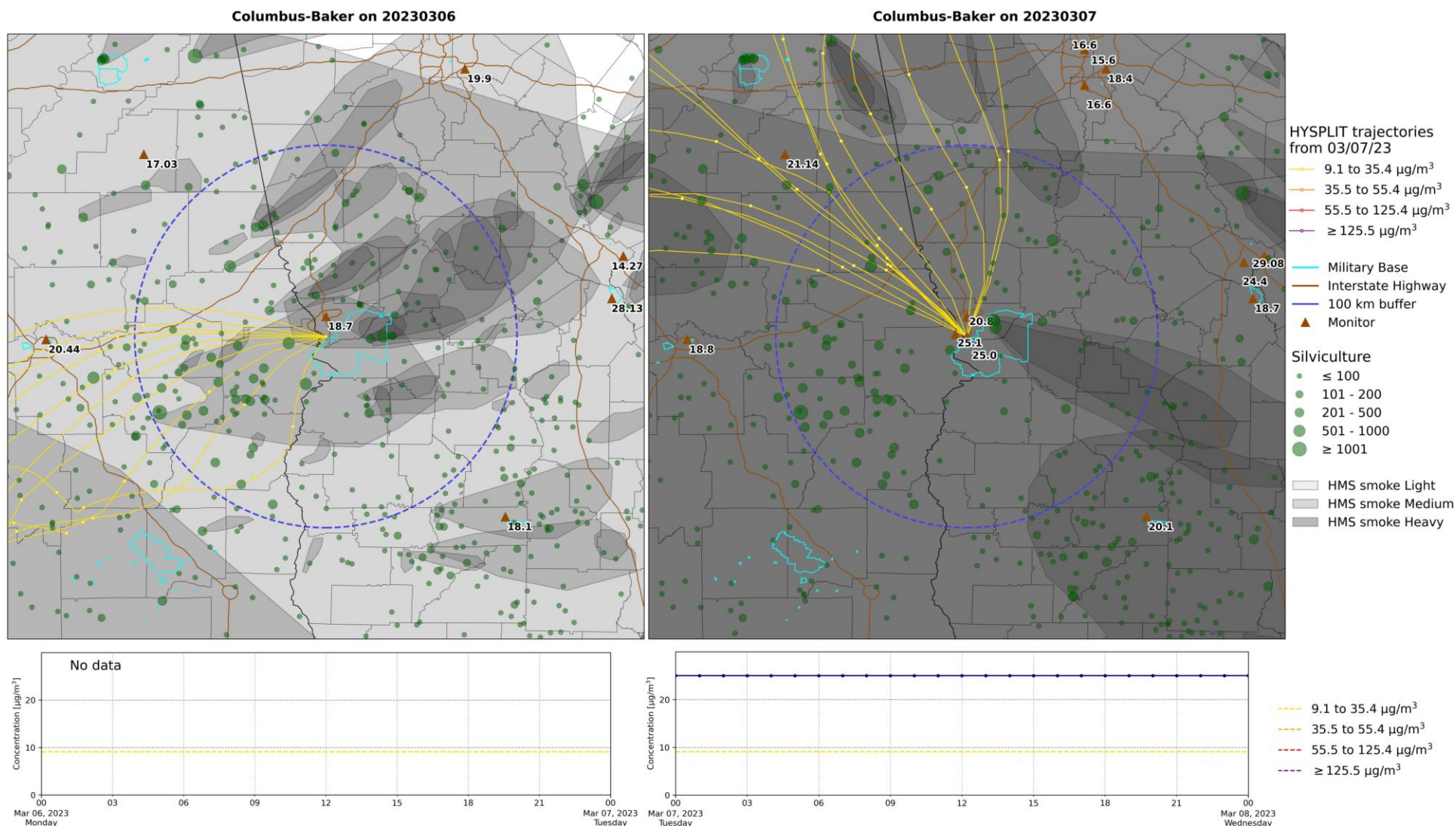
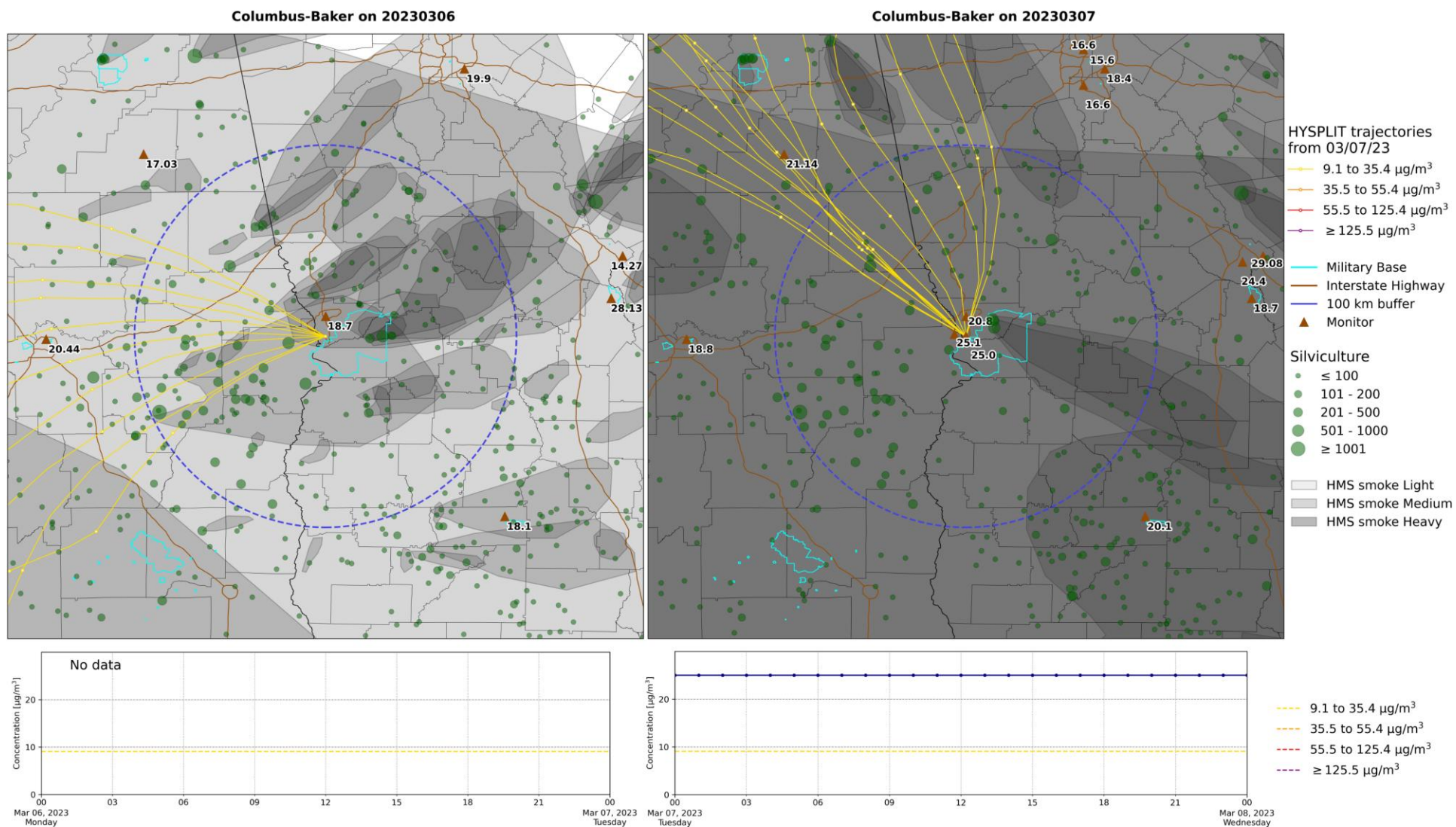


Figure 5A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Columbus-Baker PM_{2.5} monitor on March 6, 2023. The top right map contains the same information for March 7, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker PM_{2.5} monitor on March 7, 2023. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



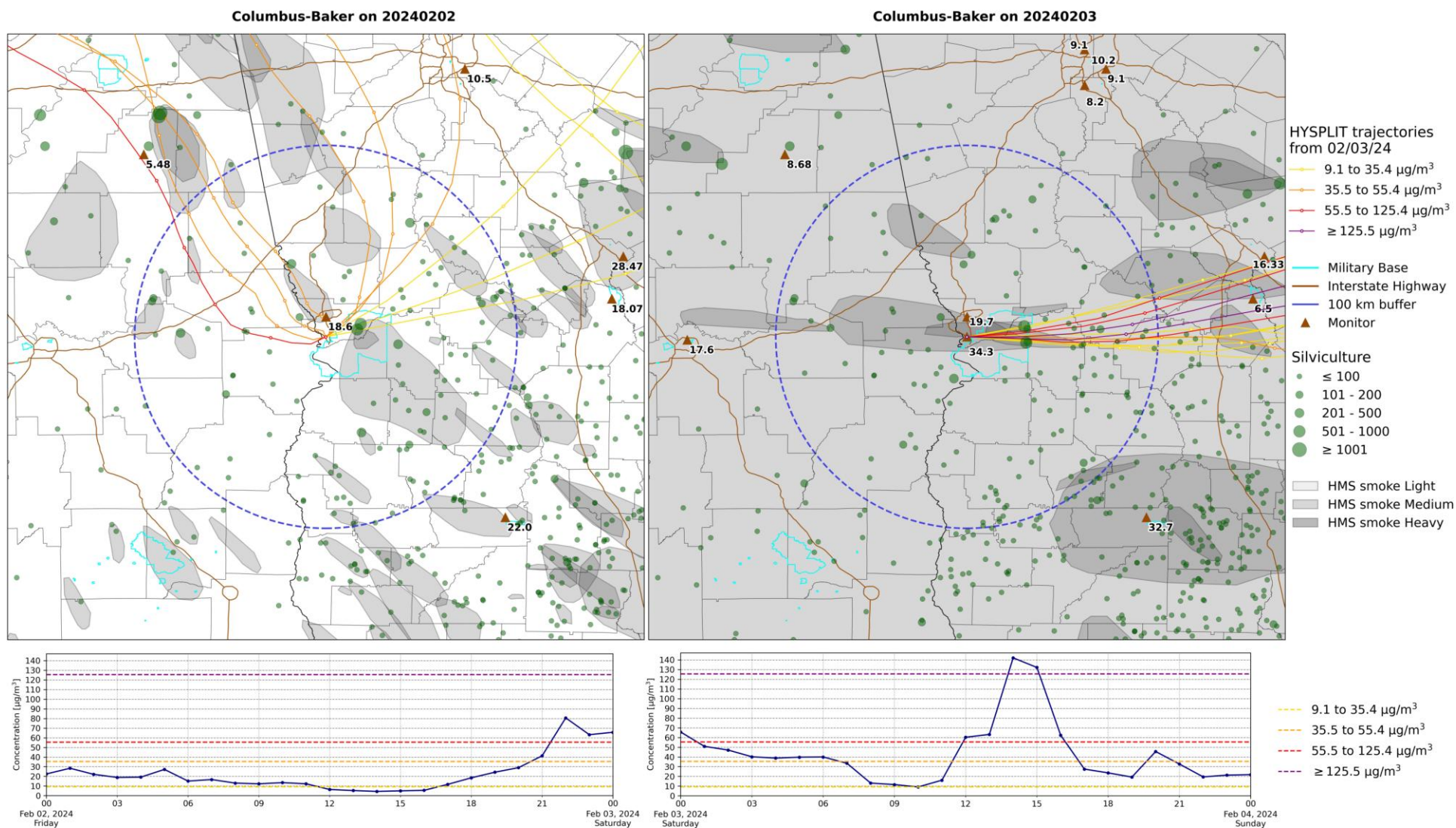


Figure 6A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Columbus-Baker PM_{2.5} monitor on February 2, 2024. The top right map contains the same information for February 3, 2024. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker PM_{2.5} monitor on February 3, 2024. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

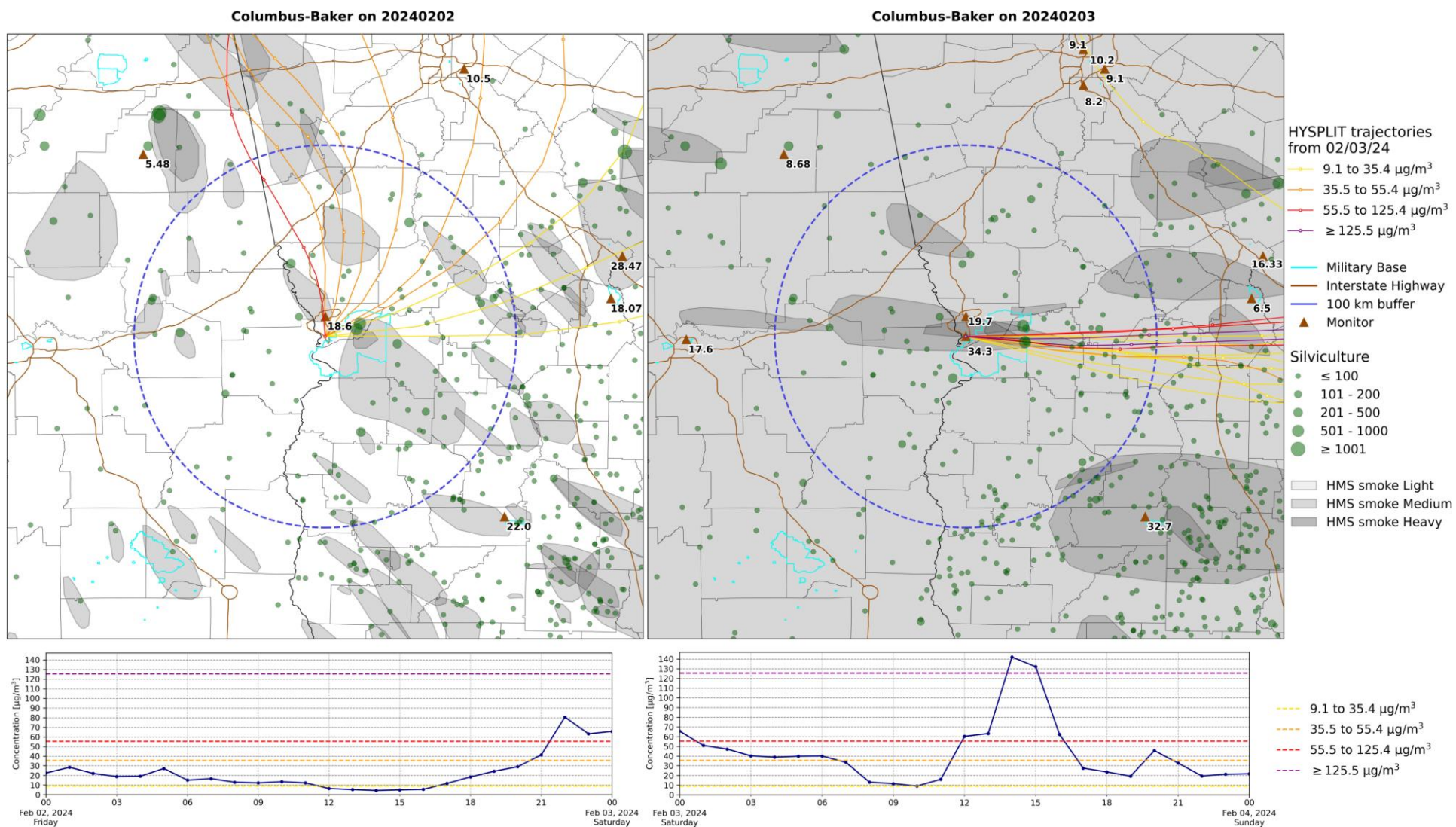


Figure 6B. The same as Figure 6A except HYSPLIT back trajectories are released at 500 m from the Columbus-Baker PM_{2.5} monitor.

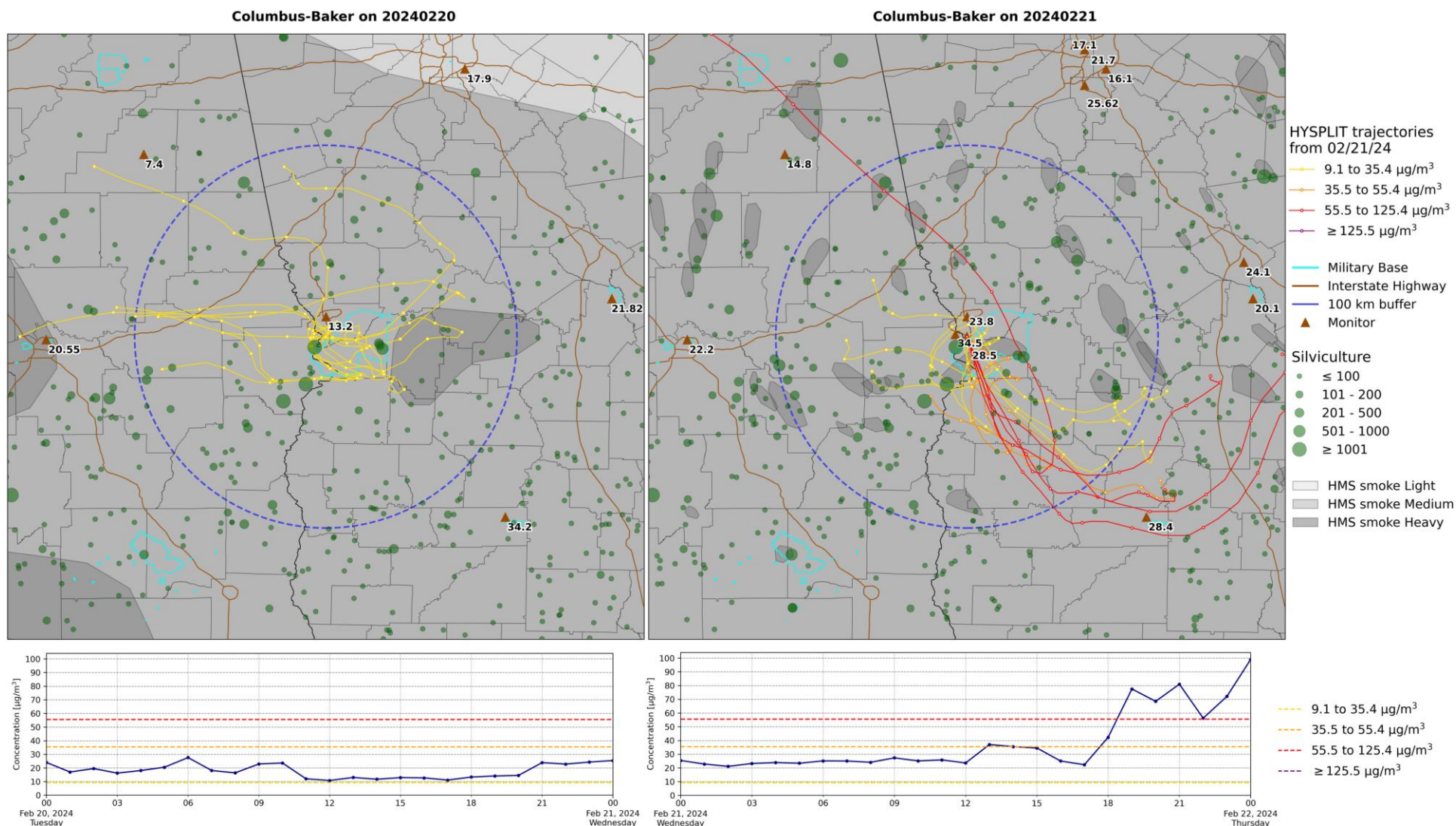


Figure 7A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Columbus-Baker $\text{PM}_{2.5}$ monitor on February 20, 2024. The top right map contains the same information for February 21, 2024. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker $\text{PM}_{2.5}$ monitor on February 21, 2024. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

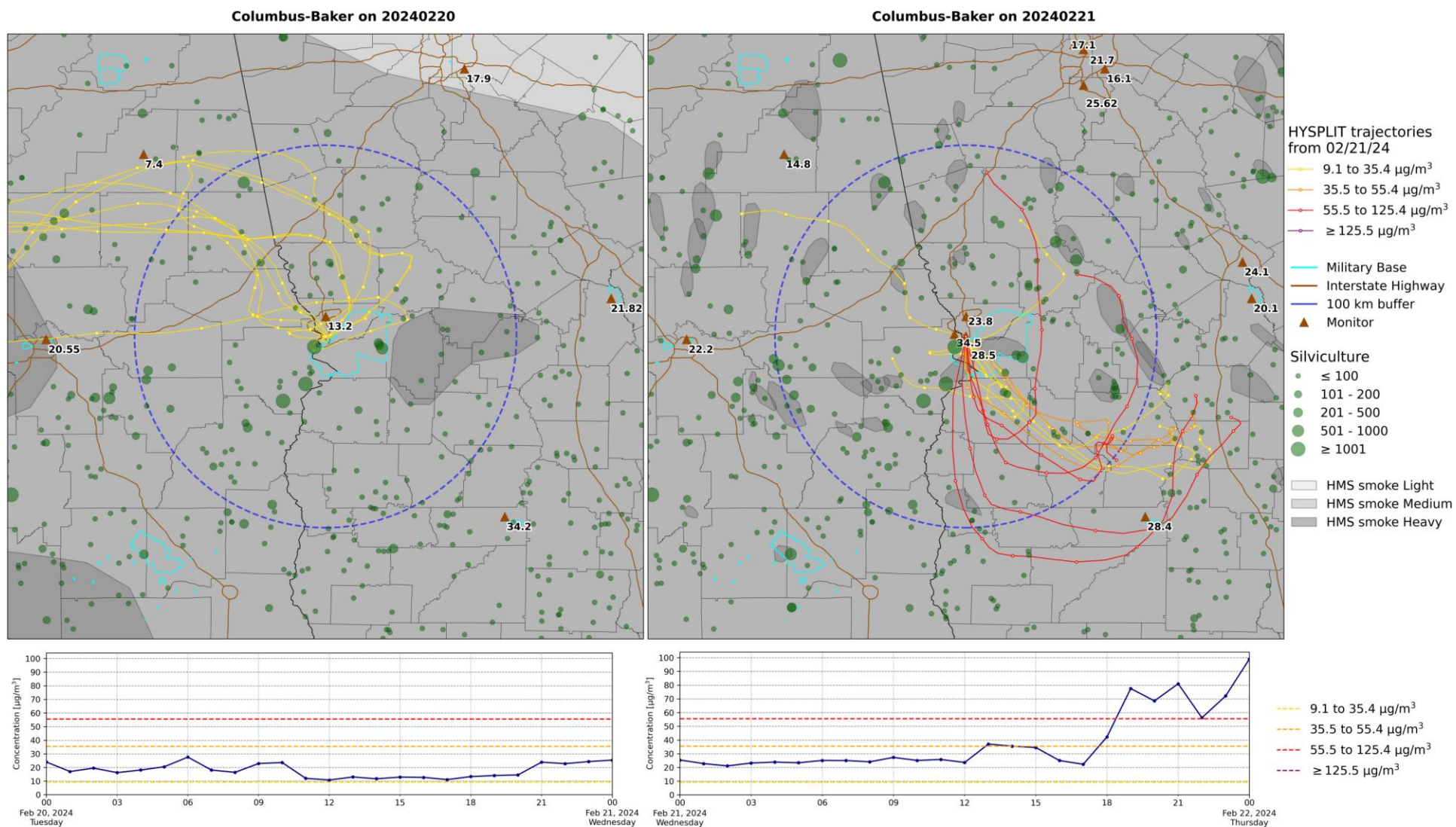


Figure 7B. The same as Figure 7A except HYSPLIT back trajectories are released at 500 m from the Columbus-Baker PM_{2.5} monitor.

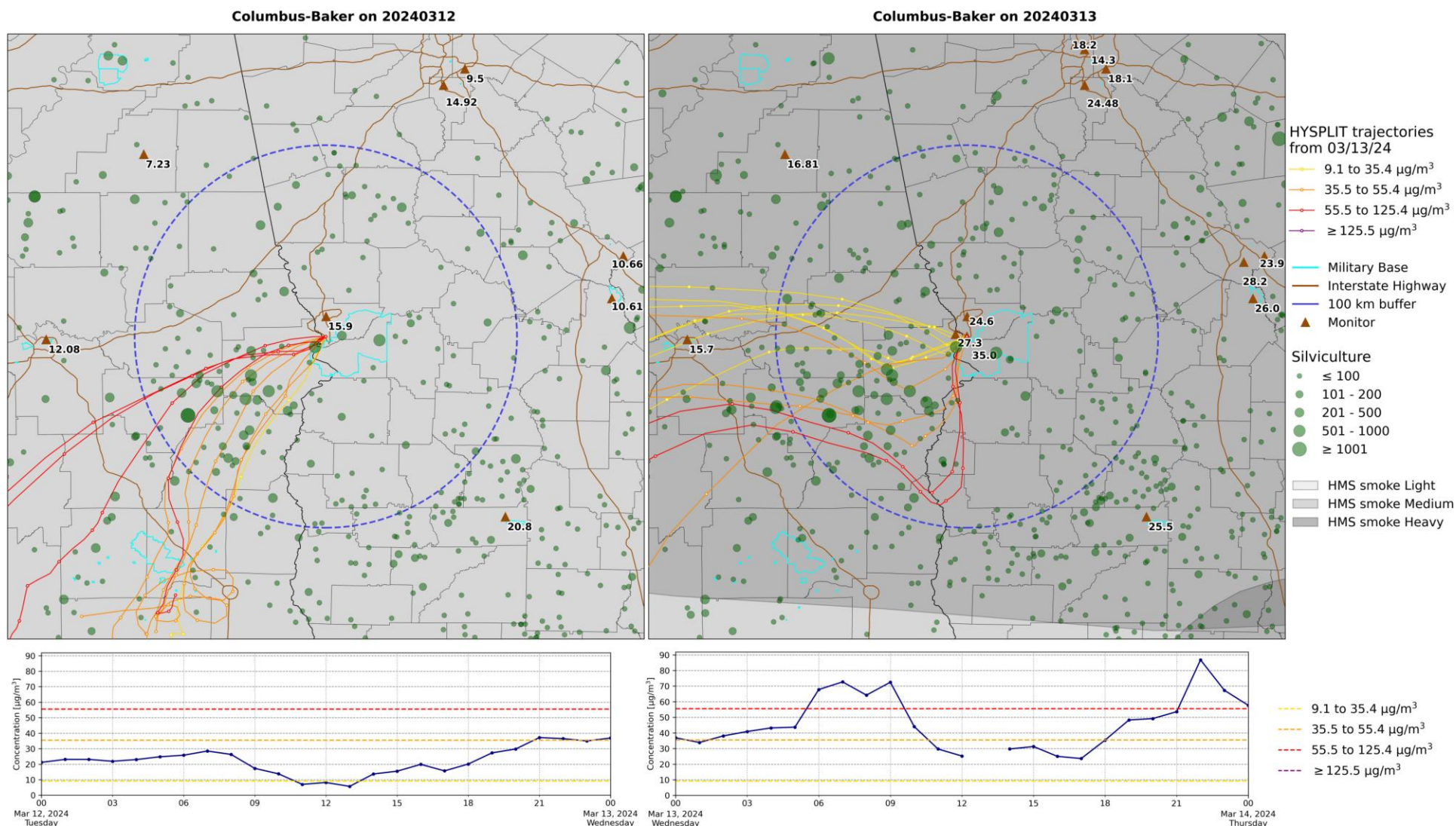


Figure 8A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Columbus-Baker $\text{PM}_{2.5}$ monitor on March 12, 2024. The top right map contains the same information for March 13, 2024. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Columbus-Baker $\text{PM}_{2.5}$ monitor on March 13, 2024. The left map shows the back-trajectories for 0:00 AM-9:59 AM EST and the right map represents back-trajectories for 10:00 AM-11:59 PM EST. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue line shows hourly observations from the monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

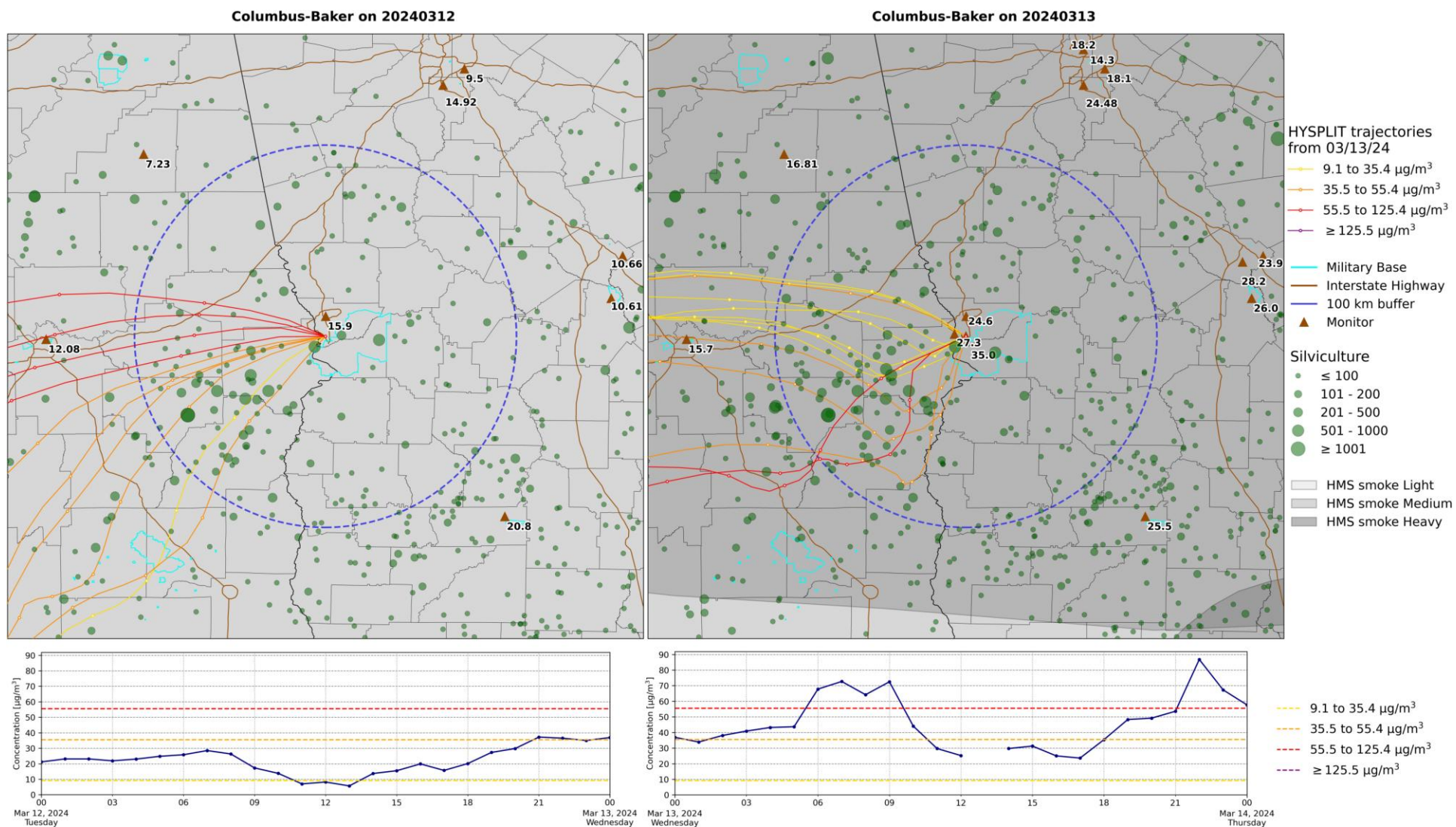


Figure 8B. The same as Figure 8A except HYSPLIT back trajectories are released at 500 m from the Columbus-Baker PM_{2.5} monitor.