

Appendix A. Augusta Prescribed Fire Exceptional Events Plots

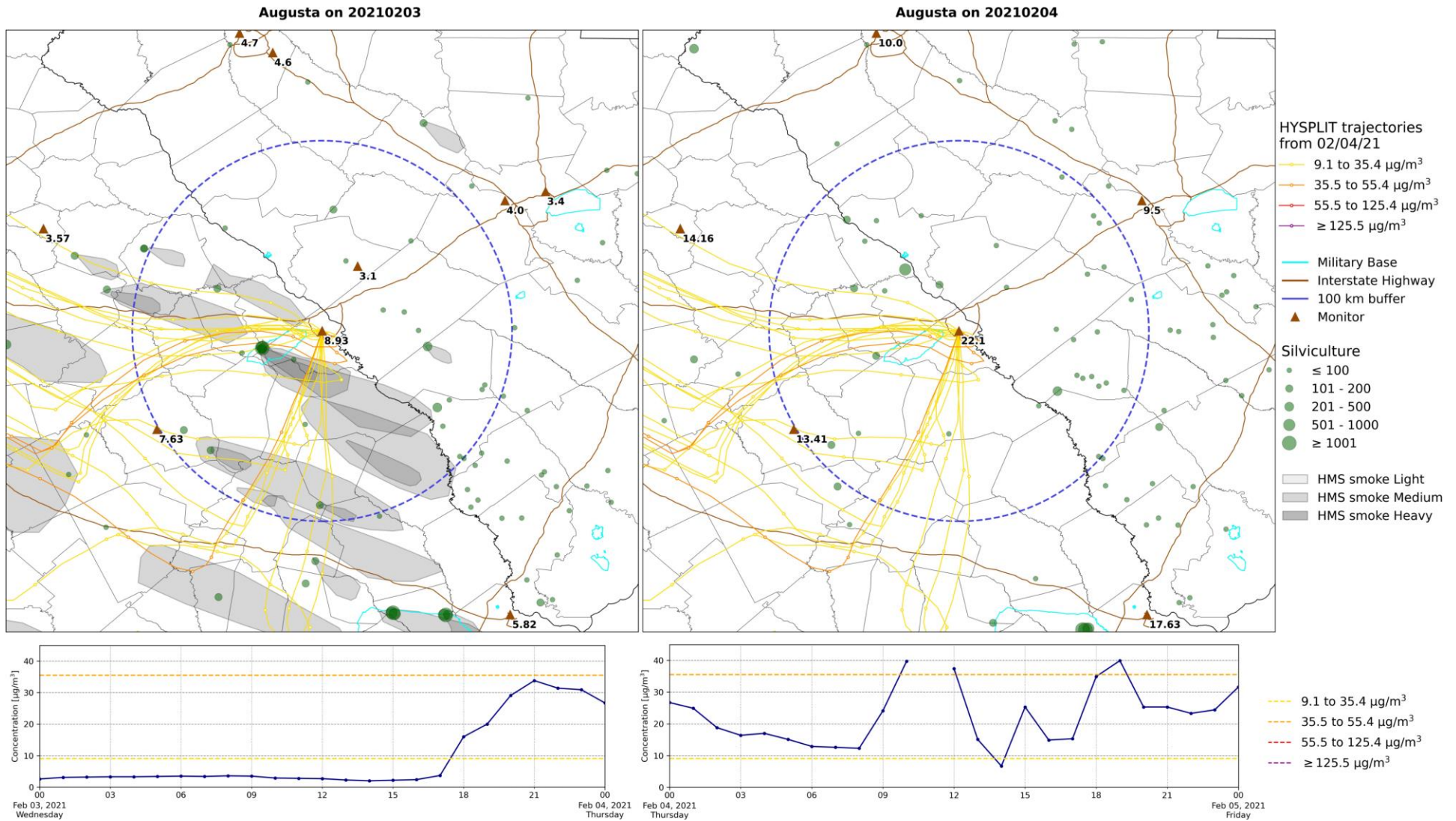


Figure 1A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on February 3, 2021. The top right map contains the same information for February 4, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on February 4, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

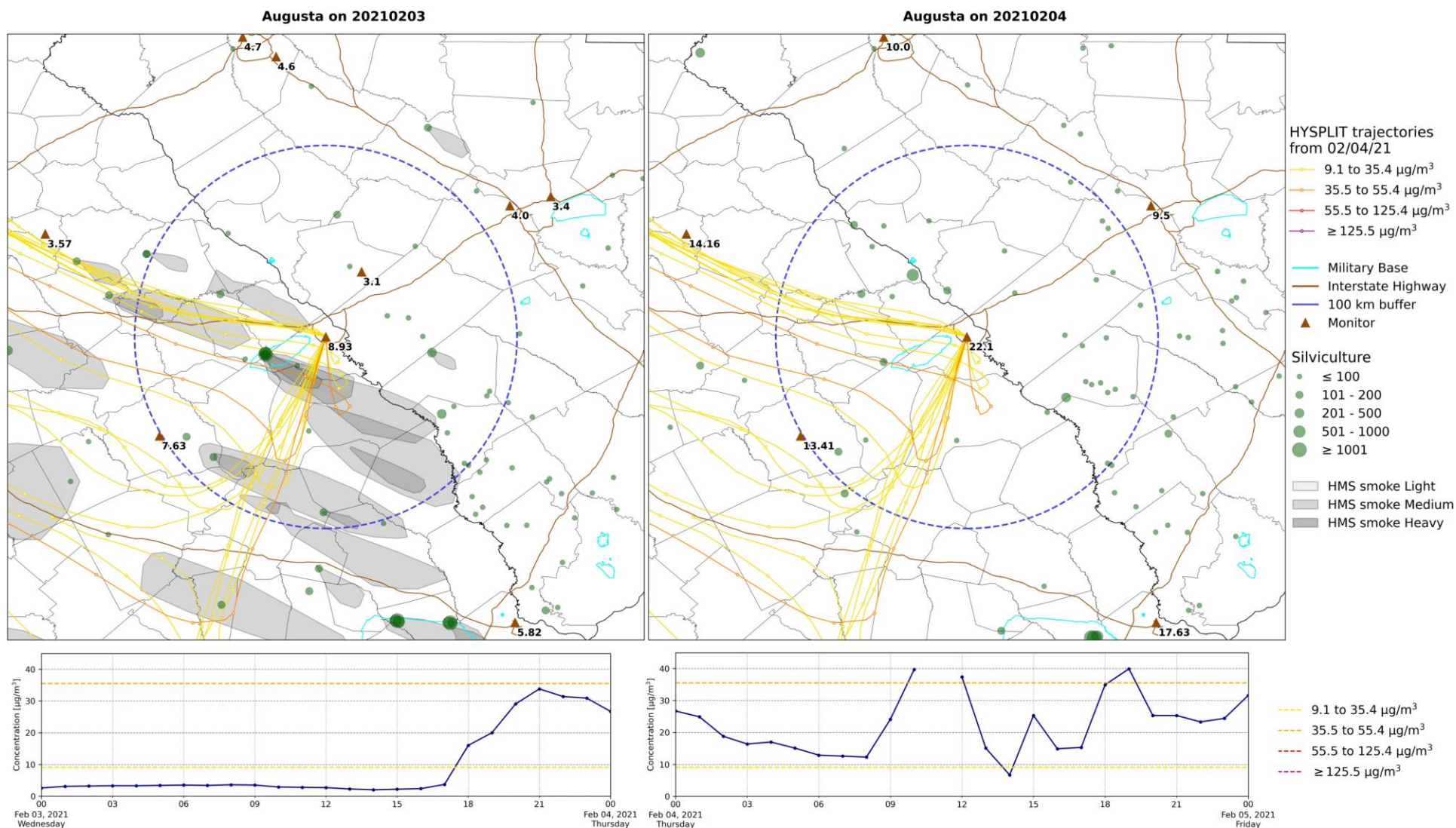


Figure 1B. The same as Figure 1A except HYSPLIT back trajectories are released at 500 m from the Augusta $\text{PM}_{2.5}$ monitor.

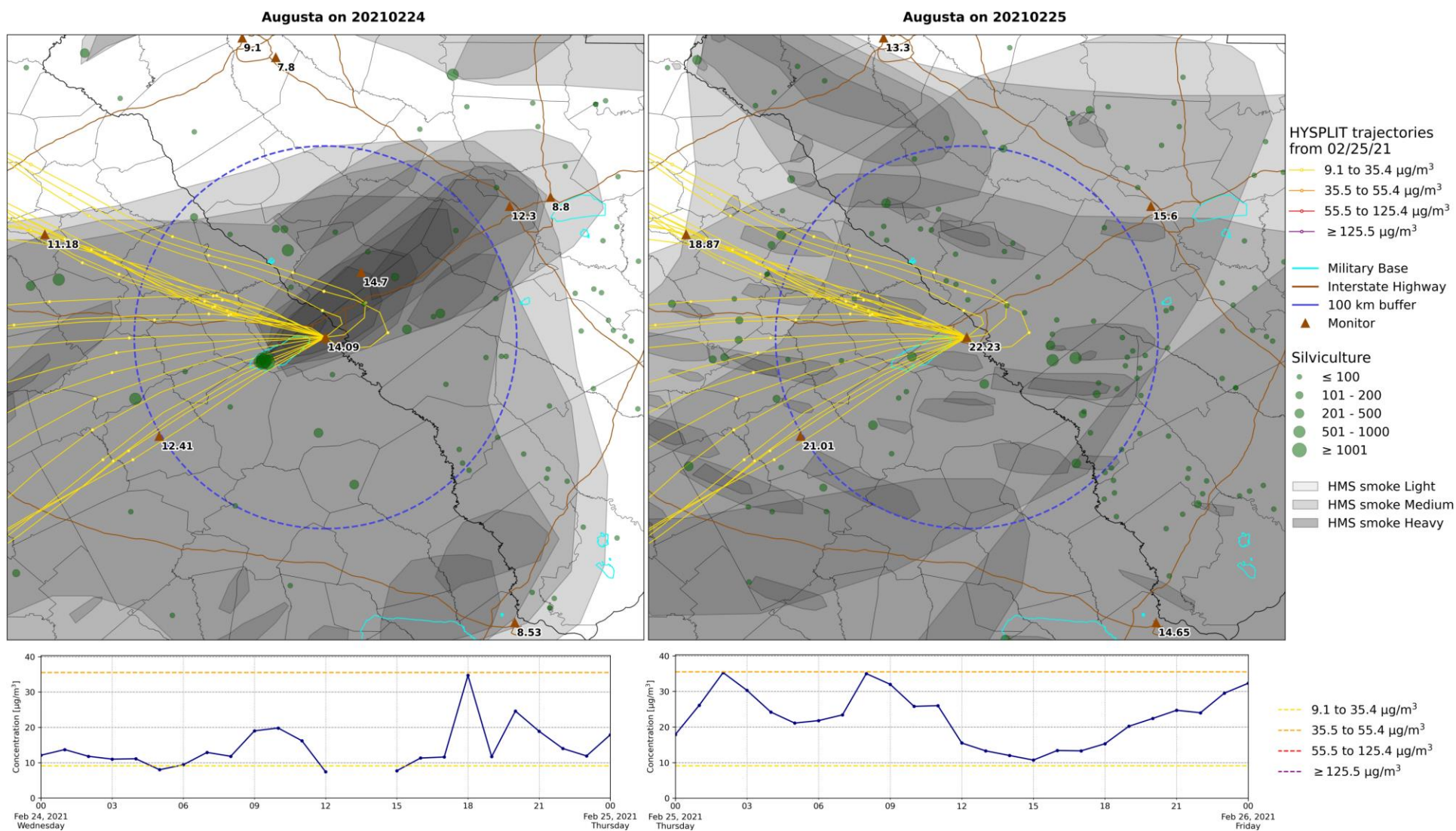


Figure 2A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on February 24, 2021. The top right map contains the same information for February 25, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on February 25, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

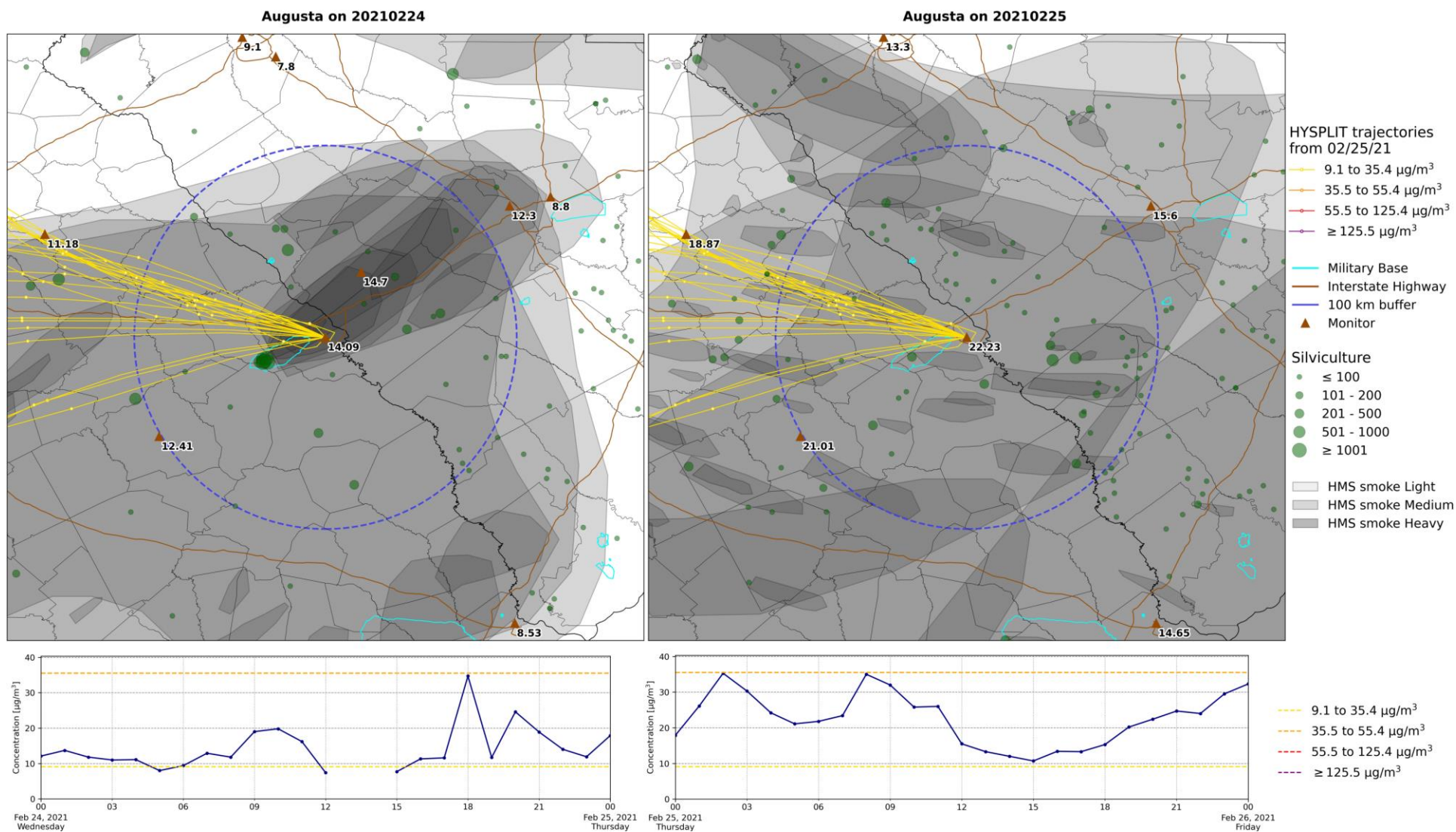


Figure 2B. The same as Figure 2A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

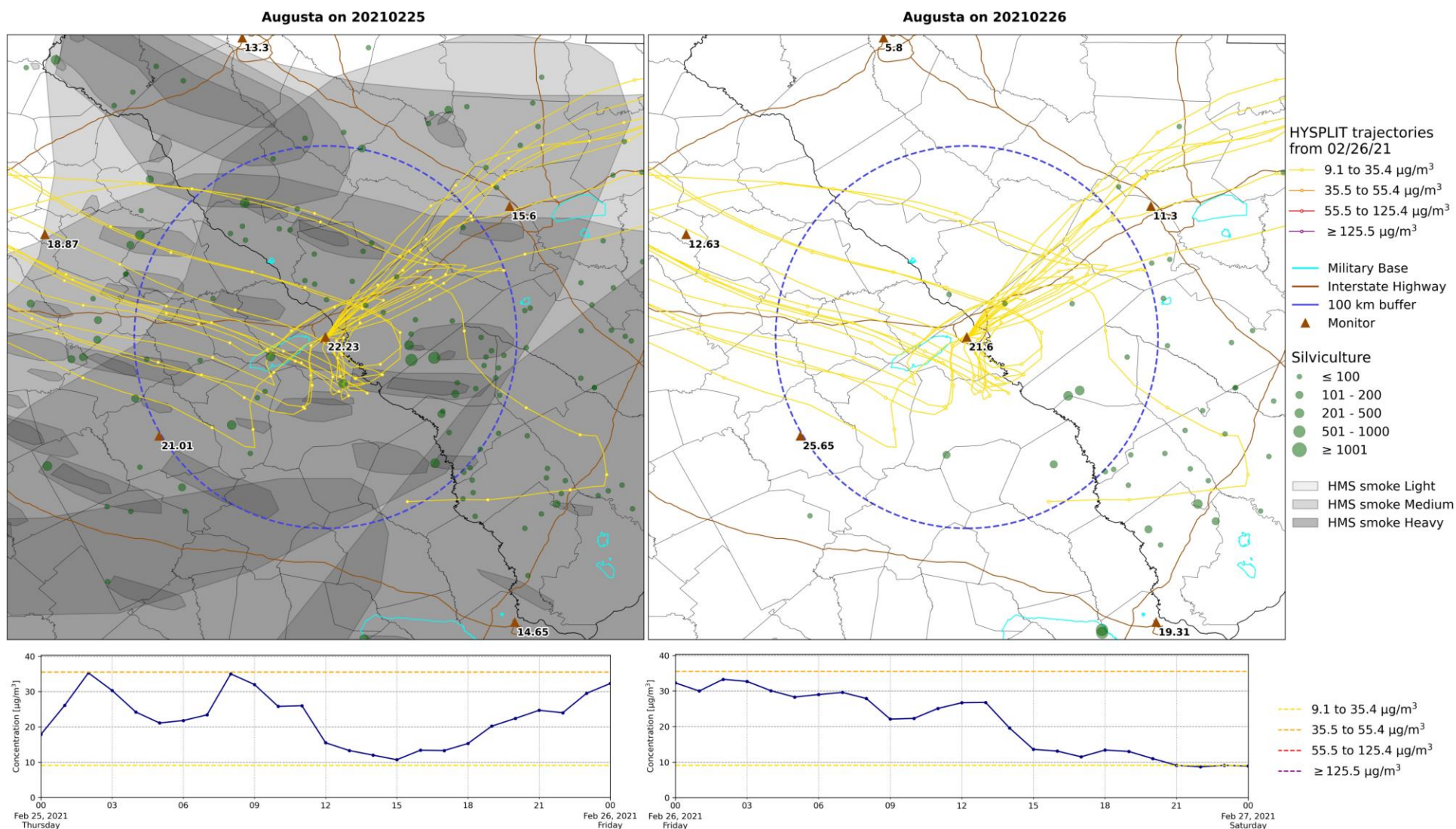


Figure 3A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on February 25, 2021. The top right map contains the same information for February 26, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on February 26, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

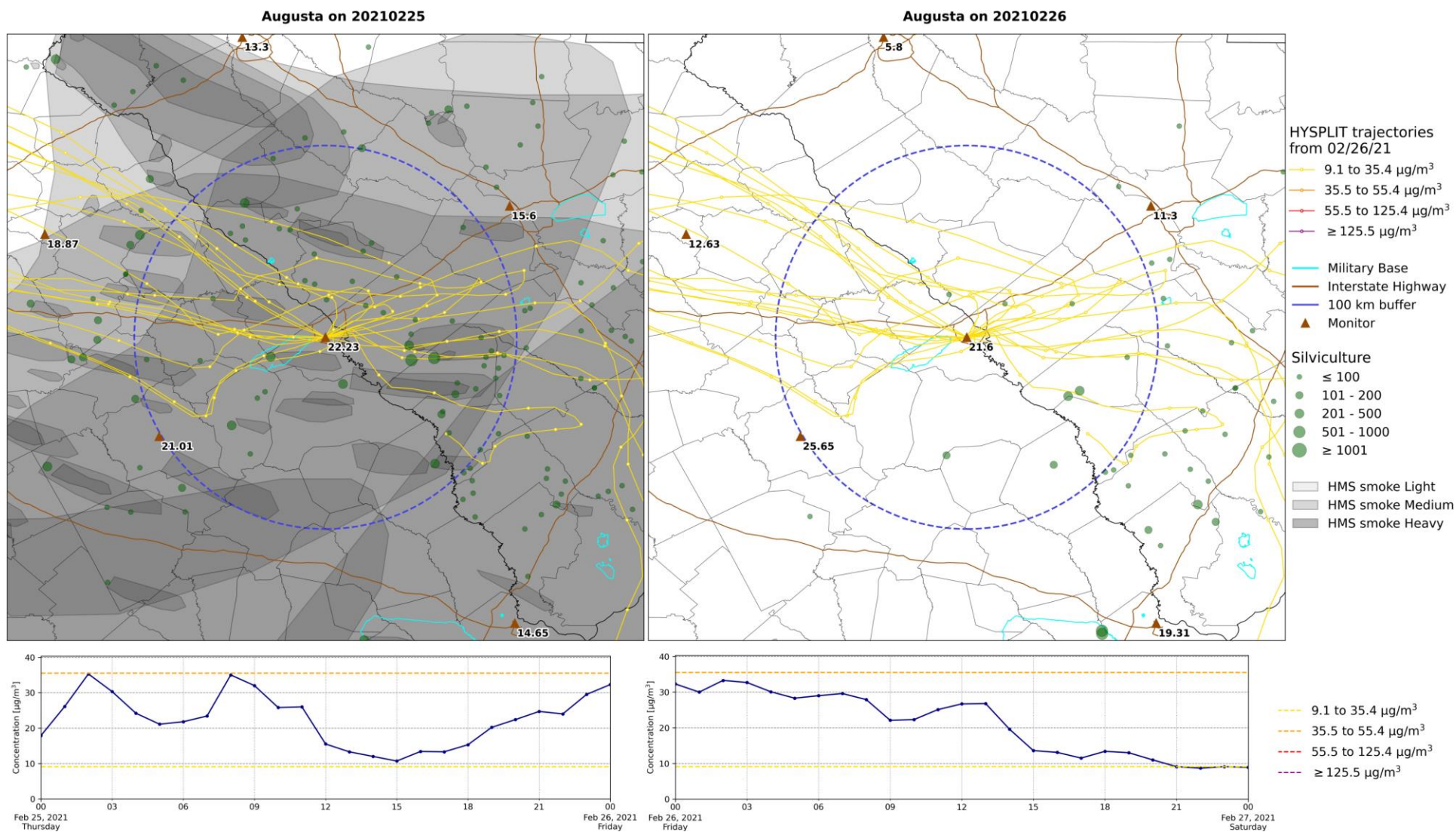


Figure 3B. The same as Figure 3A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

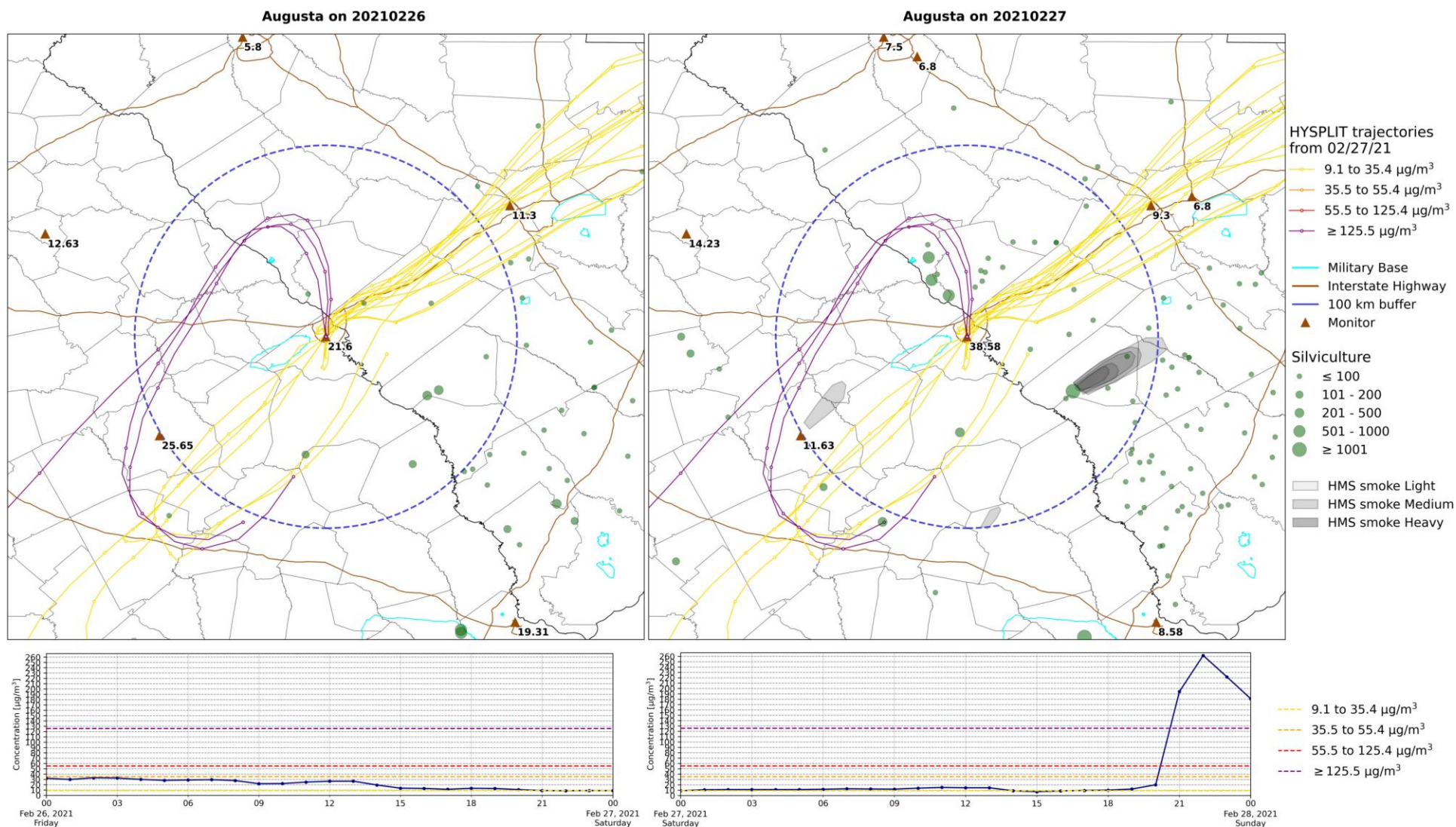


Figure 4A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on February 26, 2021. The top right map contains the same information for February 27, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on February 27, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

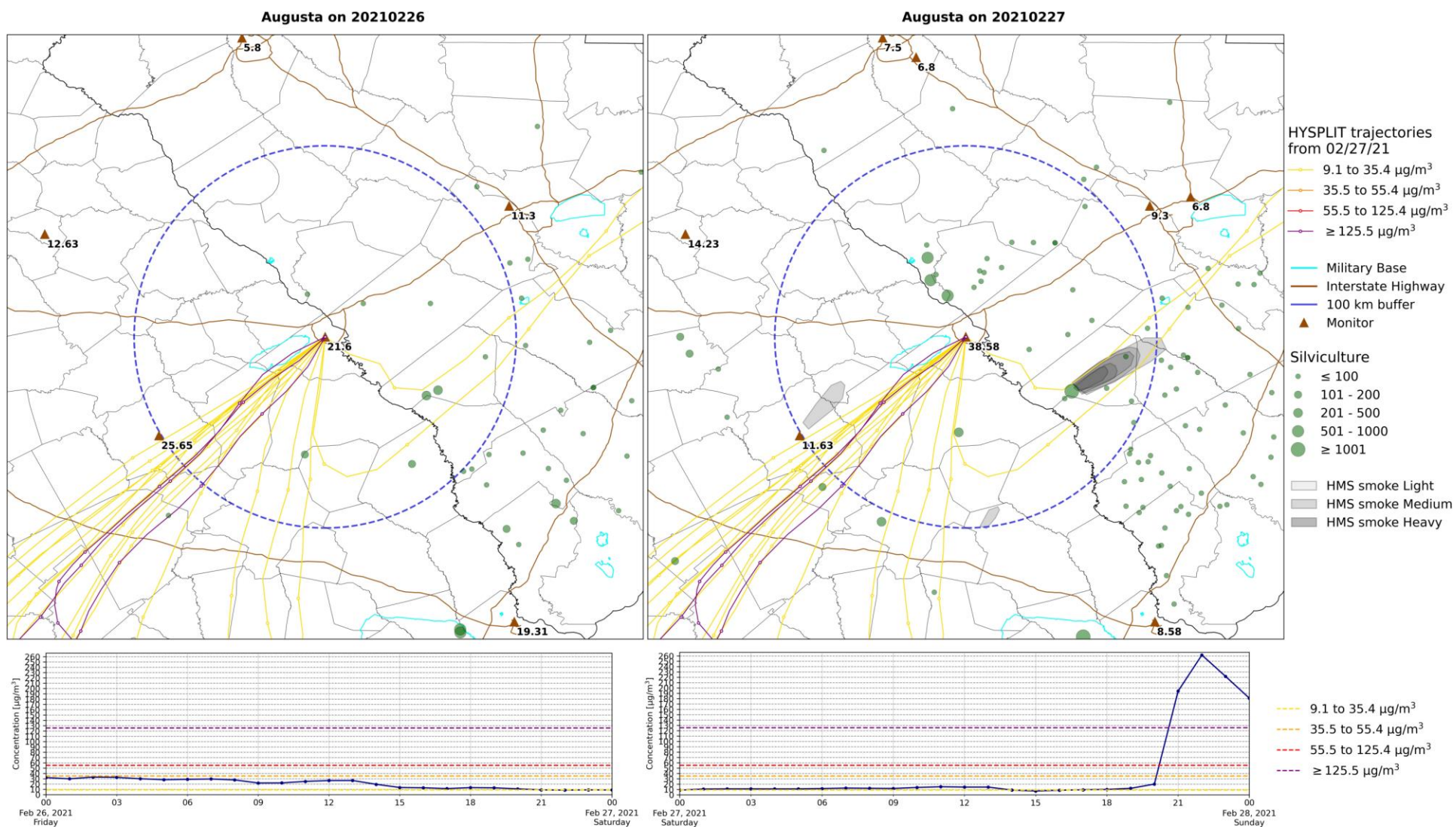


Figure 4B. The same as Figure 4A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

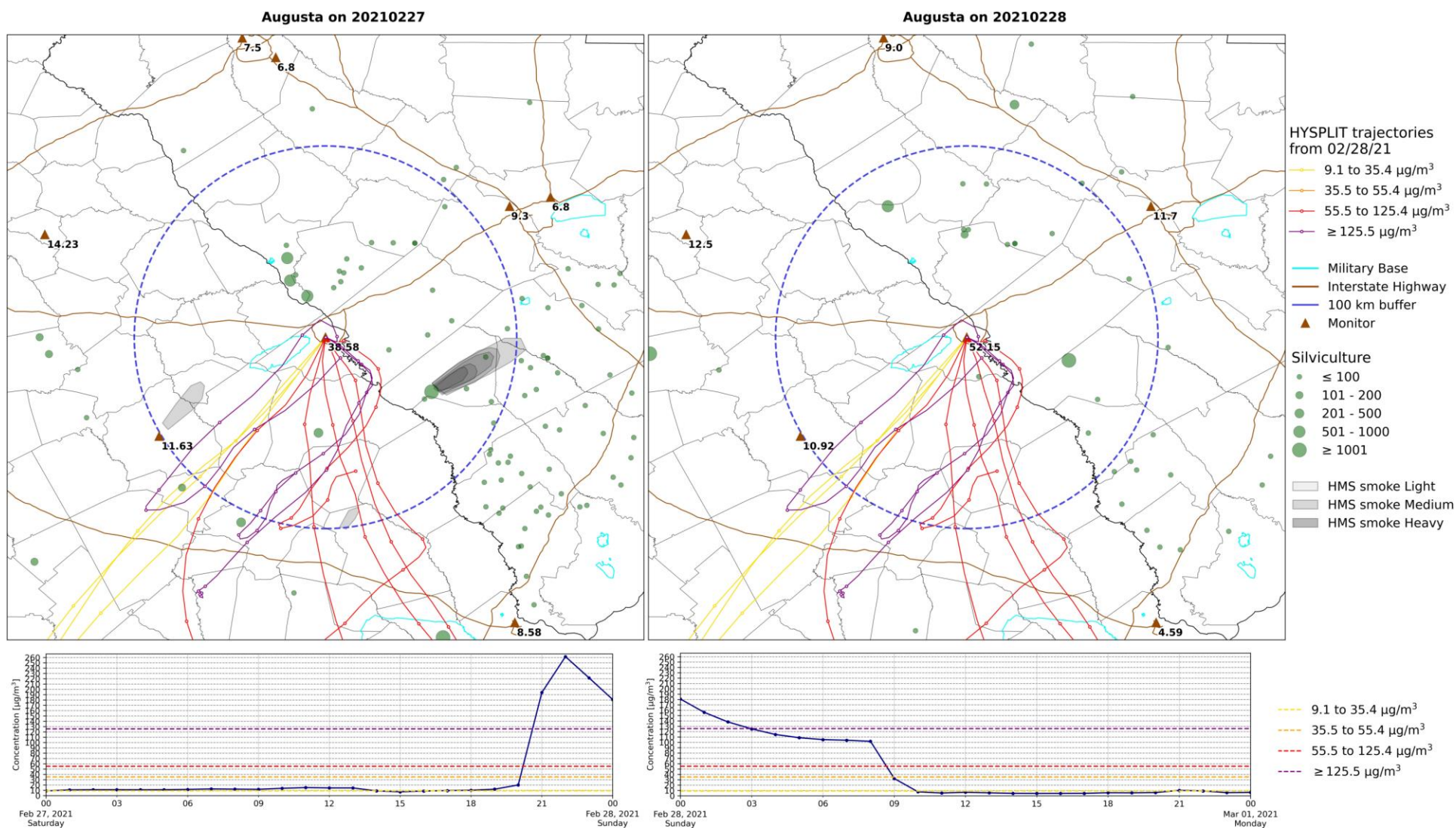
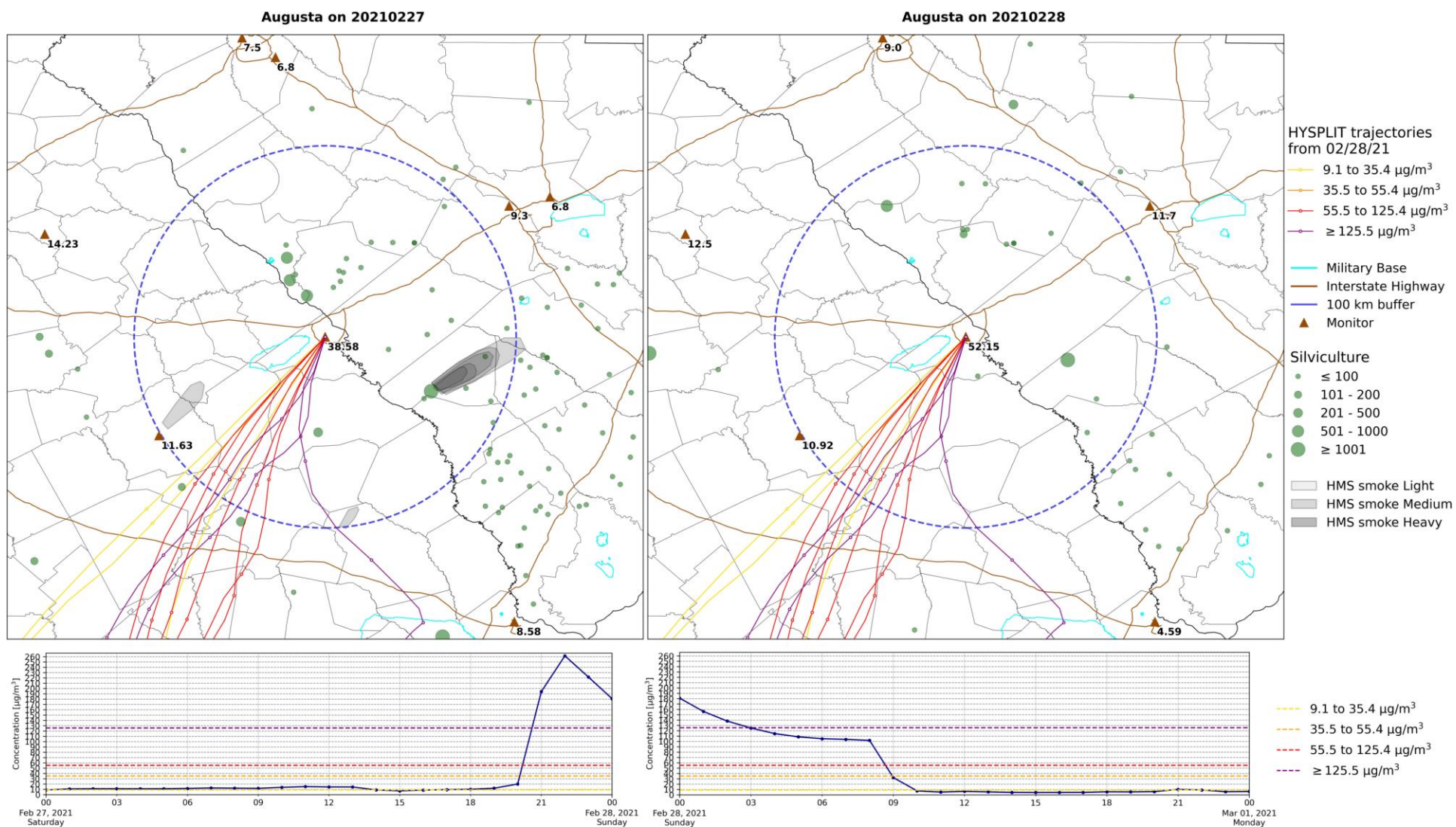


Figure 5A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on February 27, 2021. The top right map contains the same information for February 28, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on February 28, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



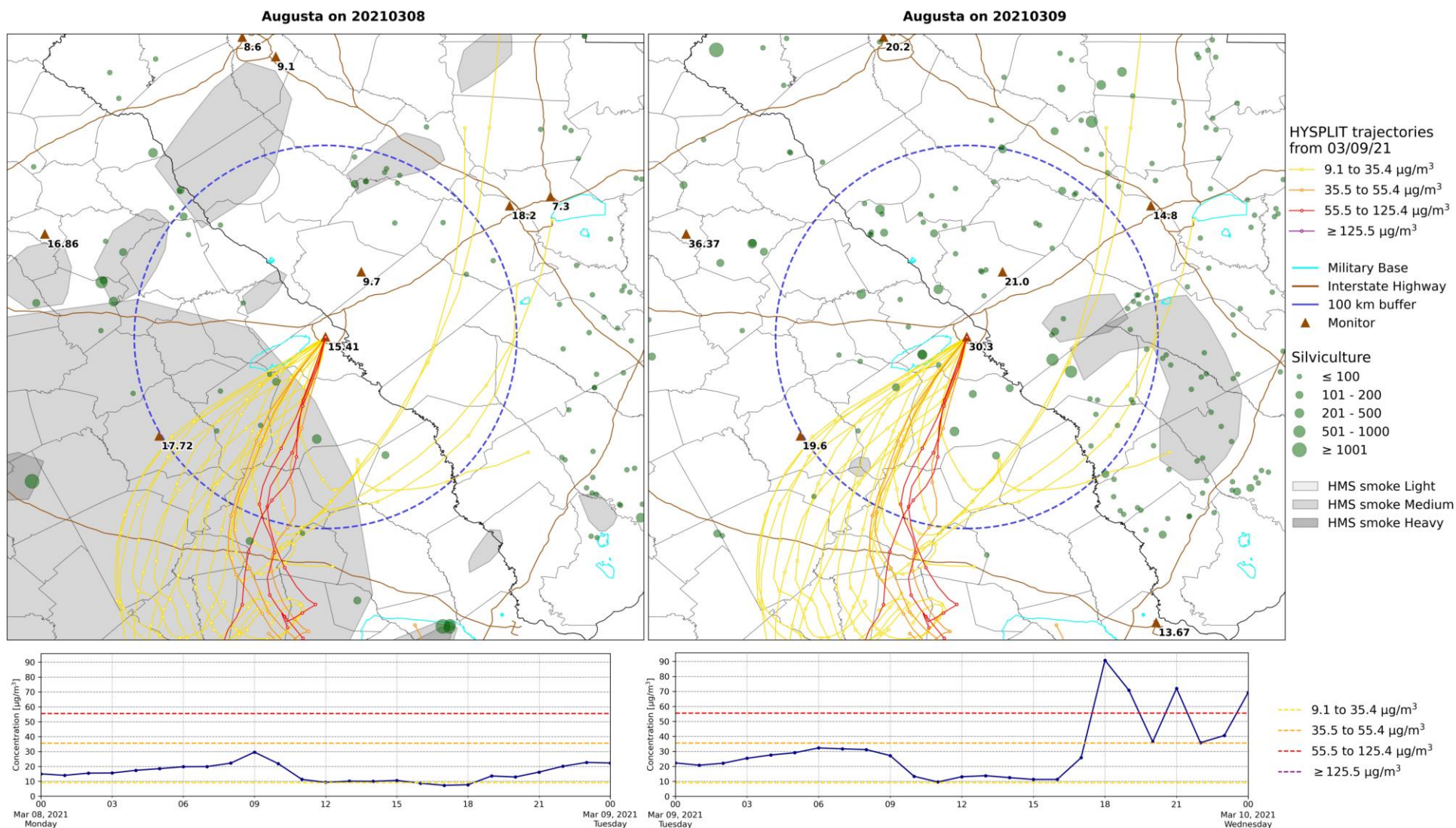


Figure 6A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on March 8, 2021. The top right map contains the same information for March 9, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on March 9, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

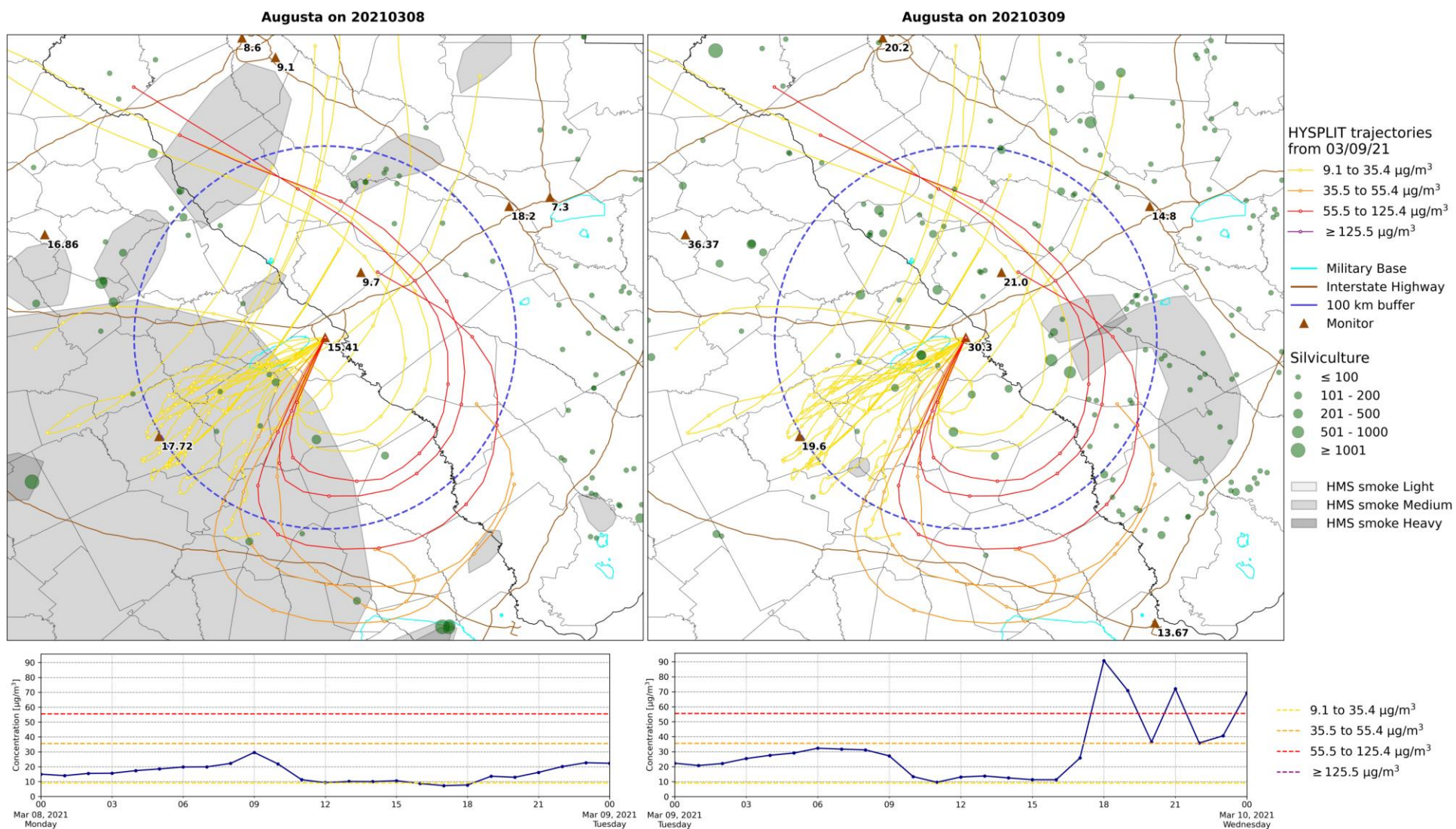


Figure 6B. The same as Figure 6A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

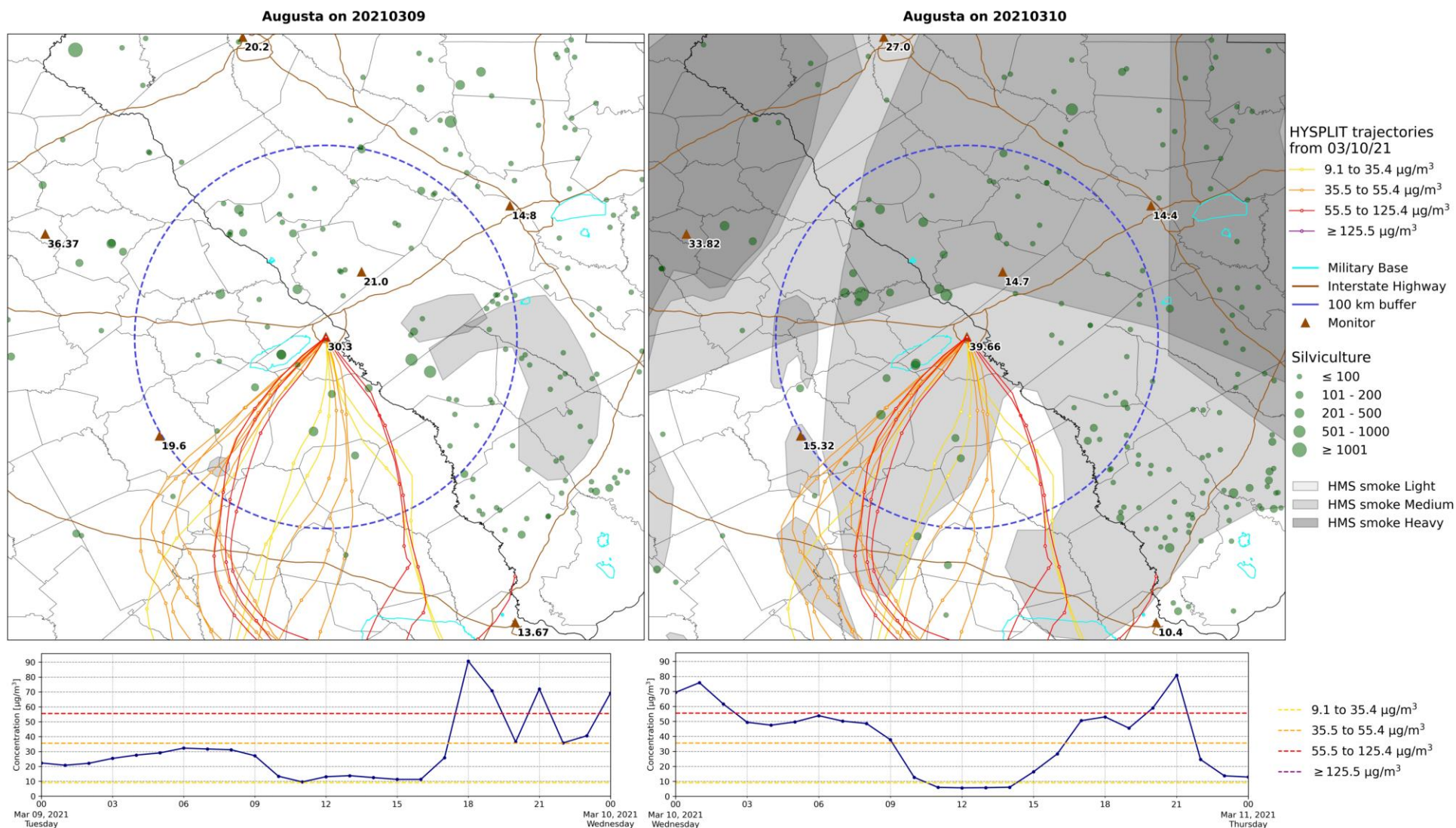


Figure 7A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on March 8, 2021. The top right map contains the same information for March 9, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on March 9, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

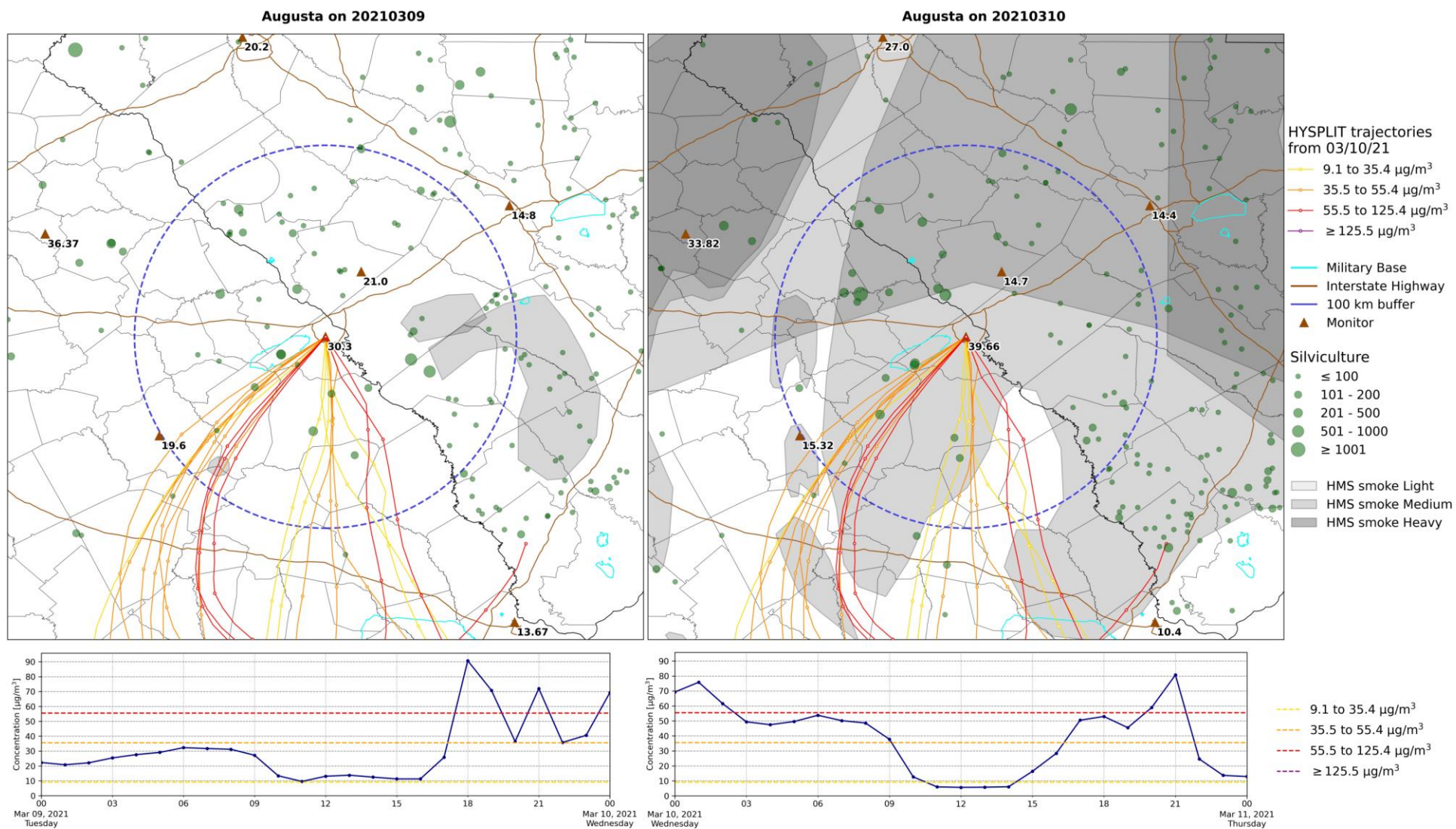


Figure 7B. The same as Figure 7A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

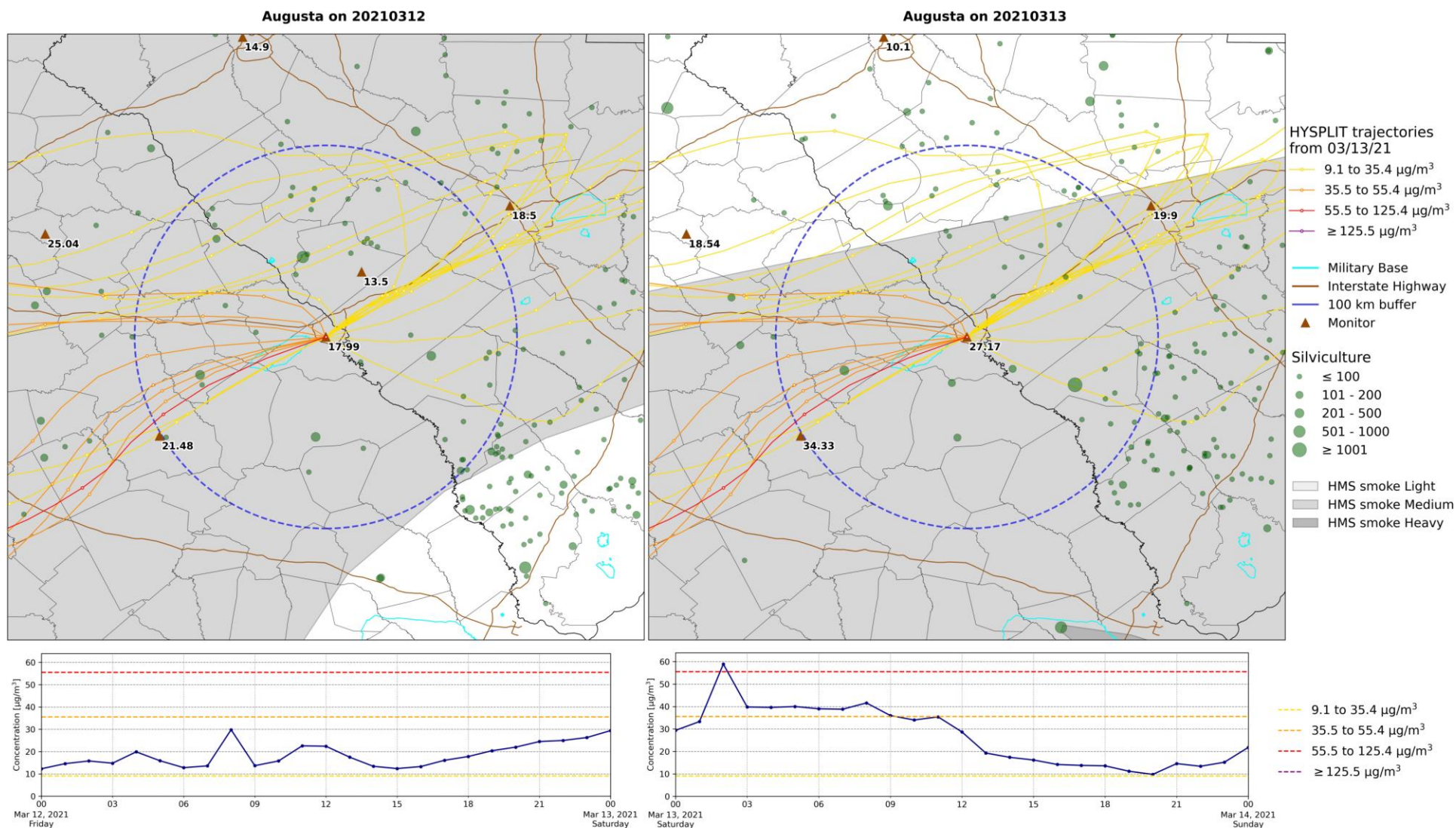


Figure 8A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on March 12, 2021. The top right map contains the same information for March 13, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on March 13, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

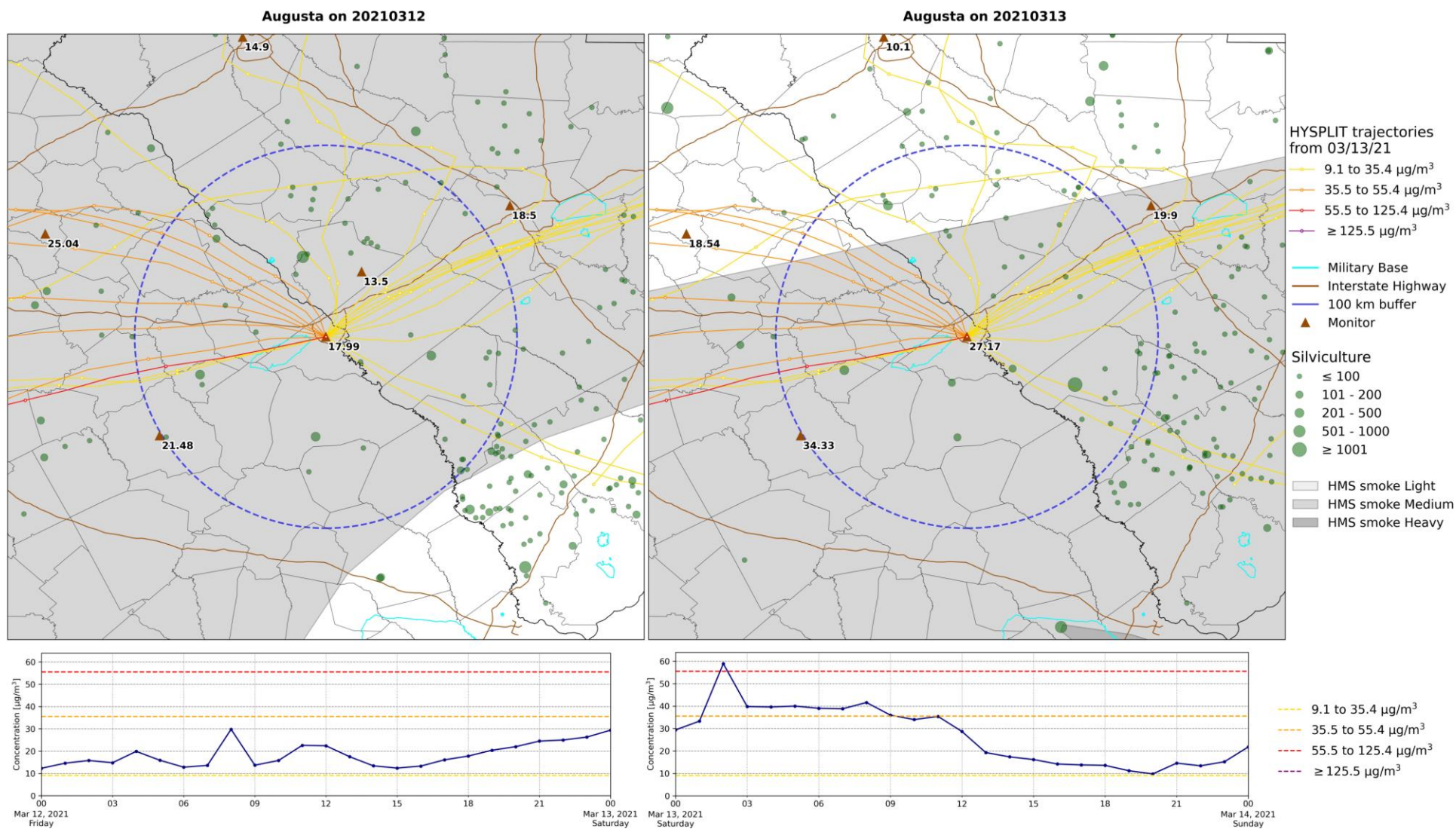


Figure 8B. The same as Figure 8A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

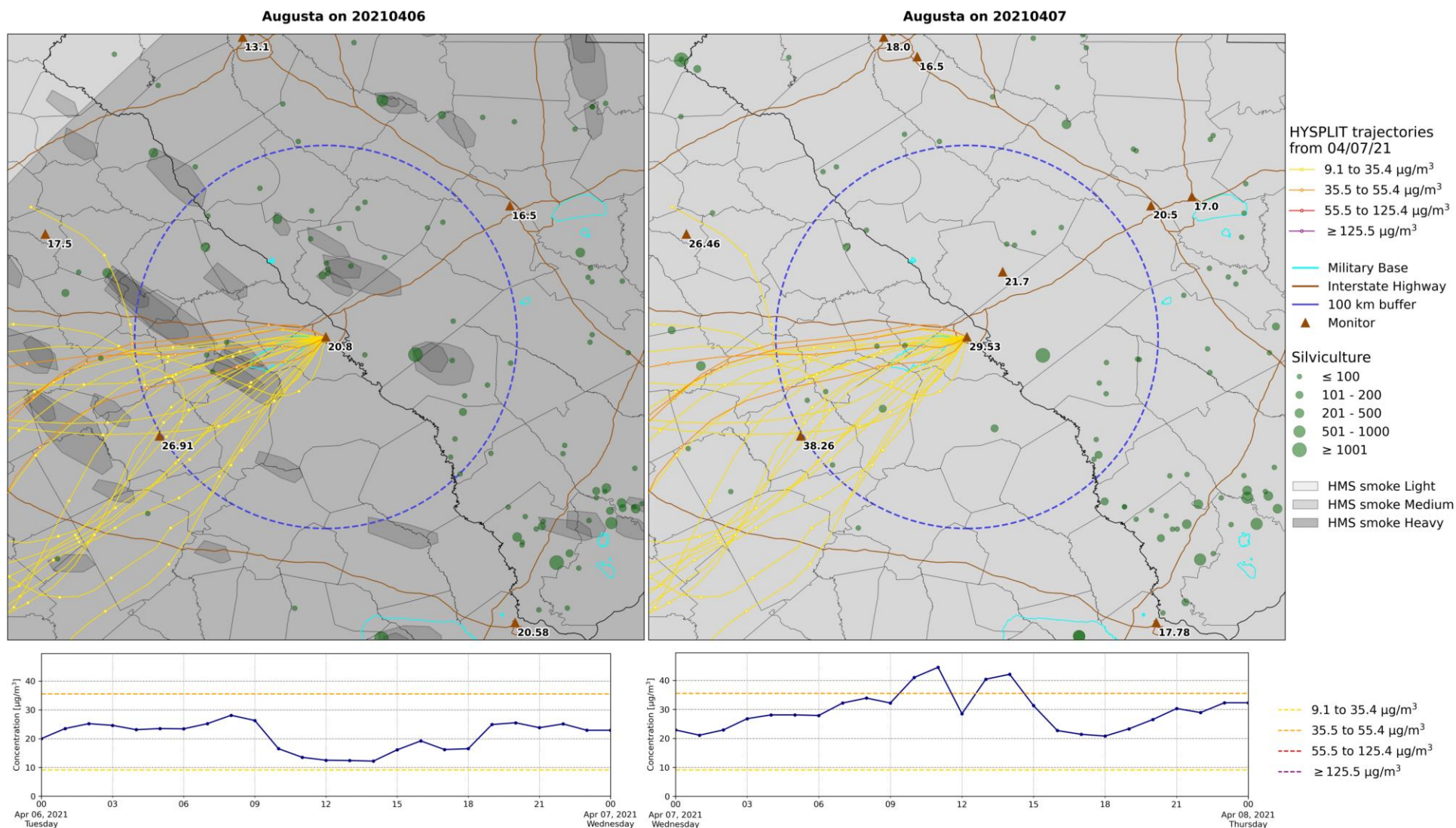


Figure 9A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on April 6, 2021. The top right map contains the same information for April 7, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on April 7, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

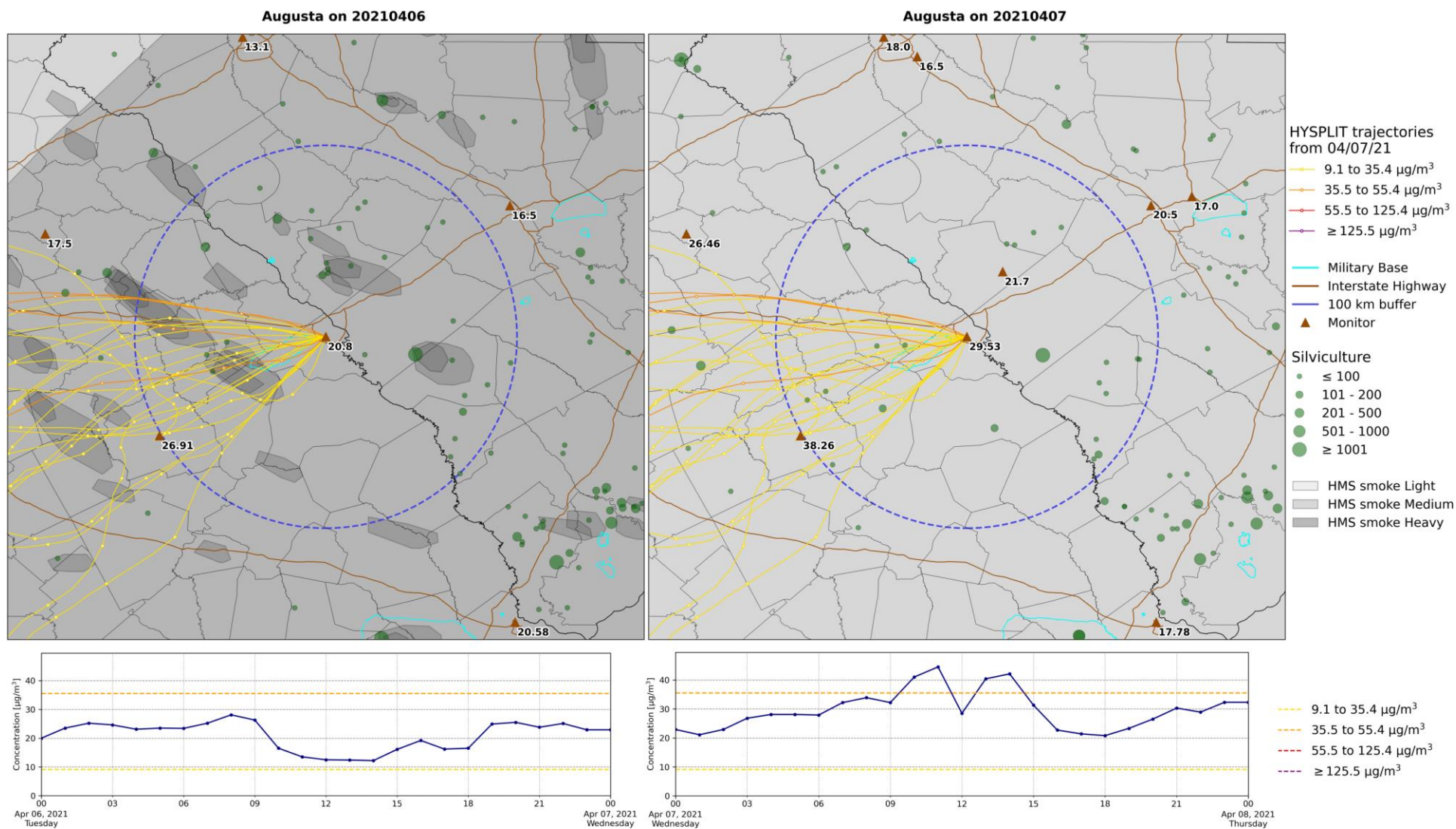


Figure 9B. The same as Figure 9A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

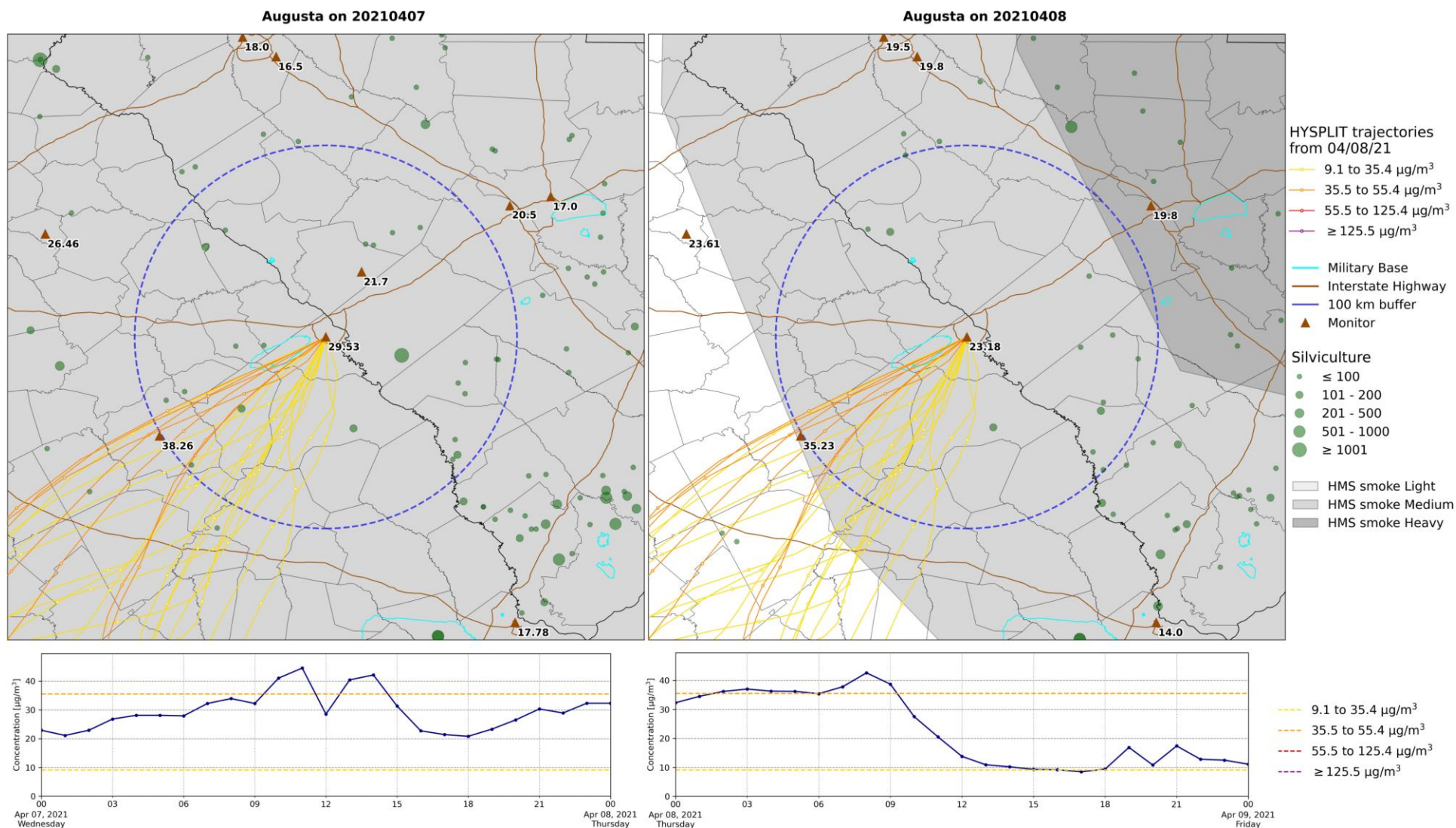


Figure 10A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on April 7, 2021. The top right map contains the same information for April 8, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on April 8, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

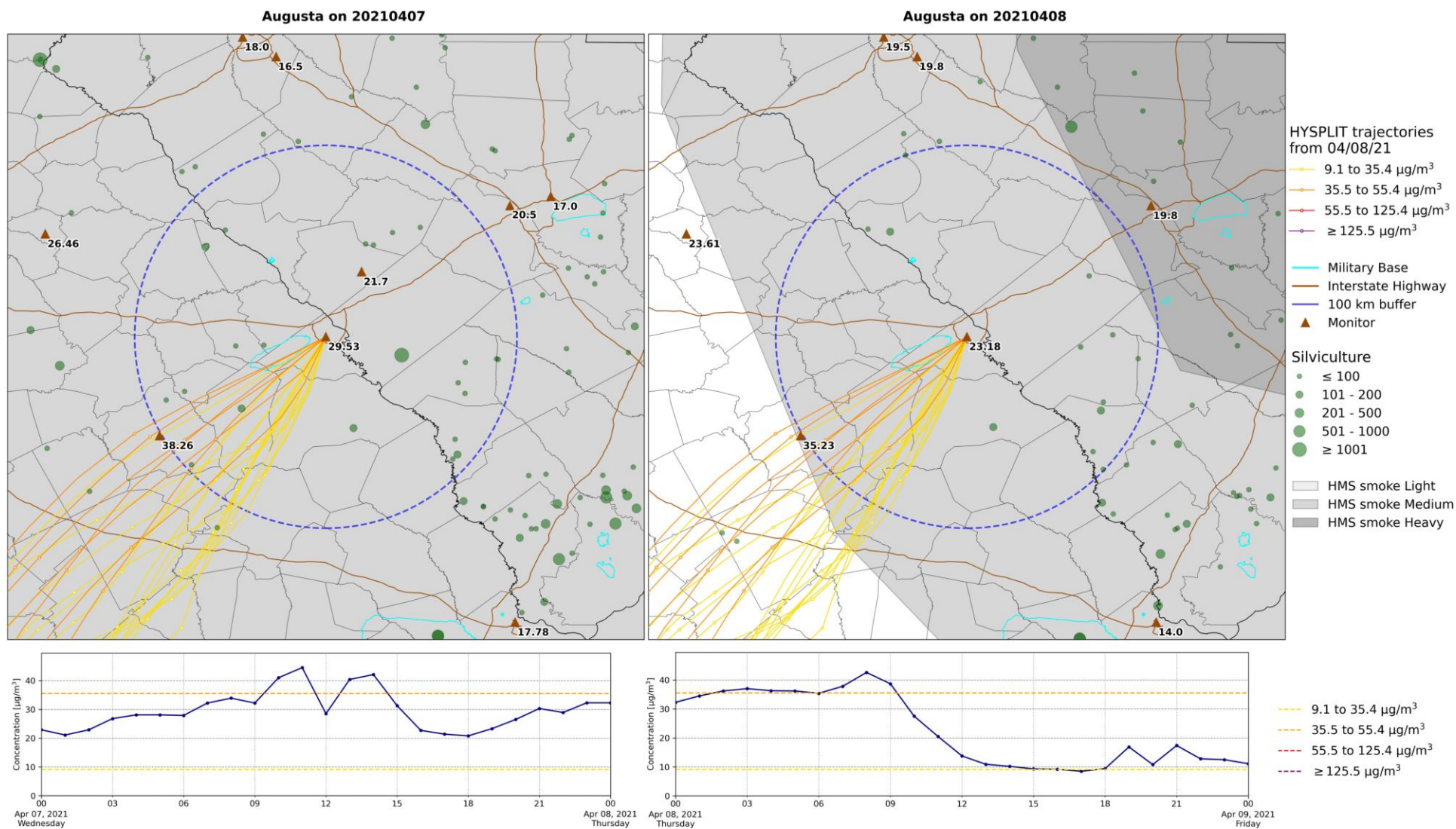


Figure 10B. The same as Figure 10A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

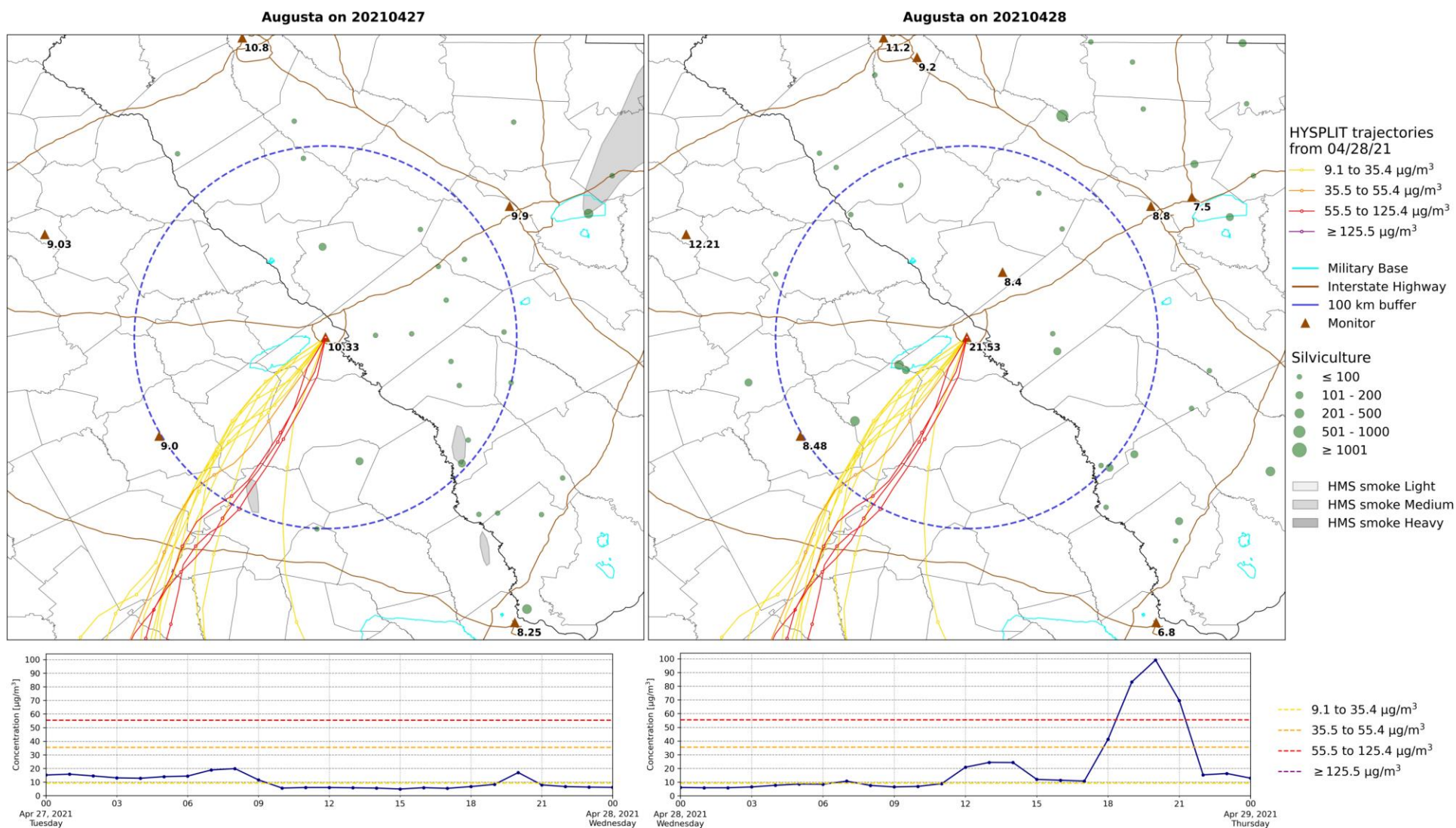


Figure 11A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on April 27, 2021. The top right map contains the same information for April 28, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on April 28, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

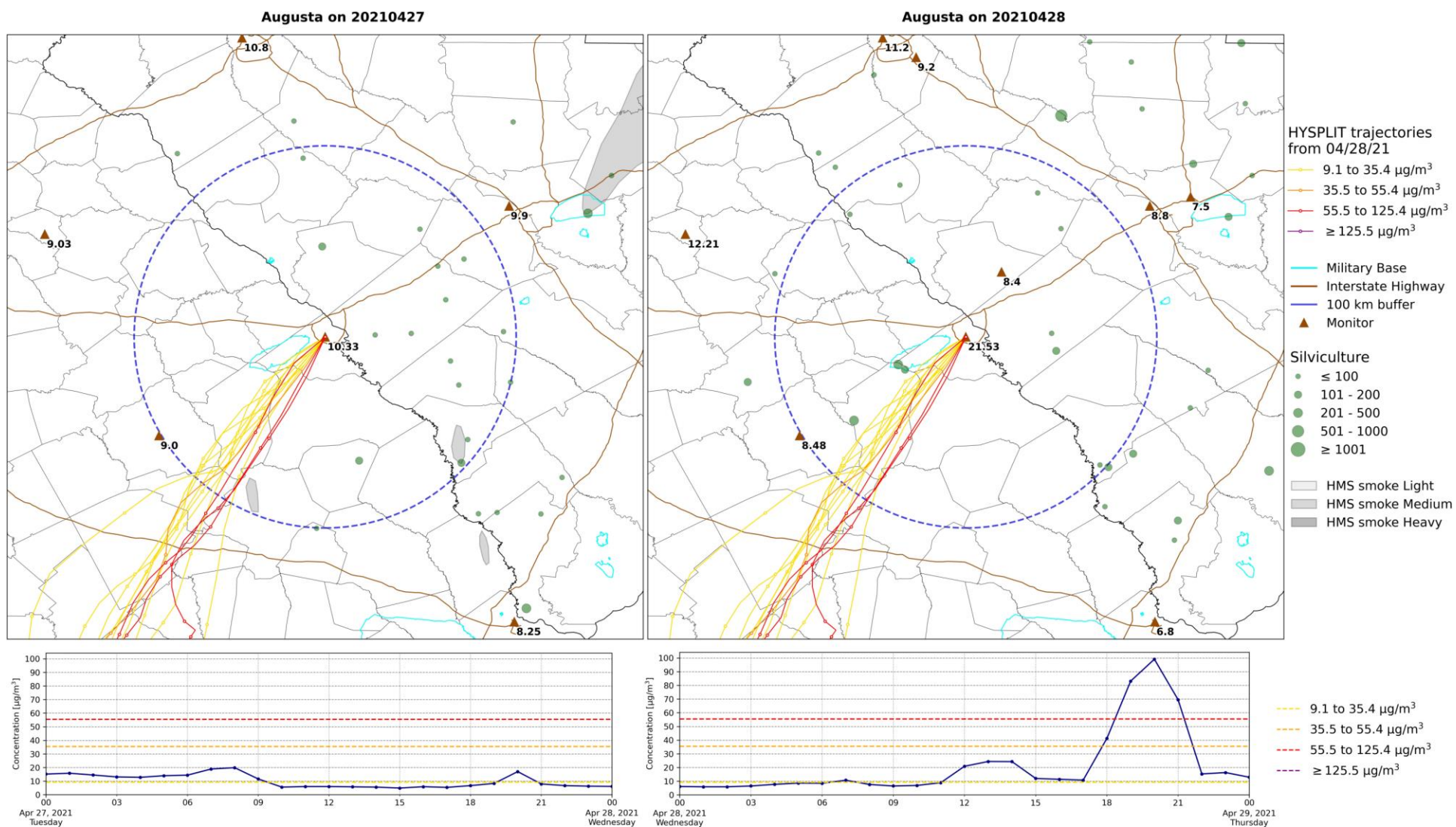


Figure 11B. The same as Figure 11A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

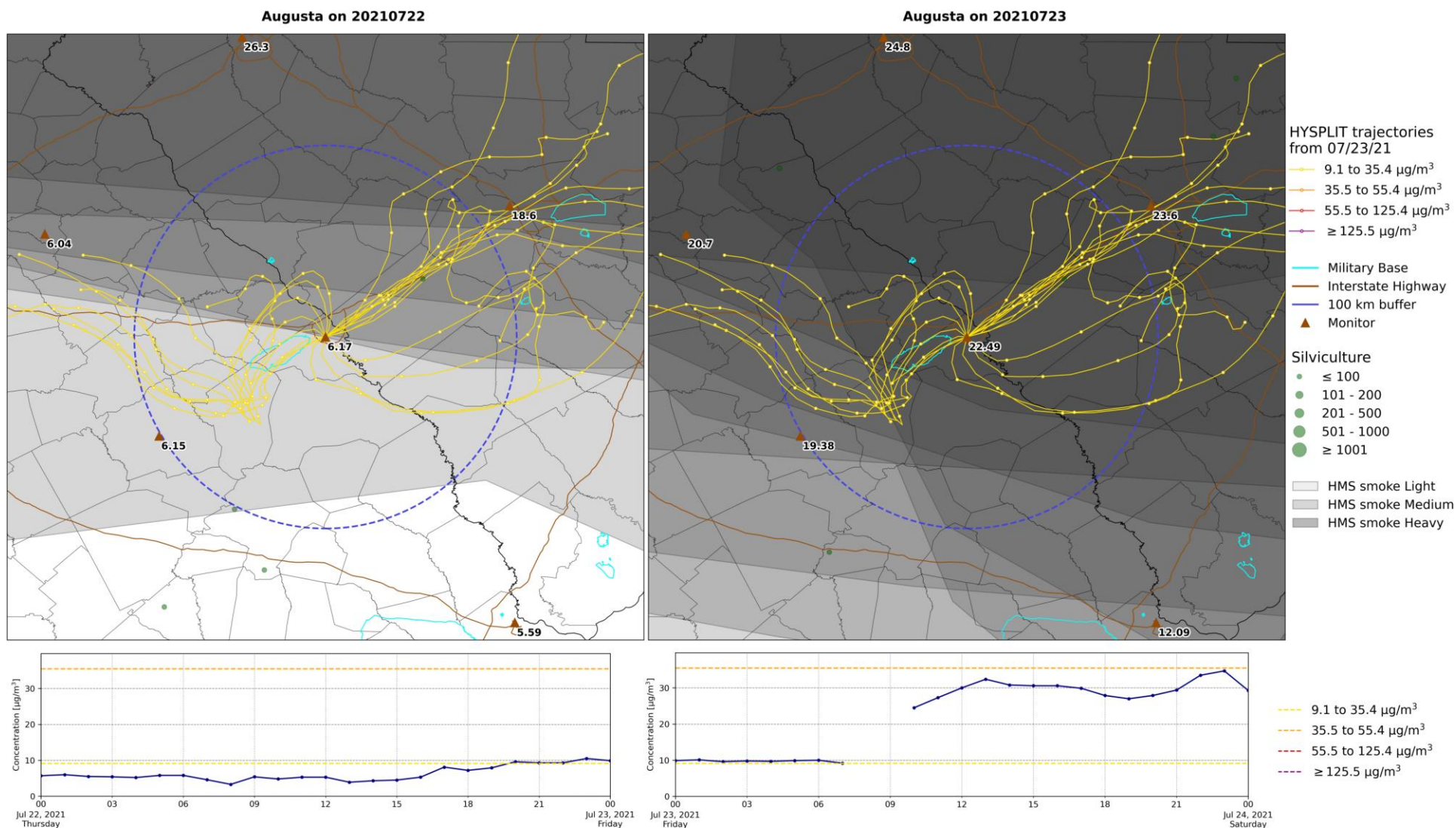


Figure 12A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on July 22, 2021. The top right map contains the same information for July 23, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on July 23, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

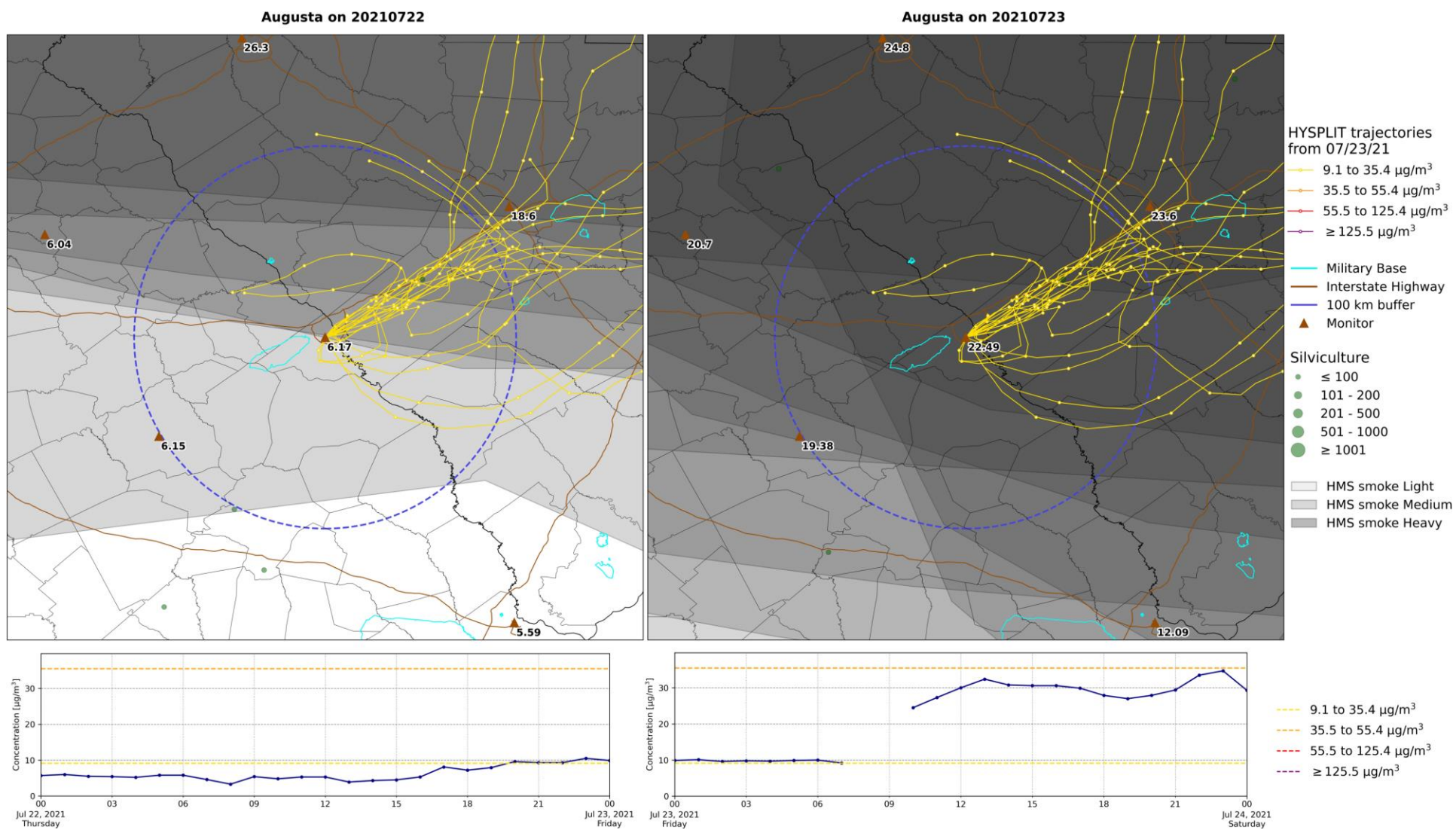


Figure 12B. The same as Figure 12A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

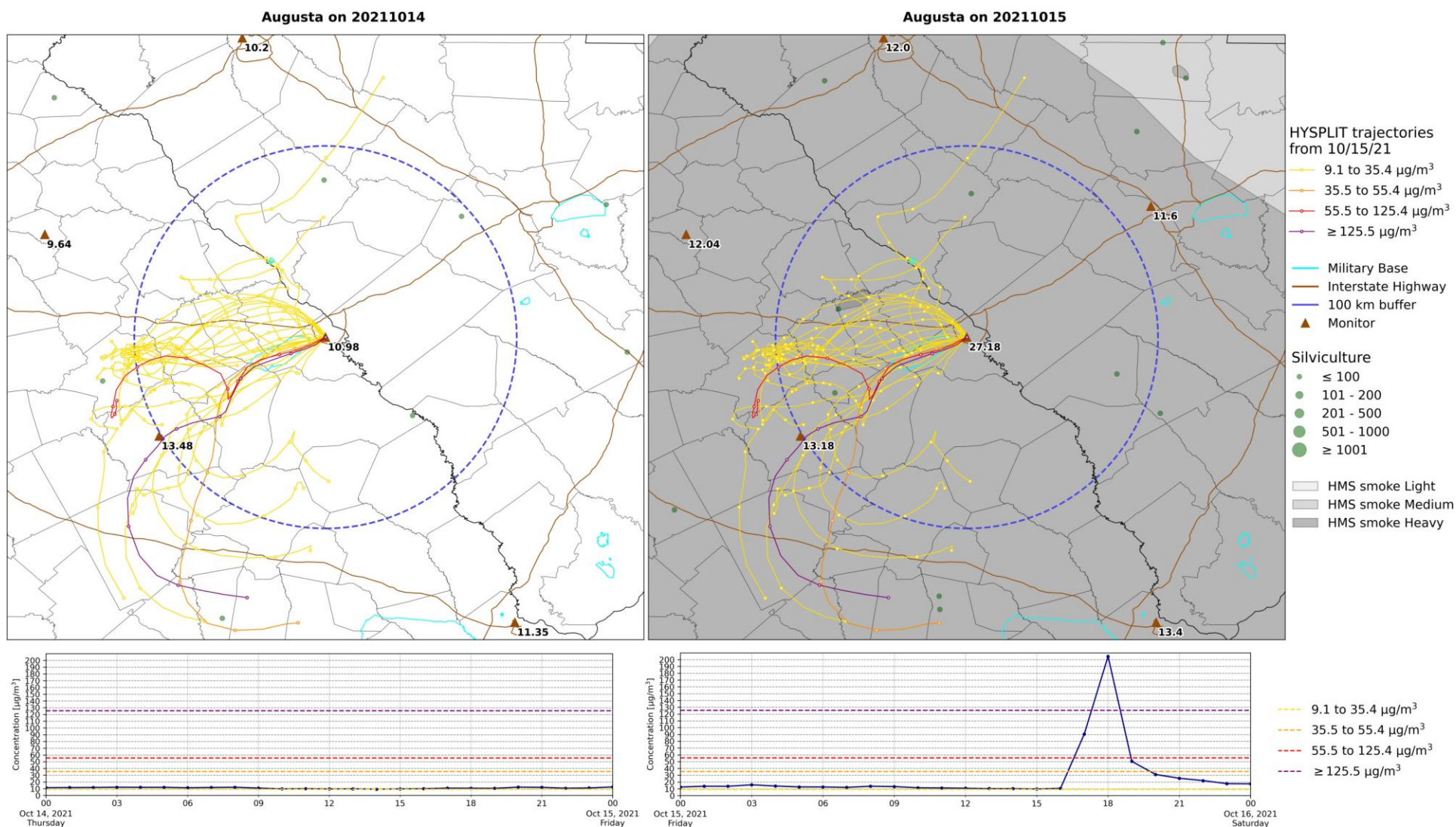
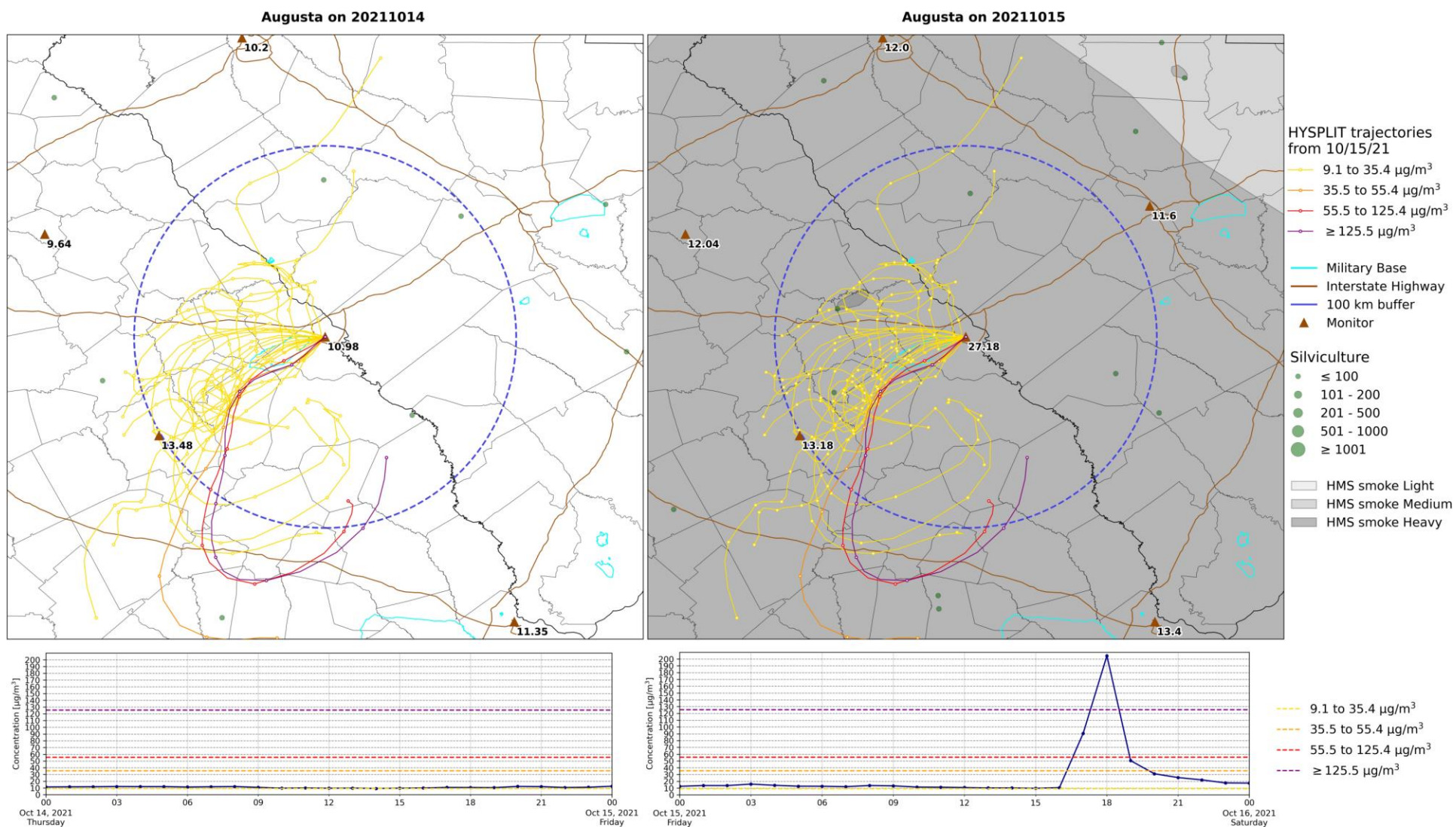


Figure 13A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on October 14, 2021. The top right map contains the same information for October 15, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on October 15, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



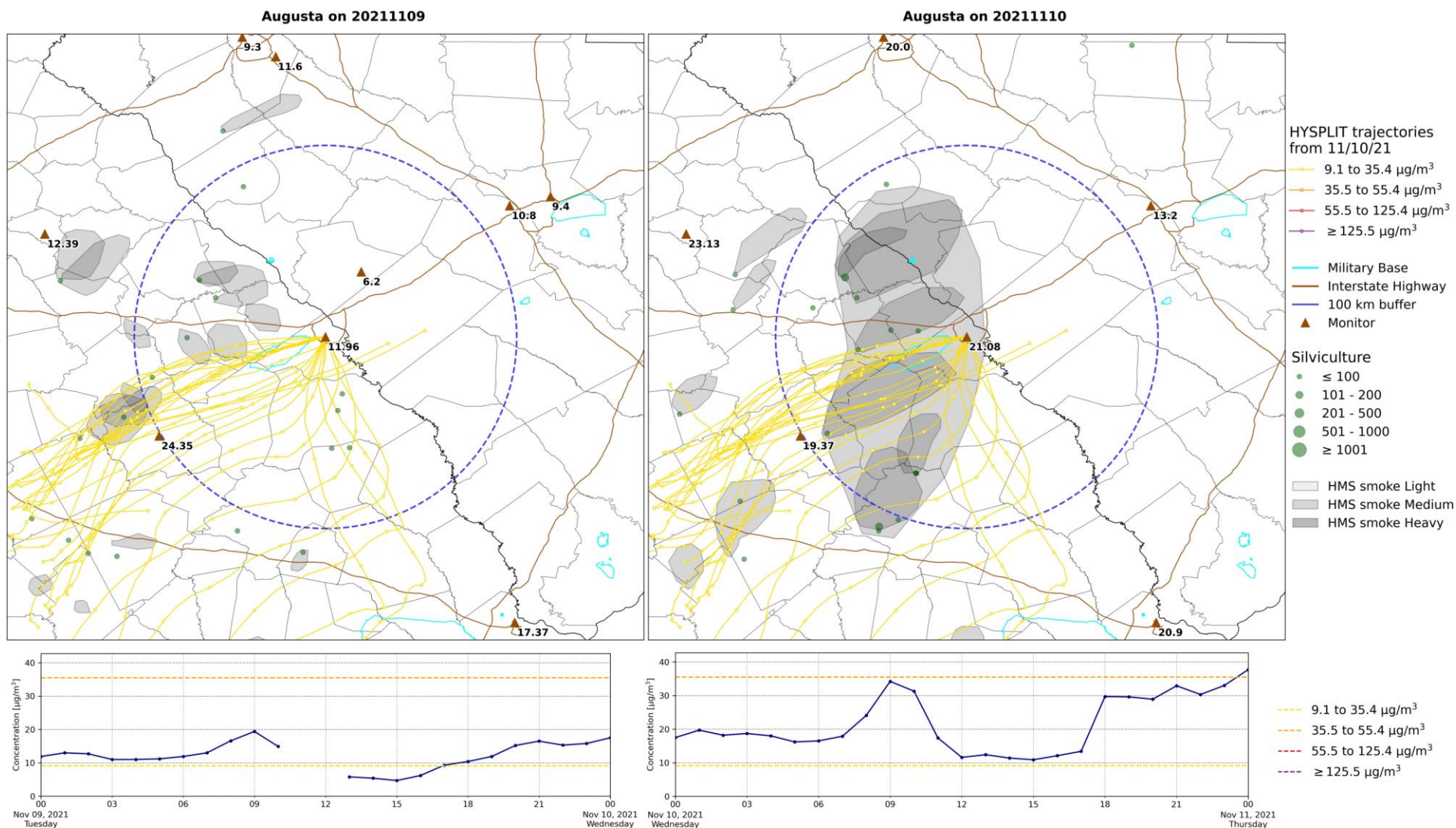


Figure 14A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on November 9, 2021. The top right map contains the same information for November 10, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on November 10, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

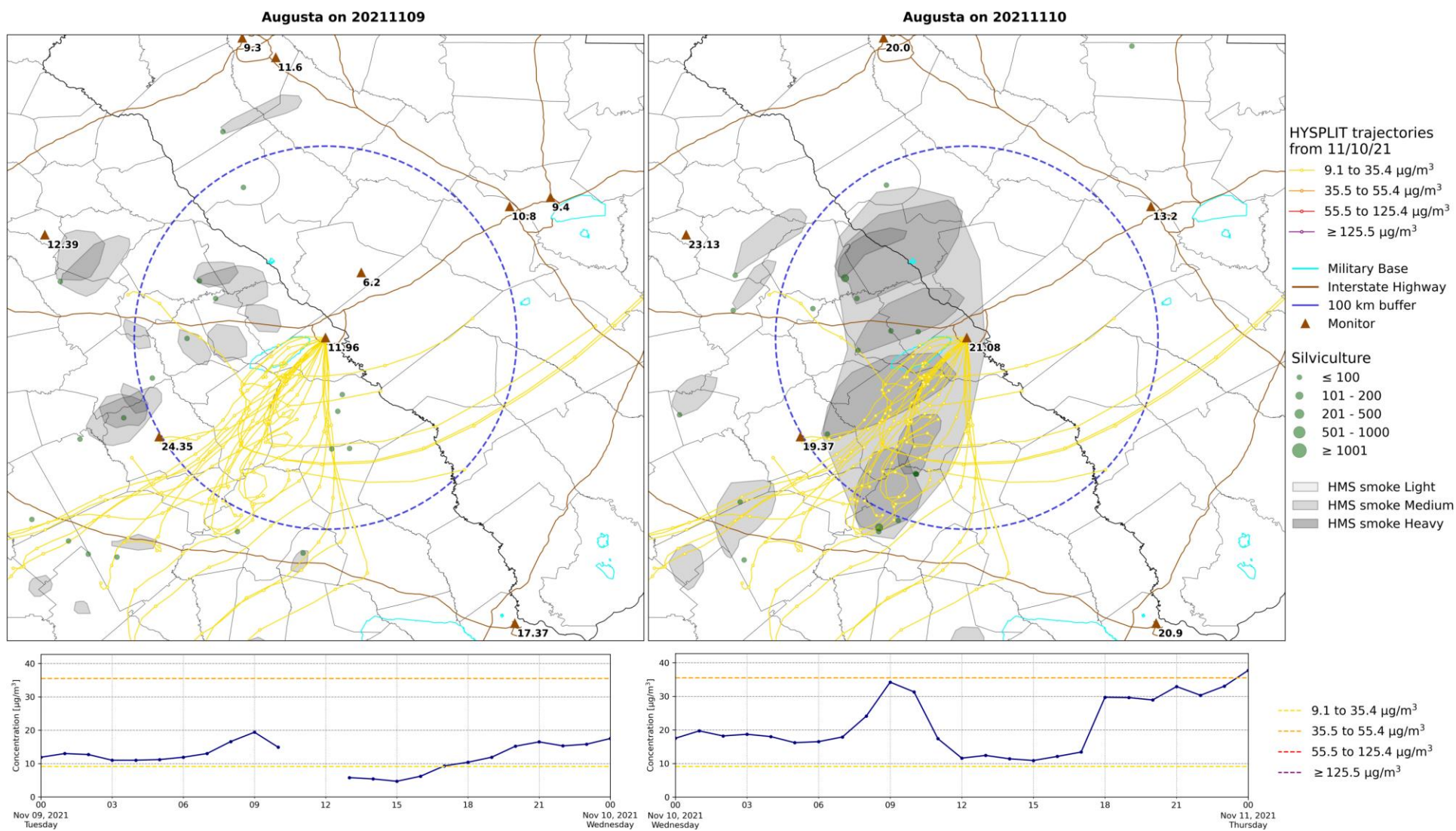


Figure 14B. The same as Figure 14A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

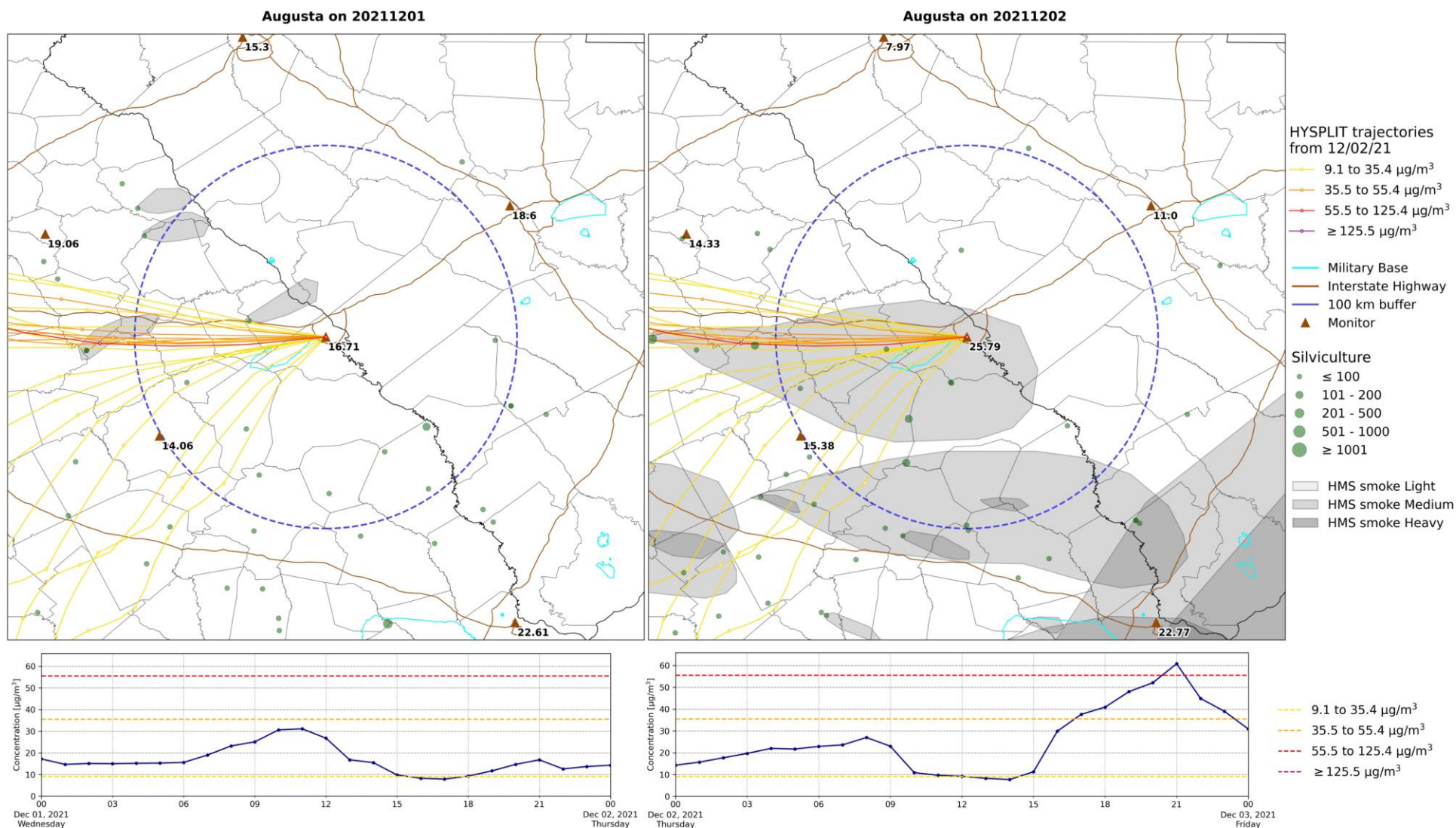
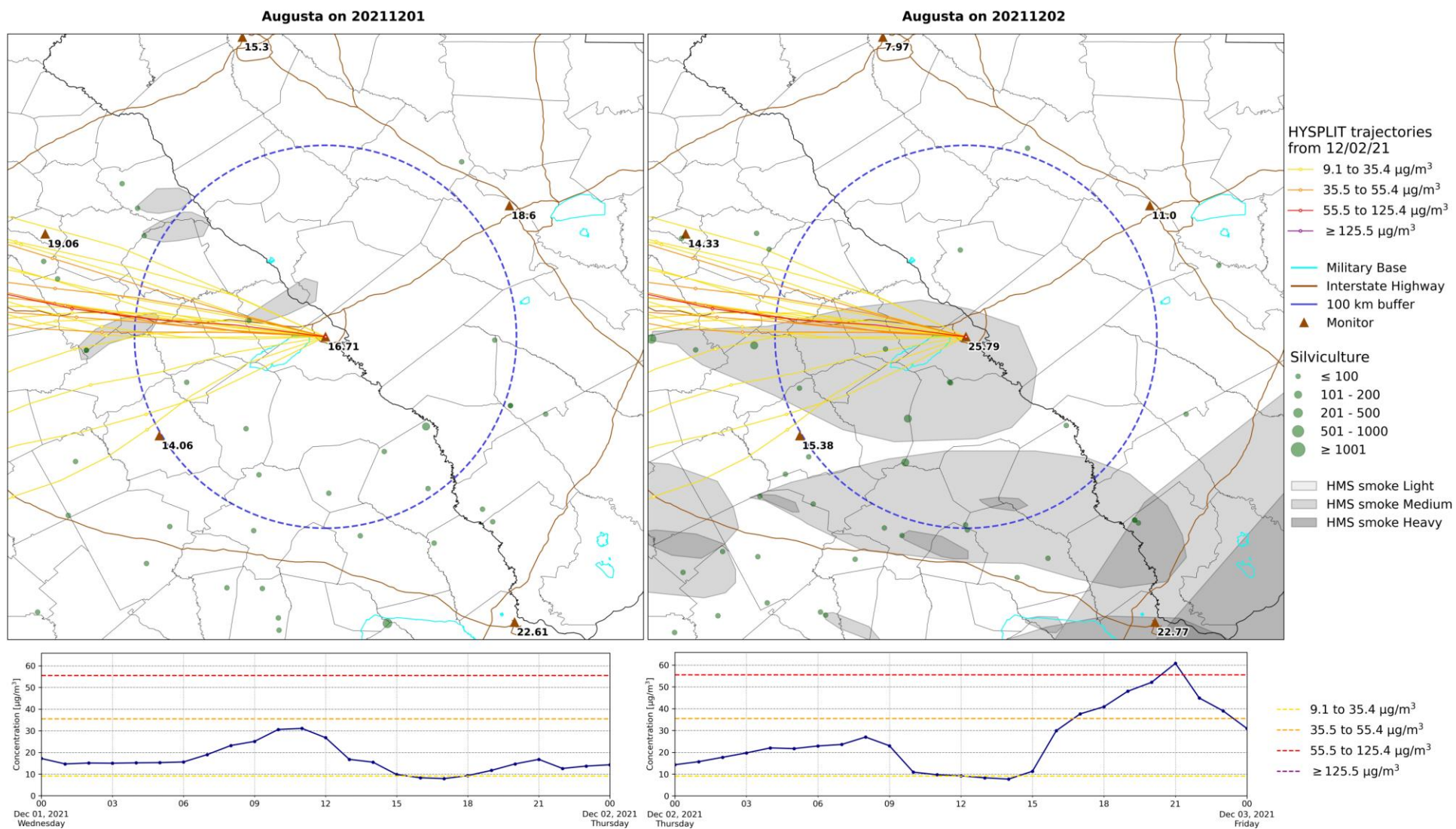


Figure 15A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 1, 2021. The top right map contains the same information for December 2, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 2, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



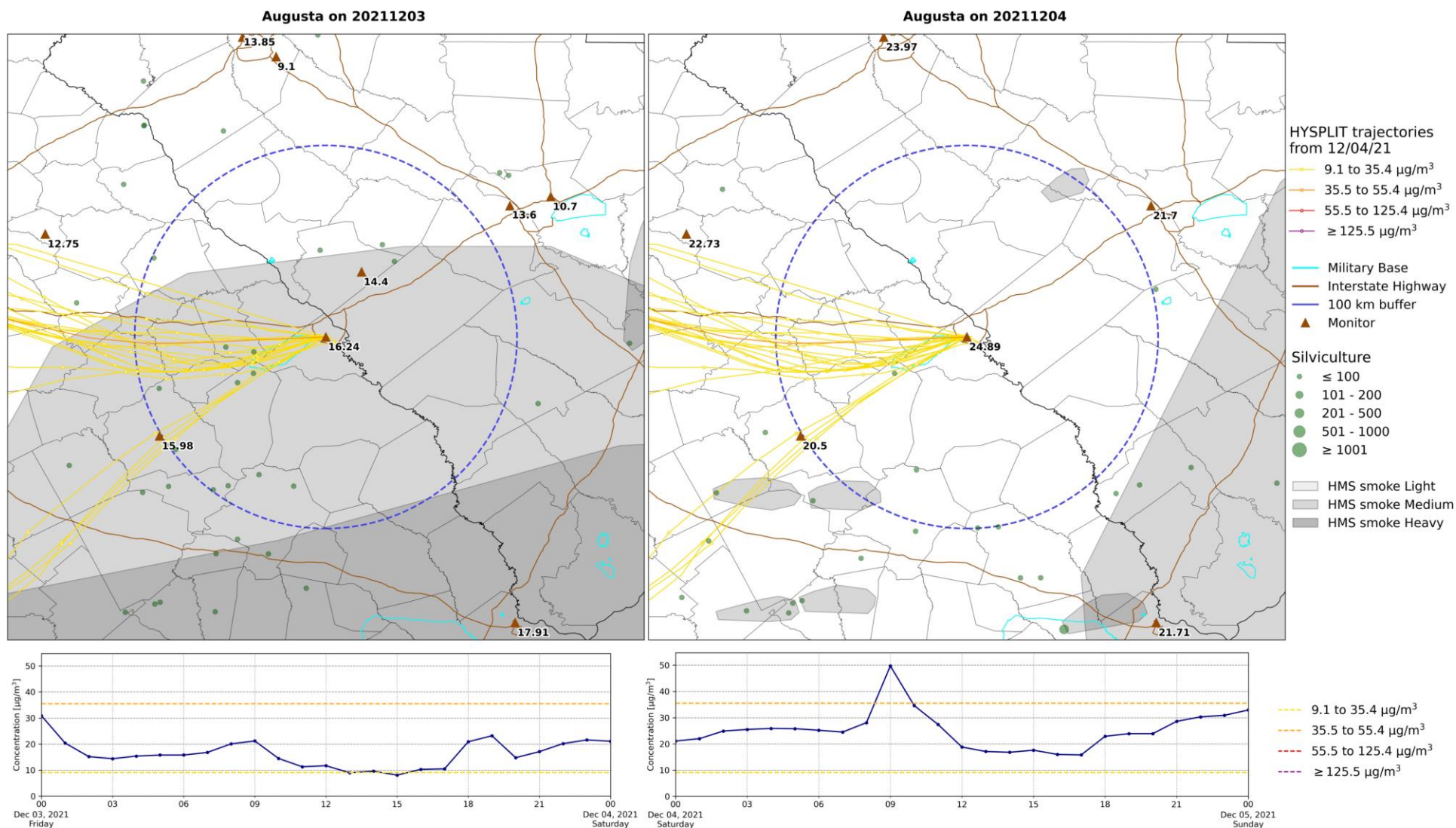
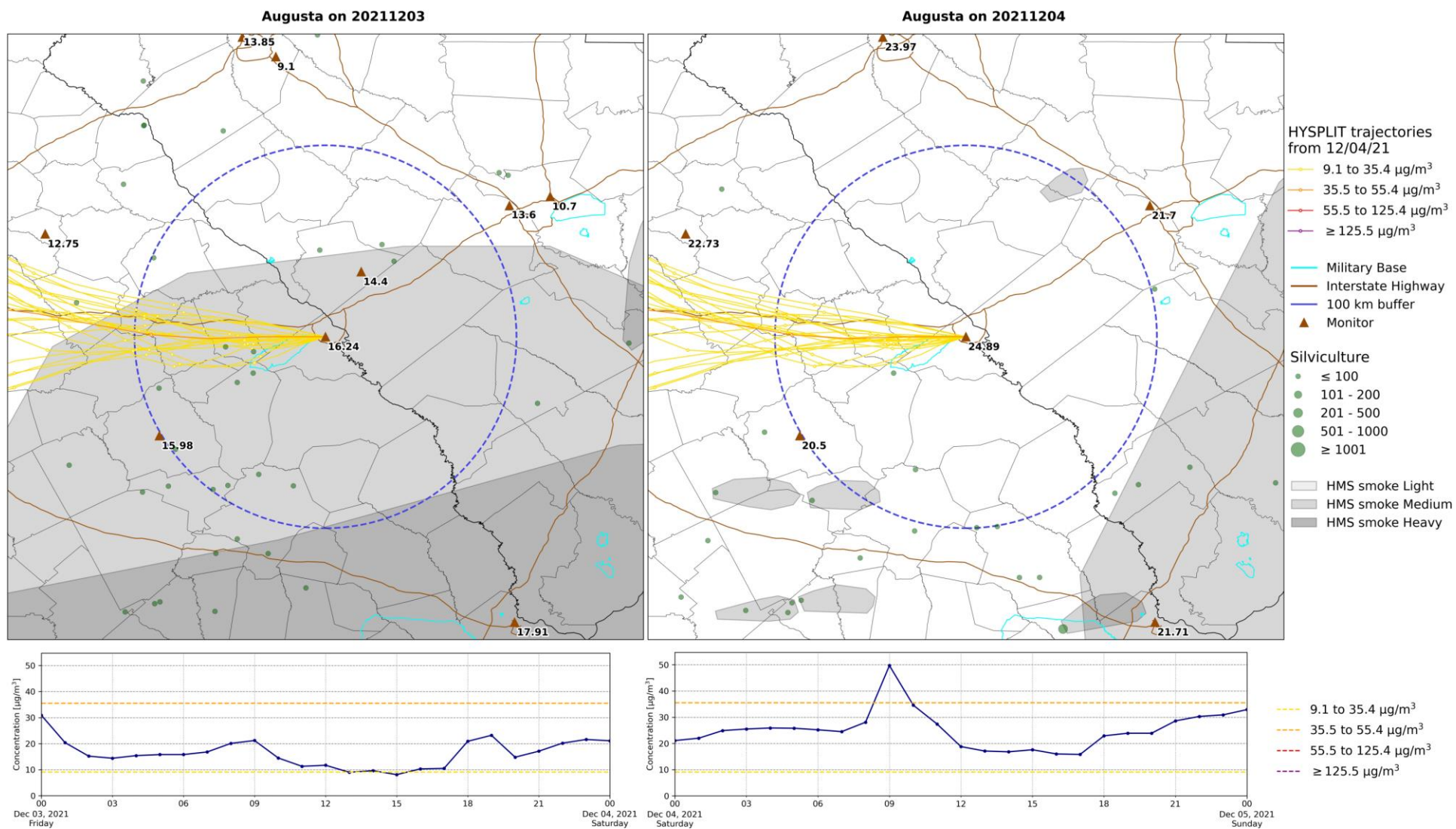


Figure 16A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 3, 2021. The top right map contains the same information for December 4, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 4, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



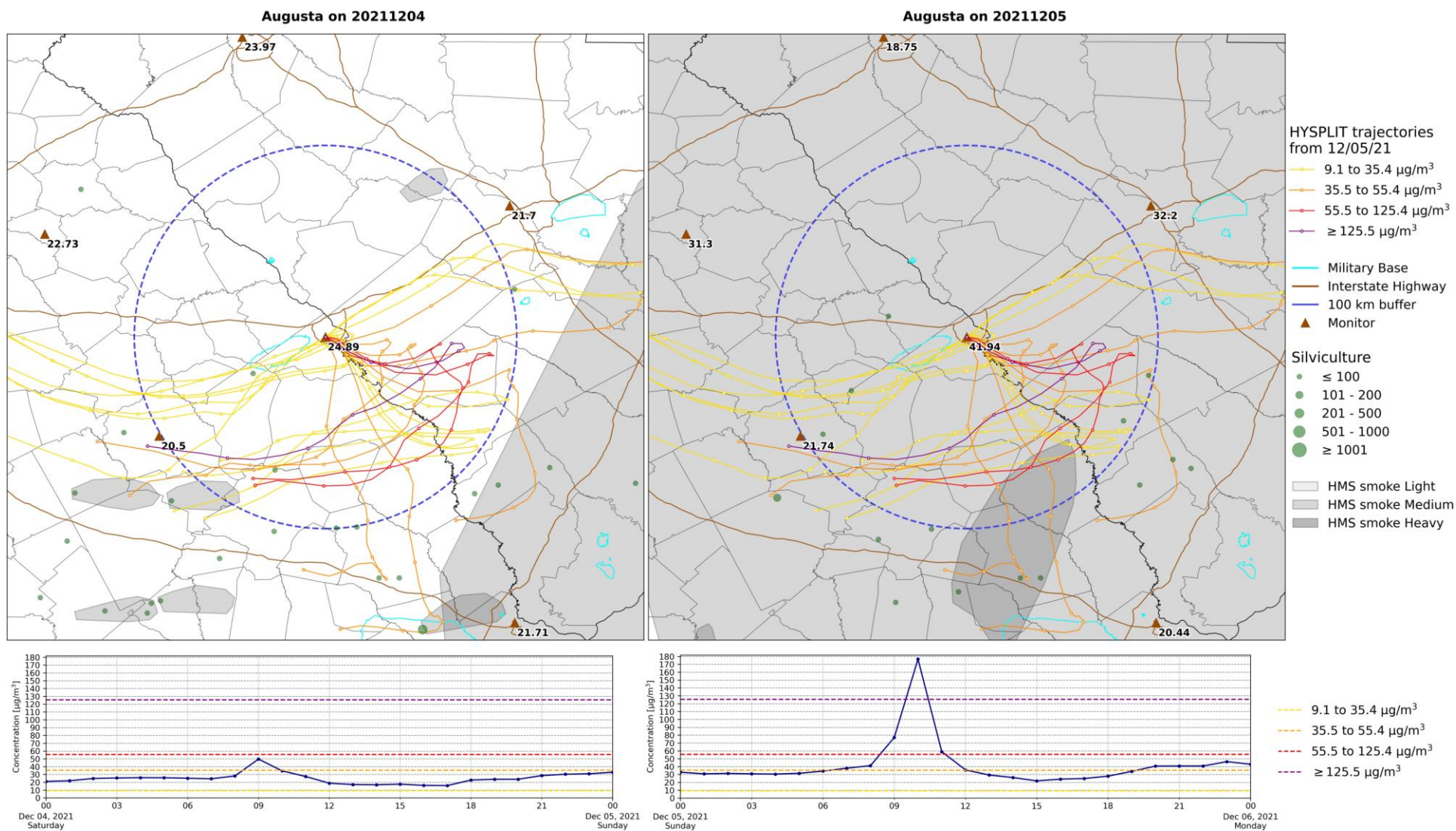


Figure 17A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 4, 2021. The top right map contains the same information for December 5, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 5, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

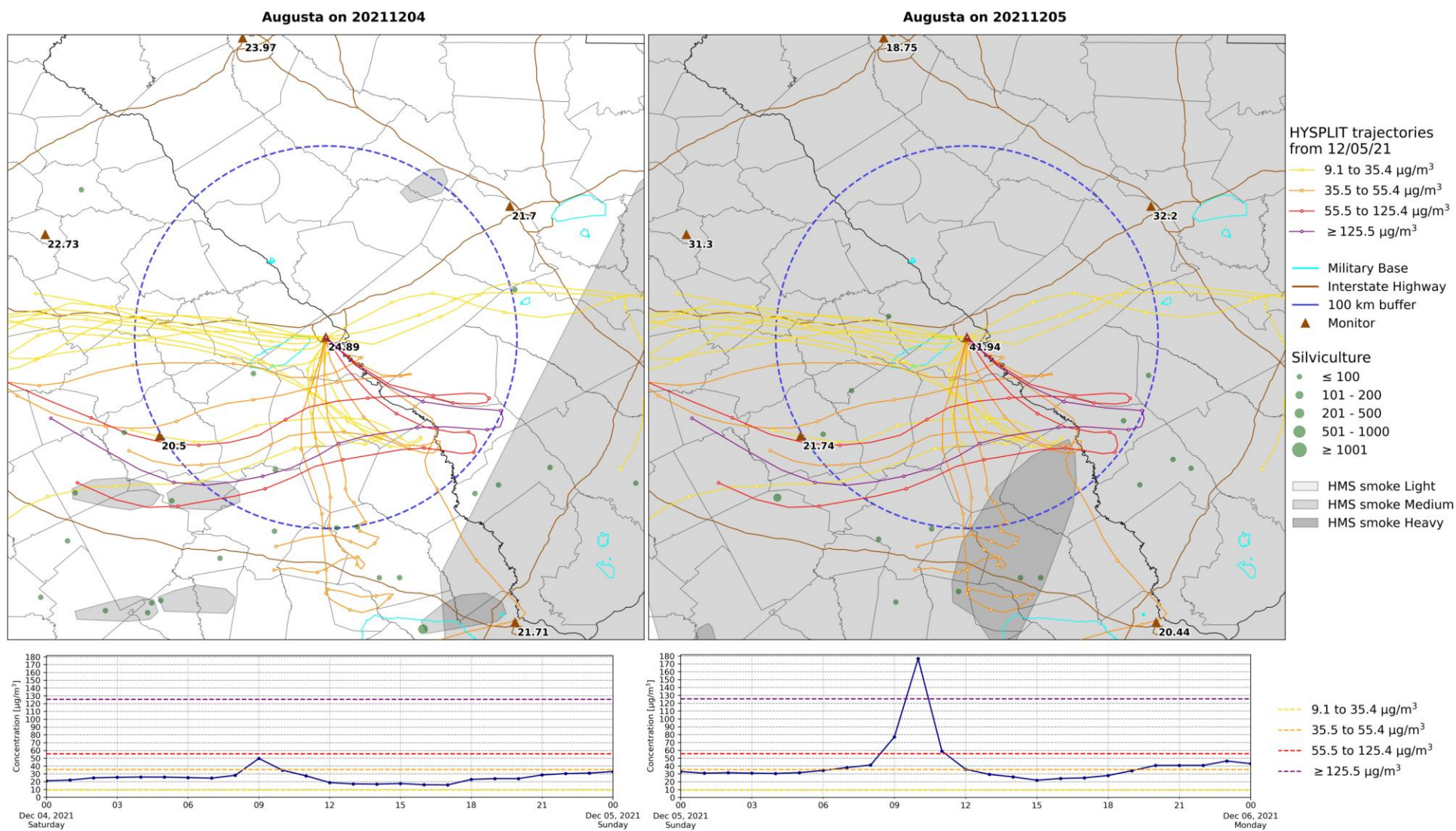


Figure 17B. The same as Figure 17A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

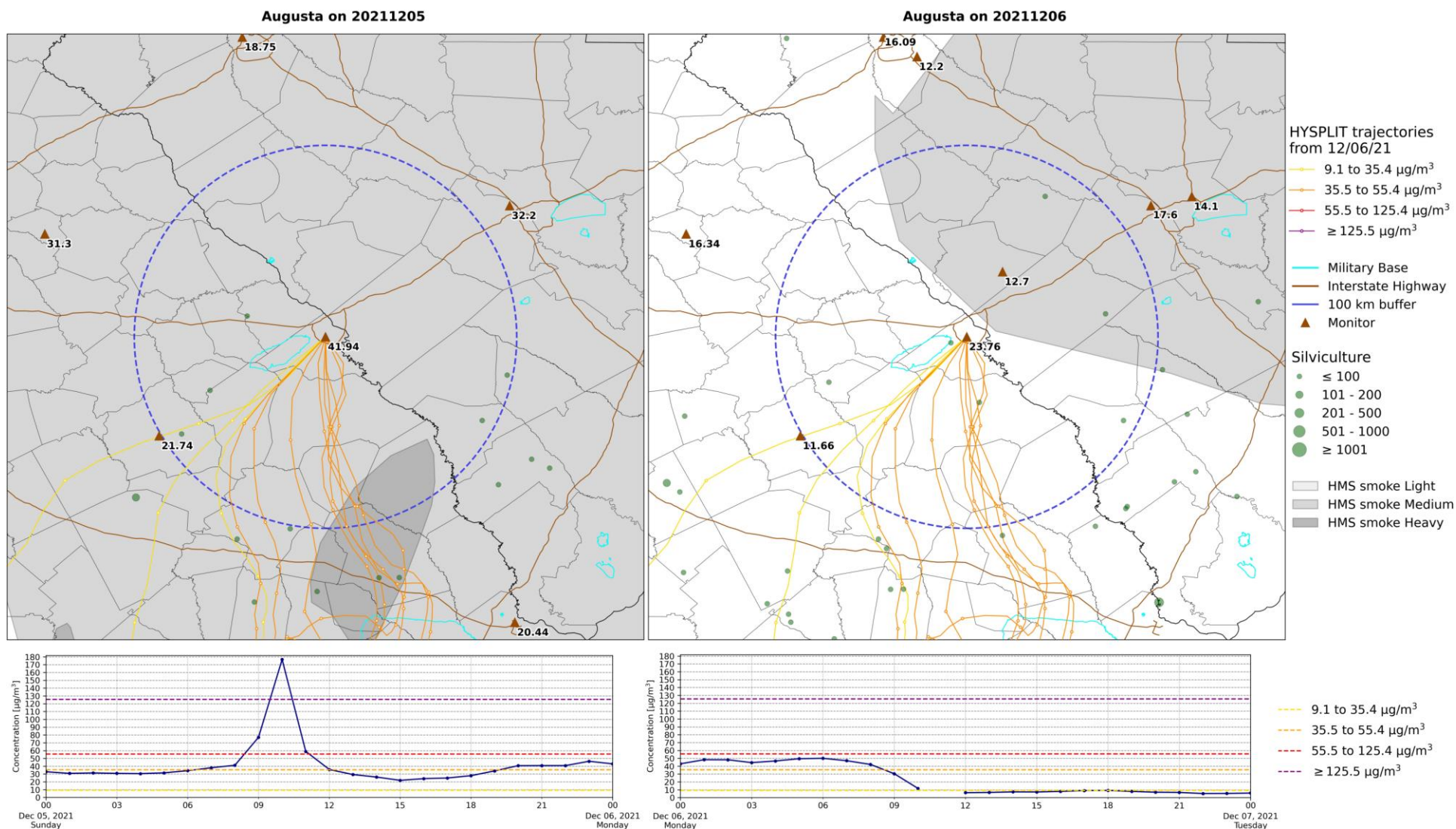
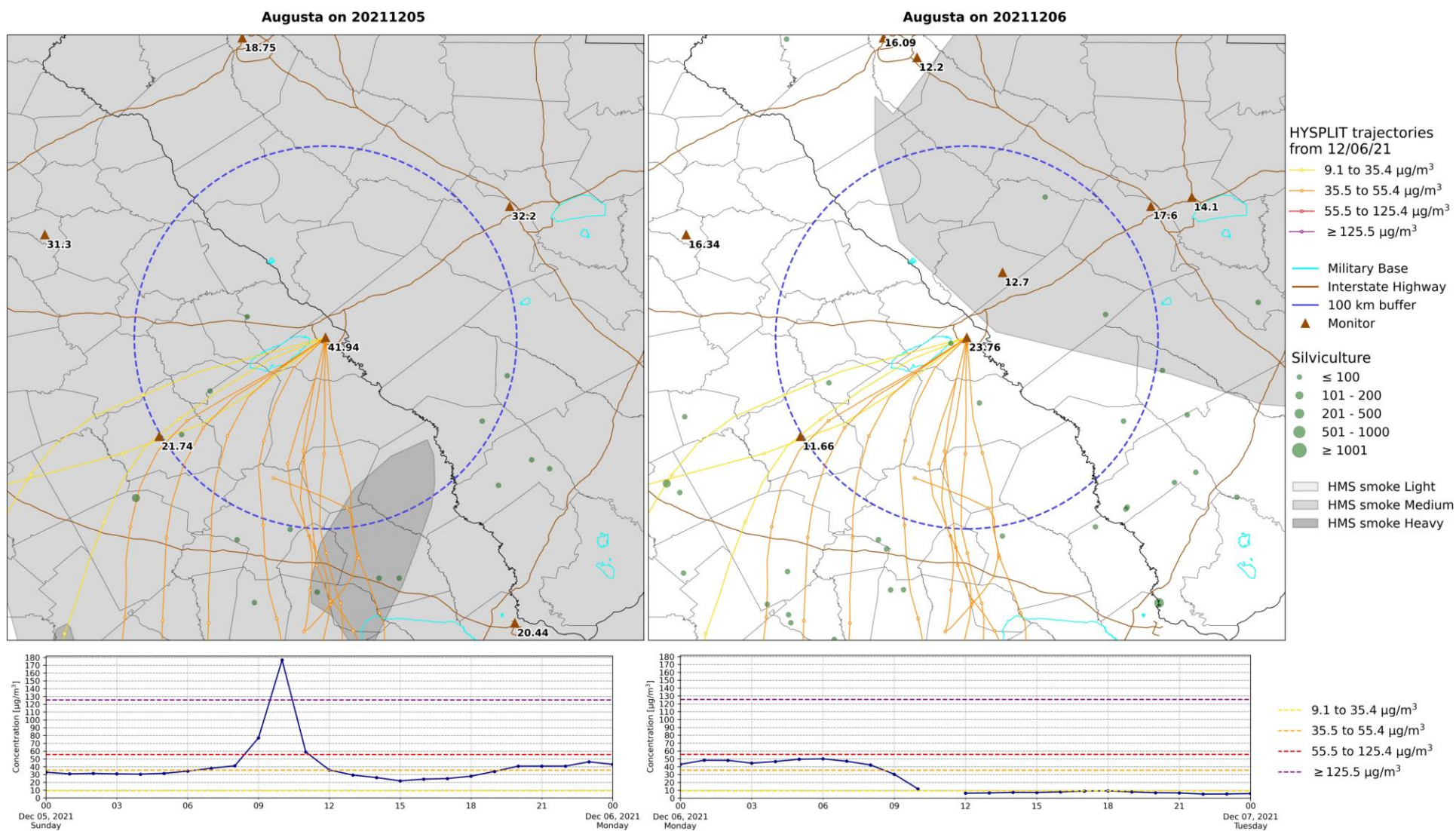


Figure 18A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 5, 2021. The top right map contains the same information for December 6, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 6, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.



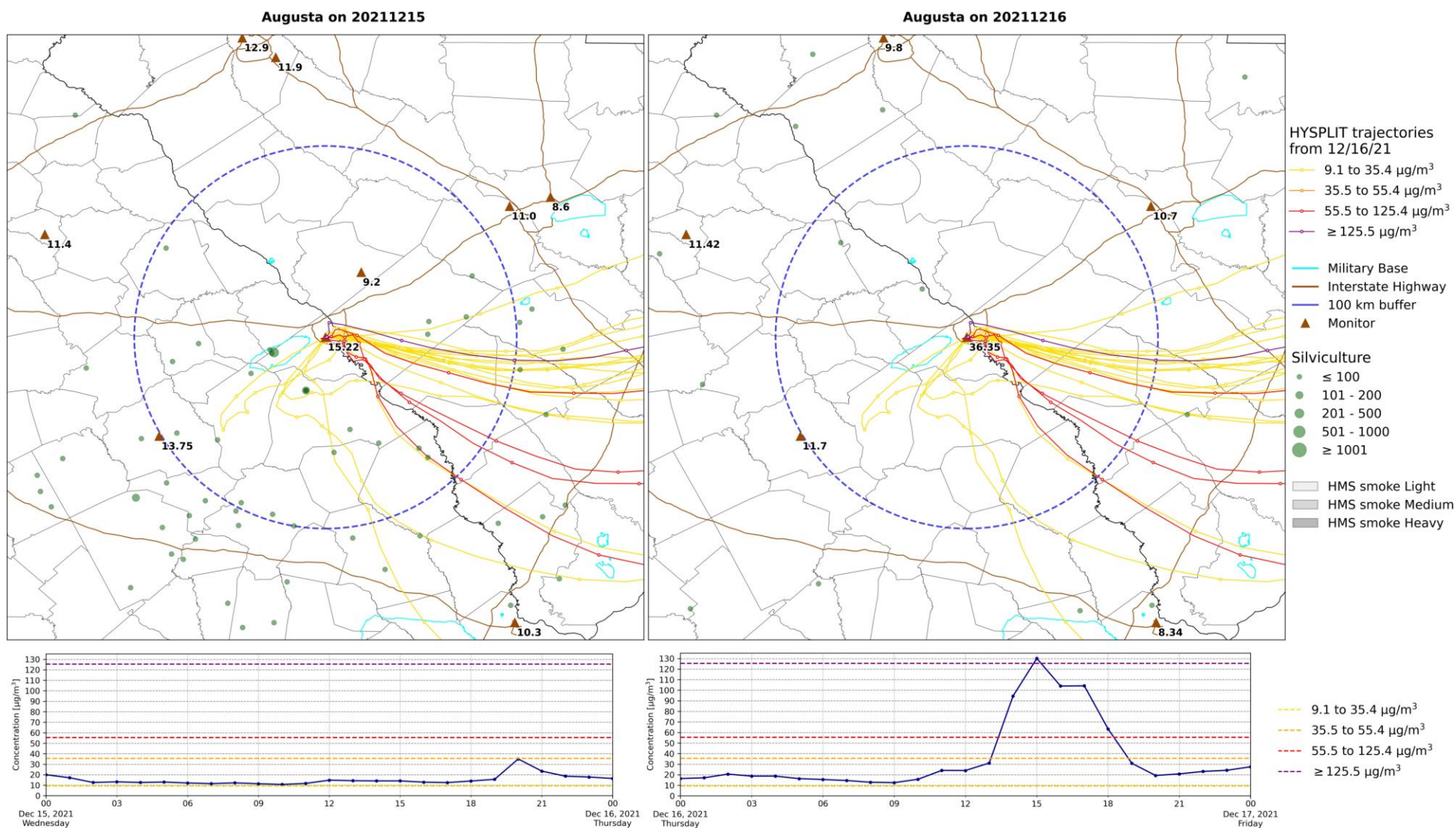


Figure 19A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on December 15, 2021. The top right map contains the same information for December 16, 2021. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on December 16, 2021. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.

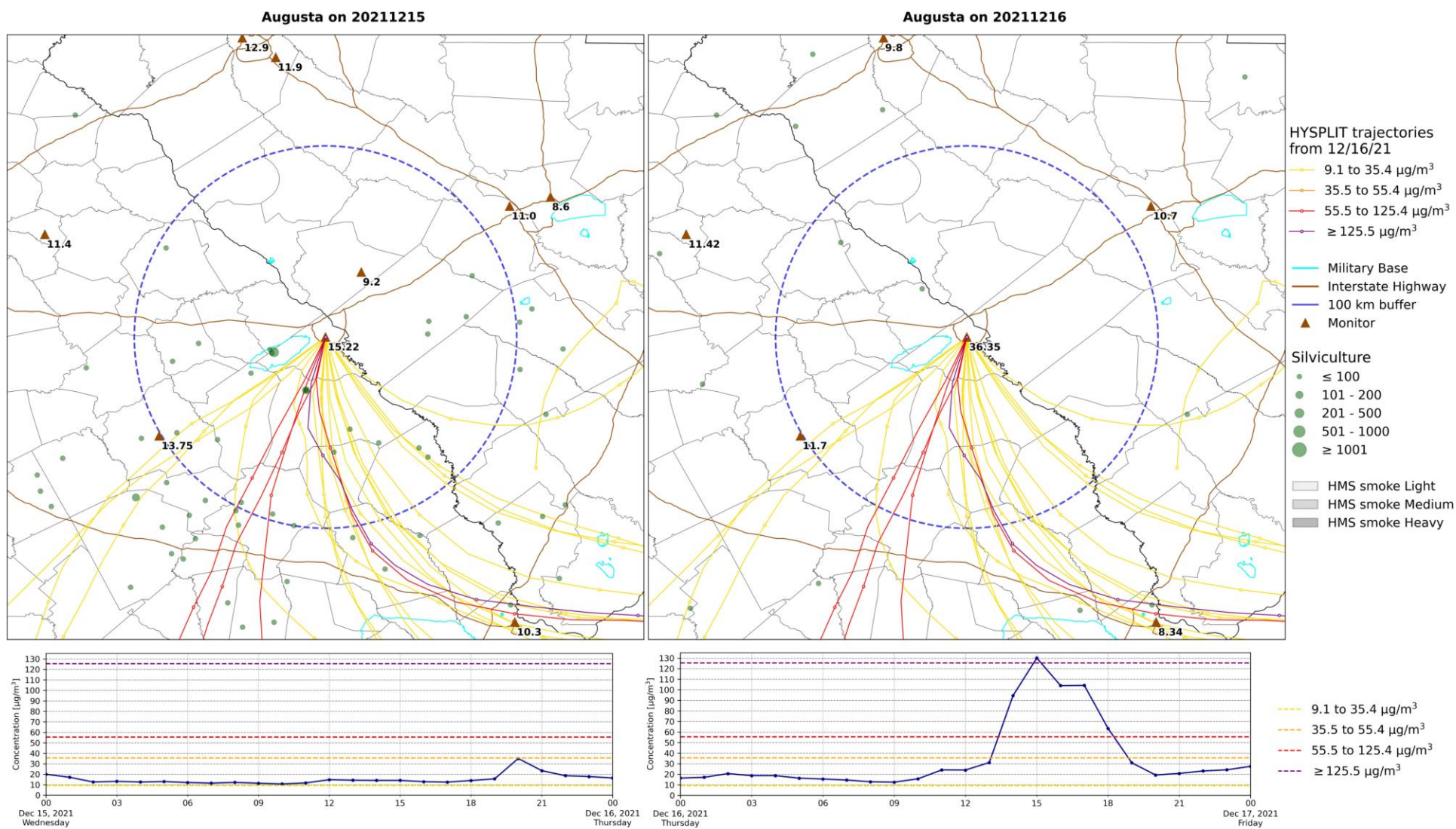


Figure 19B. The same as Figure 19A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

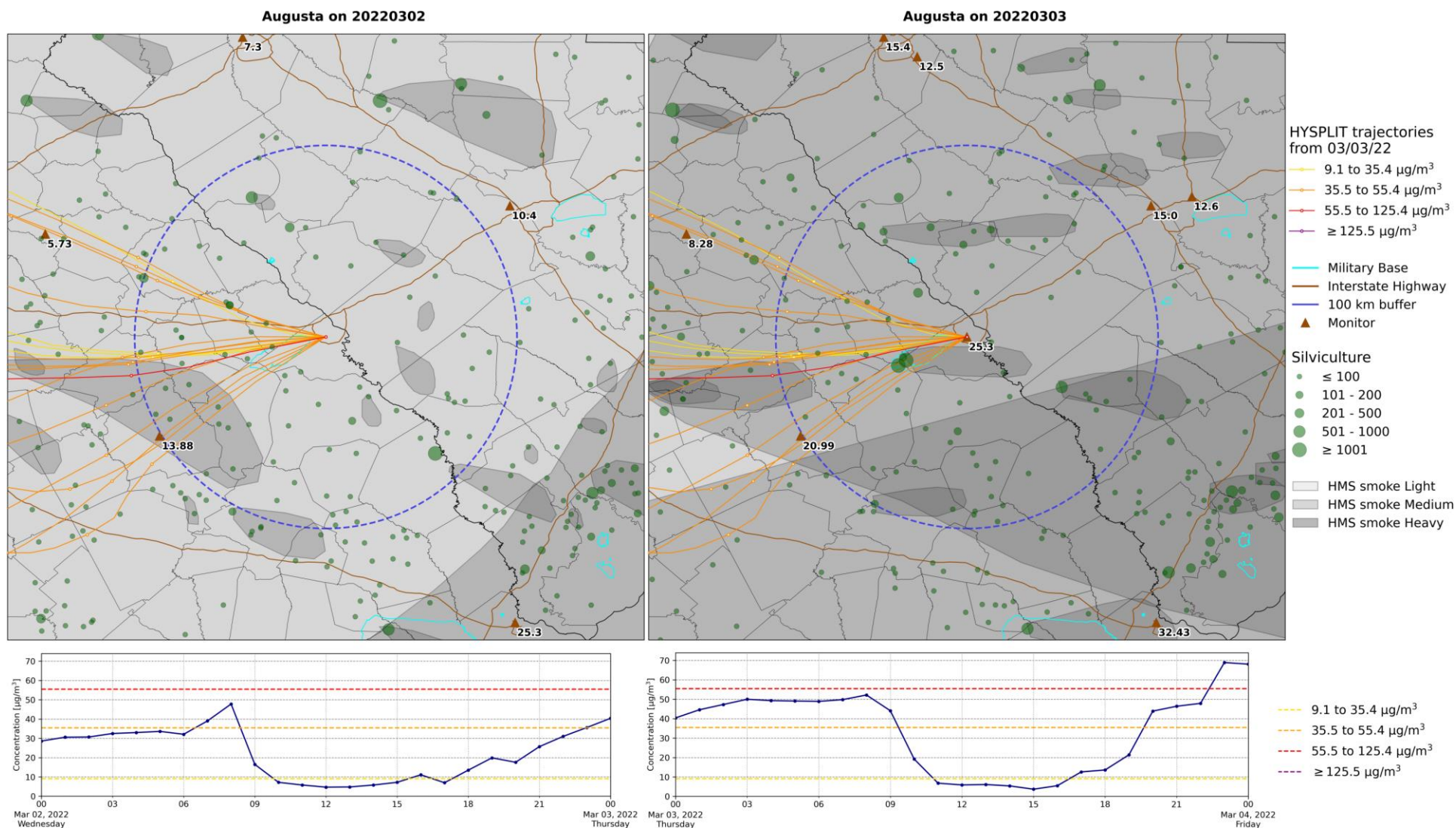


Figure 20A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on March 2, 2022. The top right map contains the same information for March 3, 2022. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on March 3, 2022. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

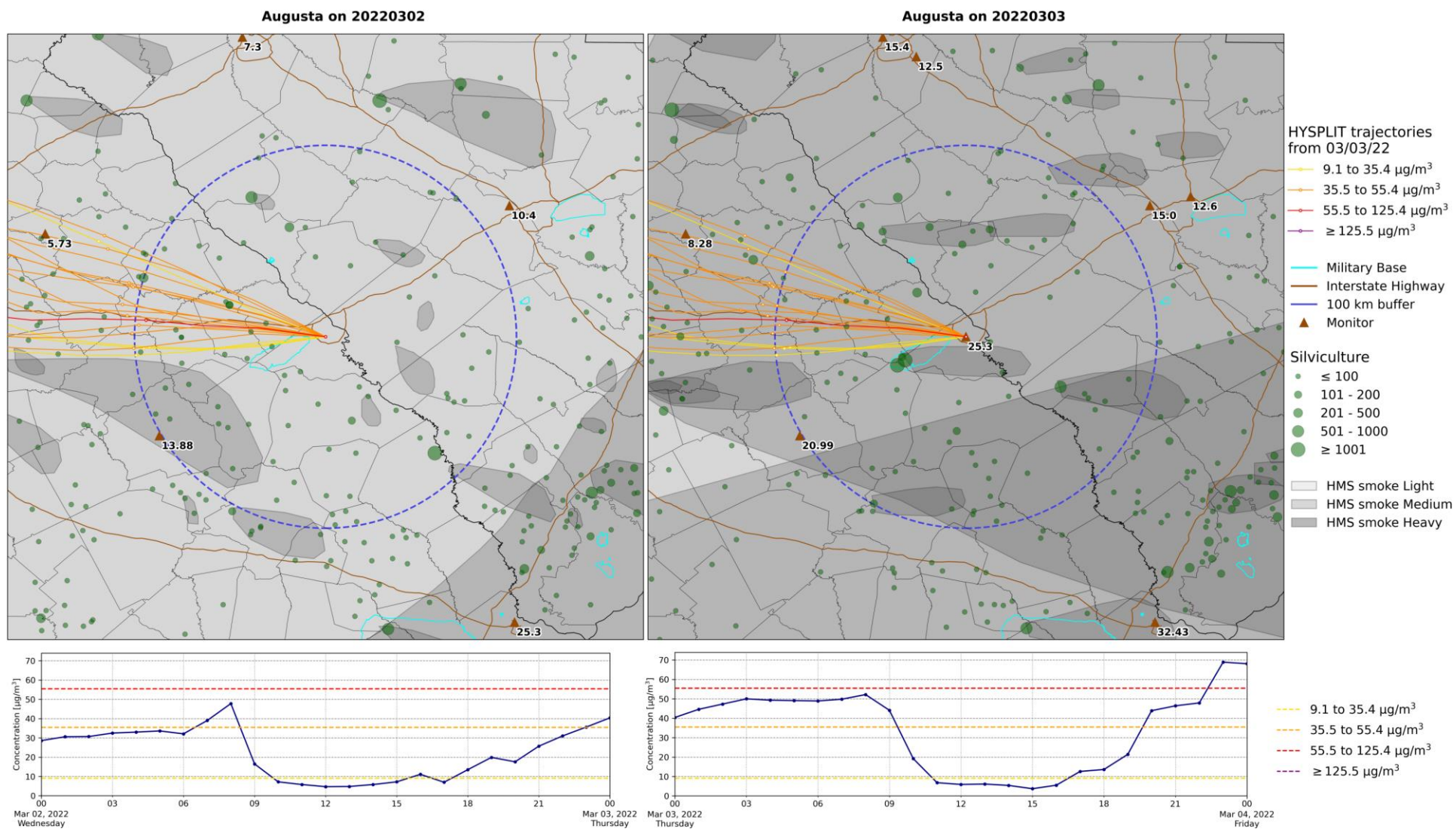


Figure 20B. The same as Figure 20A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

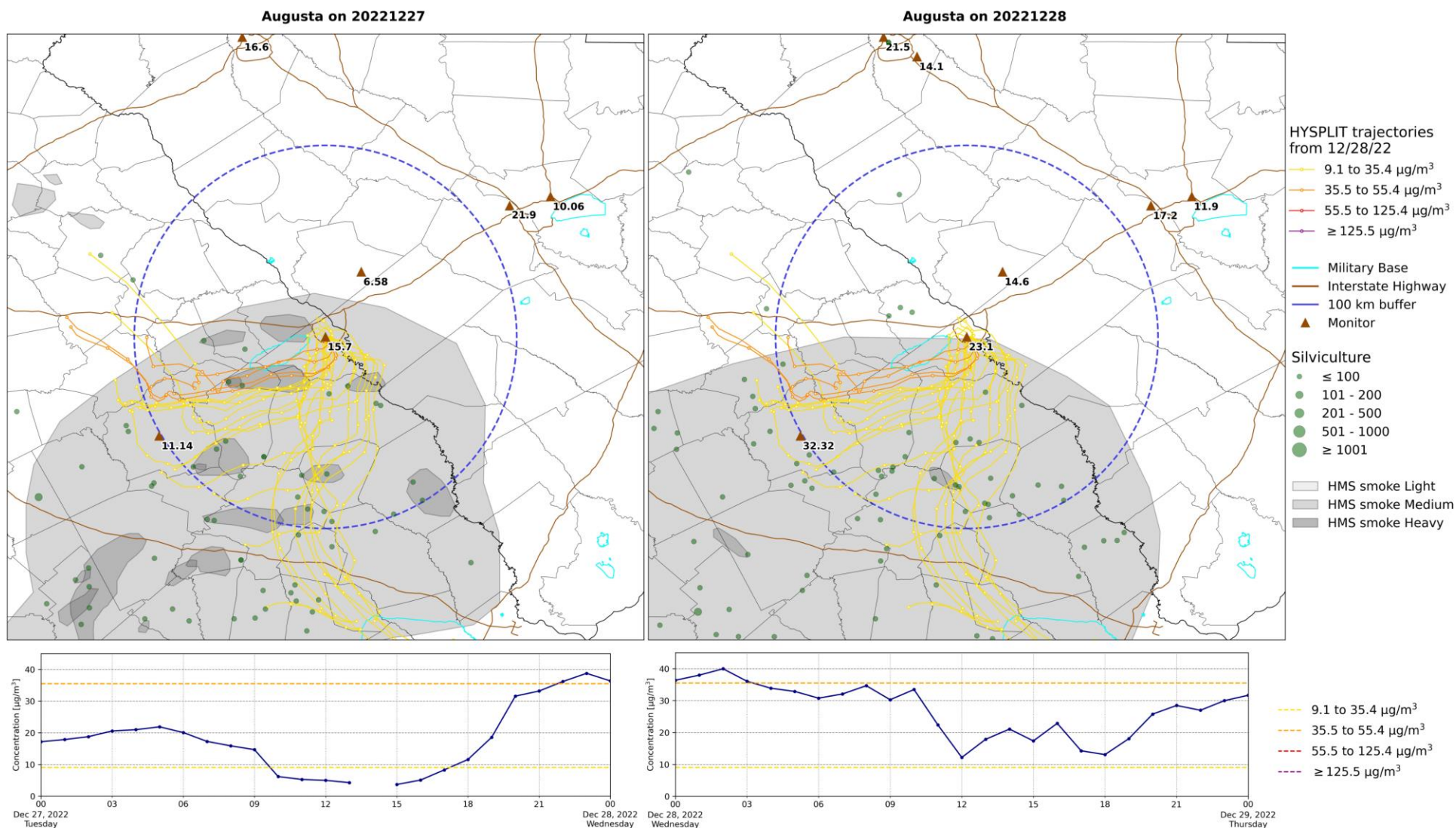


Figure 21A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 27, 2022. The top right map contains the same information for December 28, 2022. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 28, 2022. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

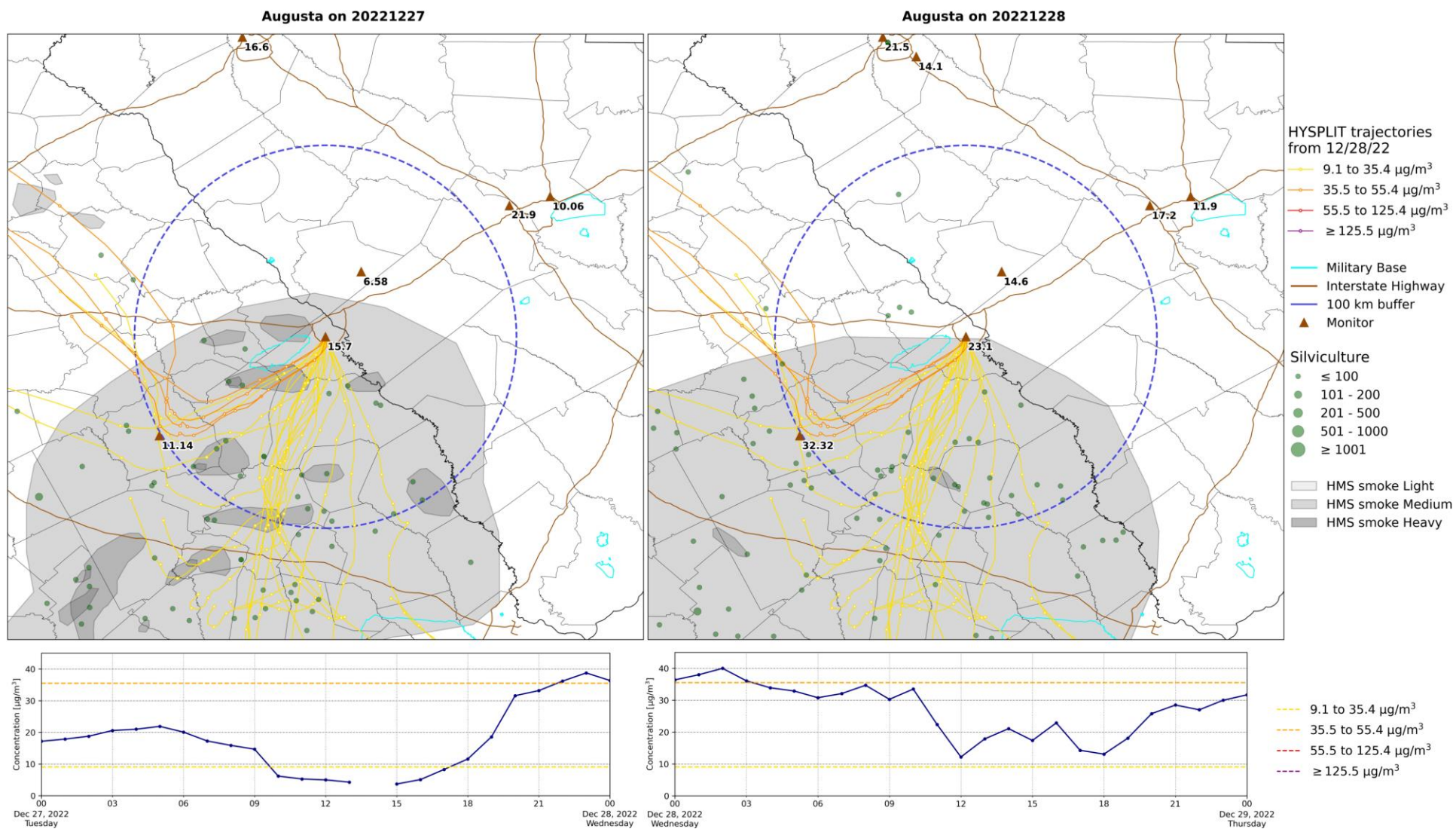


Figure 21B. The same as Figure 21A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

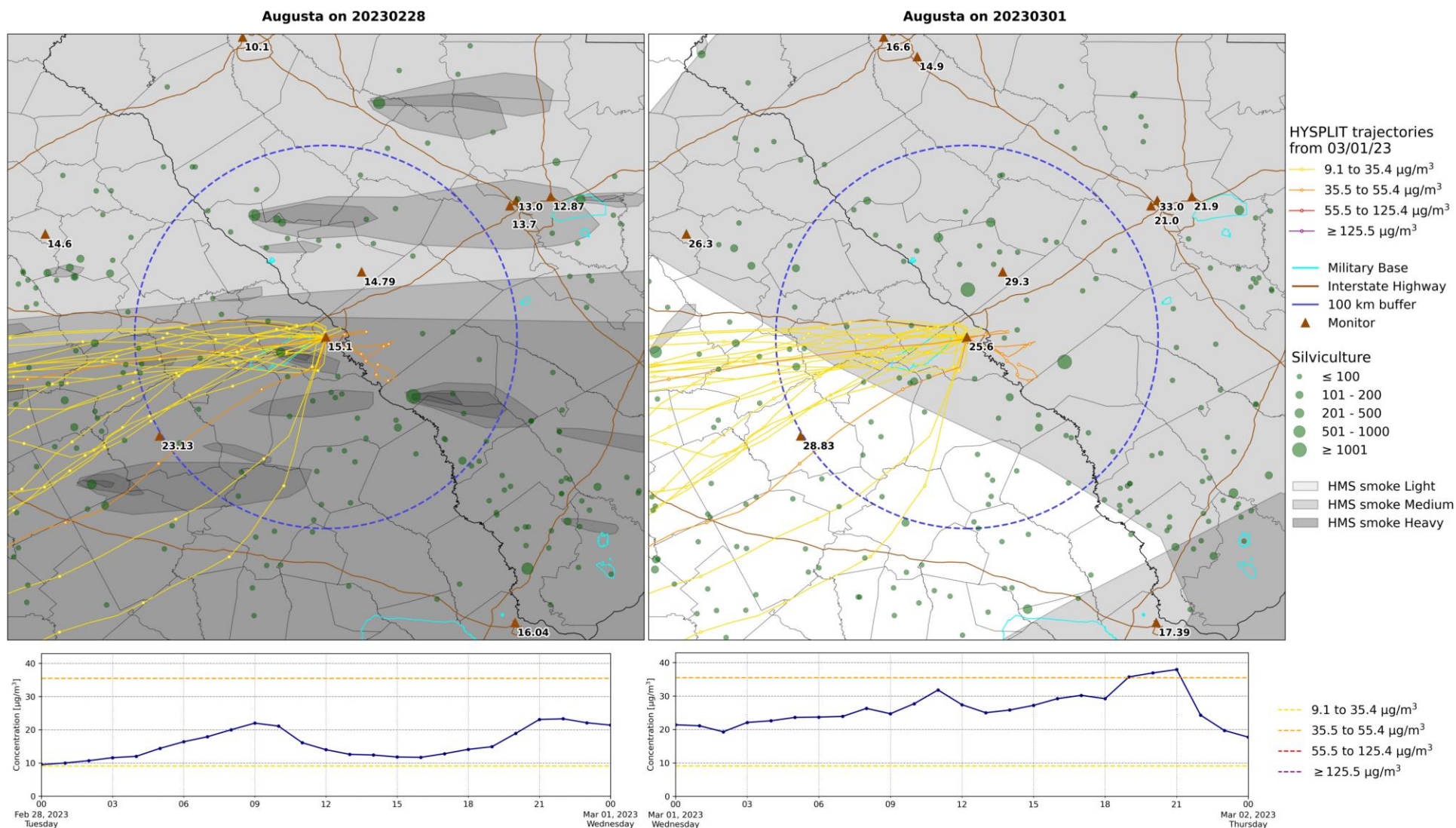
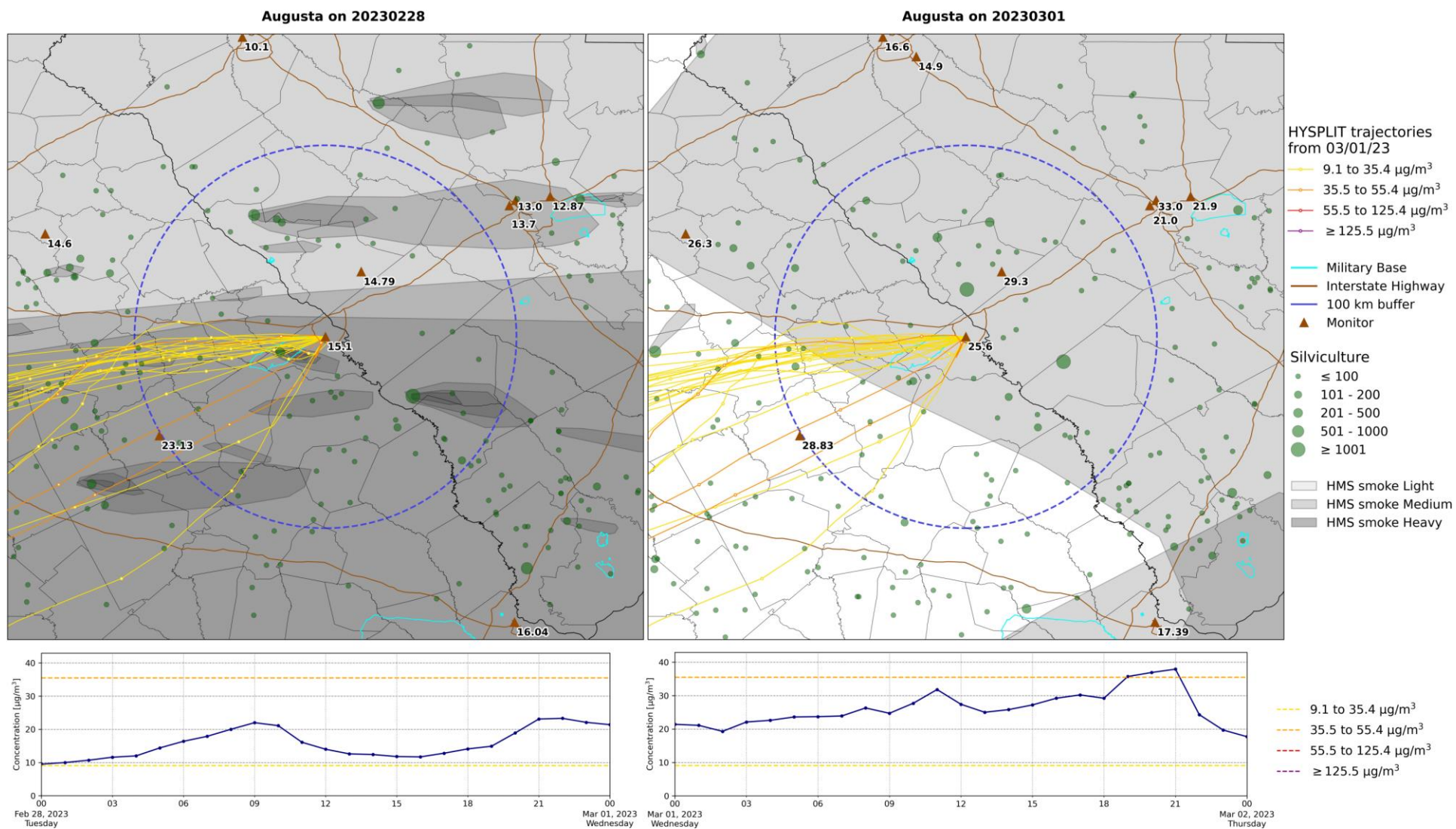


Figure 22A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour $\text{PM}_{2.5}$ concentrations at the Augusta $\text{PM}_{2.5}$ monitor on February 28, 2023. The top right map contains the same information for March 1, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta $\text{PM}_{2.5}$ monitor on March 1, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for $\text{PM}_{2.5}$ concentrations.



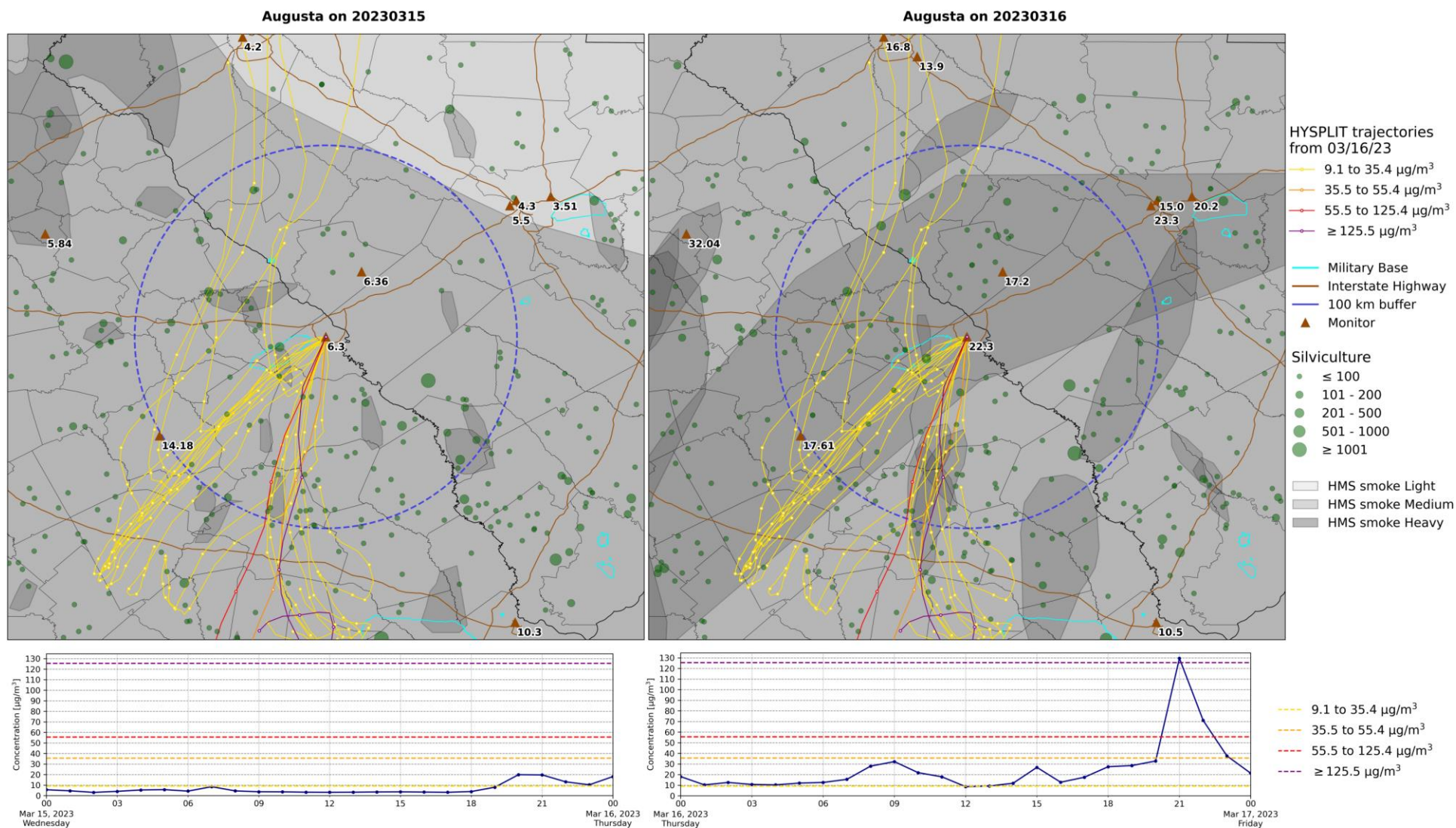


Figure 23A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on March 15, 2023. The top right map contains the same information for March 16, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on March 16, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

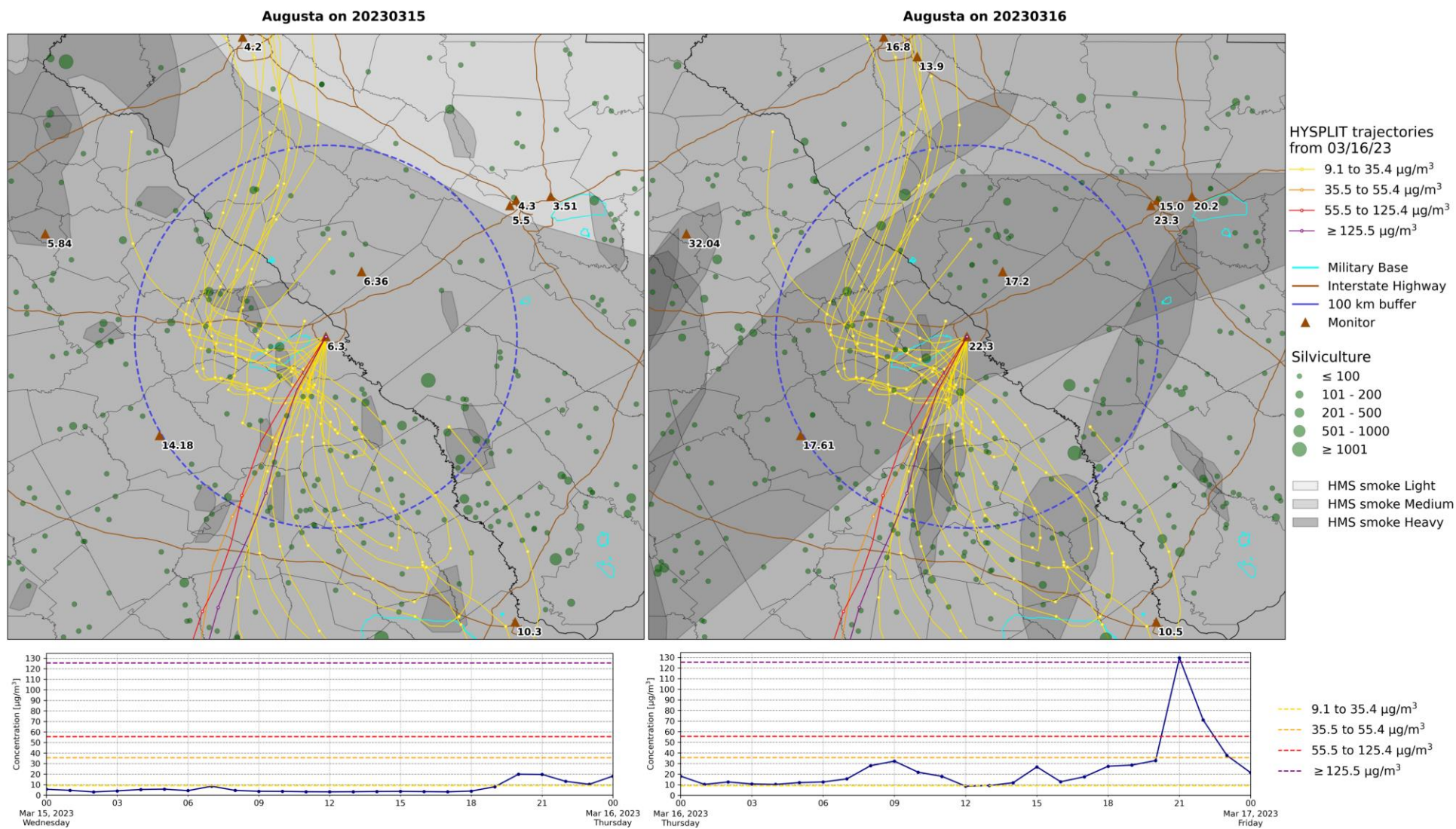


Figure 23B. The same as Figure 23A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

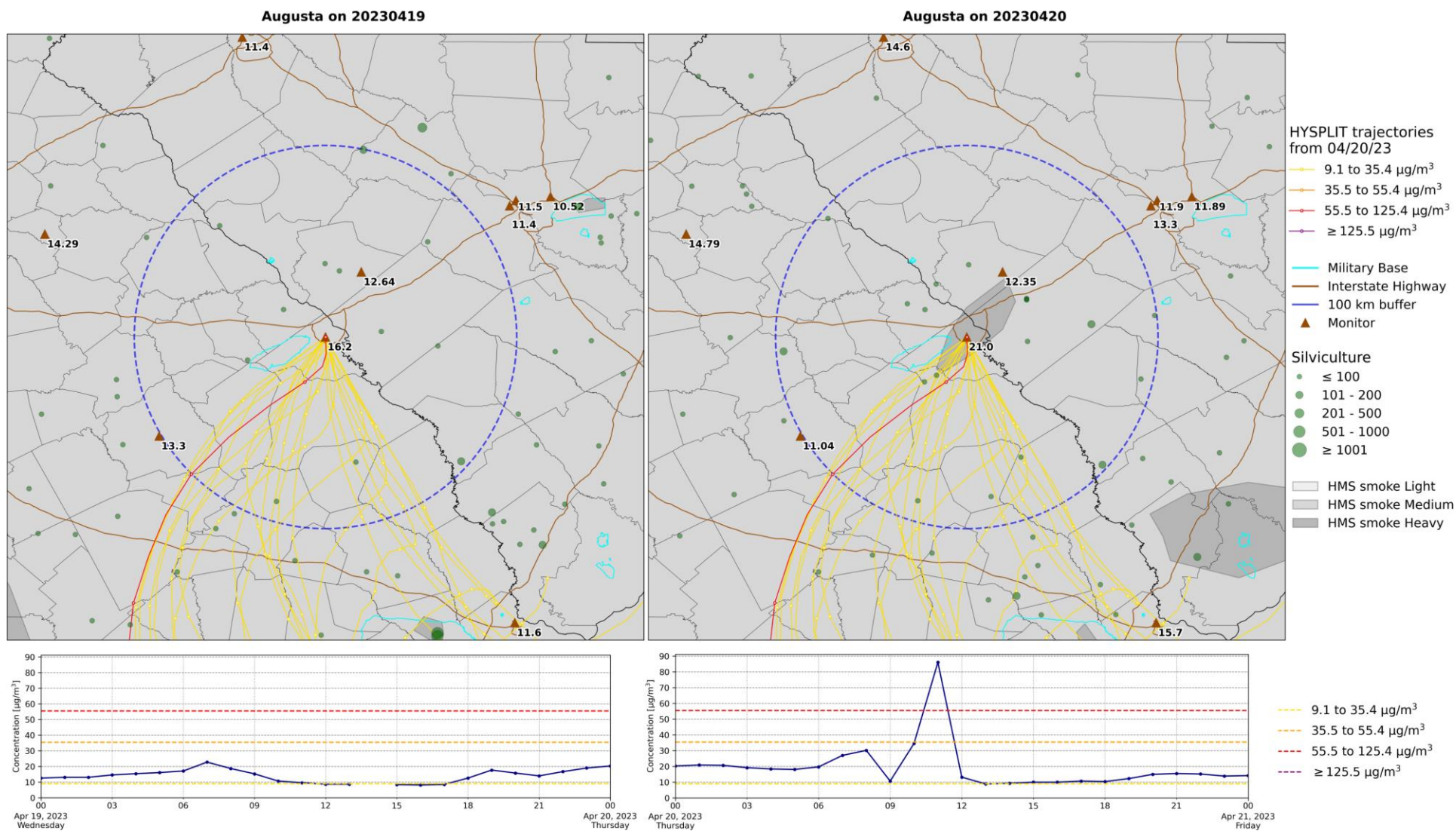


Figure 24A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on April 19, 2023. The top right map contains the same information for April 20, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on April 20, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

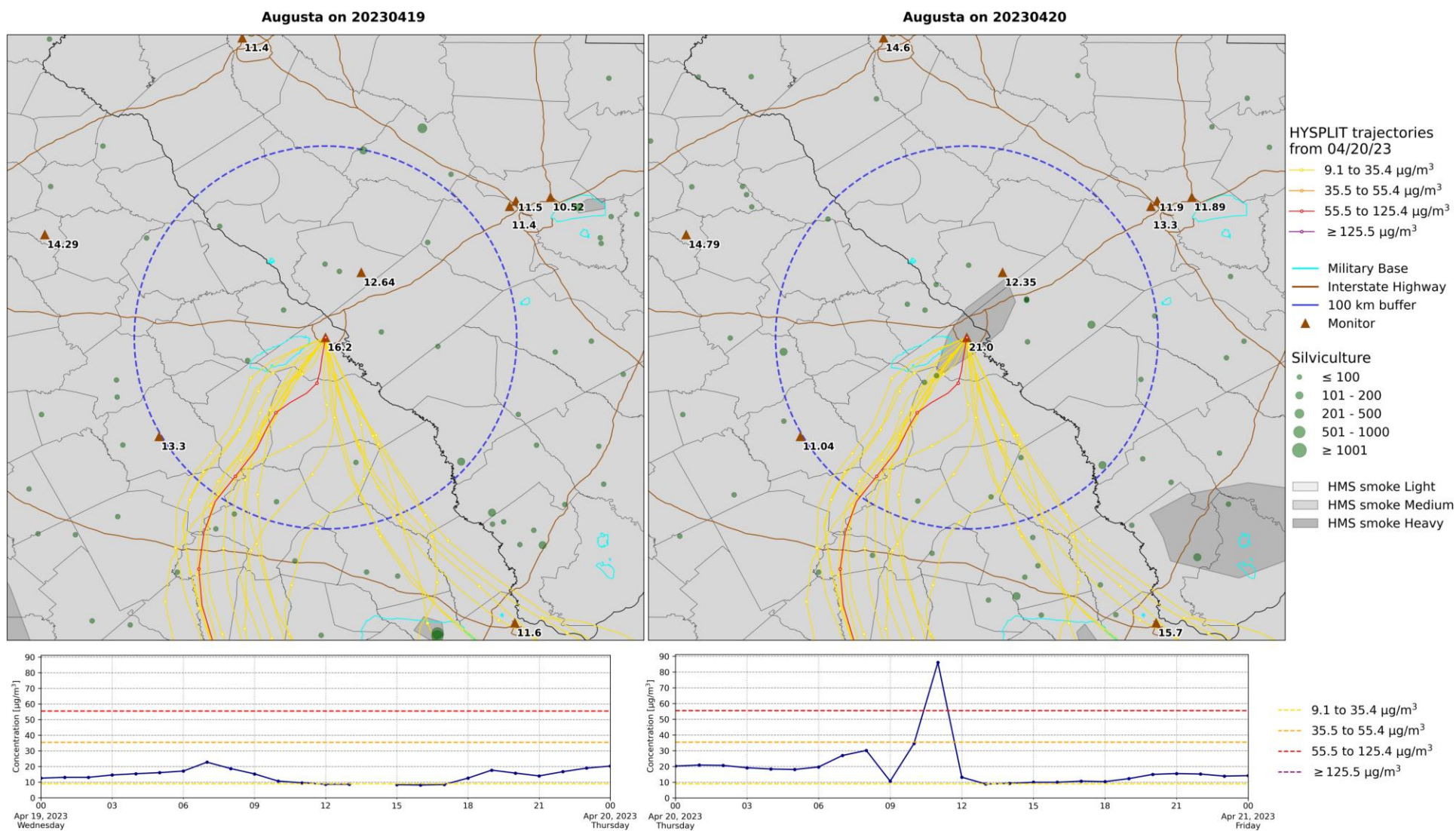


Figure 24B. The same as Figure 24A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

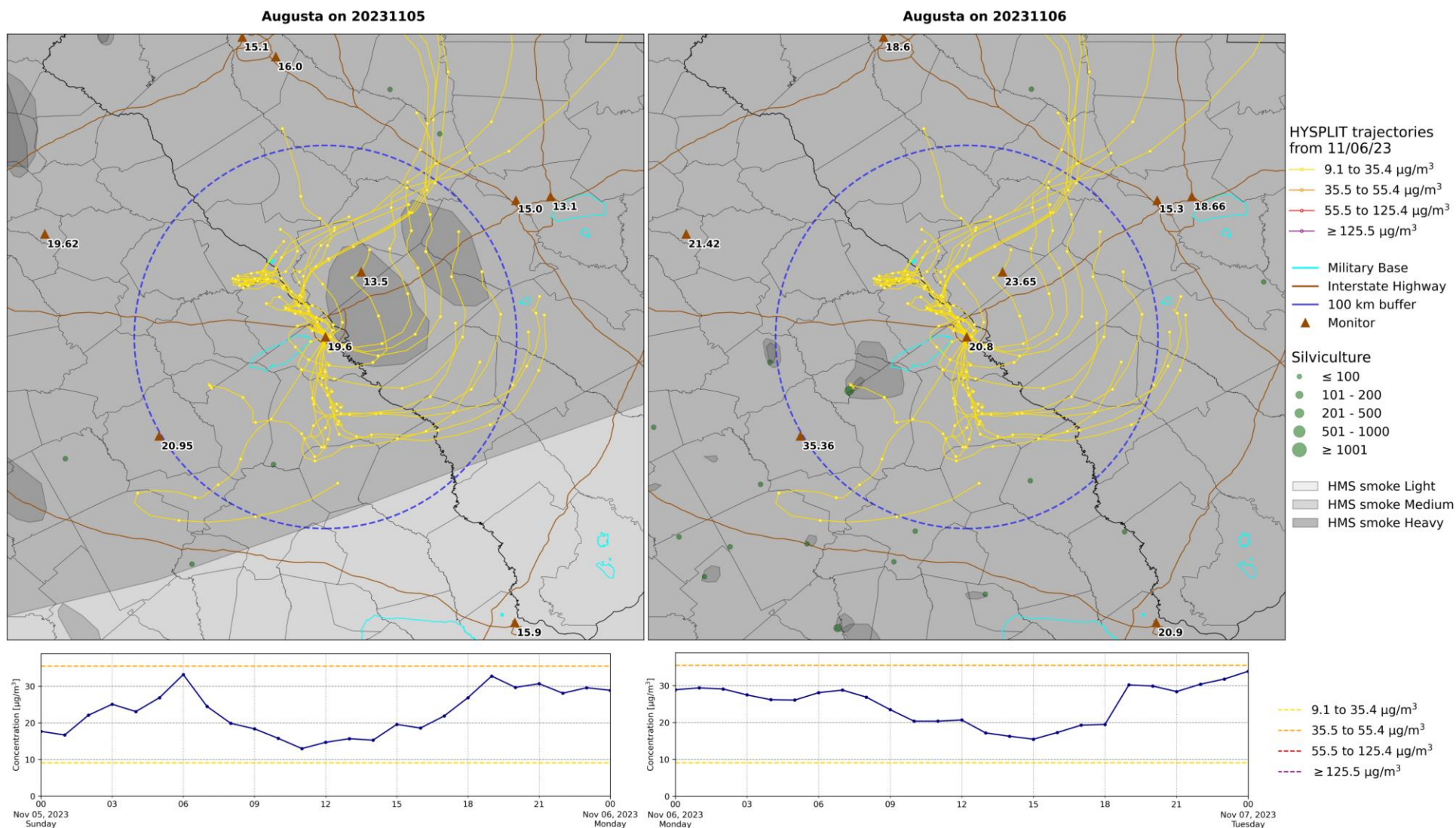


Figure 25A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on November 5, 2023. The top right map contains the same information for November 6, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on November 6, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

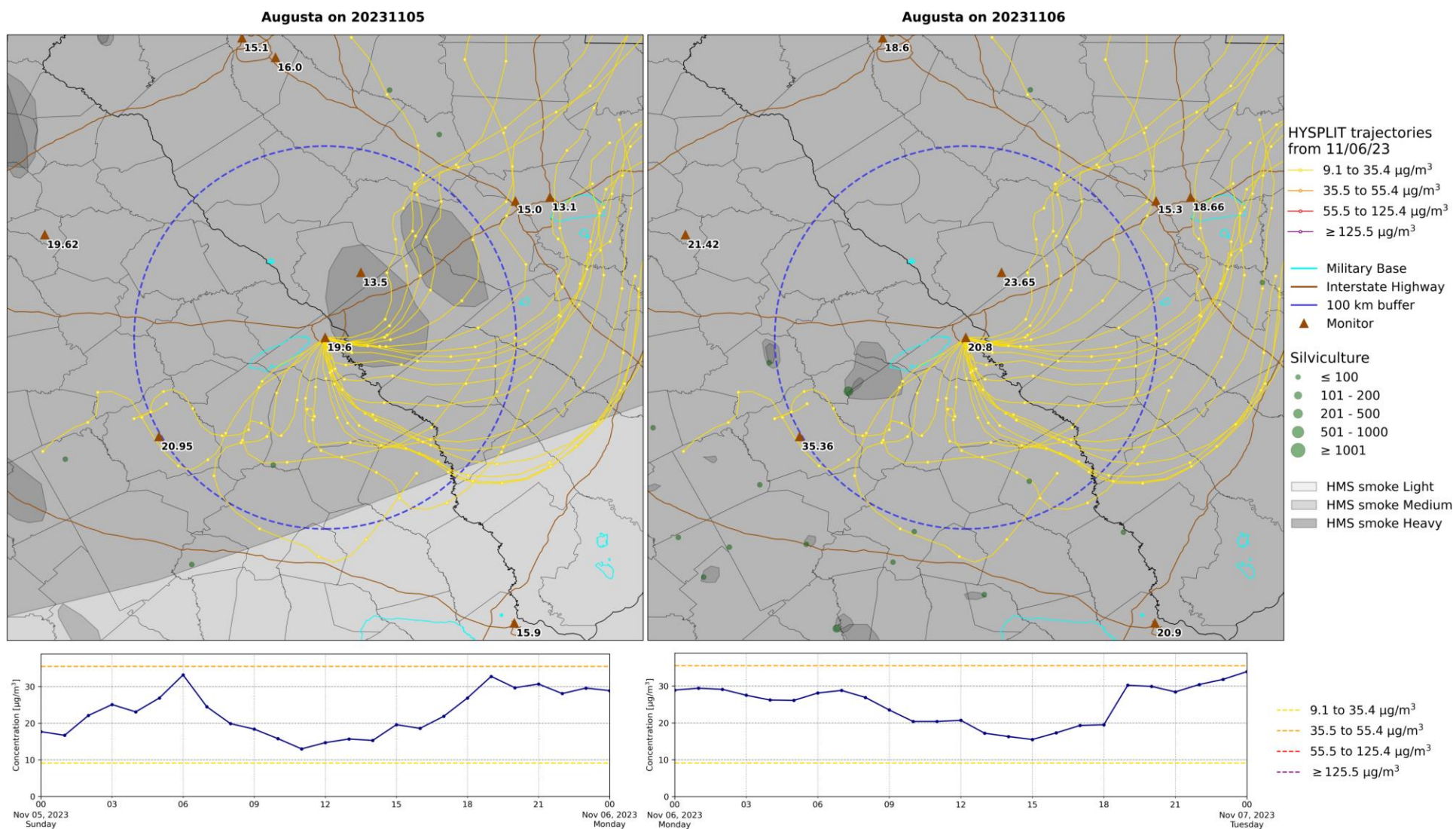


Figure 25B. The same as Figure 25A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

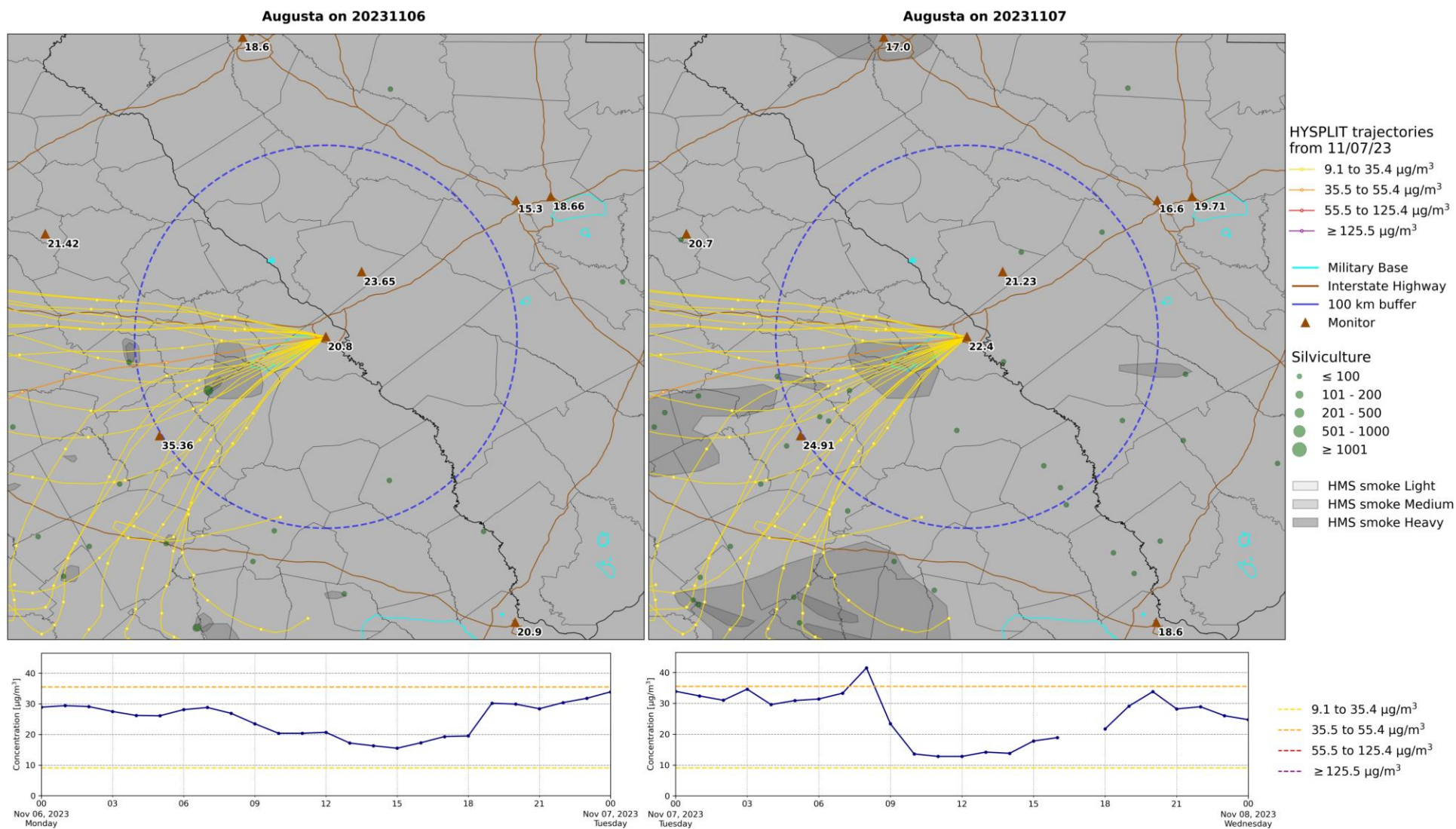


Figure 26A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on November 6, 2023. The top right map contains the same information for November 7, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on November 7, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

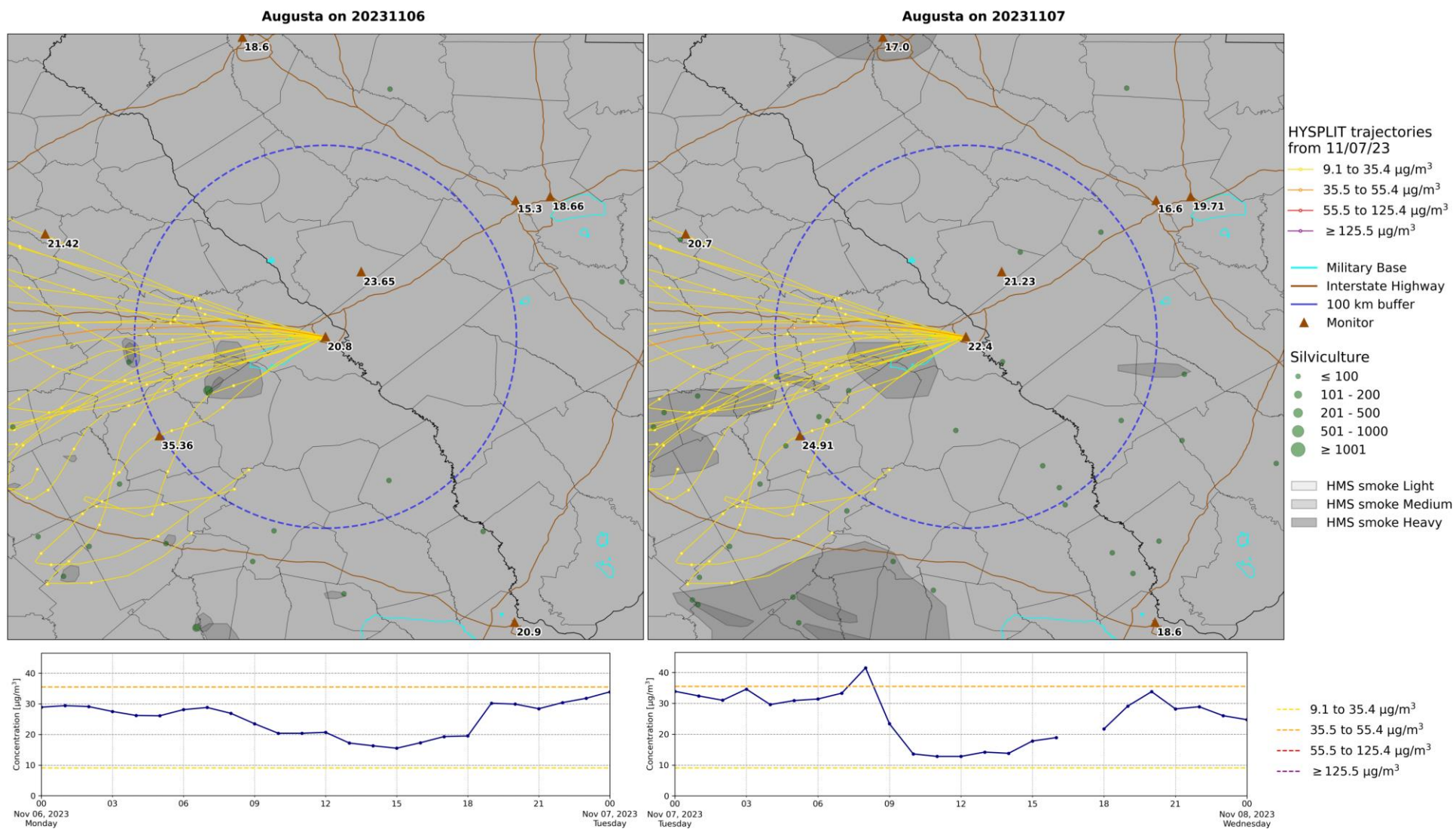


Figure 26B. The same as Figure 26A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

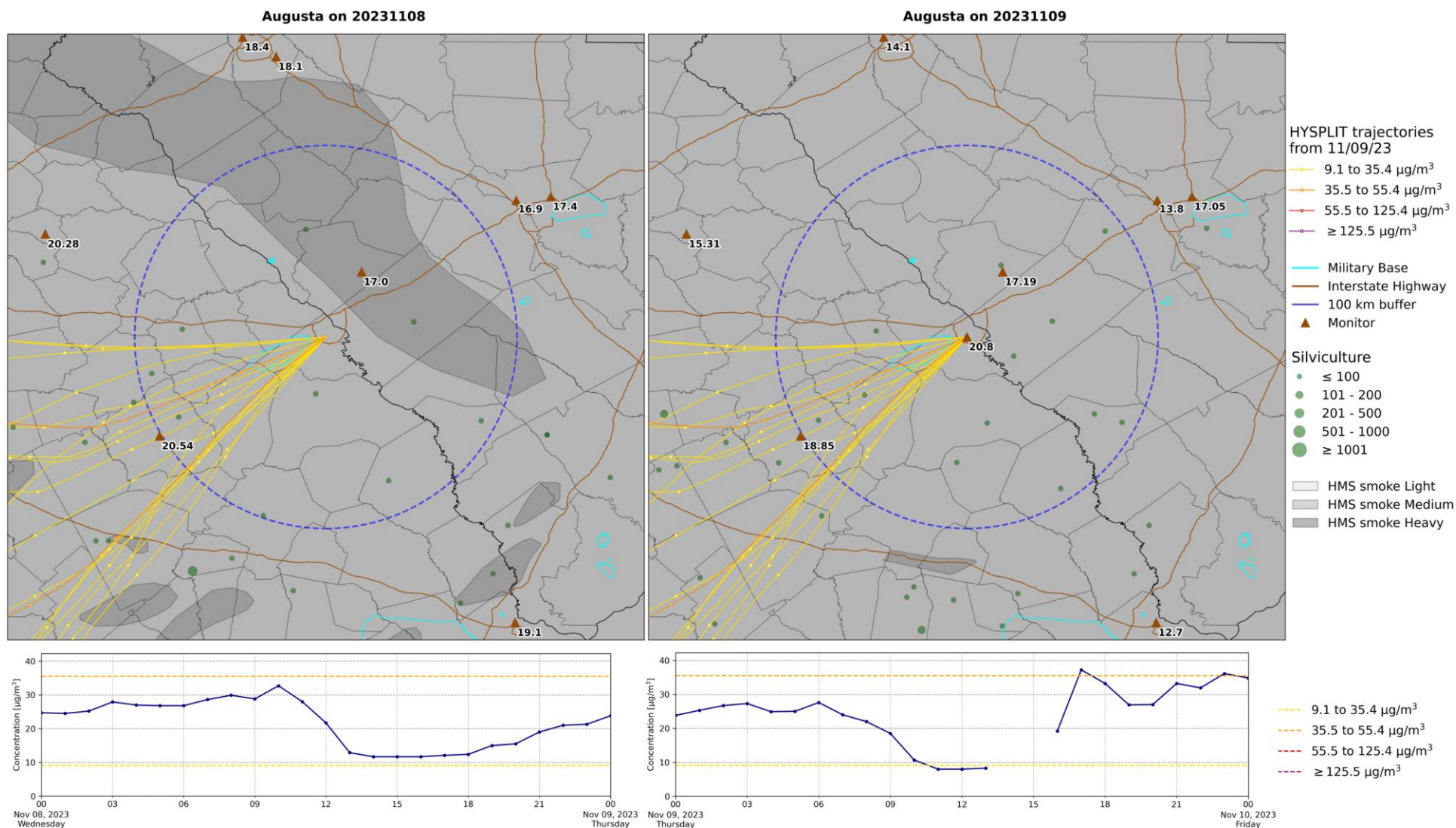


Figure 27A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on November 8, 2023. The top right map contains the same information for November 9, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on November 9, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

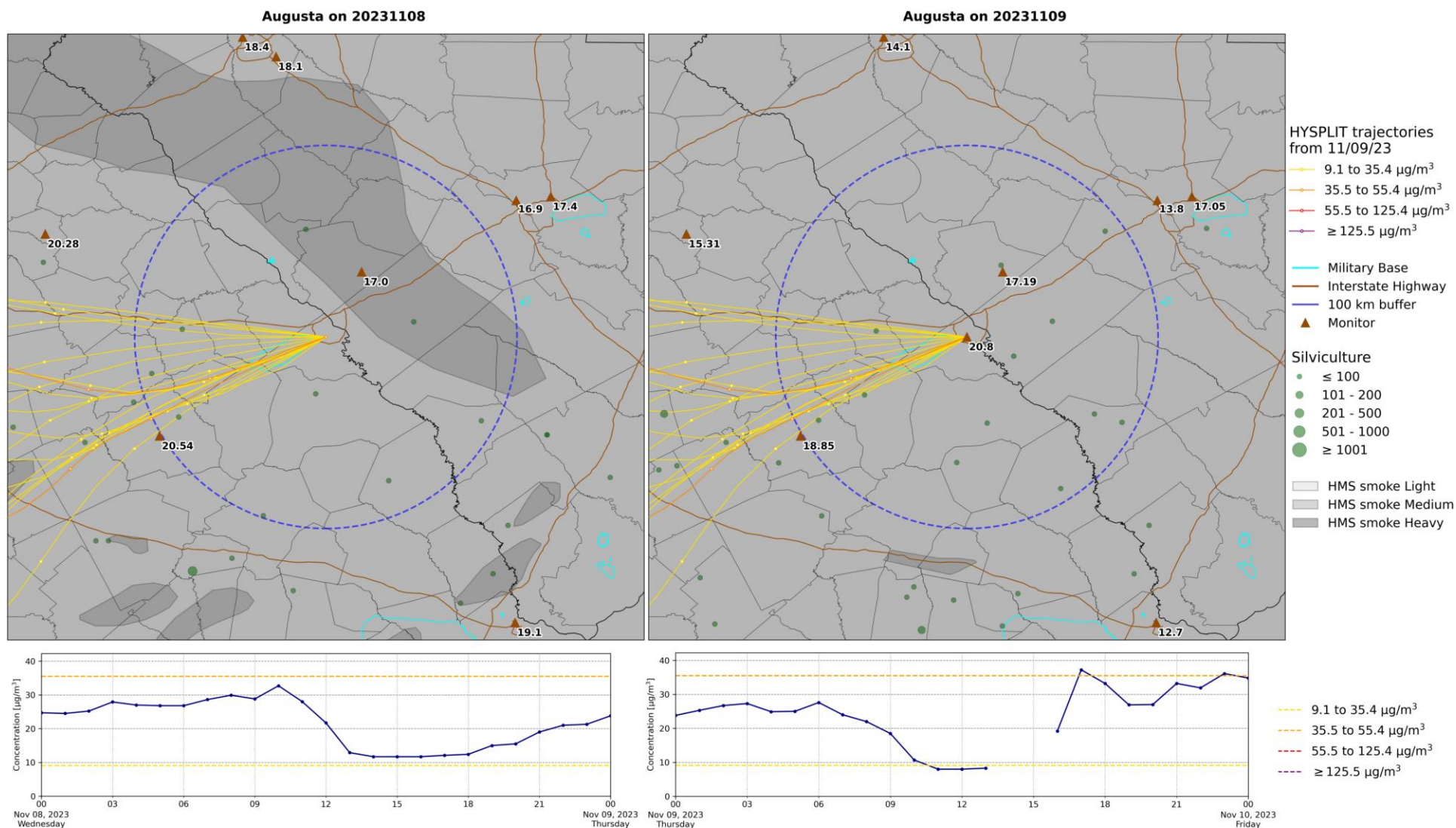


Figure 27B. The same as Figure 27A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

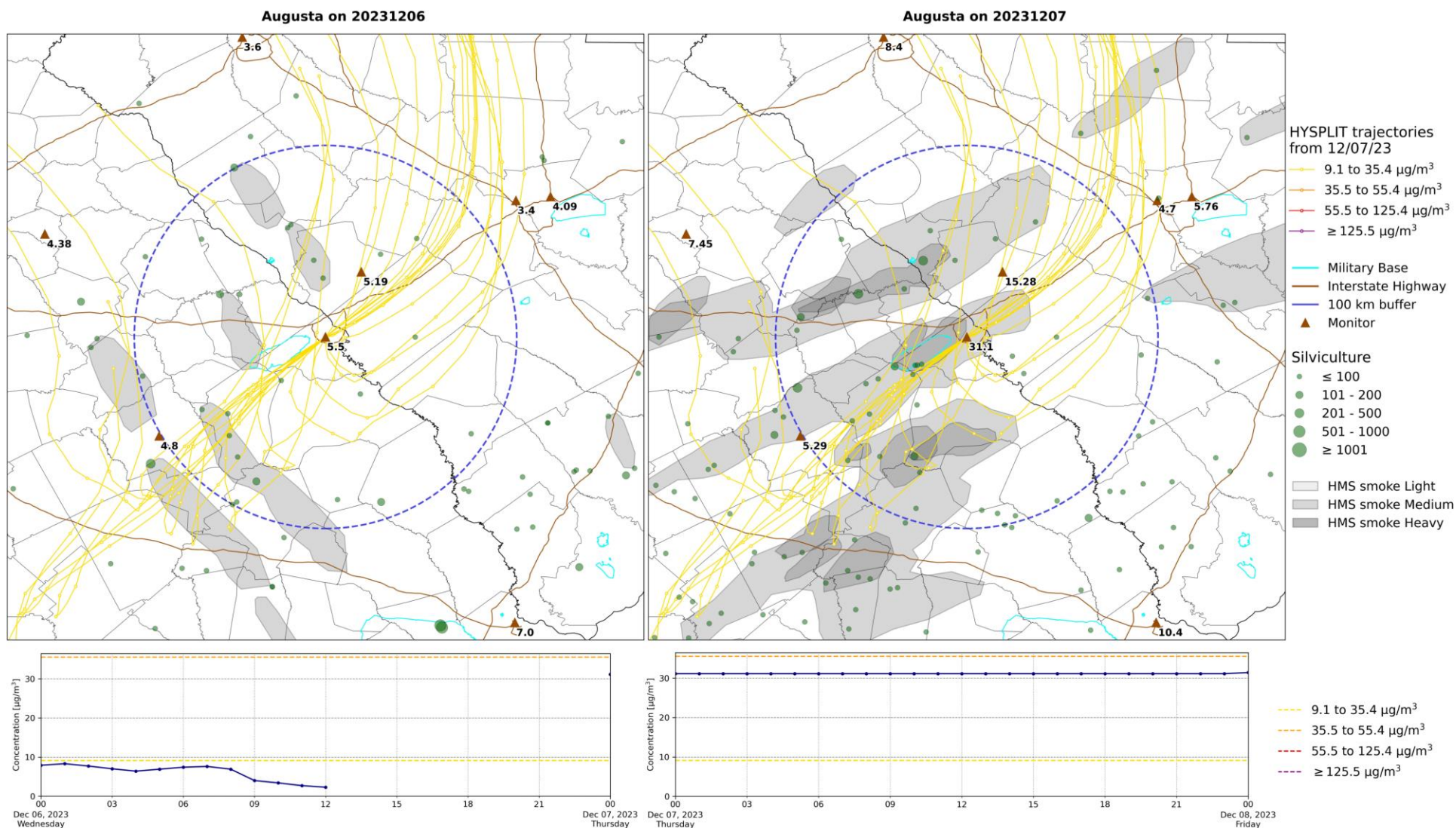


Figure 28A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 6, 2023. The top right map contains the same information for December 7, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 7, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows hourly observations from the FEM monitor (left) and calculated hourly values from daily observations from the FRM monitor (right). The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

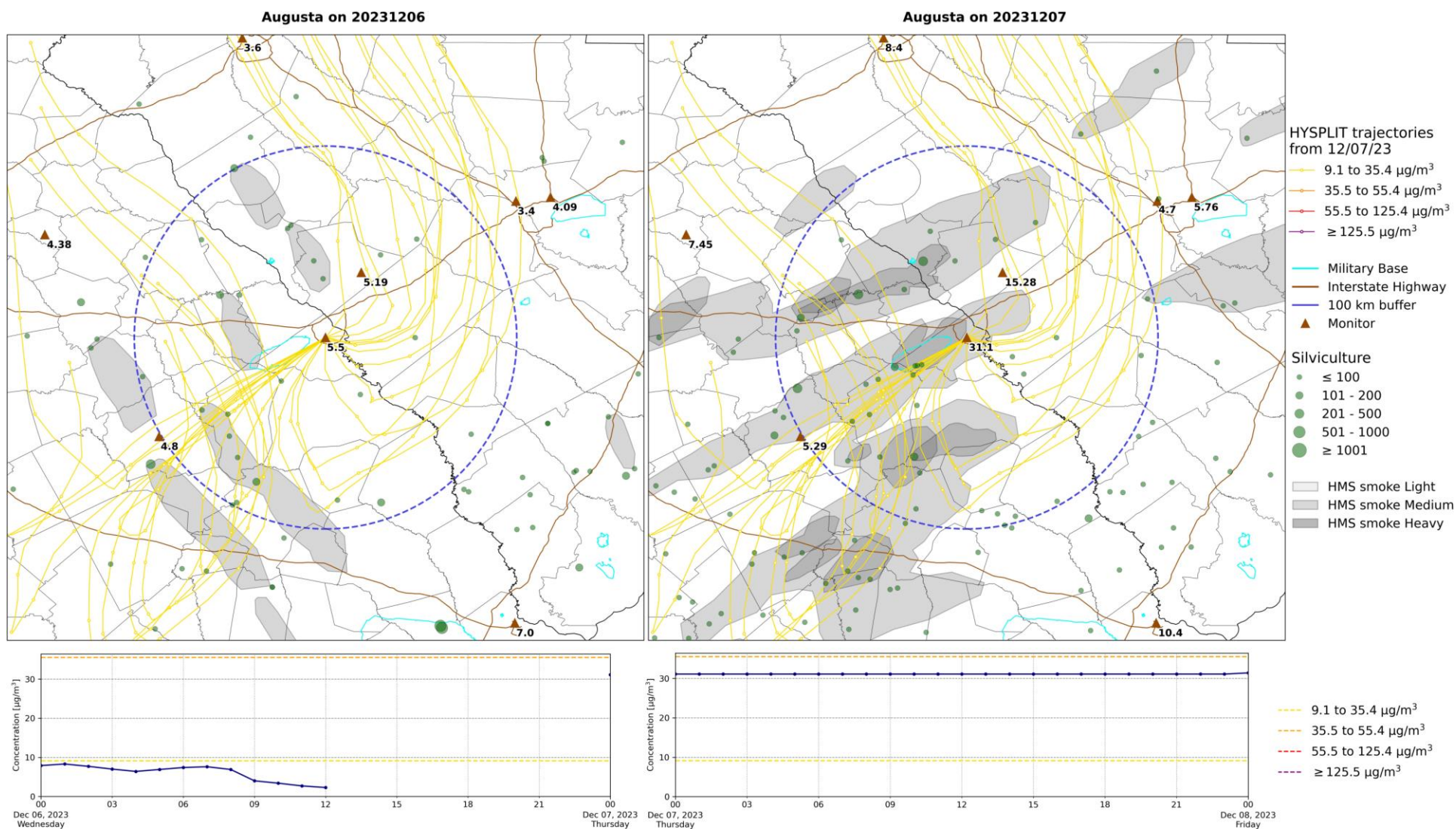


Figure 28B. The same as Figure 28A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.

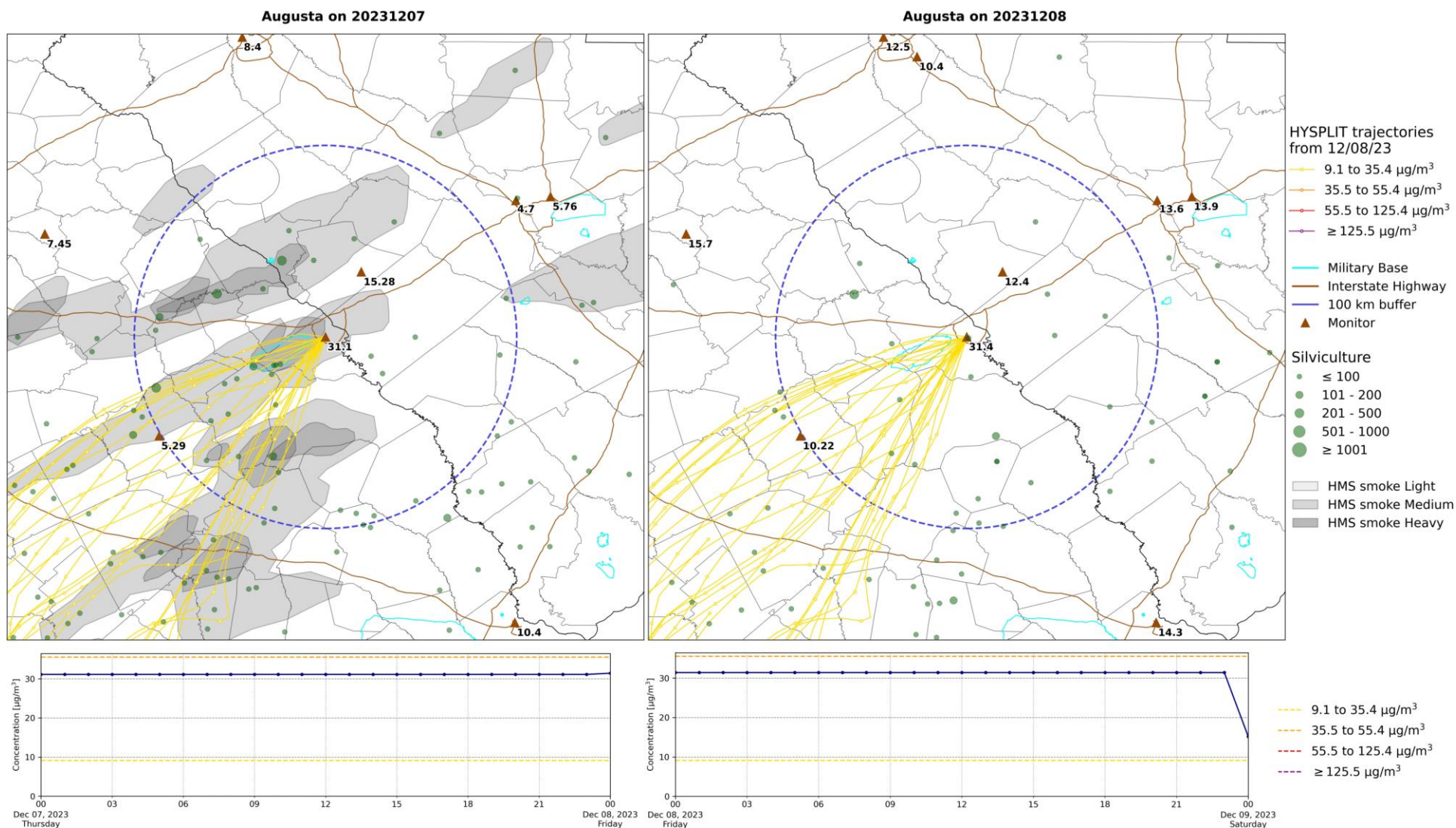


Figure 29A. The top left map contains burn permits issued, HMS smoke plumes, and 24-hour PM_{2.5} concentrations at the Augusta PM_{2.5} monitor on December 7, 2023. The top right map contains the same information for December 8, 2023. Both maps contain HYSPLIT back trajectories (released at 100 m, 24-hour duration) from the Augusta PM_{2.5} monitor on December 8, 2023. HYSPLIT markers are spaced in 3-hour intervals. In the time series plots, the blue solid line shows calculated hourly values from daily observations from the FRM monitor. The dashed lines correspond to the AQI breakpoints for PM_{2.5} concentrations.

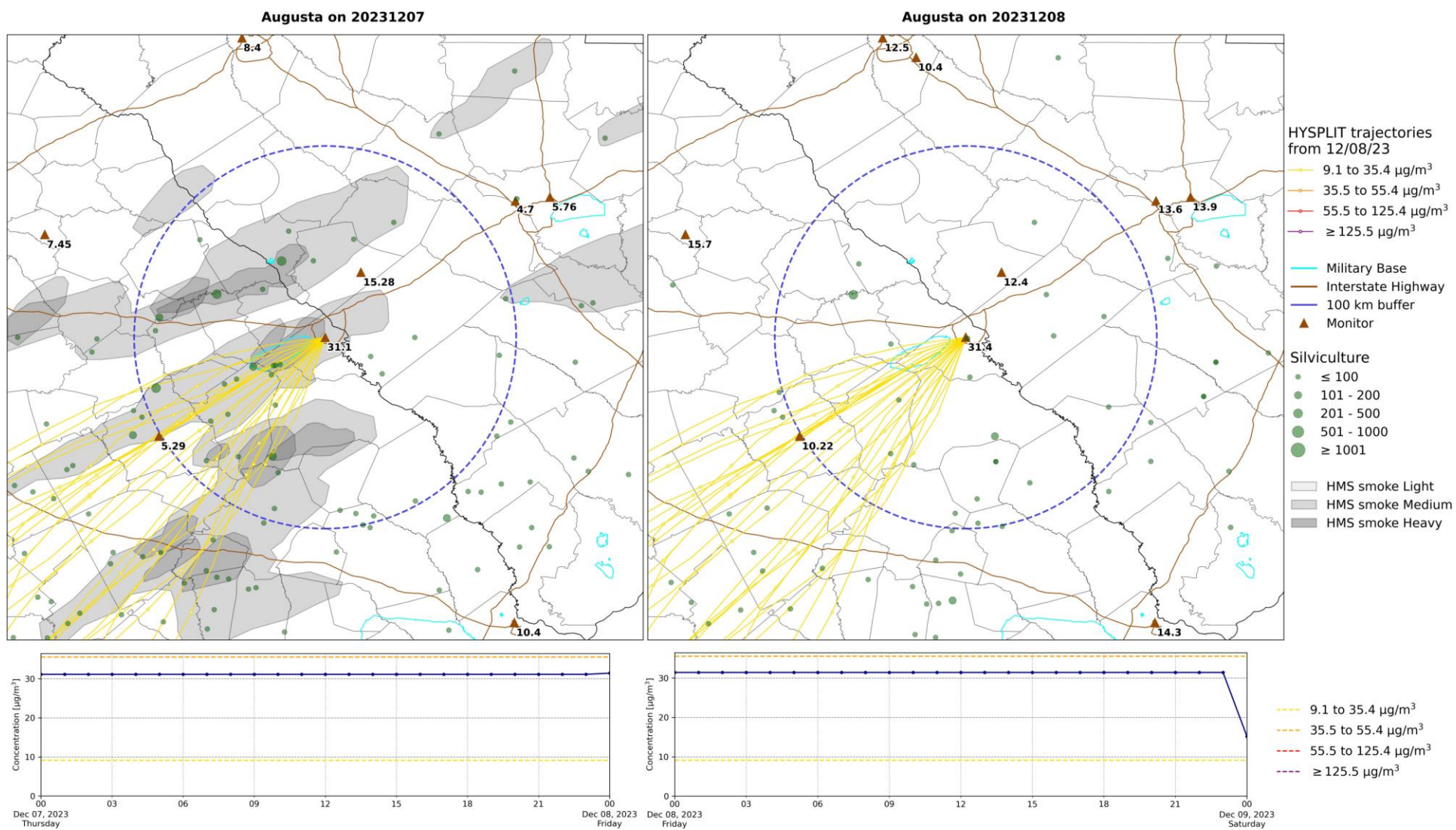


Figure 29B. The same as Figure 29A except HYSPLIT back trajectories are released at 500 m from the Augusta PM_{2.5} monitor.