



Summary Information

Greater Albany Area Plantation/Forestland Managers Meeting

September 12, 2022

Executive Summary

Through years of experience, application, and observation of fire on landscapes, prescribed burn practitioners have long recognized the importance of weather to smoke management and fire behavior. Weather parameters are key factors for consideration when planning for prescribed burning operations and as a management instrument in predicting how smoke produced from prescribed burning will disperse. It is not a desire of prescribed burn practitioners to unfavorably influence air quality. However, for forest land managers to effectively and efficiently manage the resources they are entrusted with, prescribed burning must be utilized. Without prescribed fire, the very existence of ecosystems they help manage would cease to exist.

The U. S. Environmental Protection Agency (EPA) is currently considering the reduction of the National Ambient Air Quality Standards (NAAQS) for Particulate Matter 2.5 (PM2.5). Recommendation of the Clean Air Scientific Advisory Committee (CASAC) to EPA has suggested reducing the daily standard to 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) or less and the annual standard to 10 $\mu\text{g}/\text{m}^3$ or less. The 2014 National Emissions Inventory indicates that smoke from fires is the second leading source of PM2.5 behind dust.

Exceedances of the NAAQS for a three (3) year average of the annual PM2.5 standards within the Albany Georgia area will lead to a non-attainment designation by EPA. The lowering of the NAAQS for PM2.5 will likely lead to more exceedances, especially during a period in late winter and spring when more prescribed burning is being conducted. A sequential state implementation plan (SIP,) may restrict the use of prescribed fire in the greater Albany, GA area. Forest land managers and prescribed fire practitioners have embraced best management principles and observe specific standards in planning for and conducting prescribed burns. To prevent further, and more restrictive actions, transport winds speeds of seven (7) miles per hour or less may be a management indicator to determine the level of prescribed burning acceptable within 8 counties of the greater Albany, GA area.

Transport wind speed is a measure of the average rate of the horizontal transport of air within the mixing layer of the atmosphere. It may also be the wind speed at the final height of the smoke plume rise. Generally, it refers to the rate at which emissions will be transported from one area to another. It is also recognized that weather patterns are ever-changing and even with careful evaluations and planning efforts circumstances may, and have, occurred that have resulted in unintended and unplanned smoke impacts.



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On Monday, September 12, 2022, the Georgia Forestry Commission participated in a special listening session with prescribed burning subject matter experts. The group was made up of forest land managers and their staff, who conduct prescribed burning in Southwest Georgia and the greater Albany, GA area. Also, present were people who have a vested interest in prescribed burning as a means of sustaining and enhancing natural resource ecosystems and wildlife habitats, reducing the threat of wildfires, and protecting communities from wildfires. The purpose of this session was to:

- Provide information concerning the U.S. Environmental Protection Agency's (EPA) ongoing evaluation of the current National Ambient Air Quality Standards (NAAQS) and the recommendations to EPA by their appointed Clean Air Scientific Advisory Committee (CASAC). Results from CASAC indicate that most members favor reducing the current allowable limits for both daily and annual PM2.5 standards.
- Provide information concerning how the lowering of the NAAQS may disrupt the ability of forest land managers to conduct prescribed burning.
- Review the leading sources of PM2.5 based on the 2014 National Emissions Inventory, where smoke produced from prescribed and wildland fires are listed as the second leading source.
- Discuss how the GFC manages its burn-permitting systems daily, using NWS fire weather forecasting, and considering both wildfire danger and smoke management.
- Engage with participants for open discussion on proactive measures that responsibly facilitate continued prescribed burning for the multiple benefits it provides in Georgia.
- Allow the GFC to seek advice from private land managers concerning how the GFC can manage its criteria when issuing burning permits - so that the potential for exceedance of air quality standards is reduced, yet allows landowners and their representatives to conduct prescribed burning that meets burning objectives.

After reviewing the proposed reductions of the NAAQS and evaluating NWS fire weather parameters that occurred during calendar years 2021 and 2022 when current NAAQS were exceeded at air monitor locations throughout Georgia, it was determined:

- In most cases, common indicators were related to transport wind speeds which were seven (7) miles per hour or less.
- The exceedances and/or near exceedances linked to smoke from prescribed fire occurred in the months of February, March, and April.
- PM2.5 produced by other sources may also be elevated when lower wind speeds occur, both at the surface level and within the mixing levels of the atmosphere which underscores the importance of transport wind speeds to disperse PM. (Example: dust from agriculture/farming operations.)



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- It was concerning to the group that in a few exceedance cases, the timing at which air monitor data indicated an exceedance of the daily NAAQS. These occurred within a few hours of midnight and continued through into the next day's early morning hours (after midnight) resulting in two separate exceedances by date. However, this was, in fact, a result of the same occurrence that lingered in the area through the early morning hours.

After further group interaction and discussion, it was agreed that using transport wind speeds may be the best factor for determining potential undesirable air quality impact. To be proactive and to demonstrate a responsible approach to managing potential undesirable influences on air quality, the group supports the GFC in initiating more preventive actions when issuing burning permits.

Beginning February 1, 2023, and continuing through April 30, 2023, the GFC will delay or modify the issuance of burning permits when the National Weather Service (NWS) fire weather forecast predicts the daytime transport winds speeds will be seven (7) miles per hour or less in the following Georgia counties: **Baker, Calhoun, Dougherty, Lee, Mitchell, Randolph, Terrell, and Worth.** The NWS fire weather forecast will be evaluated daily to determine when more favorable conditions will return to facilitate prescribed burning for this area. Information contained in Table 1 below will be used in determining the maximum acceptable level of permitting for the period, regardless of other weather factors for the counties shown above.

Table 1

Transport Winds Speed	Actions
5 miles per hour or less	No silviculture or land clearing burning permits issued
6 or 7 miles per hour	Silviculture burning permits are issued if the area to be burned is 200 acres or less <u>and</u> the ignition of the area can be completed by 2:00 pm eastern time.

The GFC will not use the above actions alone to make good decisions concerning the issuance of burning permits. The GFC will continue to evaluate fire weather forecasts for potential fire danger concerns. Other smoke management weather parameters indicating potential smoke dispersion issues will also be utilized, such as low mixing heights, poor dispersion index, Low Visibility Occurrence Risk Indicators (LVORI), atmospheric stability, and fog potential. However, even when all other weather factors are favorable, but the transport winds are 7 miles per hour or less, the actions described within the above table will take precedence.

To determine if these actions are successful, the GFC will request support from the Georgia Environmental Protection Division (EPD) by evaluating air monitor data at the Albany, GA locations throughout the period.



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As burning activities are conducted in the months of February, March, and April 2023, the GFC will monitor the eight-county area's burn permitting systems. It will also utilize air quality monitors to determine the level of success these actions are having. Based on the results, a determination will be made if these actions should continue, or if modifications are necessary to meet the intended outcomes.