



SOUTHERN
Fire Exchange

WEBINAR SUMMARY

a publication from the Southern Fire Exchange



Hot Spots and Hot Moments Across the Southeastern U.S.

Webinar originally presented May 2024 by Karen Cummins, Geospatial Database Administrator, Tall Timbers

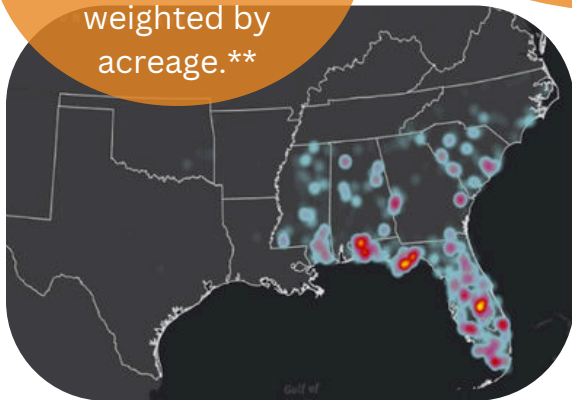
Summary prepared by Christian Fernandez, Tall Timbers

The Southeastern U.S. Prescribed Fire Permit Database is a unique geodatabase developed by Tall Timbers that compiles burn permit data to draw conclusions about spatiotemporal trends of fire across the southeast.

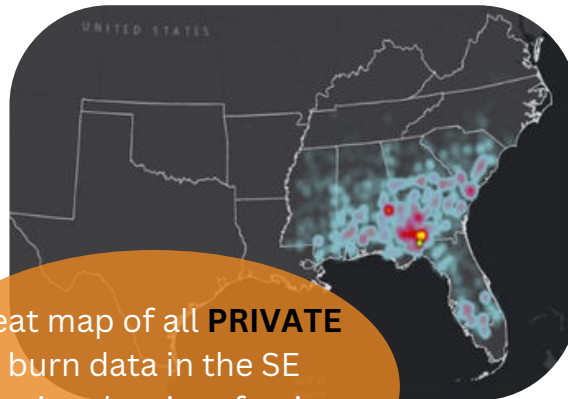
SE PERMIT X

While the database itself is not publicly accessible, Tall Timbers has used it to conduct several spatial studies already. Their particular focus is on the distribution of private lands burning in the southeast.

Heat map of all **PUBLIC** burn data in the SE showing density of points weighted by acreage.**



Heat map of all **PRIVATE** burn data in the SE showing density of points weighted by acreage.**



**does not include sugarcane burning

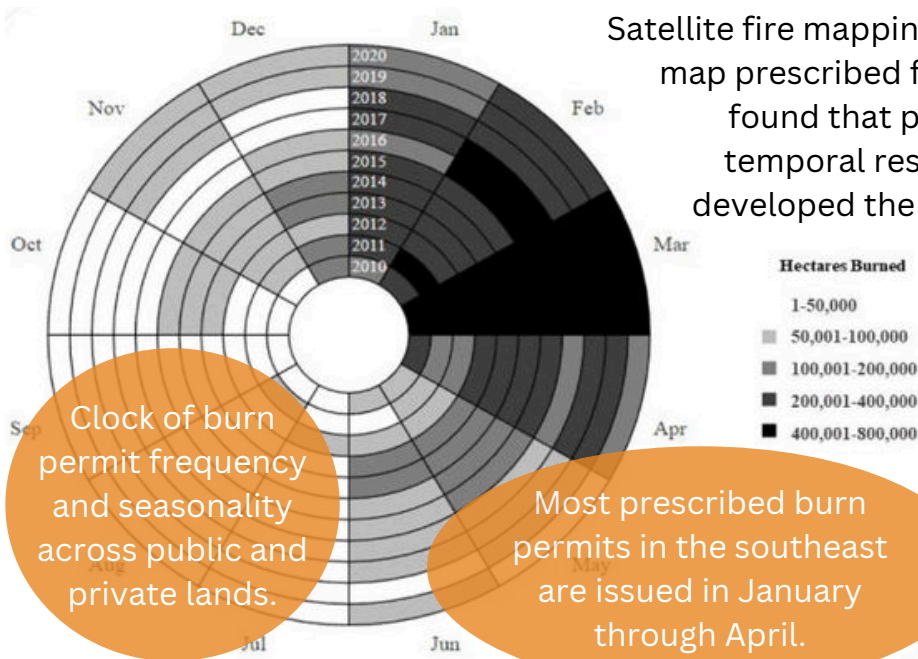
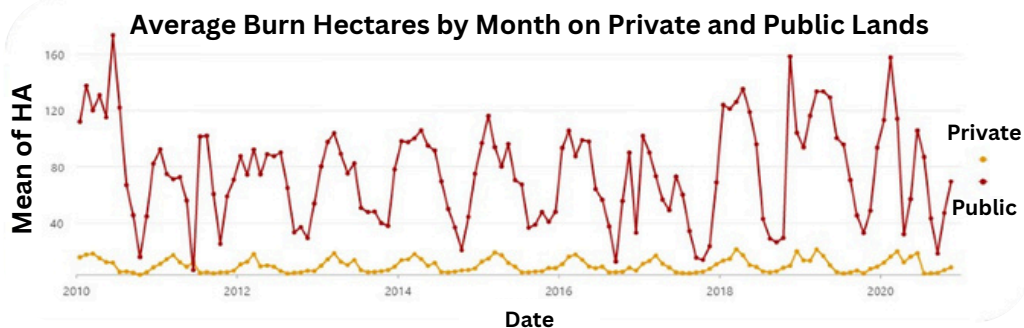
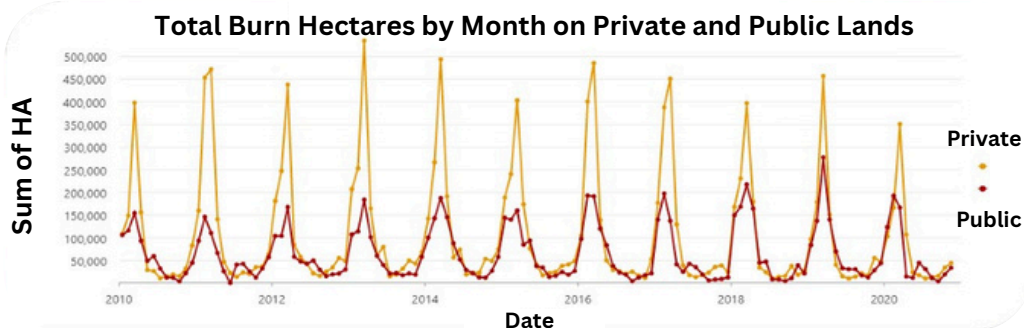


Story Map

In the face of stronger EPA regulations for PM 2.5 pollution, which can limit the practice of prescribed fire because of smoke produced, it is important to understand how smoke production may vary spatially and by landowner type. In other words, this database can serve as a tool to analyze the role of private lands burning in regional PM 2.5 production.

This research has been featured in the journal *Fire*¹ and Tall Timbers has published a free-to-access ArcGIS story map² about the database that includes more information as well as an interactive map.

Although private lands burn more total acreage than public, the average acreage of a burn is much larger for public lands than private. This data can be used to advocate for private lands burners who may not have the facilities to complete complex reporting for exceptional events to PM 2.5 emission regulations.



Satellite fire mapping techniques often struggle to accurately map prescribed fires^{3 4}. The Geospatial Lab at Tall Timbers found that permit data can provide better spatial and temporal resolution for mapping prescribed fires, and developed the Southeastern U.S. Prescribed Fire Permit Database.

Despite the improvements the database brought to fire mapping, since it relies on data collected from the submission of burn permits or voluntary burn notifications, it may have false gaps from states that do not require a permit for prescribed burning.

References:

1. Cummins, K., Noble, J., Varner, J. M., Robertson, K. M., Hiers, J. K., Nowell, H. K., & Simonson, E. (2023). The Southeastern U.S. Prescribed Fire Permit Database: Hot Spots and Hot Moments in Prescribed Fire across the Southeastern U.S.A. *Fire*, 6(10), 372. <https://doi.org/10.3390/fire6100372>
2. **A Community of Fire** <https://storymaps.arcgis.com/stories/e7874f748835451293e60db384a0482f>

Related Materials:

3. **National Interagency Fire Center Open Data Site** <https://data-nifc.opendata.arcgis.com/>
4. **Wildland Fire LLC Webinar: Mark Melvin, National Prescribed Fire Use Survey** <https://www.youtube.com/watch?v=wG4f0WVDEHQ>
5. **EPA Treatment of Air Quality Monitoring Data Influenced by Exceptional Events** <https://www.epa.gov/air-quality-analysis/treatment-air-quality-monitoring-data-influenced-exceptional-events>