

Southern Integrated Prescribed Fire Information System (SIPFIS) for Air Quality and Health Impacts



Project ID 16-1-08-1

Talat Odman, Fernando Garcia, Cassandra Johnson



NC STATE
UNIVERSITY



SIPFIS WORKSHOP
Georgia Tech
August 8, 2017

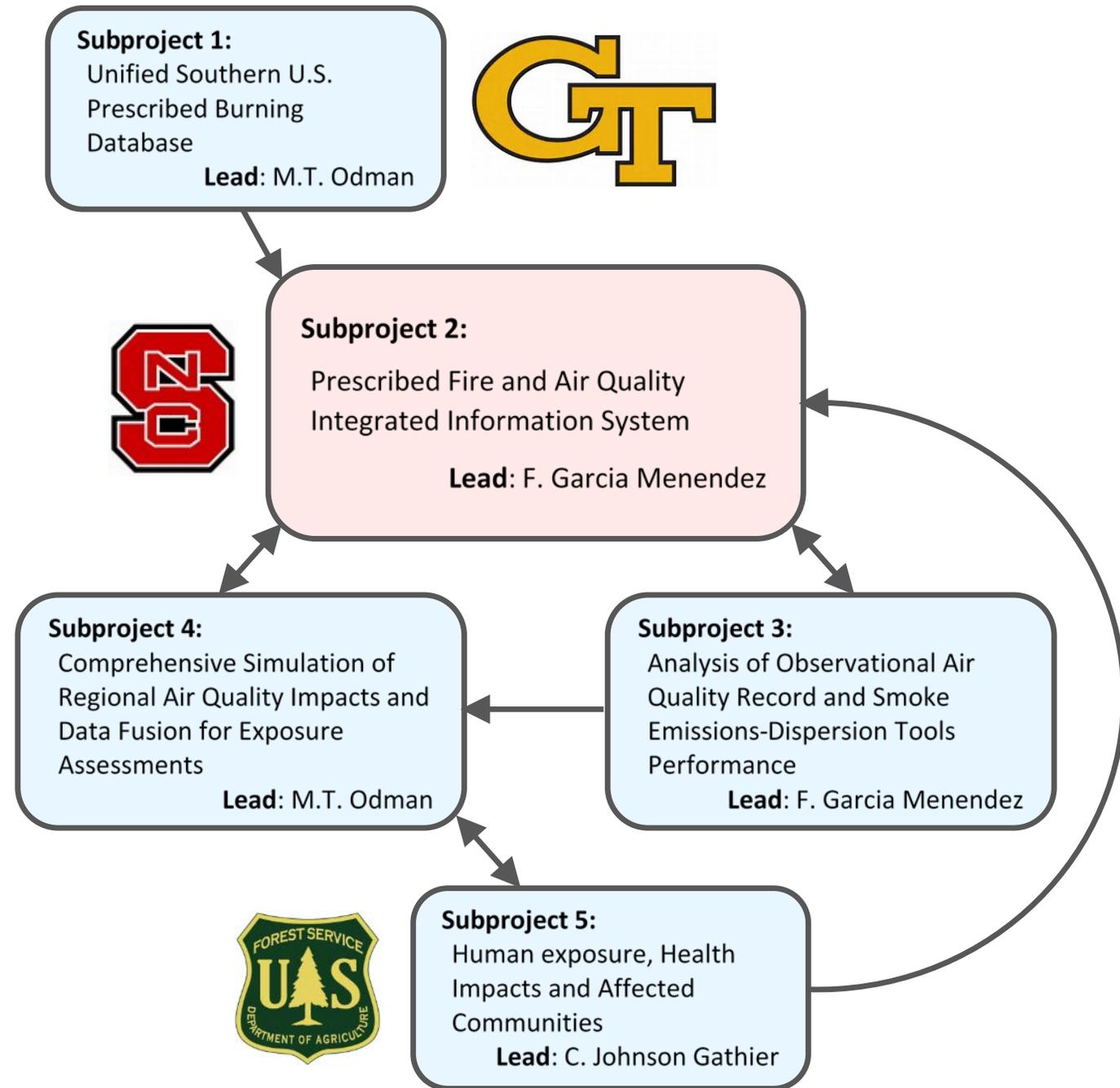
A research project funded by the Joint Fire Science Program



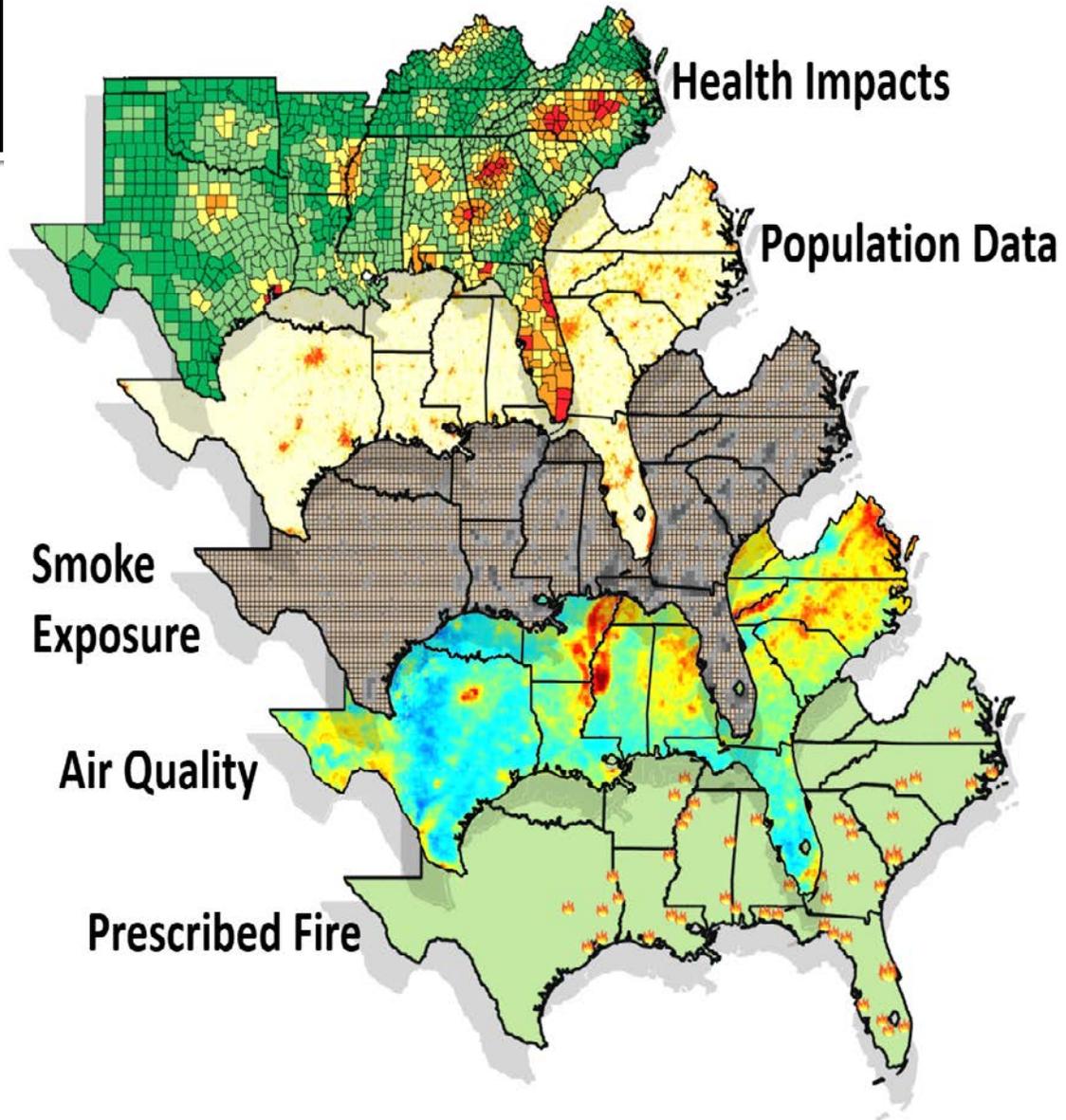
Objective: To develop an integrated prescribed fire and air quality information system for the South.

The system will comprise prescribed fire and air quality data, and results from model simulations conducted to address questions regarding the impacts of prescribed burning on air quality, smoke exposure and associated health effects.

Five subprojects



Different layers of SIPFIS



Status: Prescribed fire database

	2010	2011	2012	2013	2014	2015	2016	2017
FL			✓	✓	✓	✓	✓			
GA	✓	✓	✓	✓	✓	✓	✓			
MS	✓	✓	✓	✓	✓	✓	✓			
NC					✓	✓	✓			
TN*			✓	✓	✓	✓	✓			
Tall Timbers**	✓	✓	✓	✓	✓	✓	✓			

* Summary data

** Fire frequencies

Please send us your data

Unified Fire Record

- More on this at 10:45



Integrated Information System



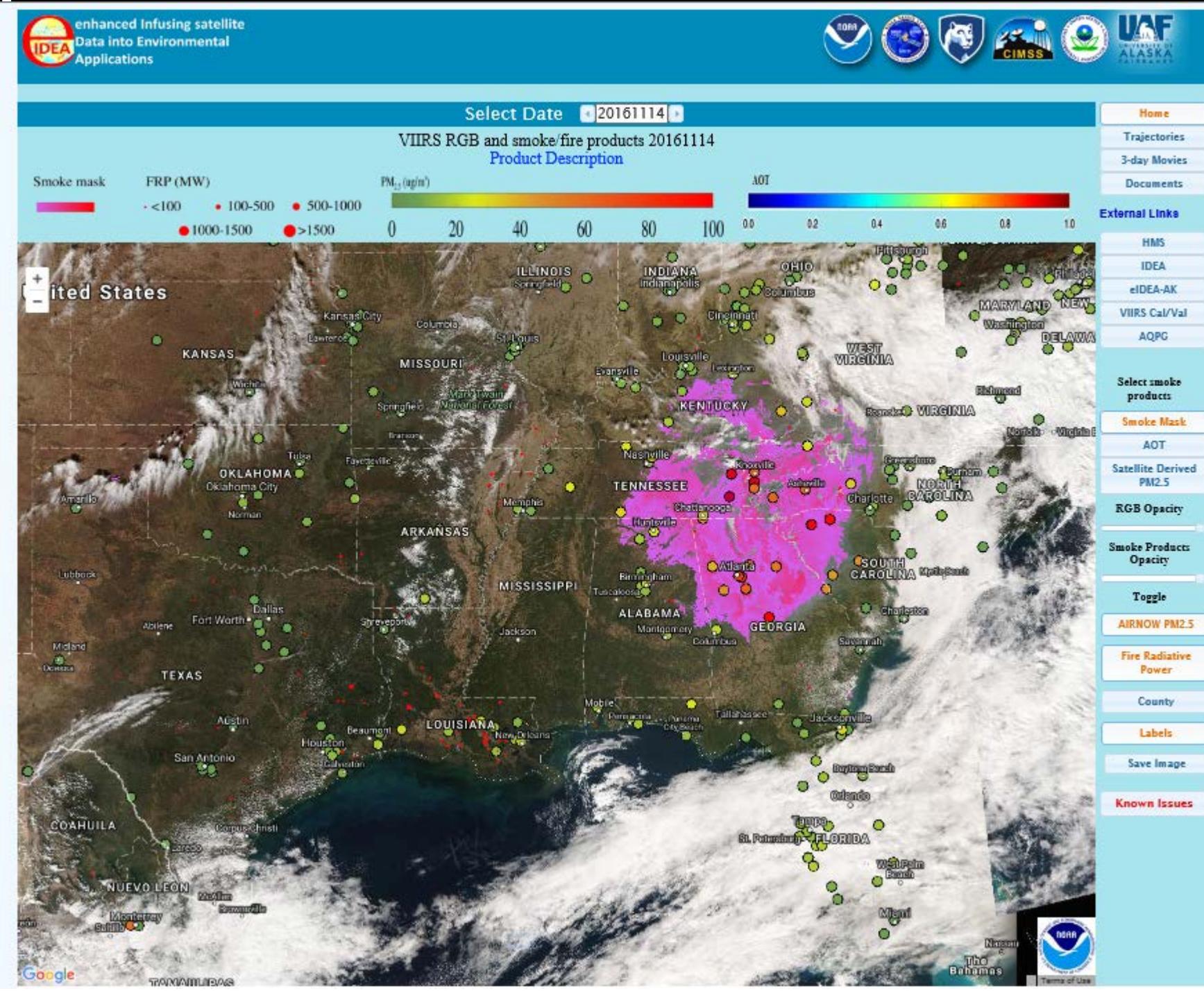
■ More on this at 13:00

■ Prescribed fire

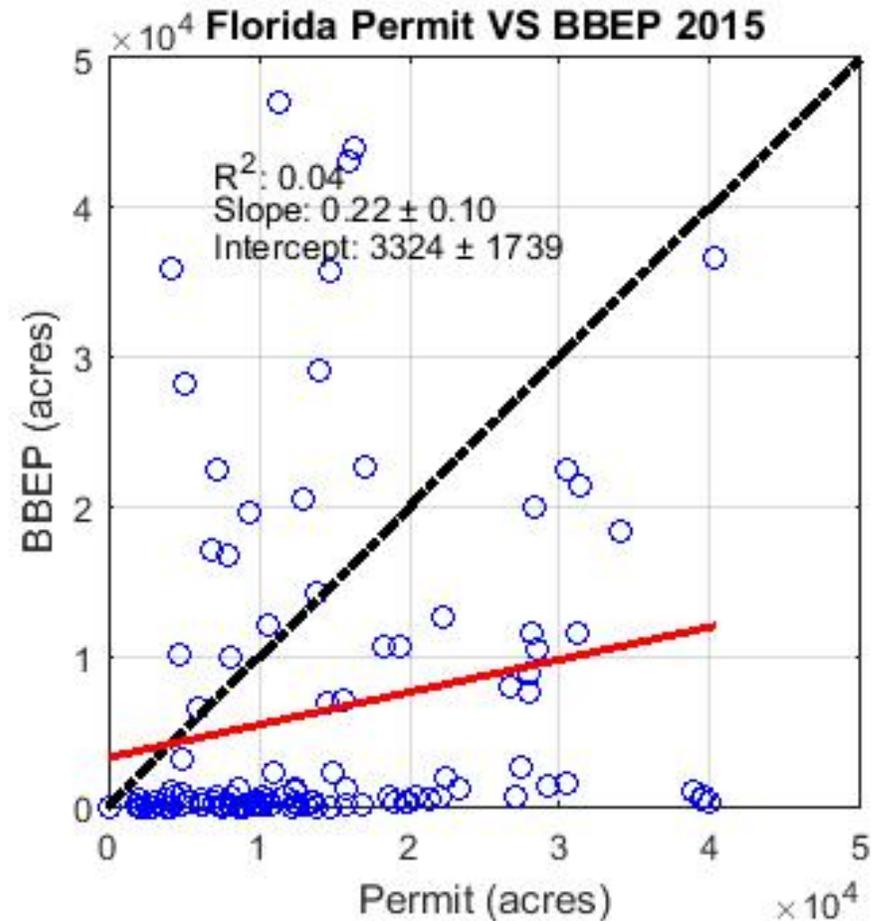
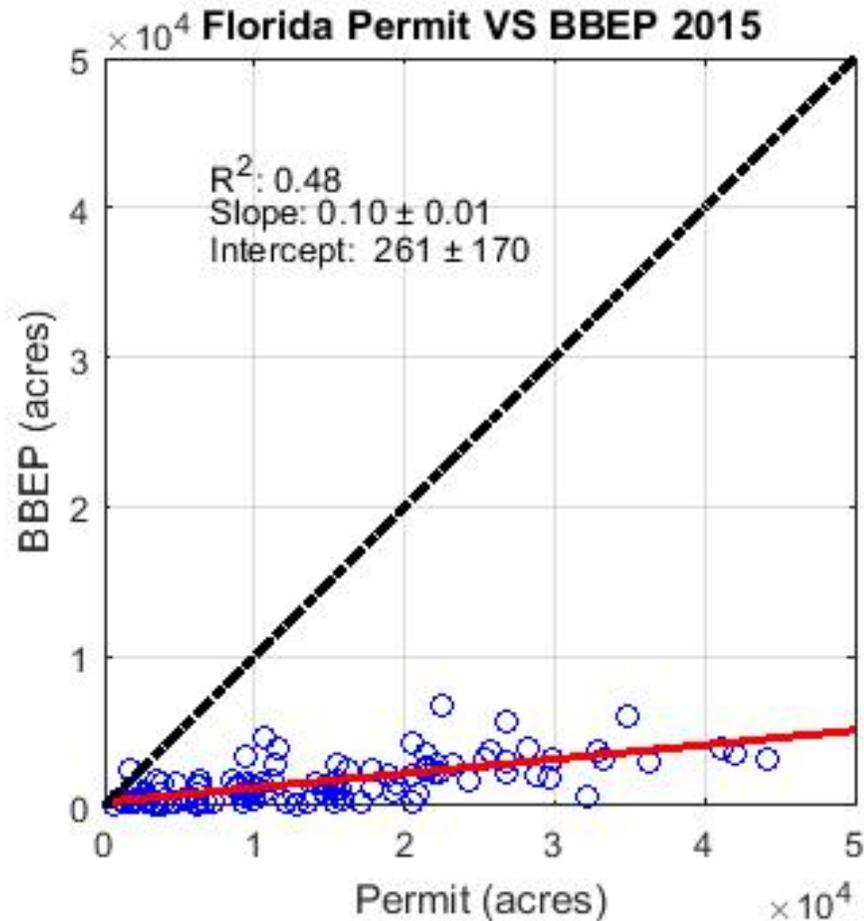
○ Air quality monitor

Why not just use satellite data?

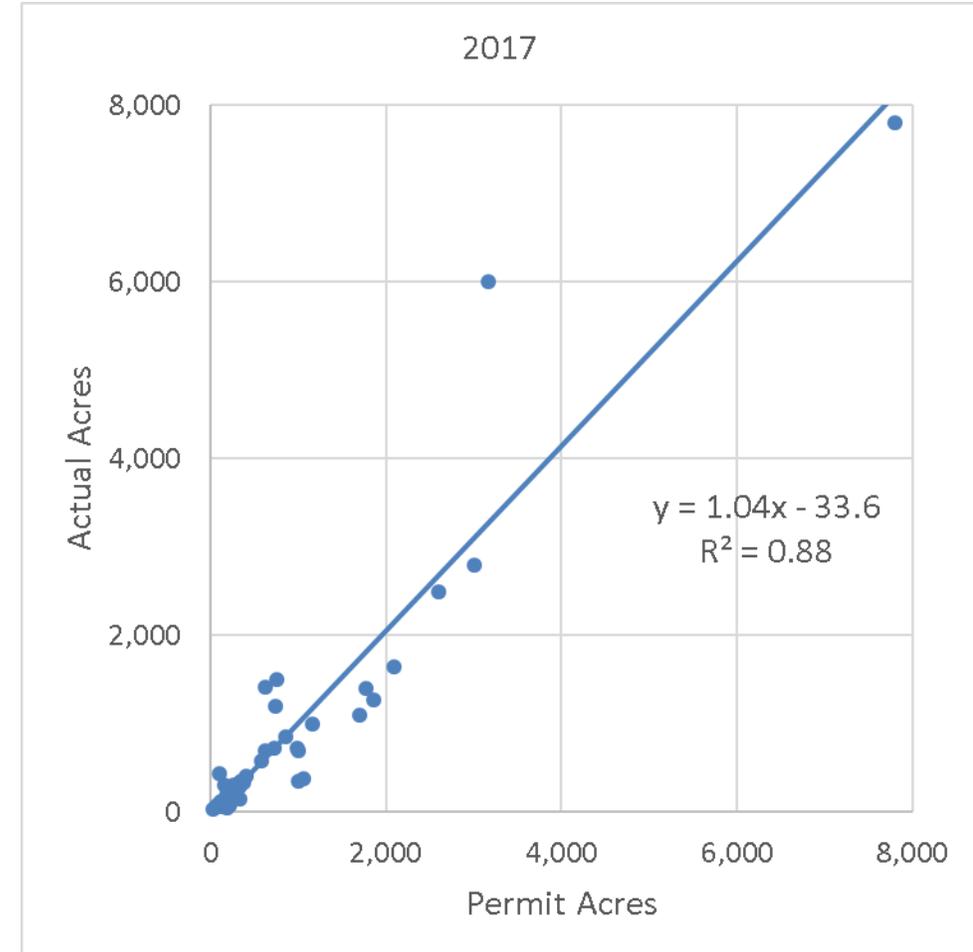
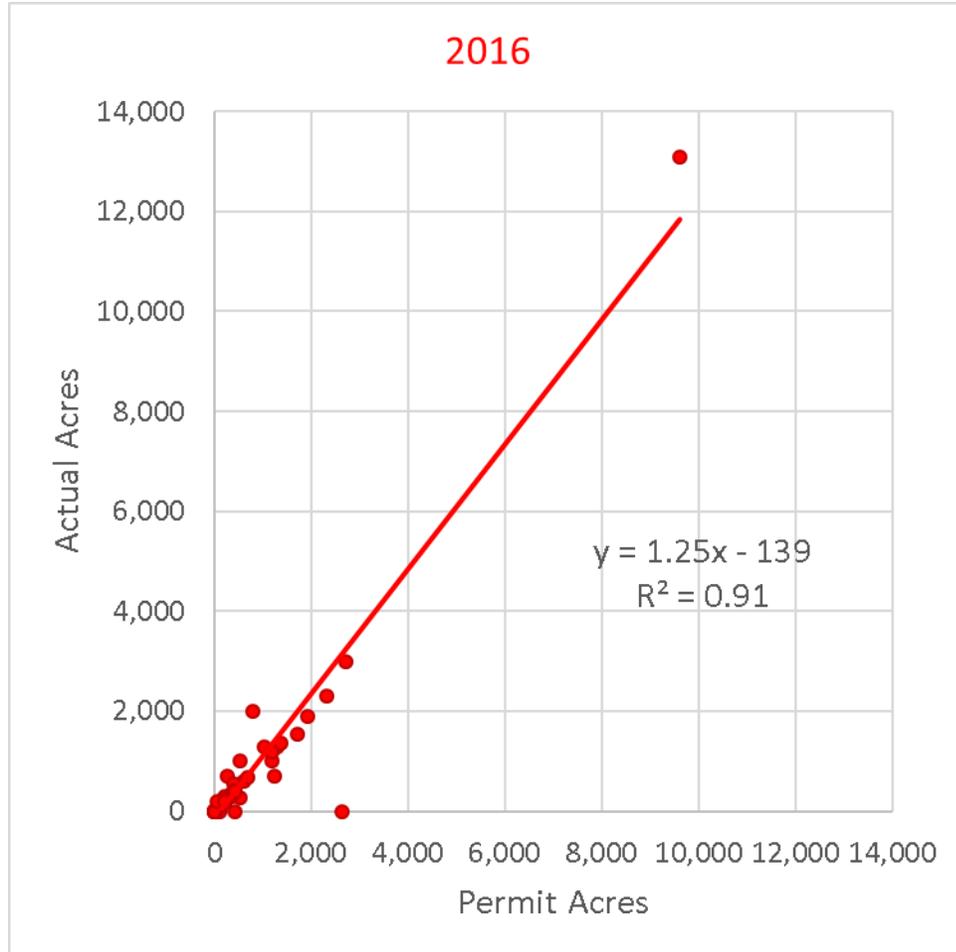
- e-IDEA
- Fire (FRP) and Smoke (masked AOT) data from VIIRS
- Air quality ($PM_{2.5}$) data from AirNow



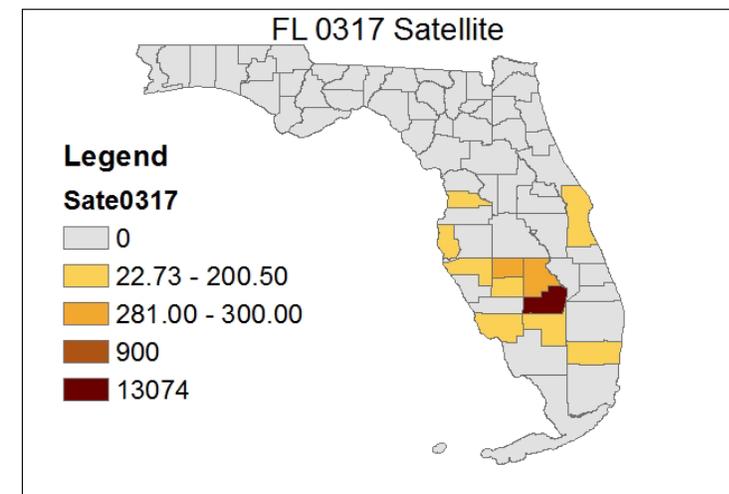
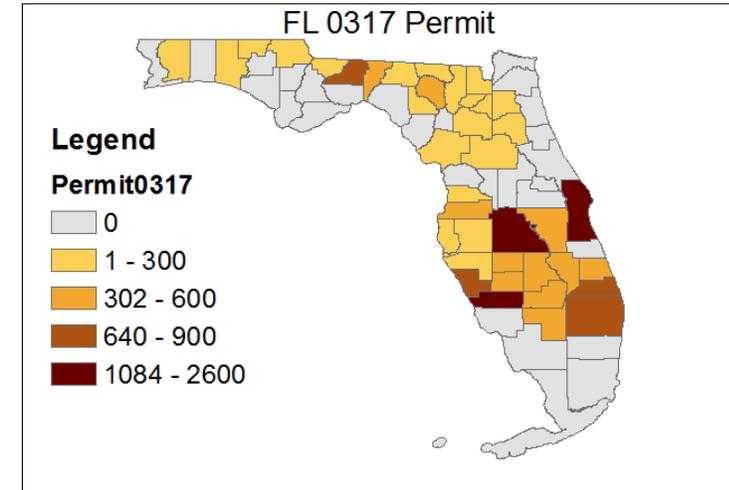
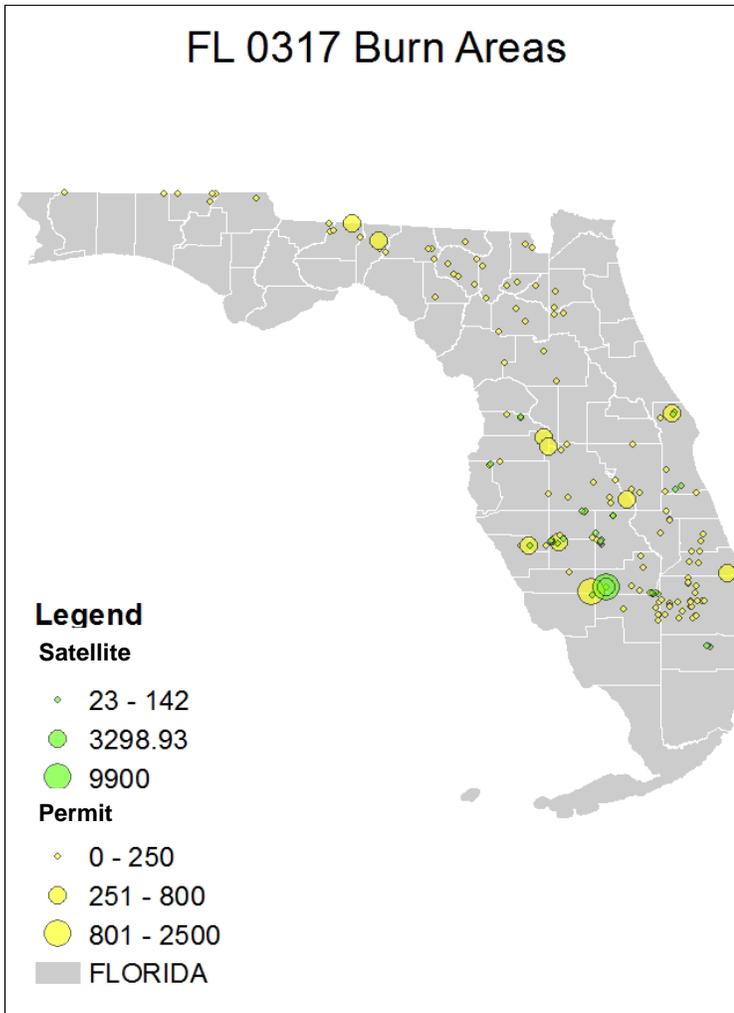
Burn areas from satellites are much smaller than those in burn permit records.



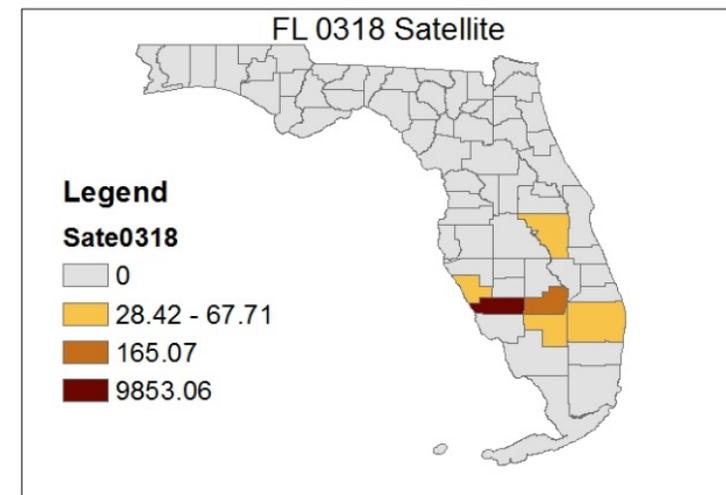
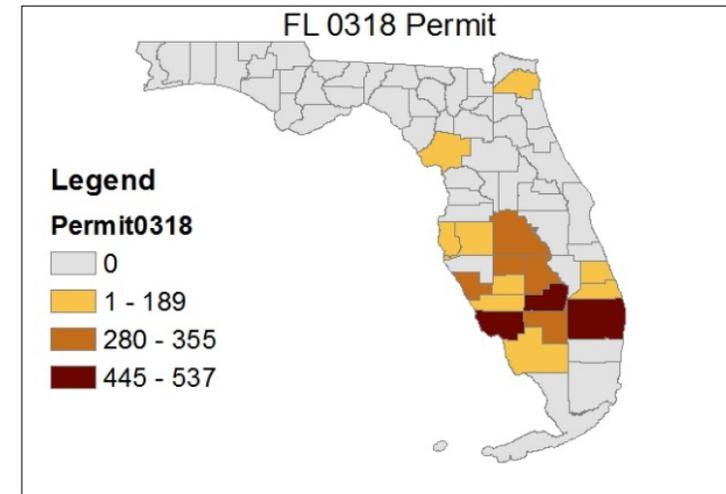
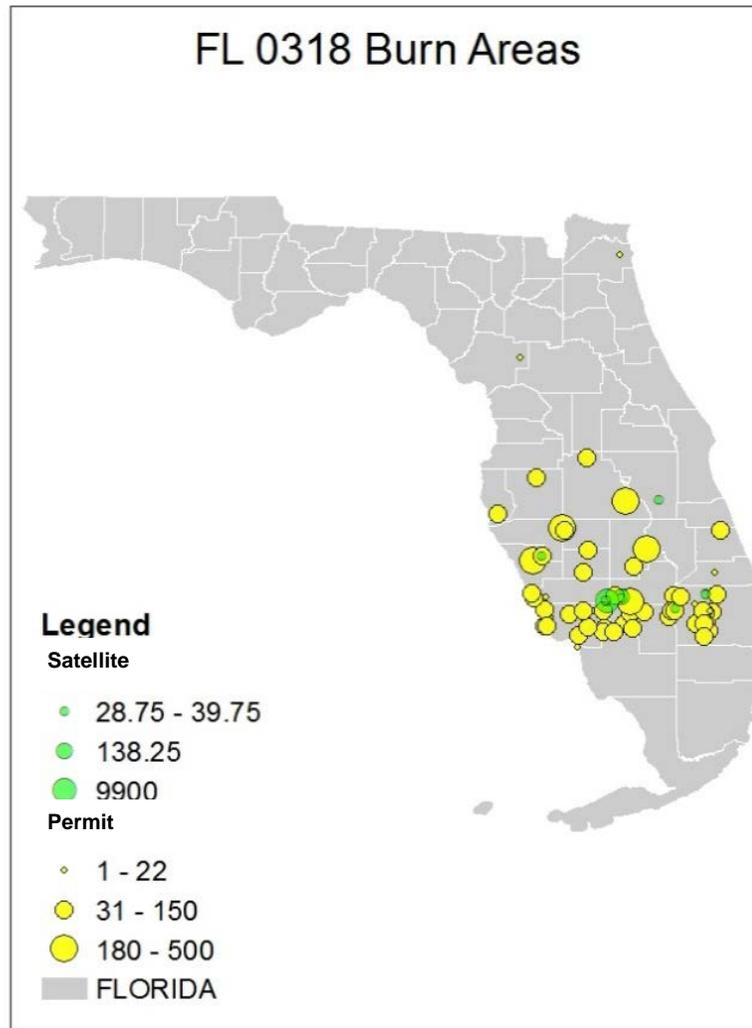
How accurate are the permit burn areas?



Satellite fire locations may be quite different than those in burn permit records.



Satellites tend to interpret several small fires as one big fire.



Summary

- As part of a JFSP funded project, we are creating a unified prescribed fire database for the South.
 - We need your Rx fire data.
- Our ultimate goal is to develop an integrated prescribed fire and air quality information system.
 - Please help us design the system.

Questions?

odman@gatech.edu

f_garcia@ncsu.edu

