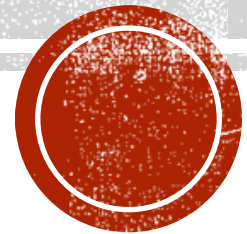


Good Fire Deserves Good Data:
COLLECTING SPATIAL DATA FOR RX FIRE

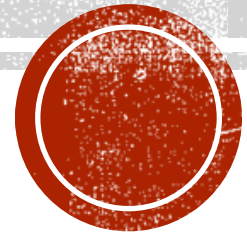
Matthew Harrell

Chair, NCPFC Implementation Committee



Good Fire Deserves Good Data:
COLLECTING SPATIAL DATA FOR RX FIRE

Part 1: Current Data



FIRE NEEDS ASSESSMENT FOR NC



**NC STATE
UNIVERSITY**

- Report will quantify burning that is currently occurring and compare it to the level of burning necessary for ecosystem health and public safety
- Currently in progress, available in early 2017

First Step? Compile records of burning!



COMPILED RECORDS

- Data contributed from:
 - NC-FS, NC-Parks, NC-PCP, NC-WRC
 - US-DOD, US-FS, US-FWS, US-NPS
 - Nature Conservancy
 - Mecklenburg County.
- Lots of sources, lots of formats.

Needed to simplify, integrate, verify.



SIMPLIFIED PRESCRIBED FIRE RECORDS

- Where (Point or Polygon)
- Size (acres)
- When (MM/DD/YYYY)

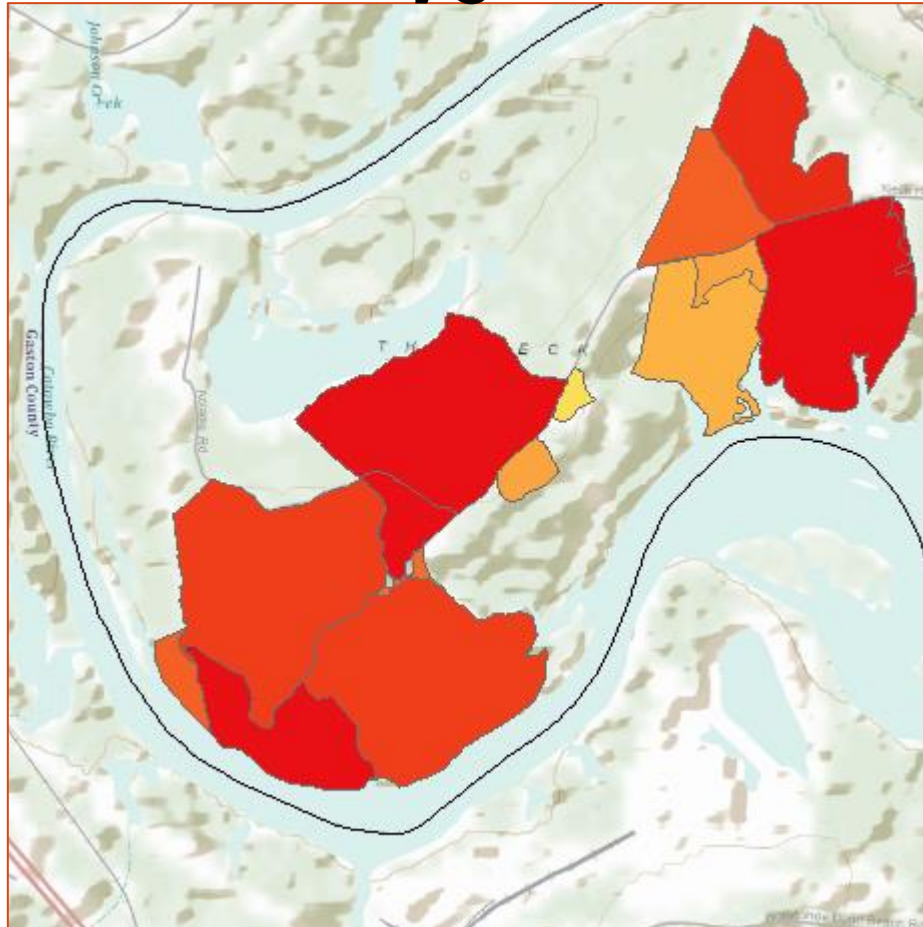
- Also included Lead Agency/Burner and Data Source

Least Common Denominator Information.

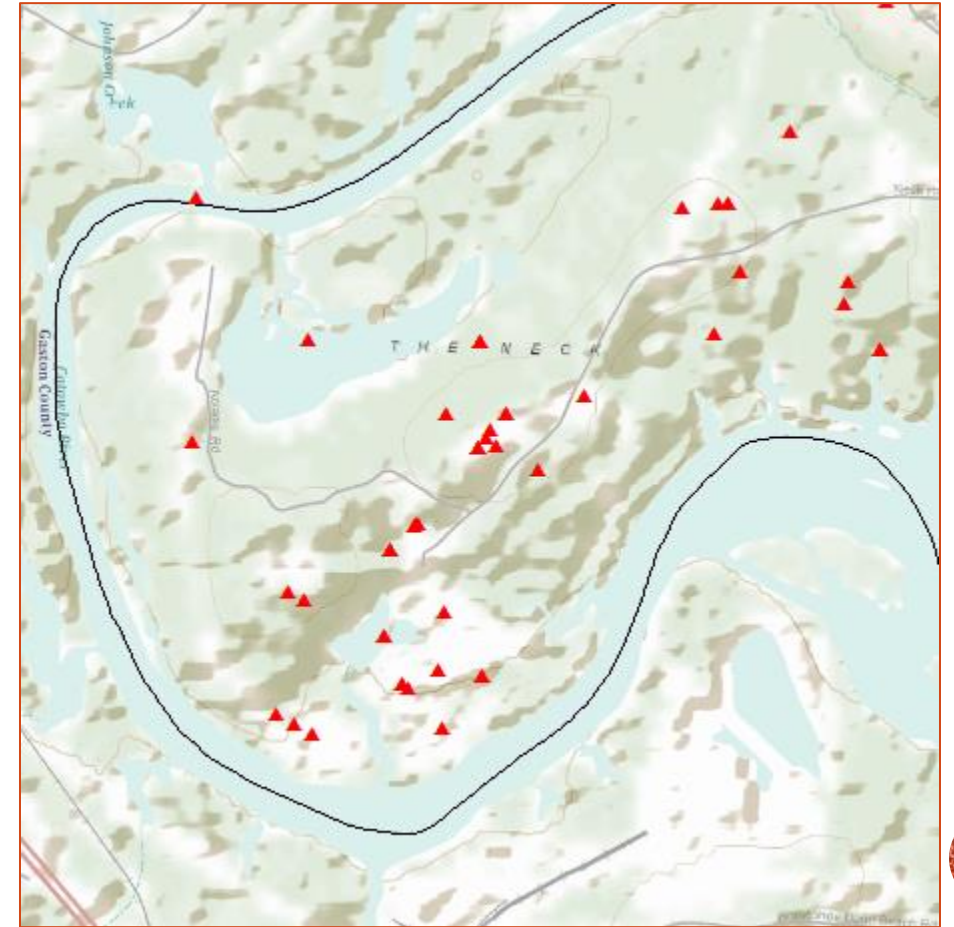


INTEGRATED PRESCRIBED FIRE RECORDS

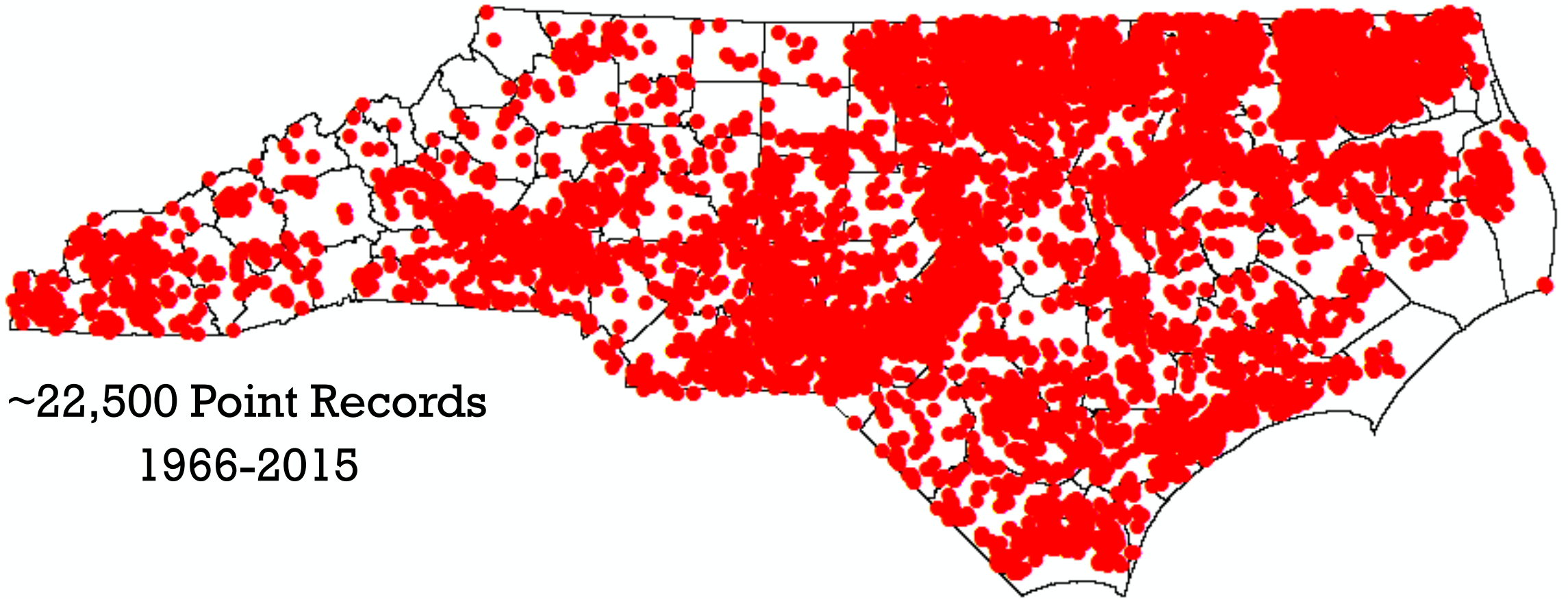
~8,000 Polygon Records



~22,500 Point Records



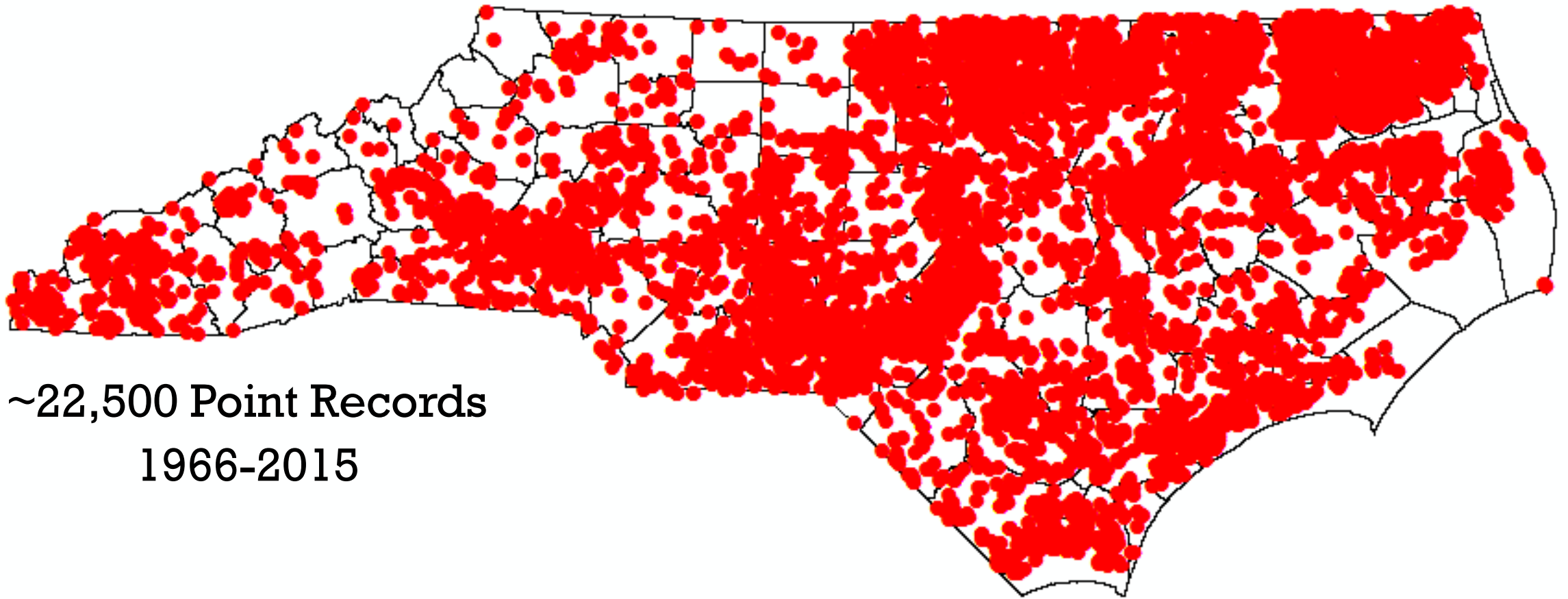
VERIFIED PRESCRIBED FIRE RECORDS



~22,500 Point Records
1966-2015



CAUTION: INCOMPLETE RECORD



~22,500 Point Records
1966-2015



WHY IS IT INCOMPLETE?

- System relies on manual entry & oral communication
- System does not leverage technology
- No cultural expectation to provide robust data



TAKEAWAY: IT'S TIME FOR BETTER DATA.

- Currently compiled dataset is painfully incomplete
 - Limits what questions can be honestly asked of the data.
- We, the prescribed fire community, need better records!
 - Standardize format and minimum information.
 - Centralize and make available a collective record.
 - Improve collection from non-agency sources.



WHY KEEP BETTER RECORDS?

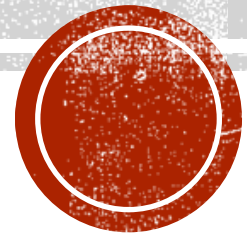
- Apologetics of fire science
 - Sharing is caring: Providing good data allows research & understanding.
- Science of land management
 - Better understanding of history allows better planning for the future.
- Funding and Regulations

To maintain a Social License to conduct Rx fire.



Good Fire Deserves Good Data:
COLLECTING SPATIAL DATA FOR RX FIRE

Part 2: Future



MAKING IMPROVEMENTS TO THE SYSTEM

GOLD STANDARD: Online open data format

- Direct user submission in standard polygon form
- Records available (verified) within weeks of burn

- NC Forest Service: Updates in progress or planned
 - Enterprise System for Total Accomplishments
 - NC Forest Atlas Portal
 - Updates to the Smoke Management data entry system

- Regional Efforts



WHAT KIND OF RECORDS SHOULD WE KEEP?

- Basic.
 - None of us like extra office work.
 - Nothing that isn't on a typical burn plan.
- Standard.
 - Allows integration and sharing.
 - No surprises, no disappointments.
- Digital polygons.
 - We are nearly 30 years into the Digital Revolution, after all.



TECHNOLOGY & RECORDKEEPING

Olden Days: Handwritten logbooks, hand-drawn maps



1980's: Handwritten logbooks, hand-drawn maps



Today: Digital Solutions (and Headaches)



TECHNOLOGY & RECORDKEEPING

1989: First handheld civilian GPS: Magellan Nav 1000



TECHNOLOGY & RECORDKEEPING

1989: First handheld civilian GPS: Magellan Nav 1000

2000: GPS Signal Upgrade! 10x accuracy improvement overnight



TECHNOLOGY & RECORDKEEPING

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TECHNOLOGY & RECORDKEEPING

1989: First handheld civilian GPS: Magellan Nav 1000

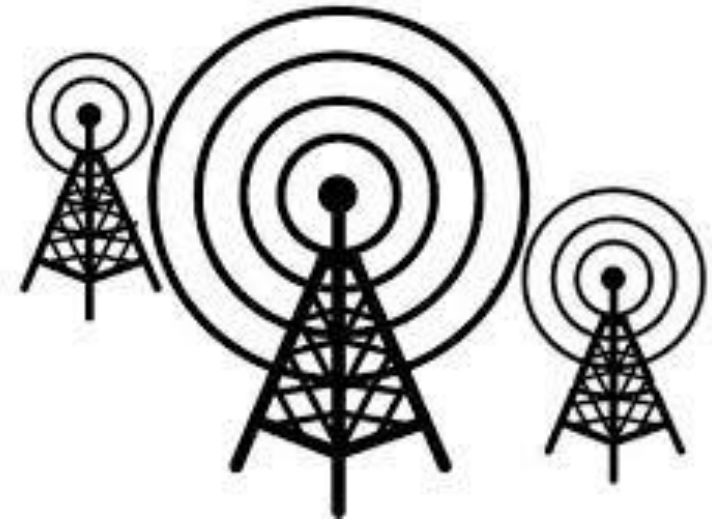
2000: GPS Signal Upgrade! 10x improvement overnight

2001: Pre-cursor to Google Earth established

2004: Qualcomm introduces Cell-Tower assisted GPS for phones

Accuracy improved 10x again,

If you have cell service.



TECHNOLOGY & RECORDKEEPING

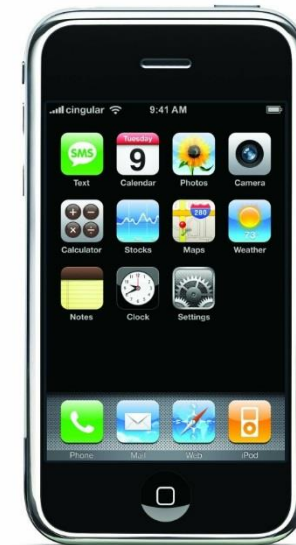
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2016:

198.5 million people in the U.S. own smartphones

325 million = estimated U.S. population.

comScore, Feb 2016

www.census.gov

*That's 61% with smartphones.



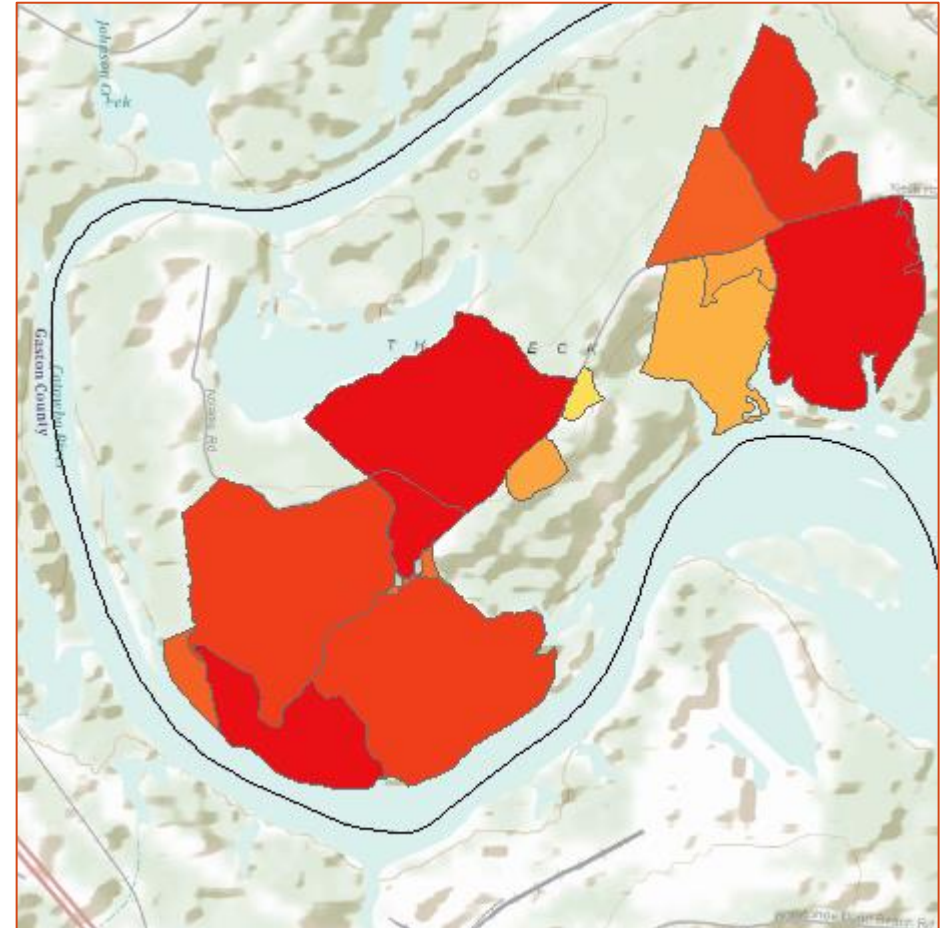
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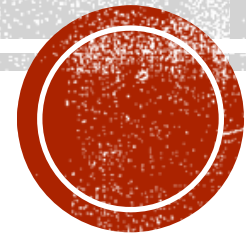


WHAT KIND OF RECORDS SHOULD WE KEEP?

- Standard Polygons.
 - Calculated X/Y center point
 - Calculated area
- Standard Minimum Data Attributes
 - Lead Burner/Agency
 - Ignition Date (MM/DD/YYYY)
 - Ignition Time (HH:MM)
 - End of Active Fire Time (HH:MM)
 - Estimated fuel consumption (Tons/Acre)
 - Estimate area burned (percent black)

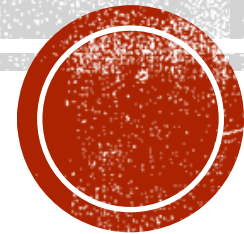


GOOD FIRE DESERVES GOOD DATA.



matthew.harrell@mecklenburgcountync.gov

**BRUSH YOUR TEETH.
PROVIDE GOOD DATA.**



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