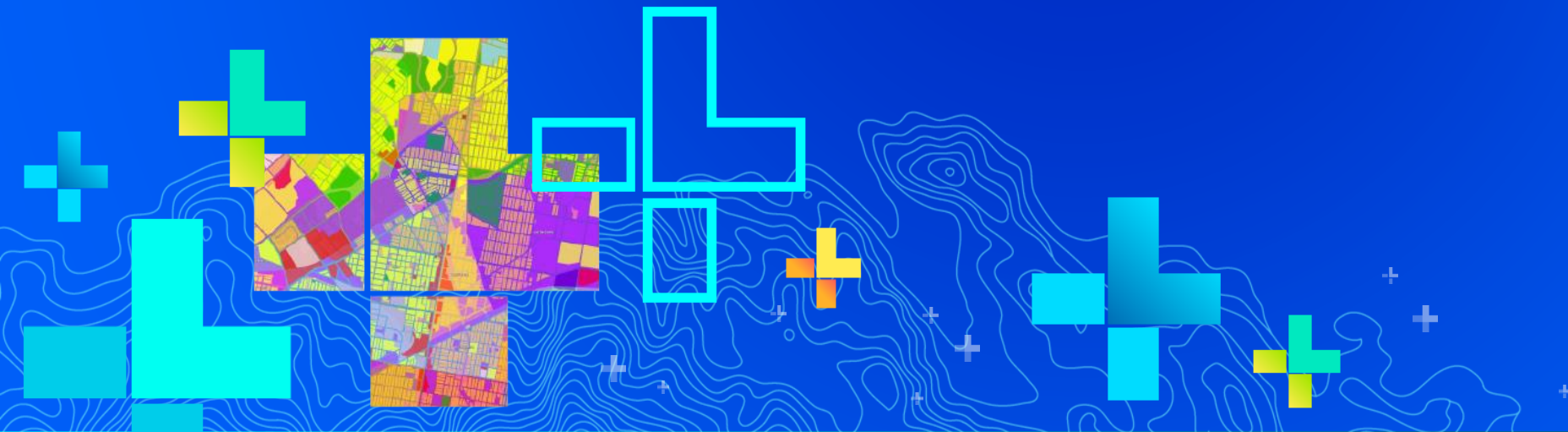


Conservation Insights with Big Data

Jake Leizear

Senior Geospatial Analyst with the Chesapeake Conservancy





Chesapeake
Conservancy
EXPLORE. CONSERVE. INNOVATE.



DCR
Virginia Department of Conservation & Recreation

DHR
Department of Historic Resources

Chesapeake

CONSERVATION PARTNERSHIP



LOWER SHORE
LAND TRUST



CLEARWATER
conservancy



American Farmland Trust
SAVING THE LAND THAT SUSTAINS US



Cacapon
& Lost Rivers
LAND TRUST



CIVIL WAR TRUST
Saving America's Civil War Battlefields
CivilWar.org



LIVING LANDSCAPE
OBSERVER
NATURE, CULTURE AND COMMUNITY

Land Trust Alliance
Together, conserving the places you love

Piedmont
Environmental
Council



THE
CONSERVATION FUND

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES



pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES



APPALACHIAN TRAIL
CONSERVANCY®



THE
TRUST
for
PUBLIC LAND



The Nature Conservancy
Protecting nature. Preserving life.™



Saving Nearby Nature®
NVCT
Northern Virginia
Conservation Trust



National Trust for
Historic Preservation
Save the past. Enrich the future.™



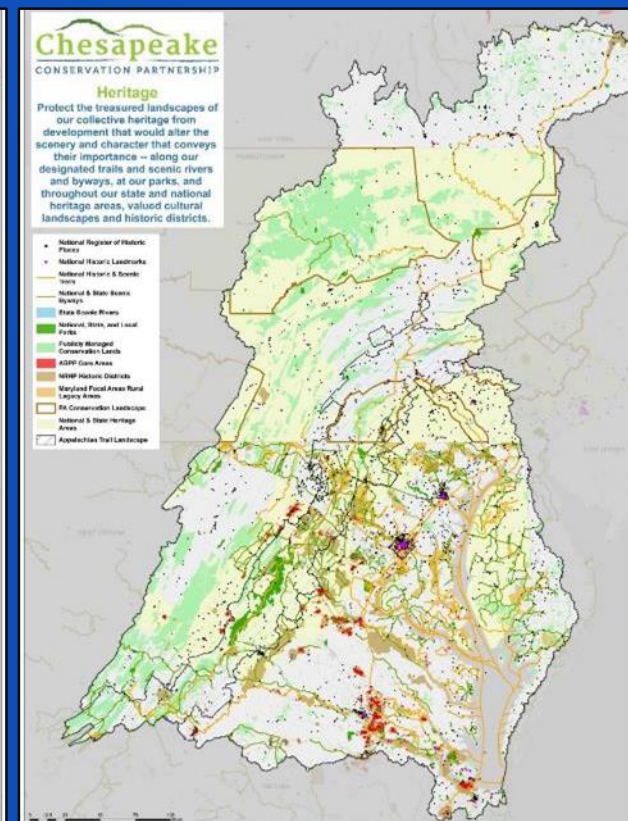
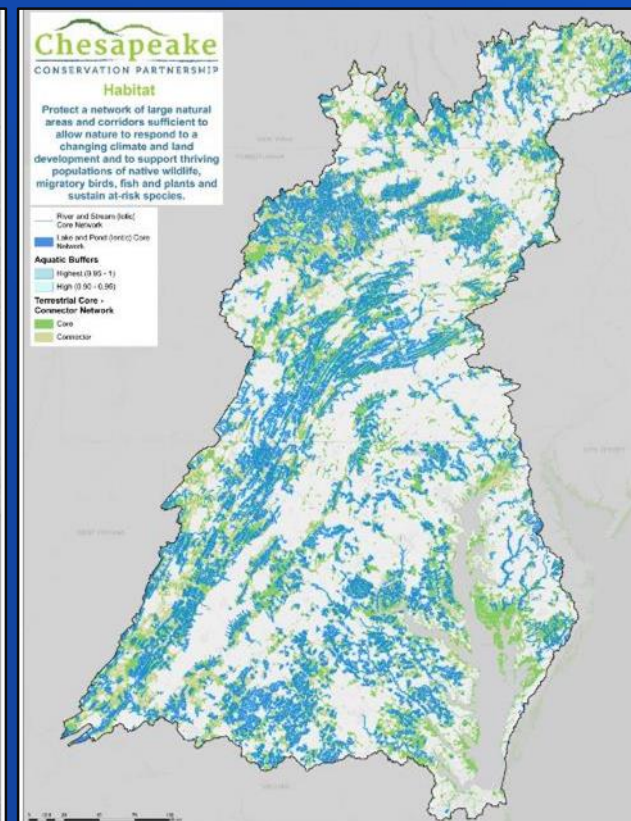
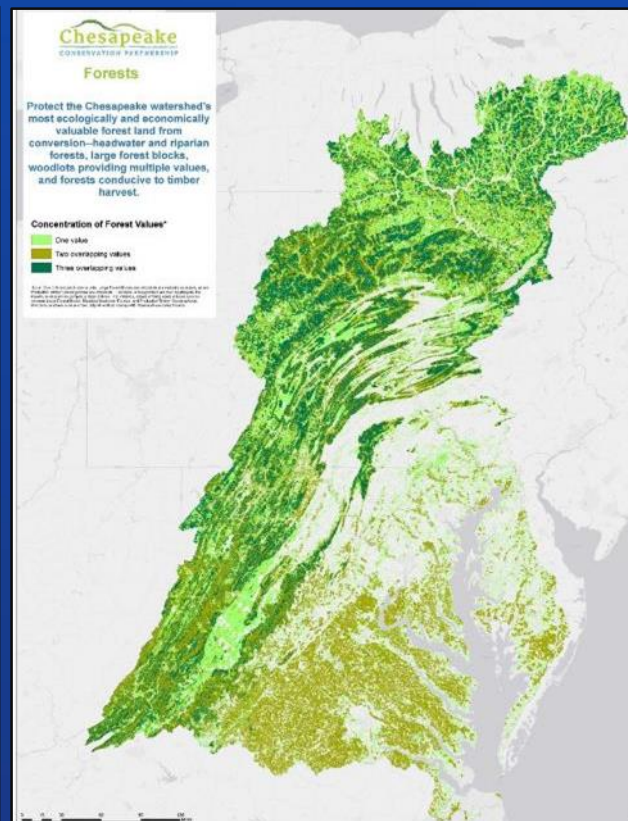
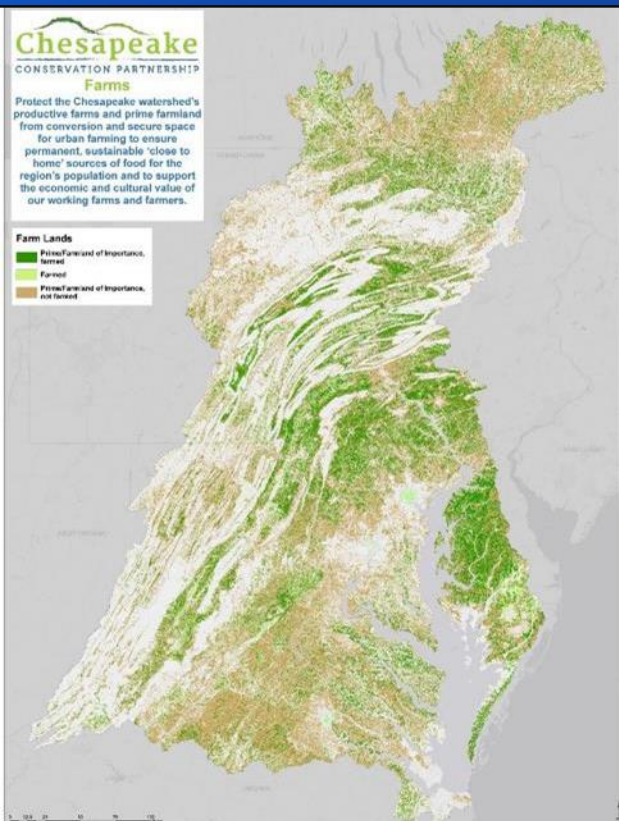
Photo: Nicholas Tonelli

A Chesapeake Conservation Atlas

Version 1.1

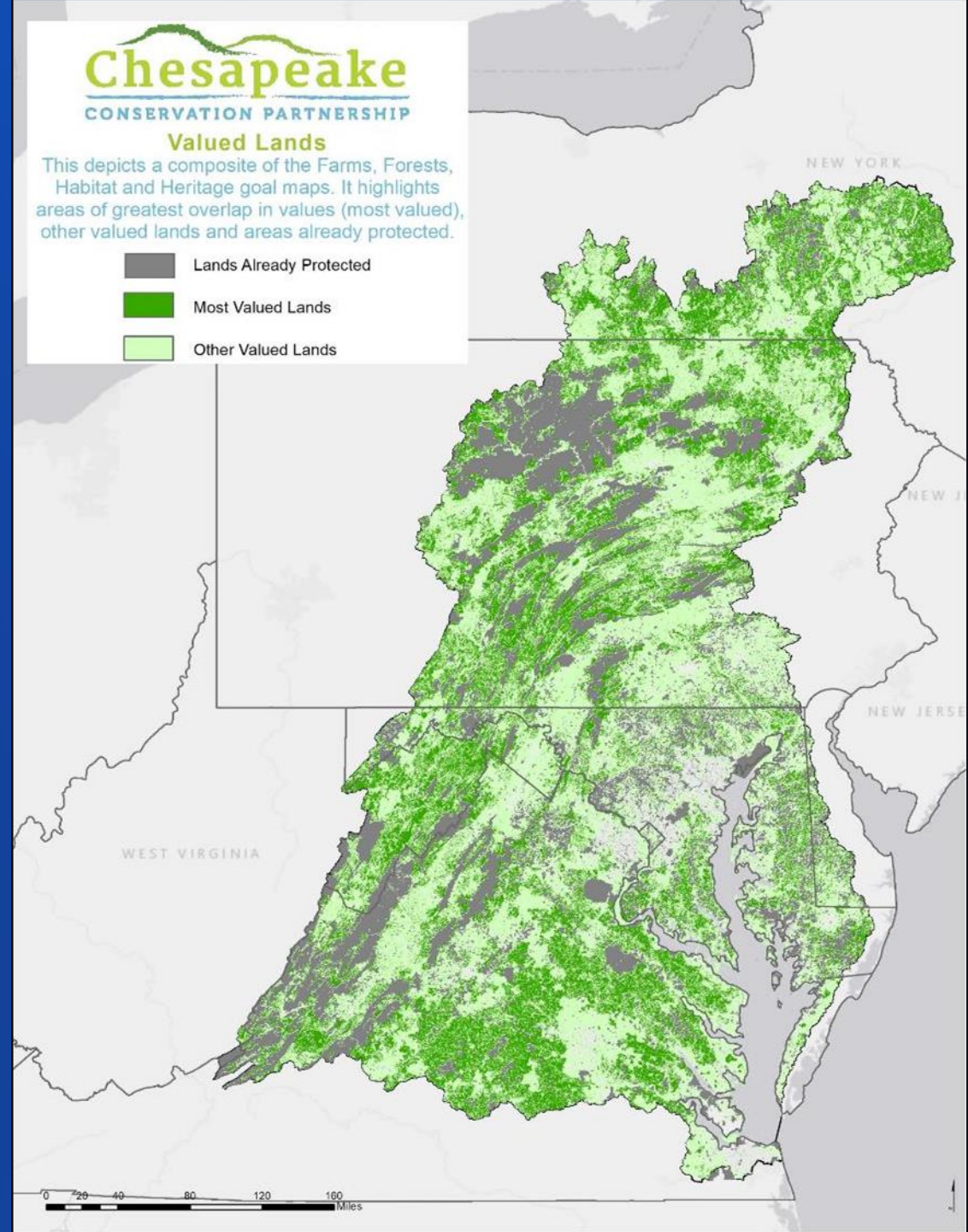
March 2018







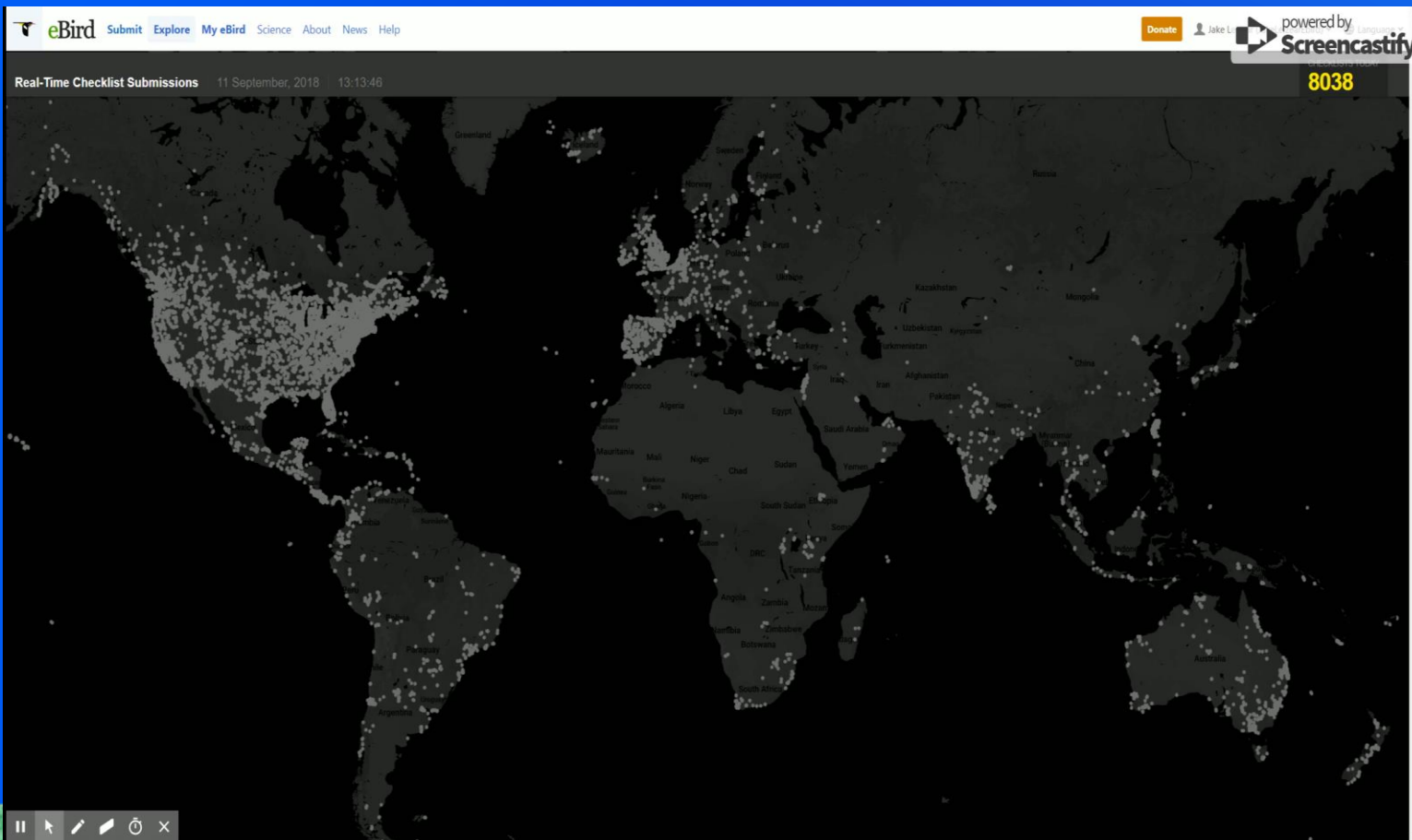
Composite of Farms, Forests, Habitat and Heritage:

- Lands already protected
- Most valued lands
- Other valued lands

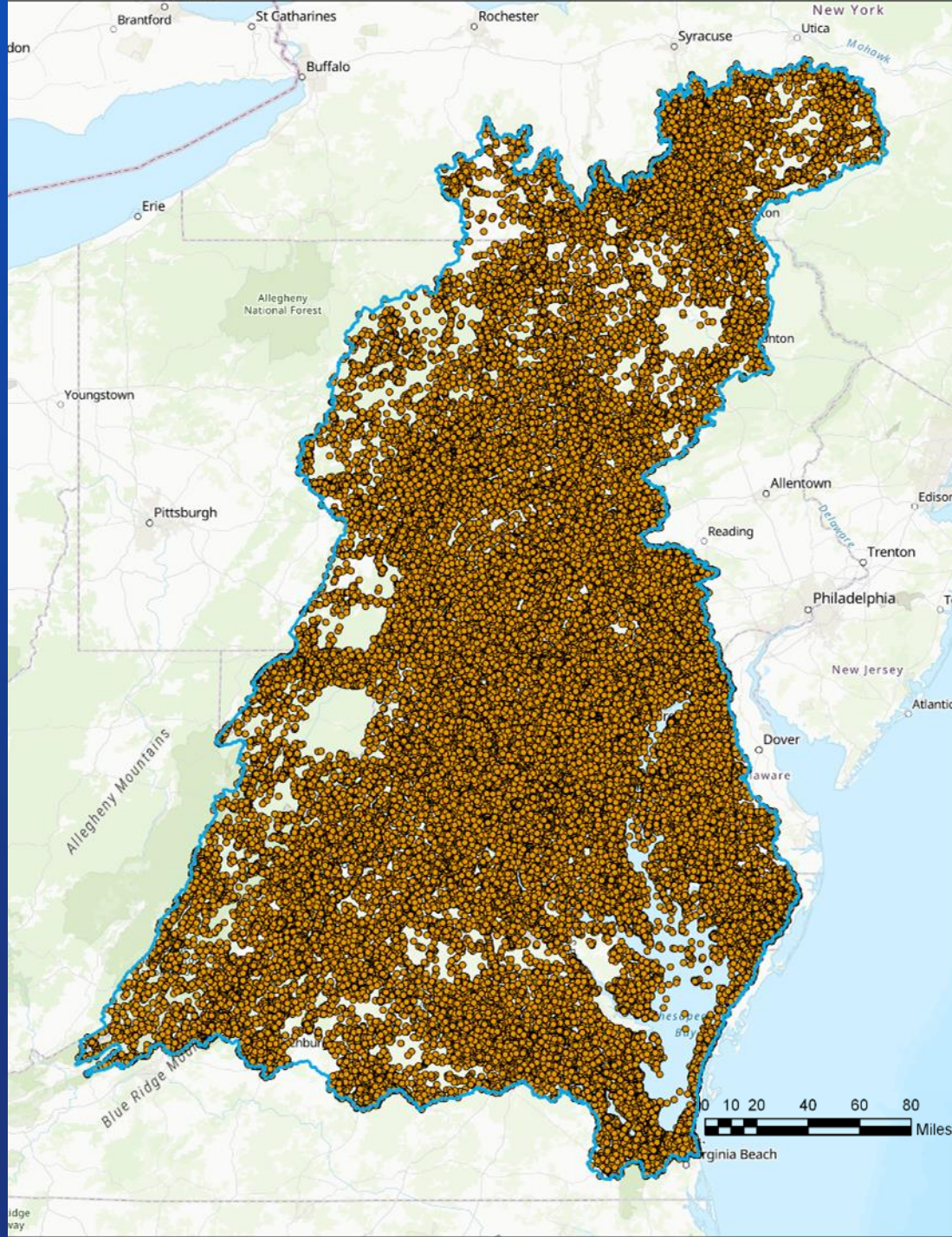




- 
- **How do we supplement these existing layers?**
 - **How do we represent individual citizen's investment in lands and their conservation?**
 - **How do we answer these questions above in an efficient way, both in terms of finance and capacity?**
- 



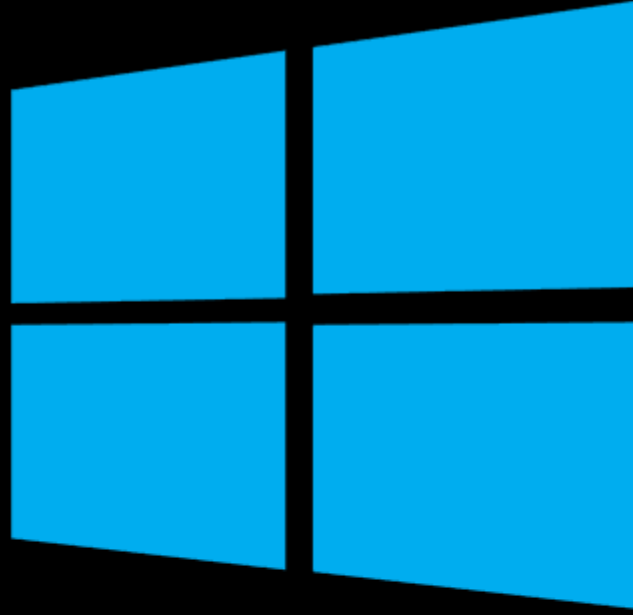
eBird



eBird
10,111,222
checklists

10.1 MILLION POINTS





You don't need to know what's happening or how long it's going to take.

ArcGIS Pro vs ArcGIS Desktop vs ArcGIS GeoAnalytic Server

**6
hours**

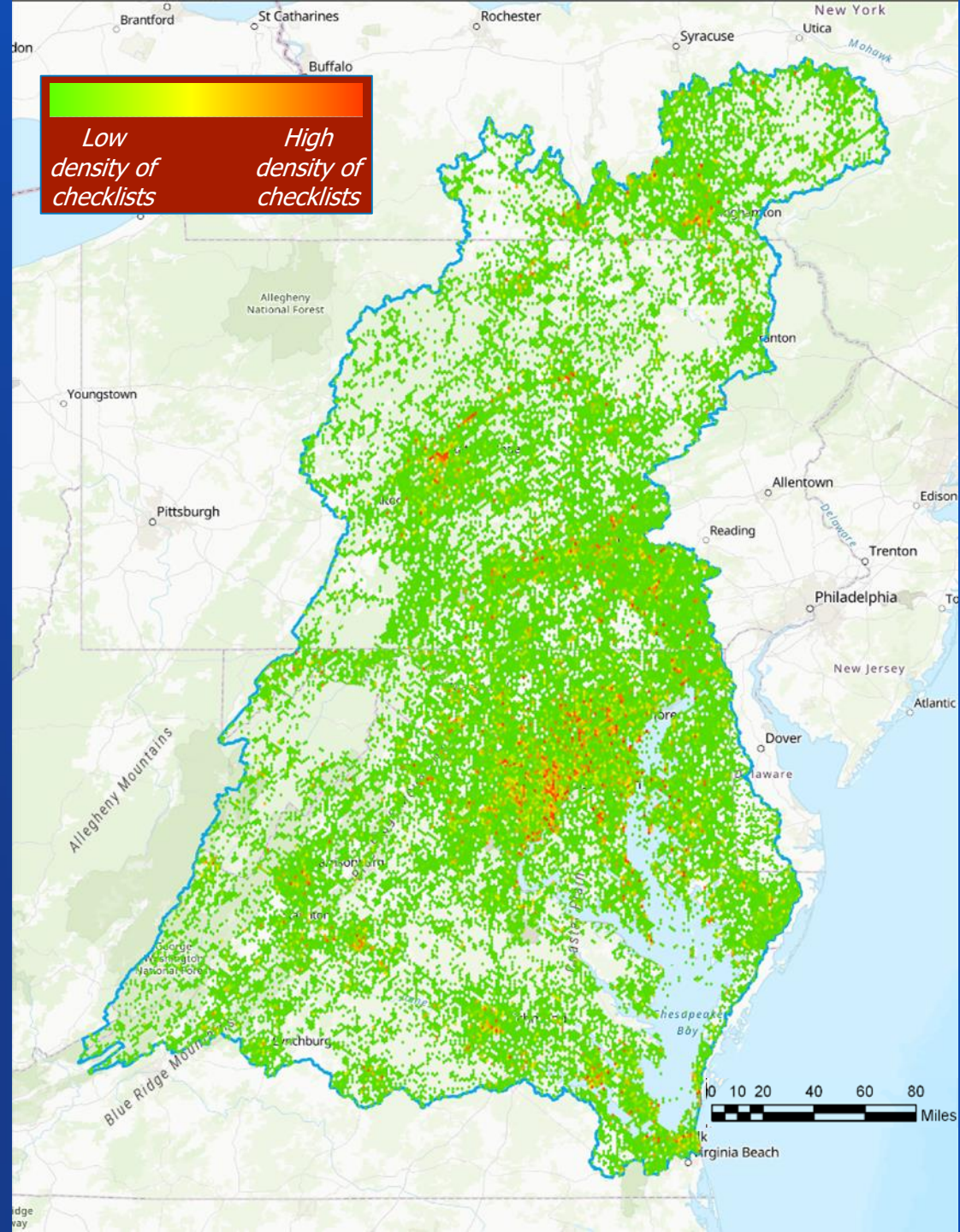


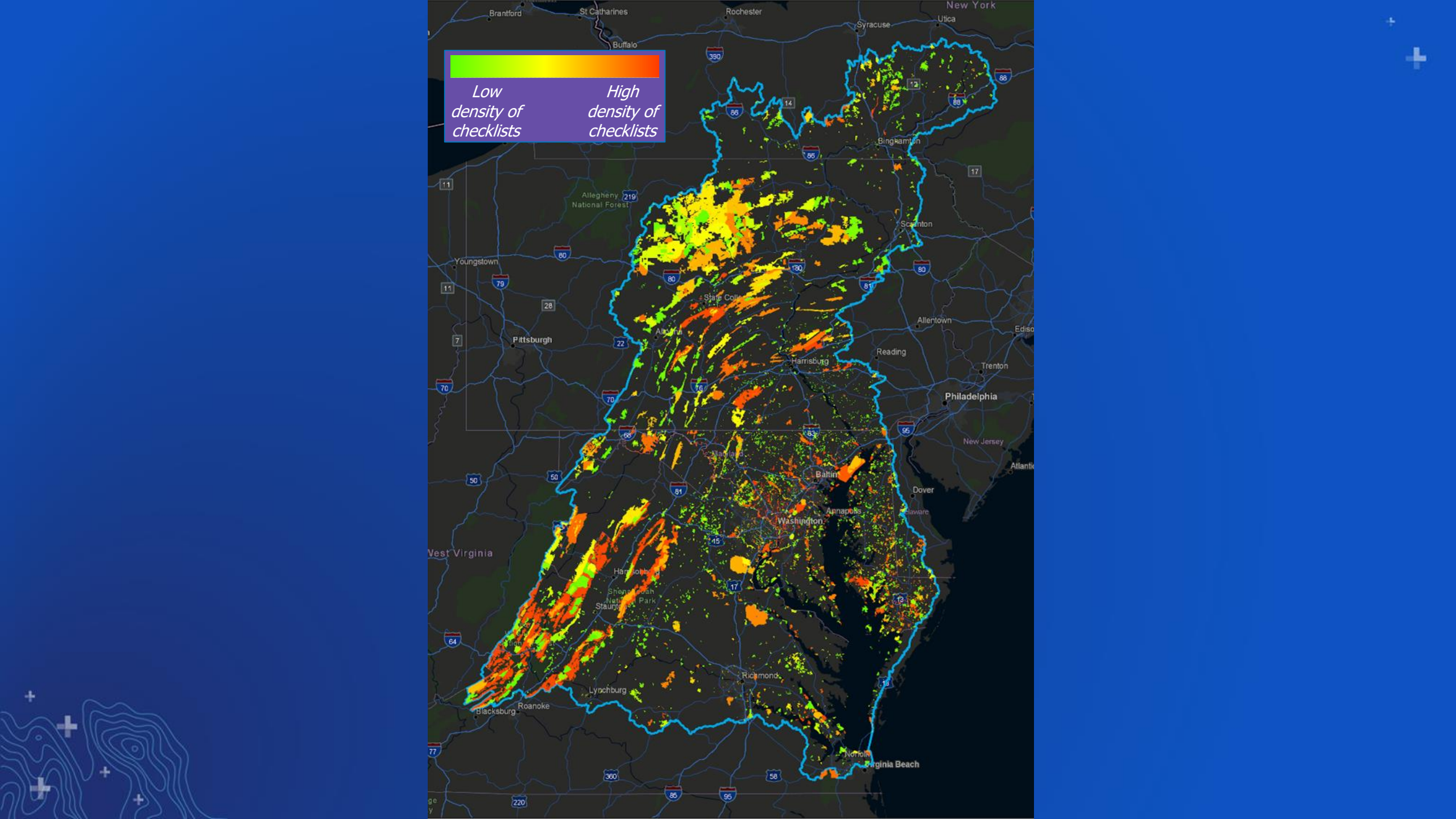
**54.4
minutes**



**~ 1.5
minutes**

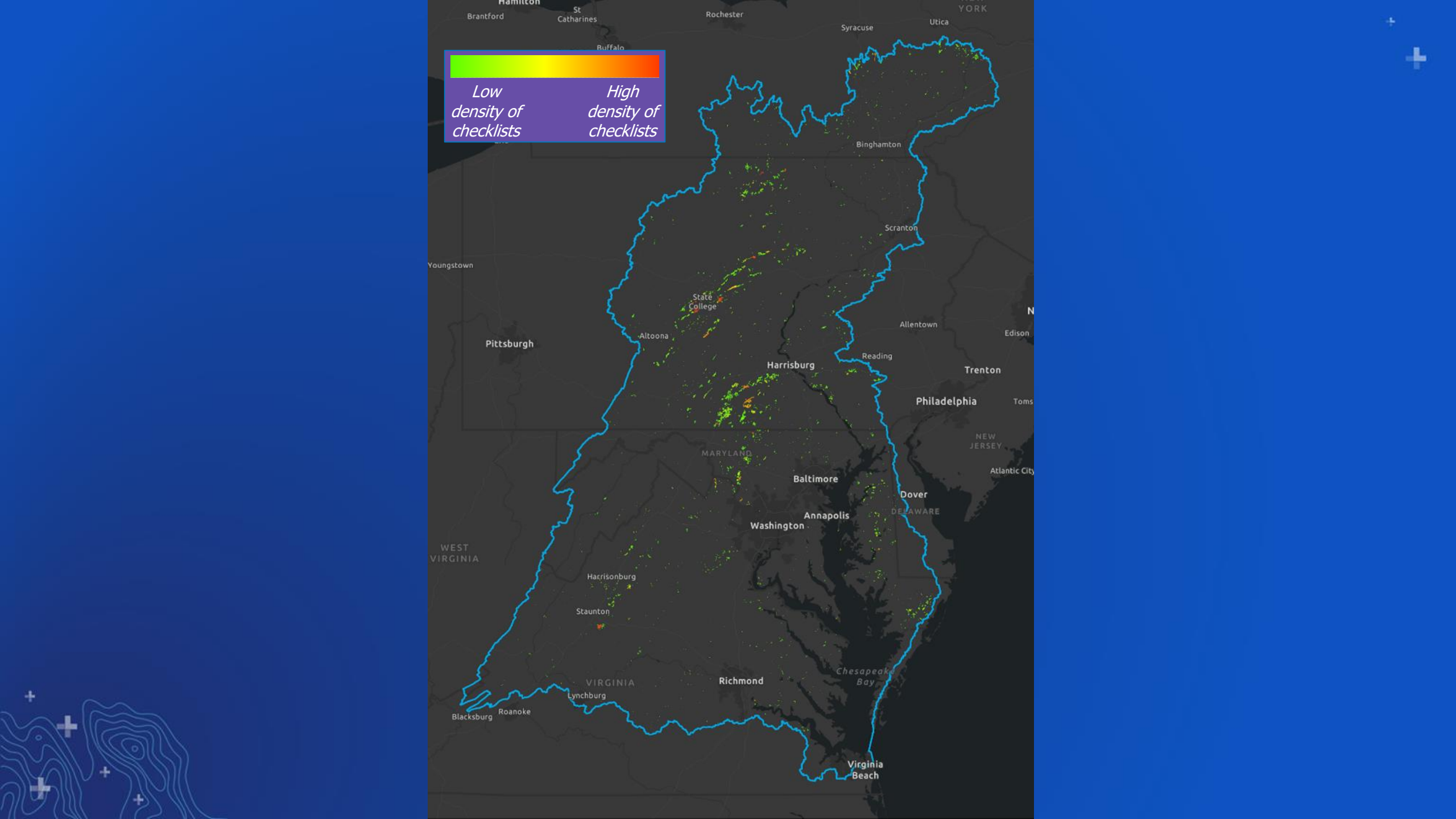








116,604 sightings
Huntley Meadows
County Park,
Alexandria, VA 22306





12,264 checklists

845-1 Van Buren Rd

Maurertown, VA

22644

Next Steps

- On average, how much time is spent each year birding, as evidenced by time spent in documented birding events?
- How do birding events correlate with land cover?
- Where are the hotspots of greatest bird diversity?
- How many species of birds breed in the watershed?
- How many species of birds winter in the watershed?



This map displays the distribution of 10,000 simulated locations (red dots) across the state of Pennsylvania. The dots are densely packed in the central and eastern parts of the state, particularly around the Philadelphia and Harrisburg areas, and more sparsely distributed in the western and northern regions. The map includes major cities, highways, and the state boundary, which is highlighted in red.

ArcGIS Pro vs ArcGIS Desktop vs ArcGIS GeoAnalytic Server

**3
hours**

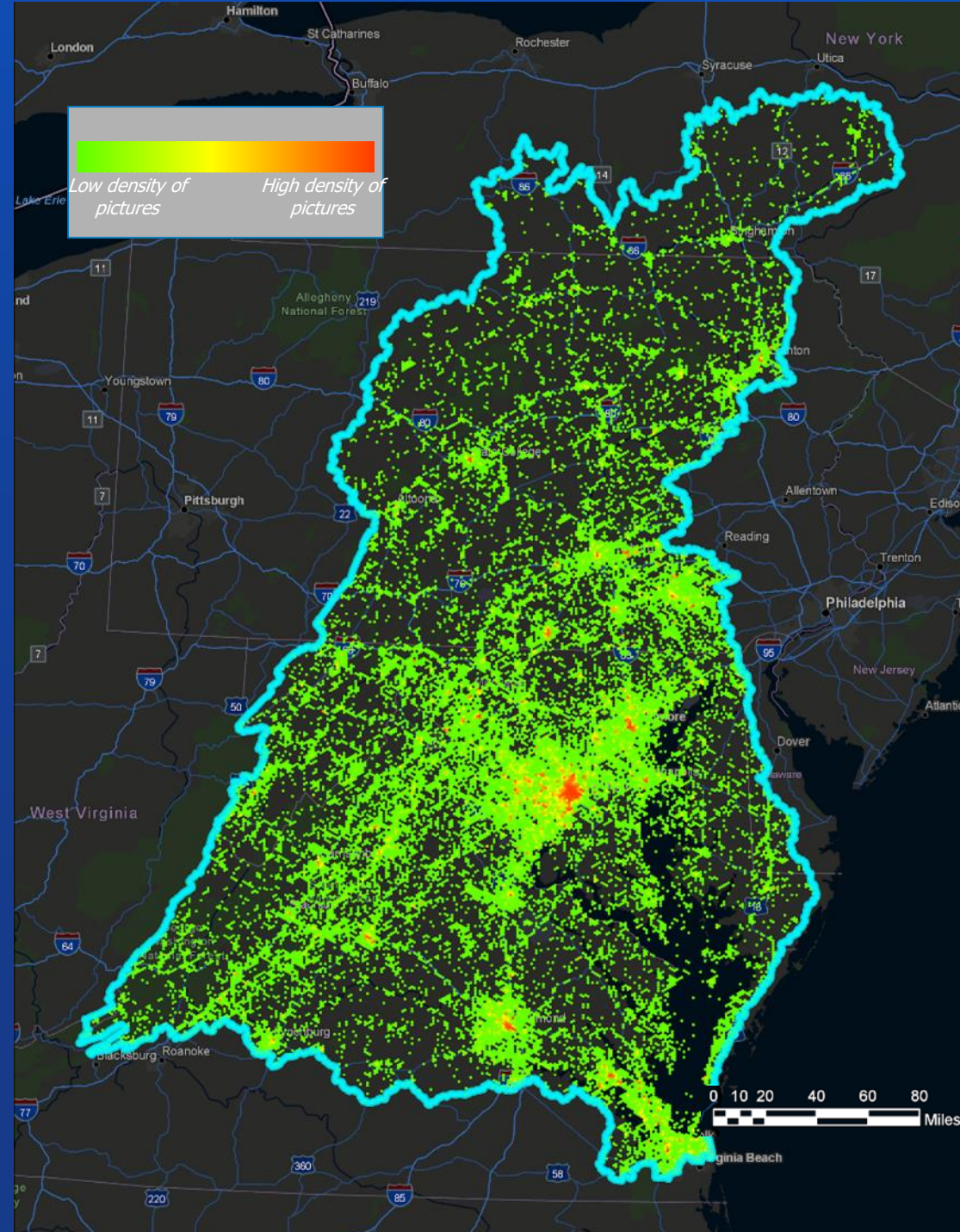


**8.7
minutes**



**~30
seconds**





Scenic

Park

Tree(s)

Lake

Landscape

Forest

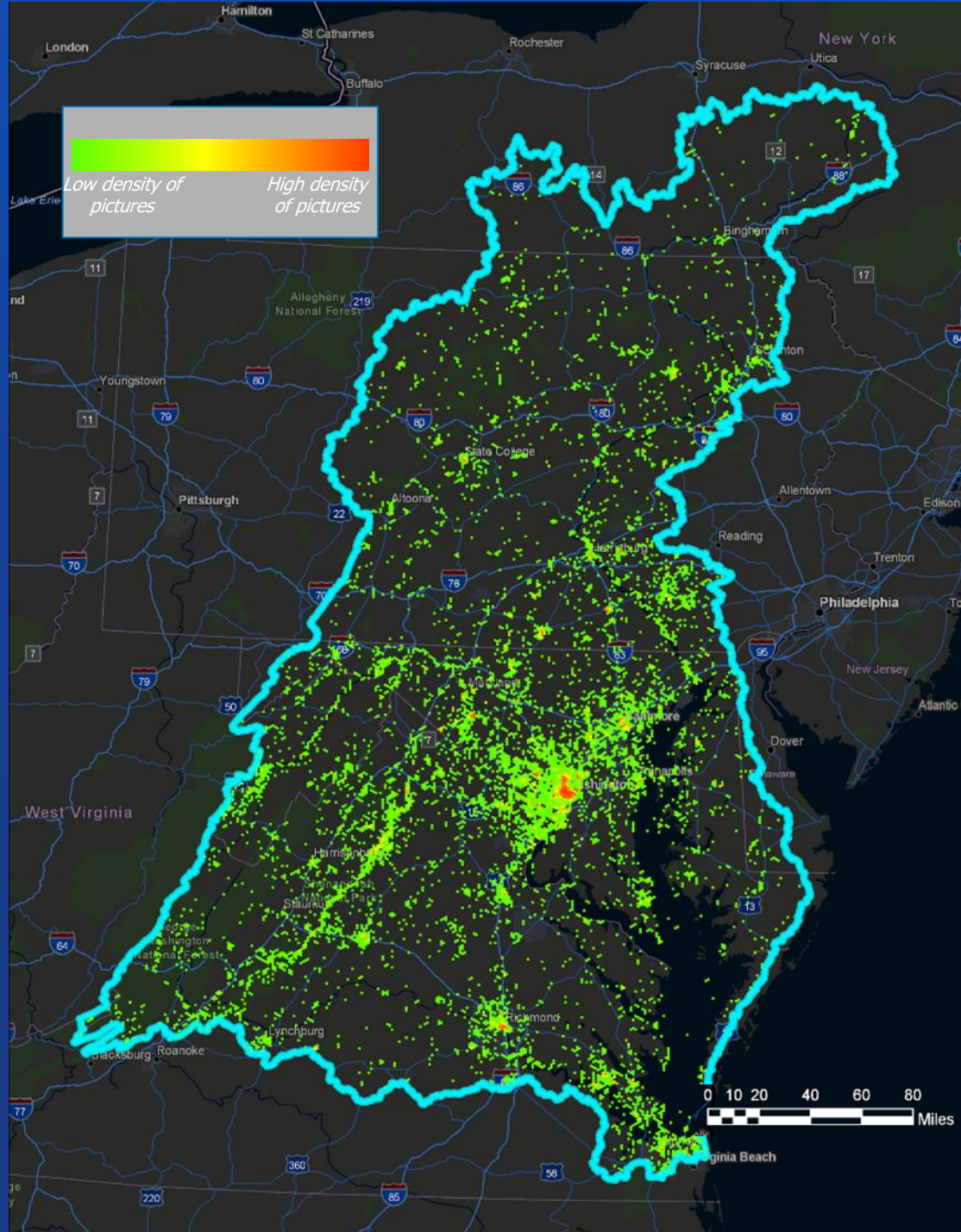
Outside

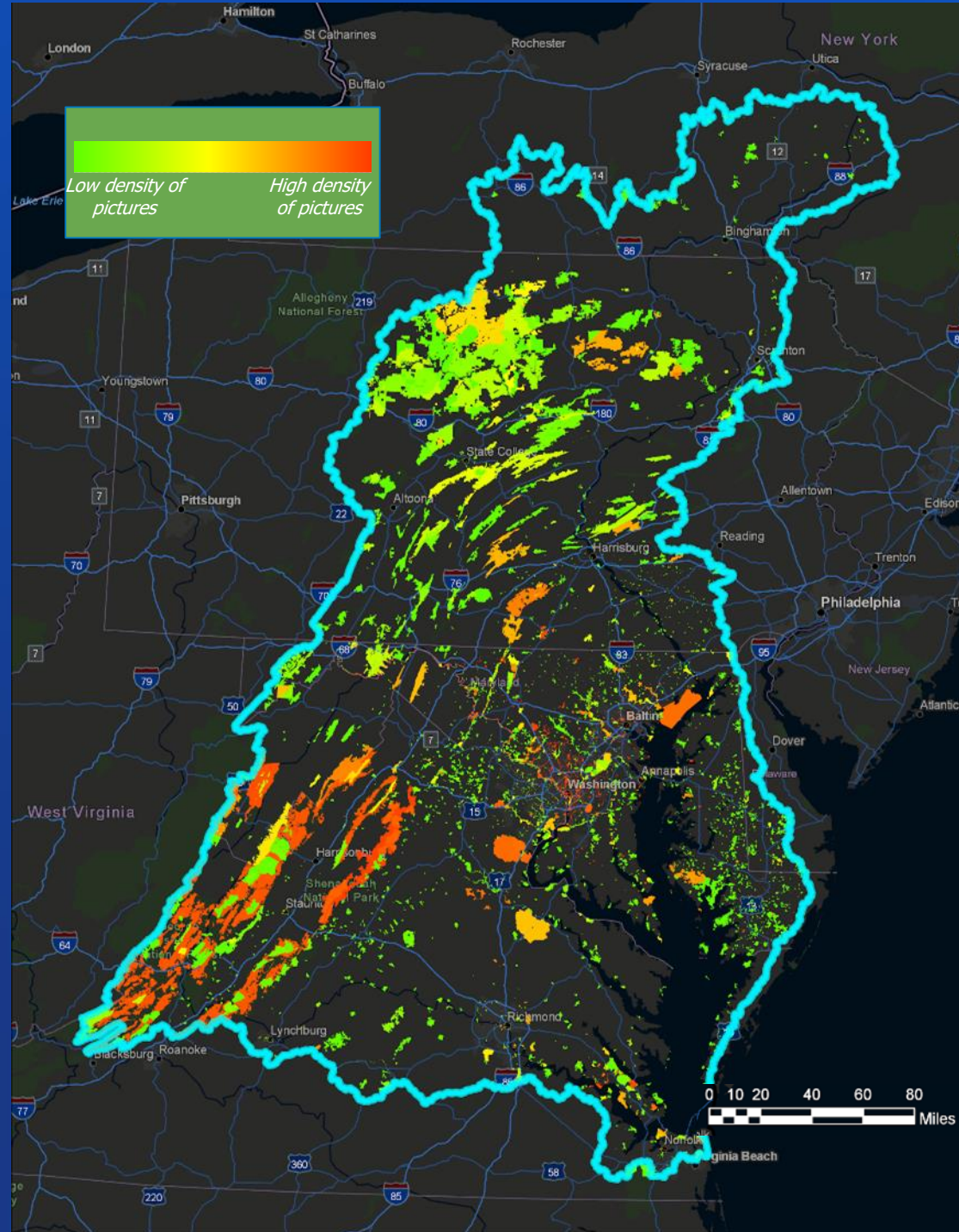
Woods

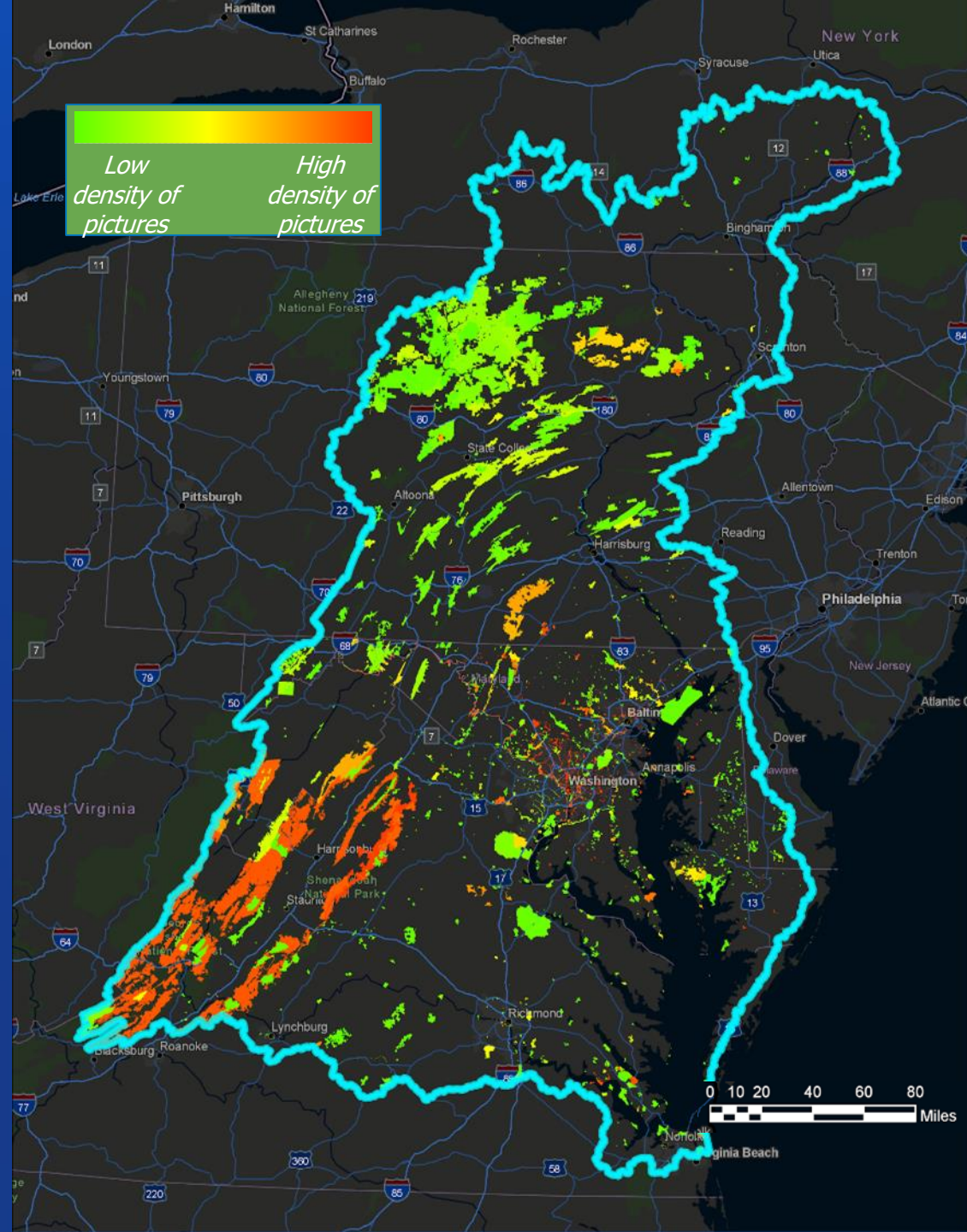
River(s)

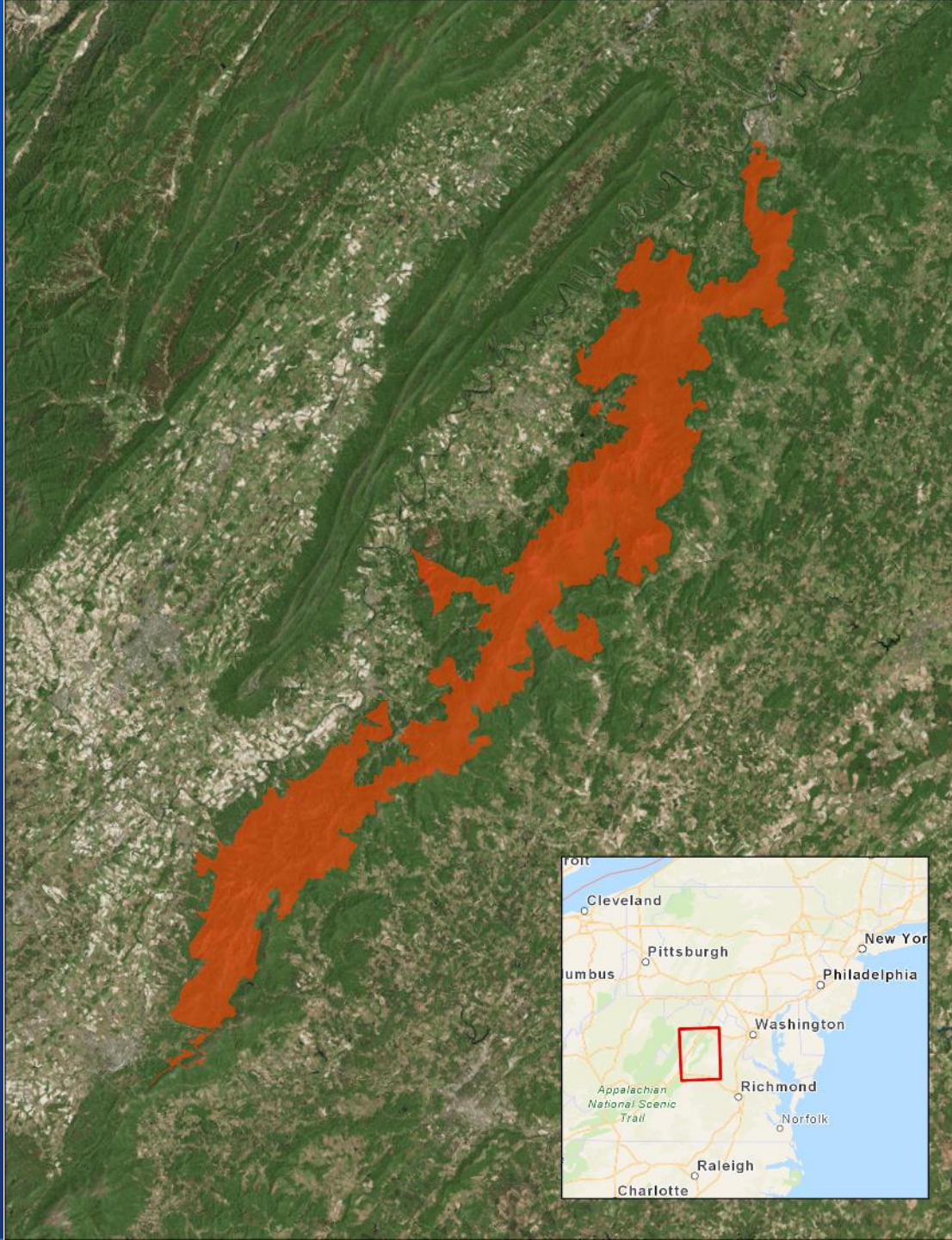
Nature





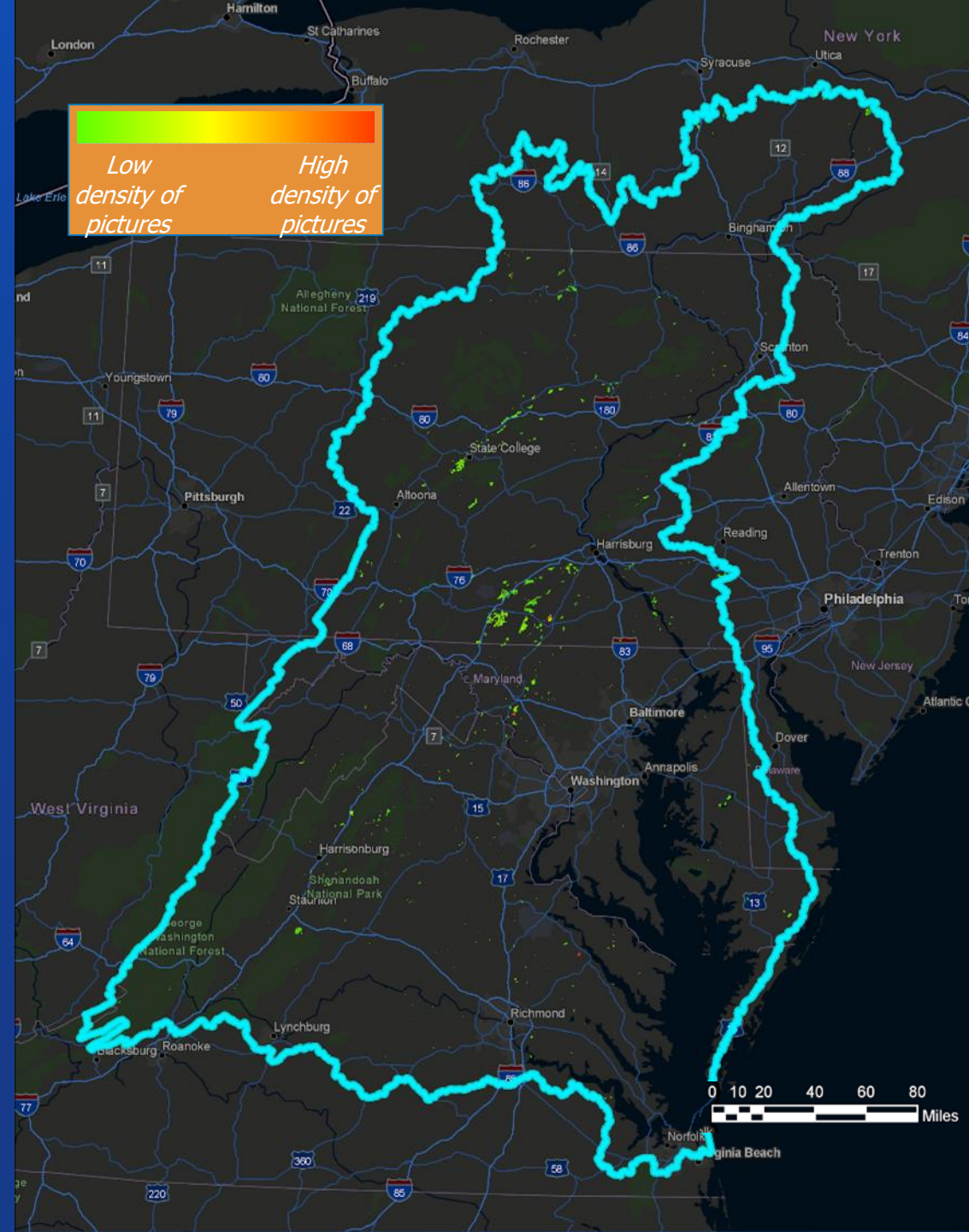


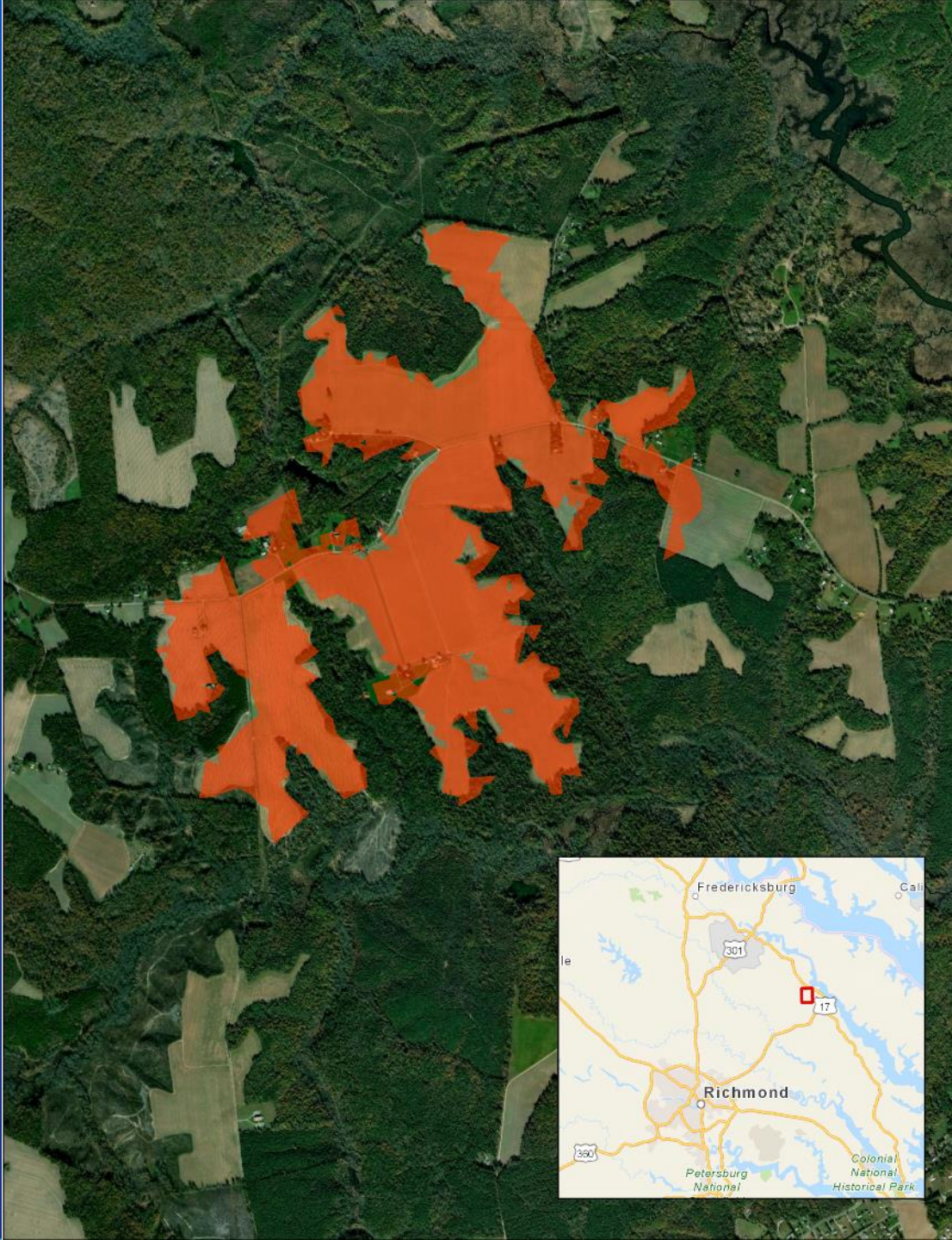




6,702 Pictures

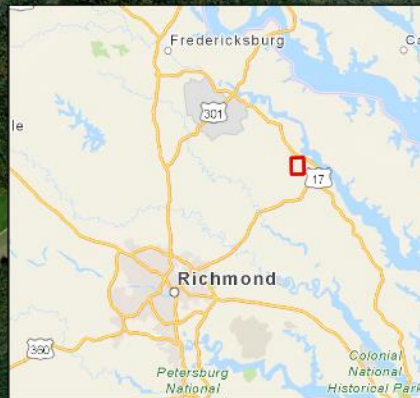
Shenandoah National Park, Virginia

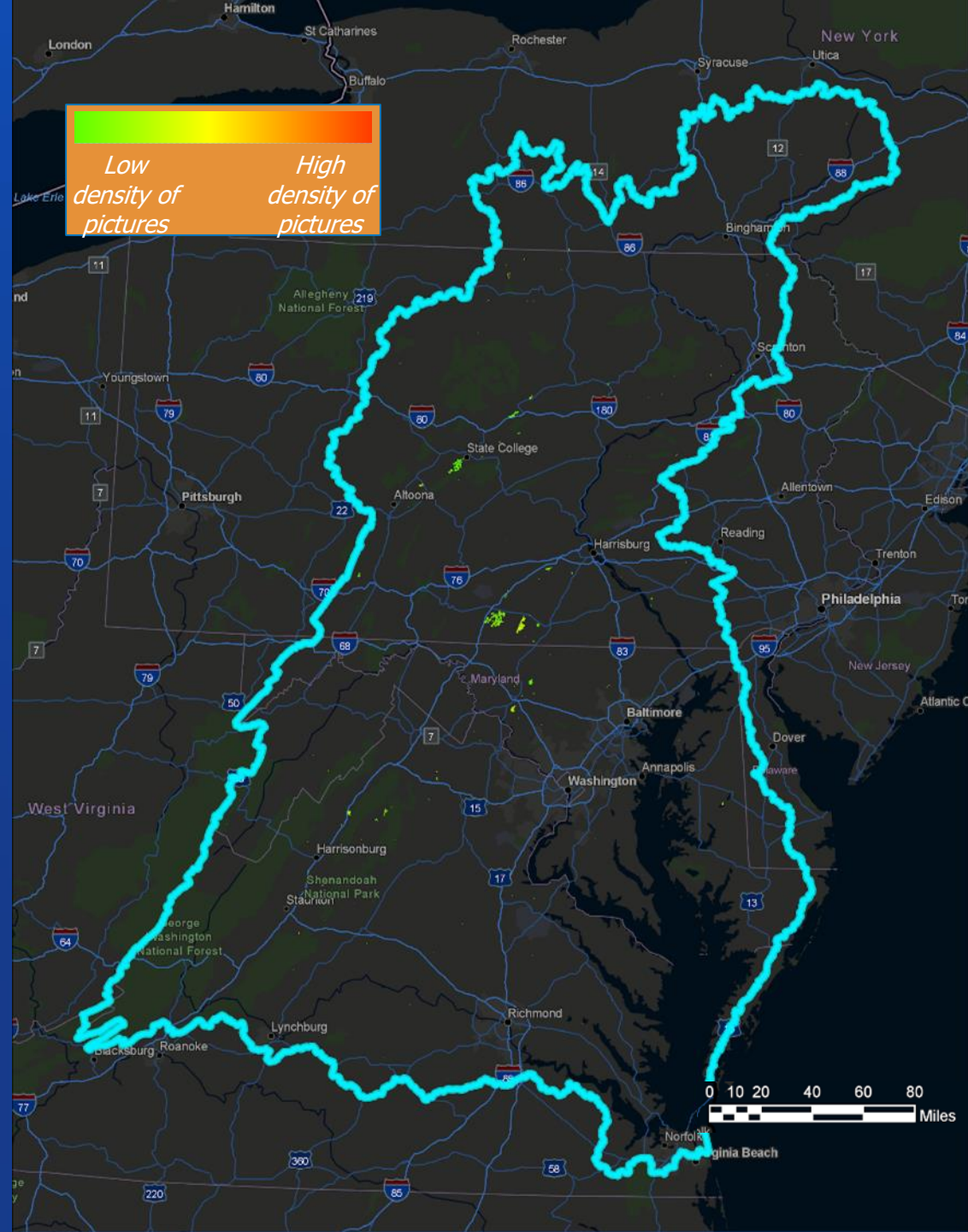


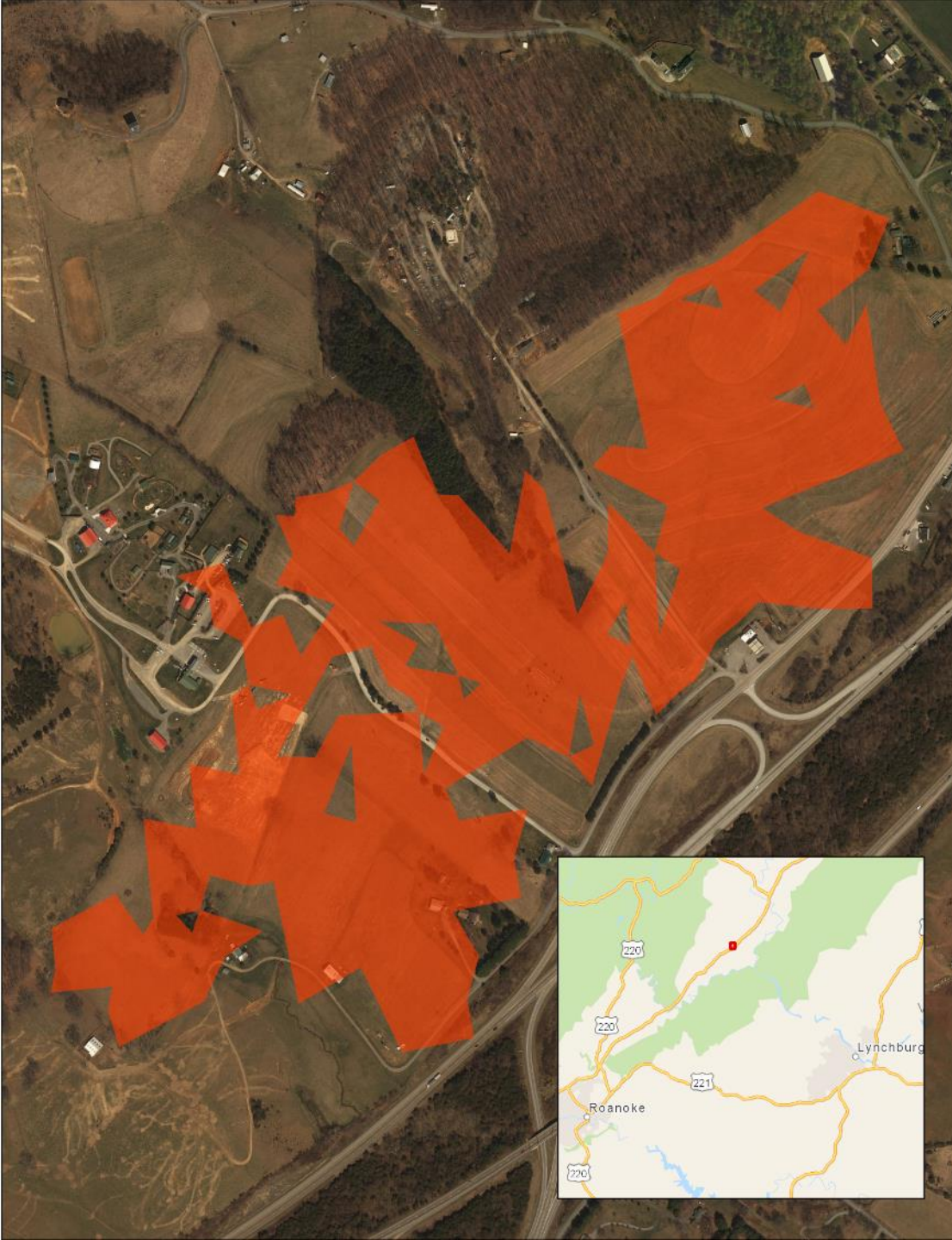


664 Pictures

5165 State Rte 627,
Tappahannock, VA
22560

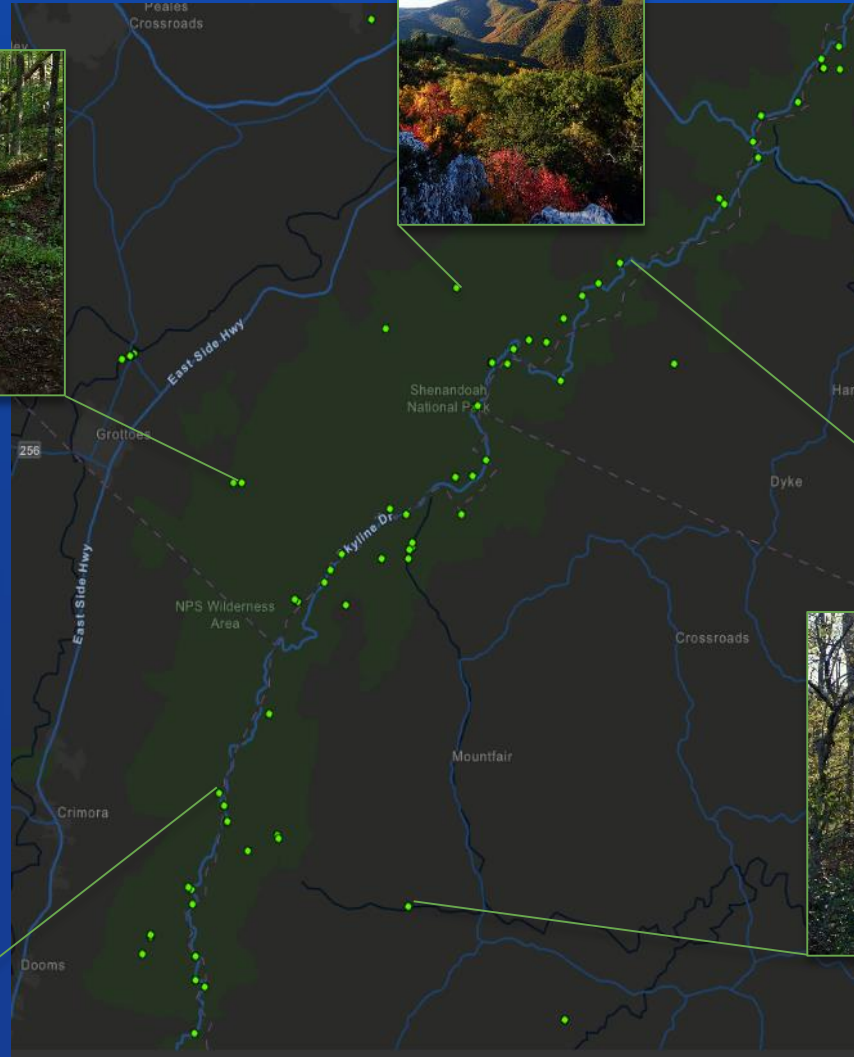




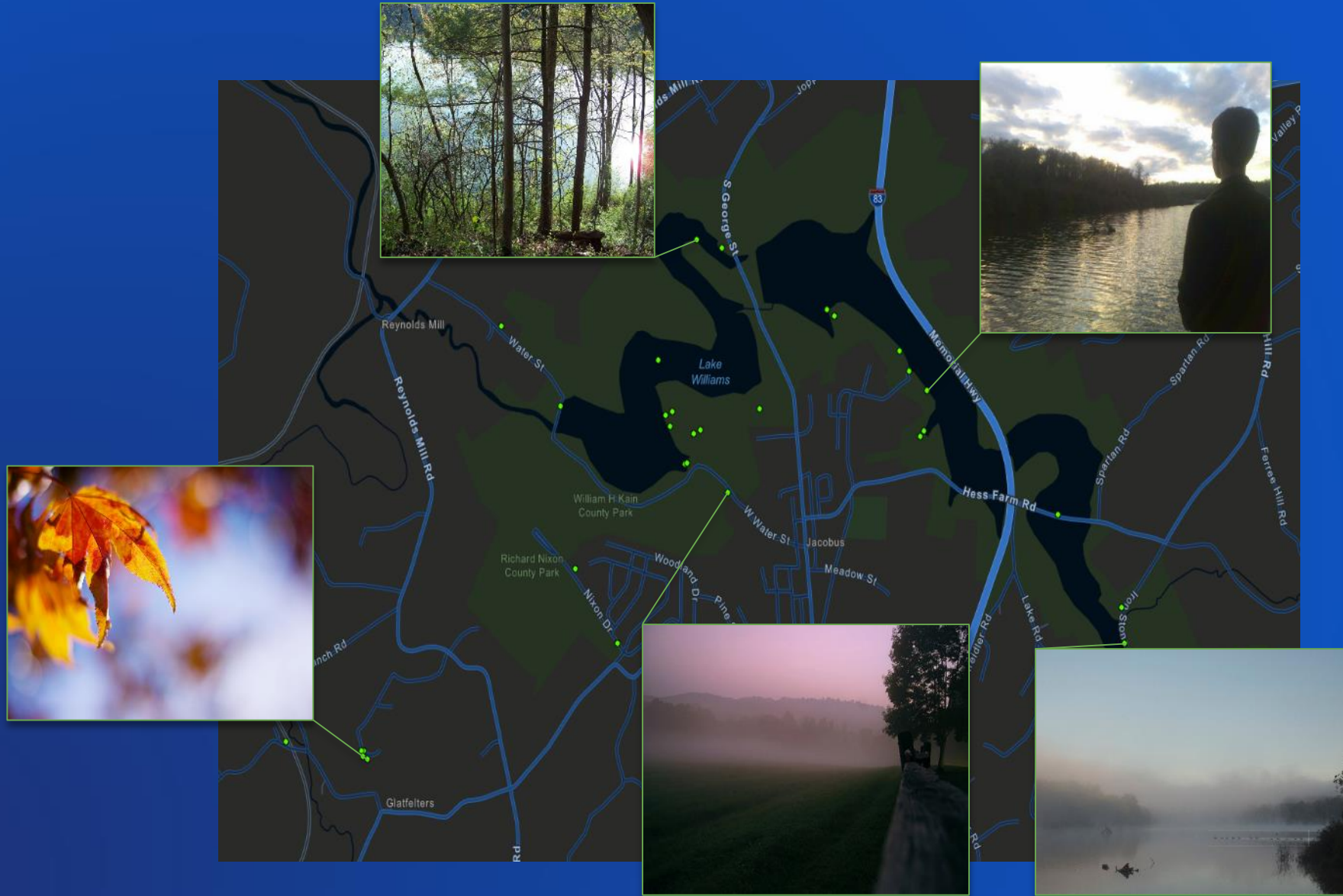


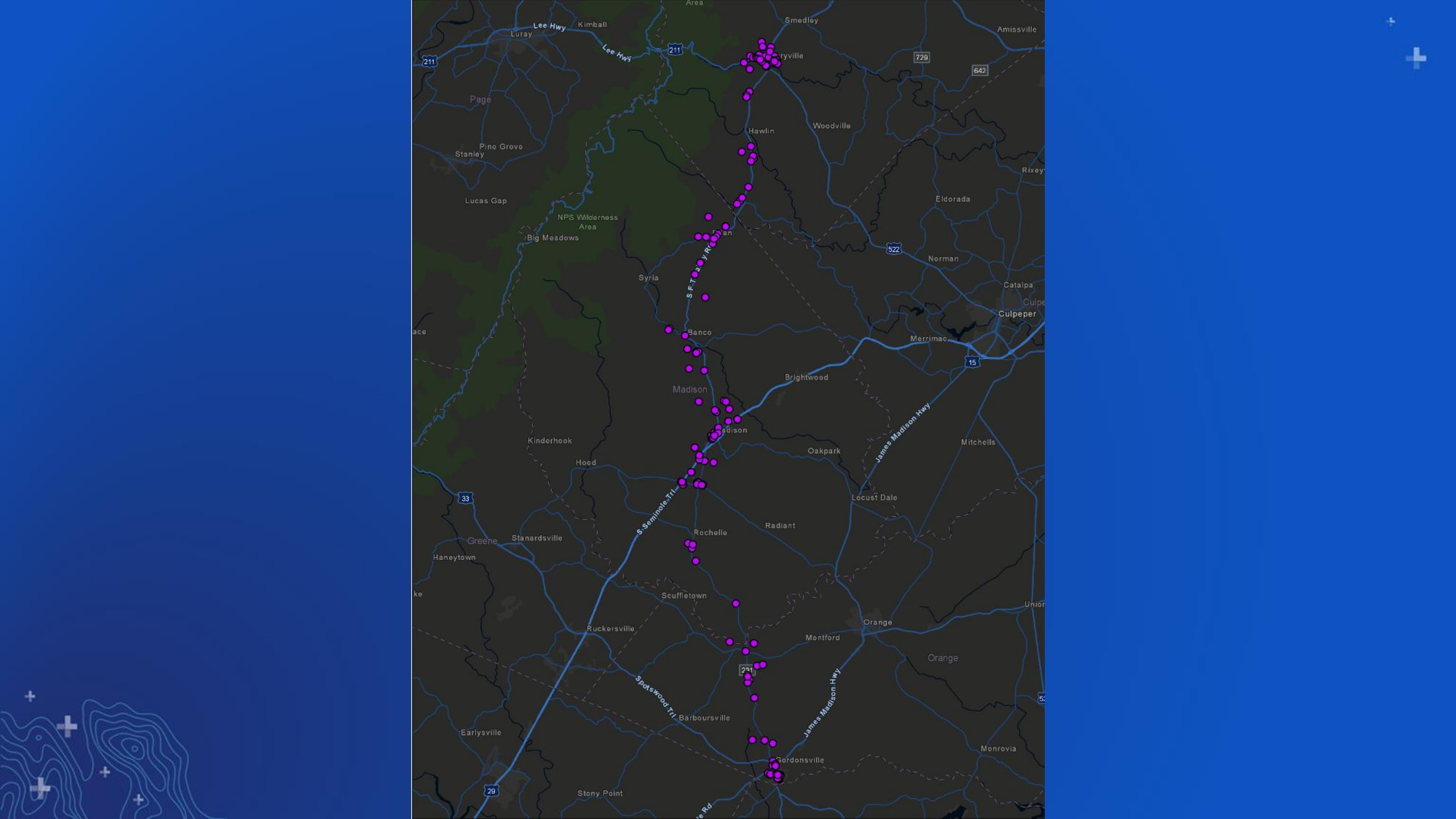
194 Pictures
Safari Ln, Natural
Bridge, VA 24578

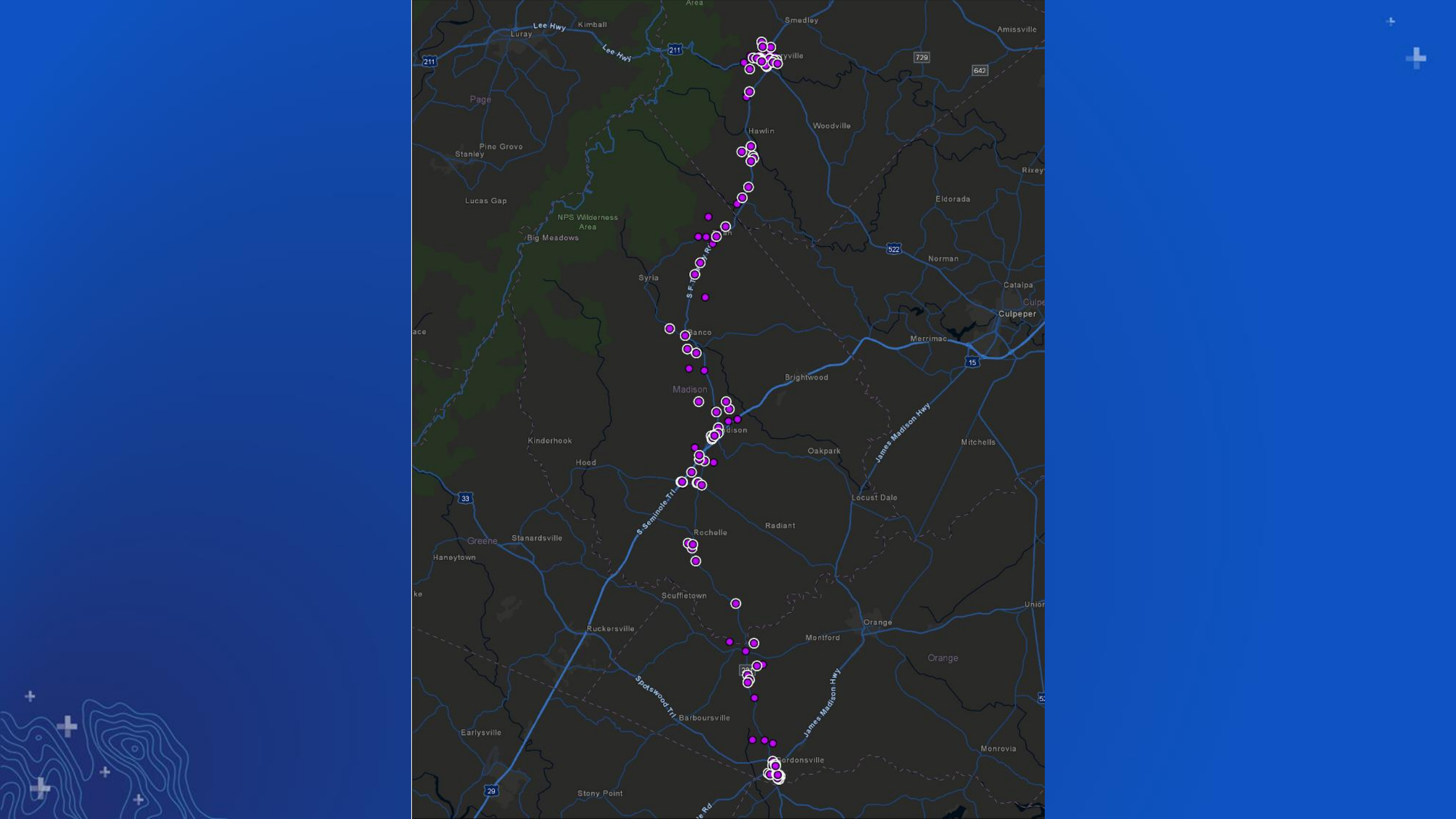
Shenandoah National Park

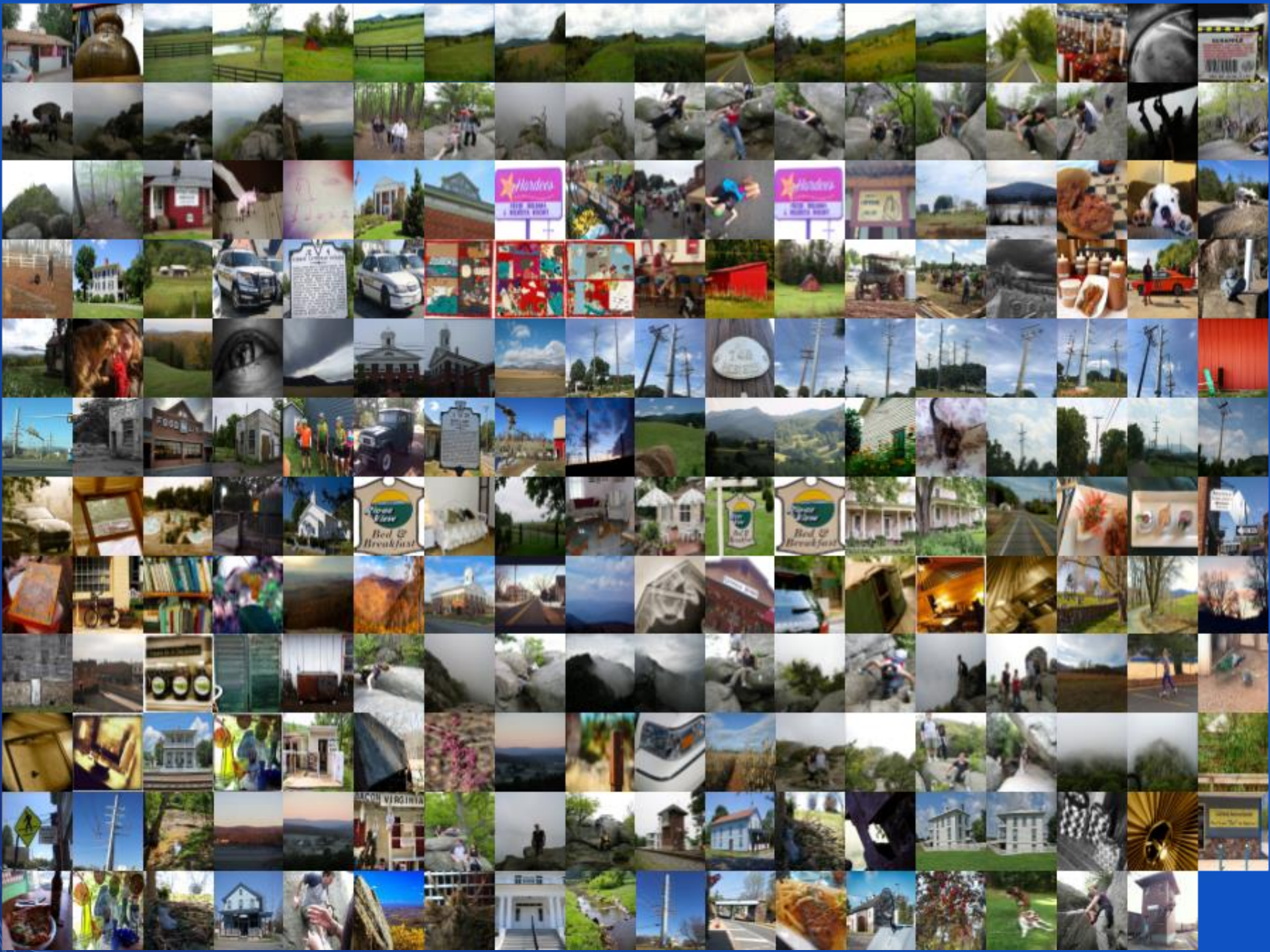


Lake Williams, York County, Pennsylvania





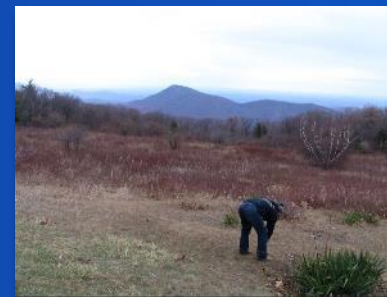






OLD RAG
VIEW
OVERLOOK
ELEVATION 3585







Next Steps

- Alternative data sources (Helsinki study)
- Who is taking the most pictures?
- What is the reverse of this: where are there pictures OUTSIDE of already protected lands?





ANY QUESTIONS?

jleizear@chesapeakeconservancy.org

