EnviroAtlas and the Eco-Health Relationship Browser

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NCER Tribal Research Progress Review

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What is EnviroAtlas?

A free, easy-to-use, online decision support tool to **view, analyze, and download** national geospatial data and other resources. EnviroAtlas is designed to inform decision-making, education, and additional research.

EnviroAtlas includes:

- Indicators of ecosystem services supply, demand, and drivers of change
- Supplemental data to aid interpretation (e.g., land cover, soils, hydrography, impaired water bodies, wetlands, demographics, roads, boundaries)
- Analytic and interpretive tools

All Data are Downloadable & Accessible via Web Services (incl. fact sheets for general users and technical metadata)

Some EnviroAtlas Users & Collaborators

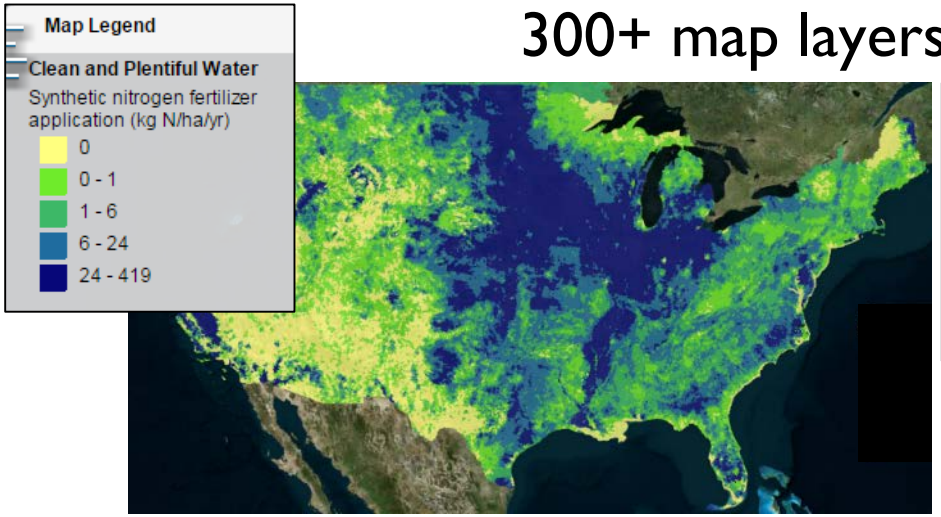
EnviroAtlas is designed around the benefits we receive from nature, also known as ecosystem goods and services.

They are intertwined with our everyday lives and are critical to our health and well-being.

EnviroAtlas data are organized into 7 ecosystem service benefit categories.

Interactive Mapping & Screening Tool

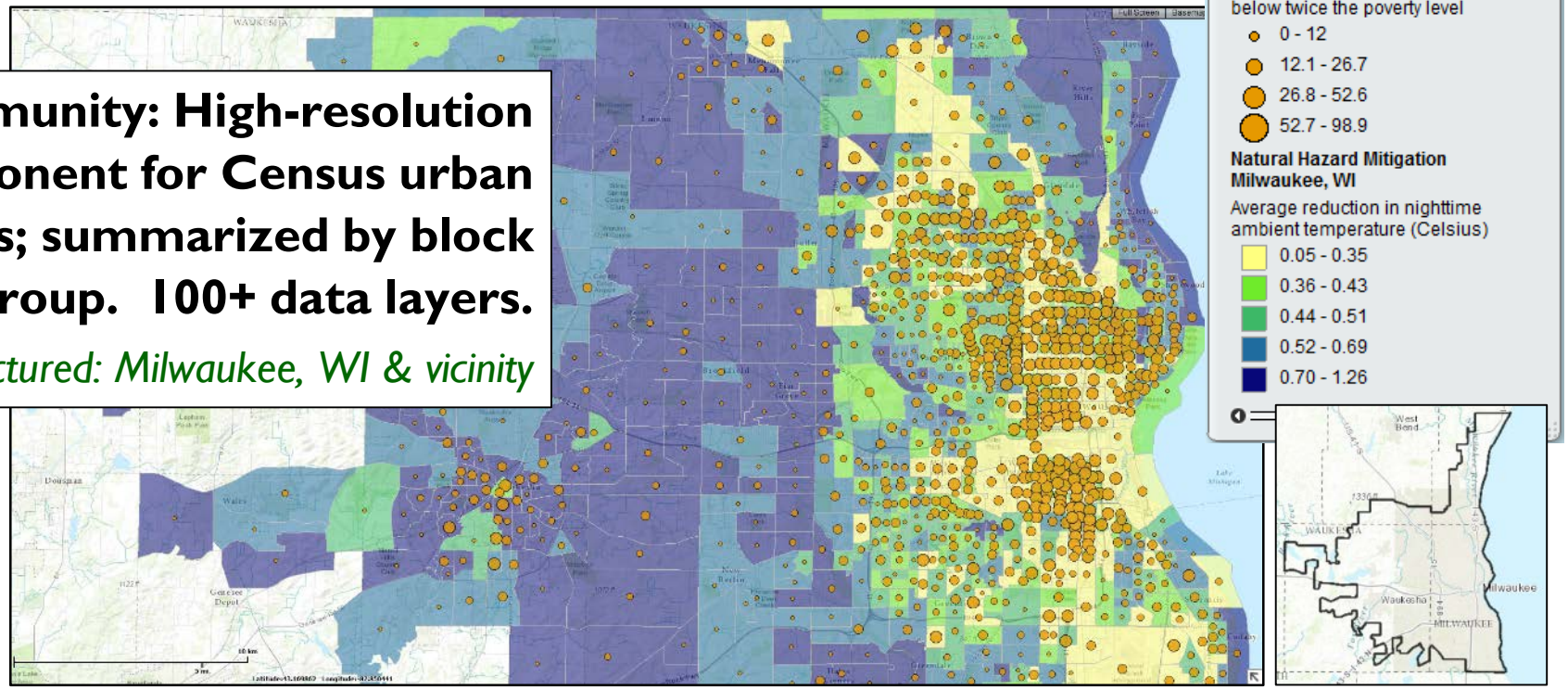
300+ map layers available online



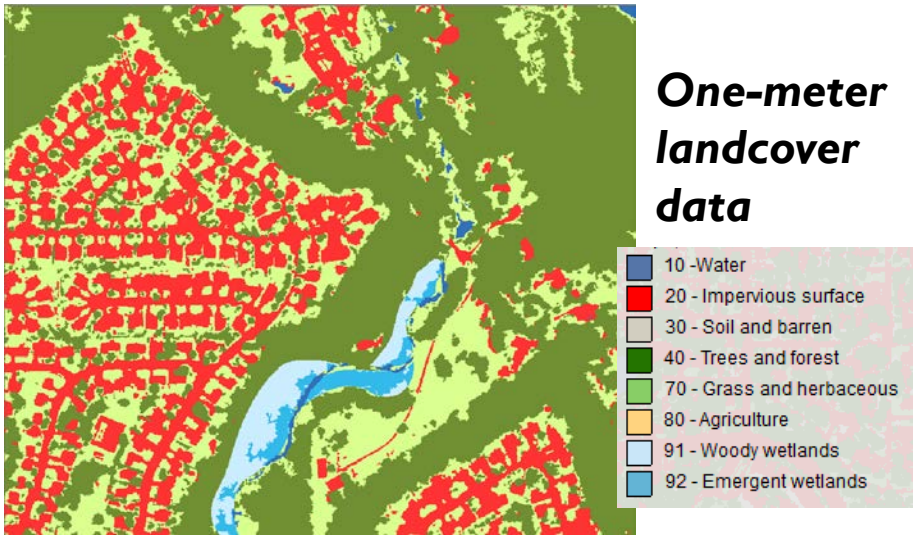
National: Wall-to-wall coverage for contiguous US; summarized by ~90,000 drainage basins (12-digit HUCs). 160+ data layers

Community: High-resolution component for Census urban areas; summarized by block group. 100+ data layers.

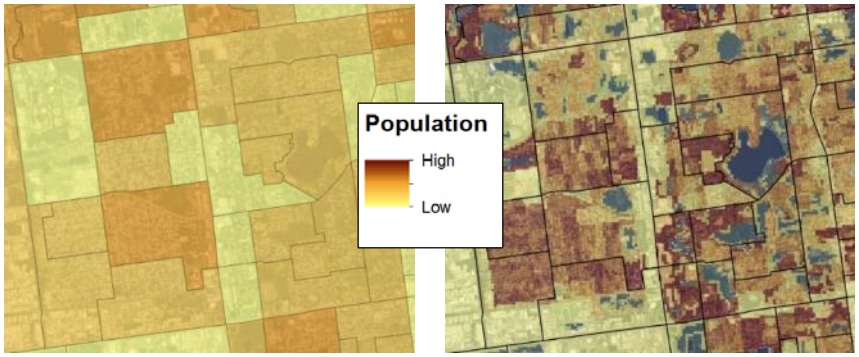
Pictured: Milwaukee, WI & vicinity



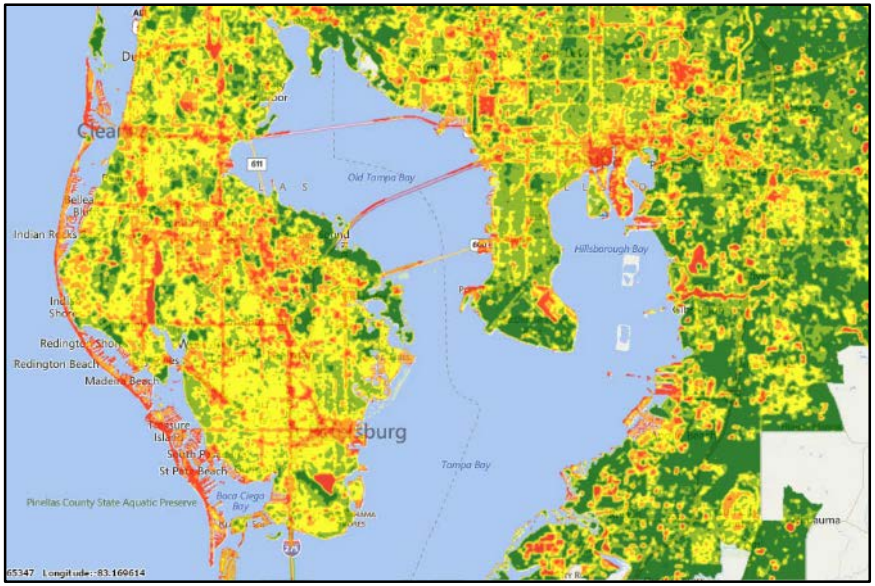
Many spatially-explicit maps also available



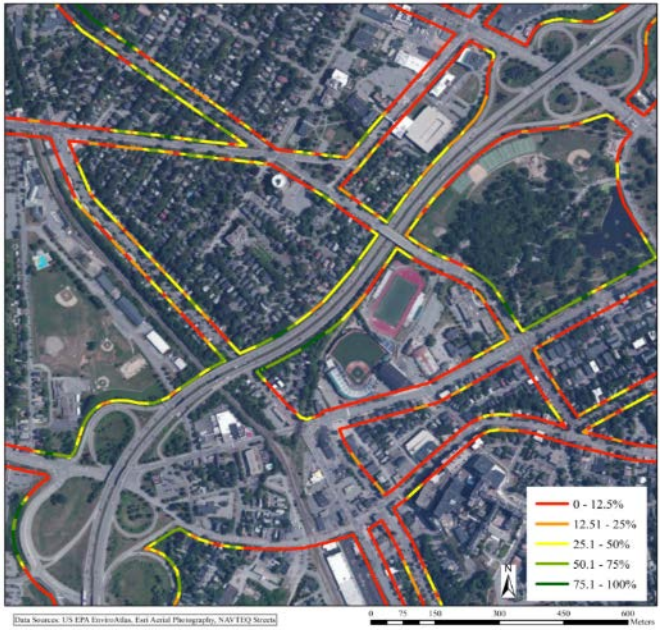
One-meter landcover data



Downscaled (30-meter) U.S. Census population grid

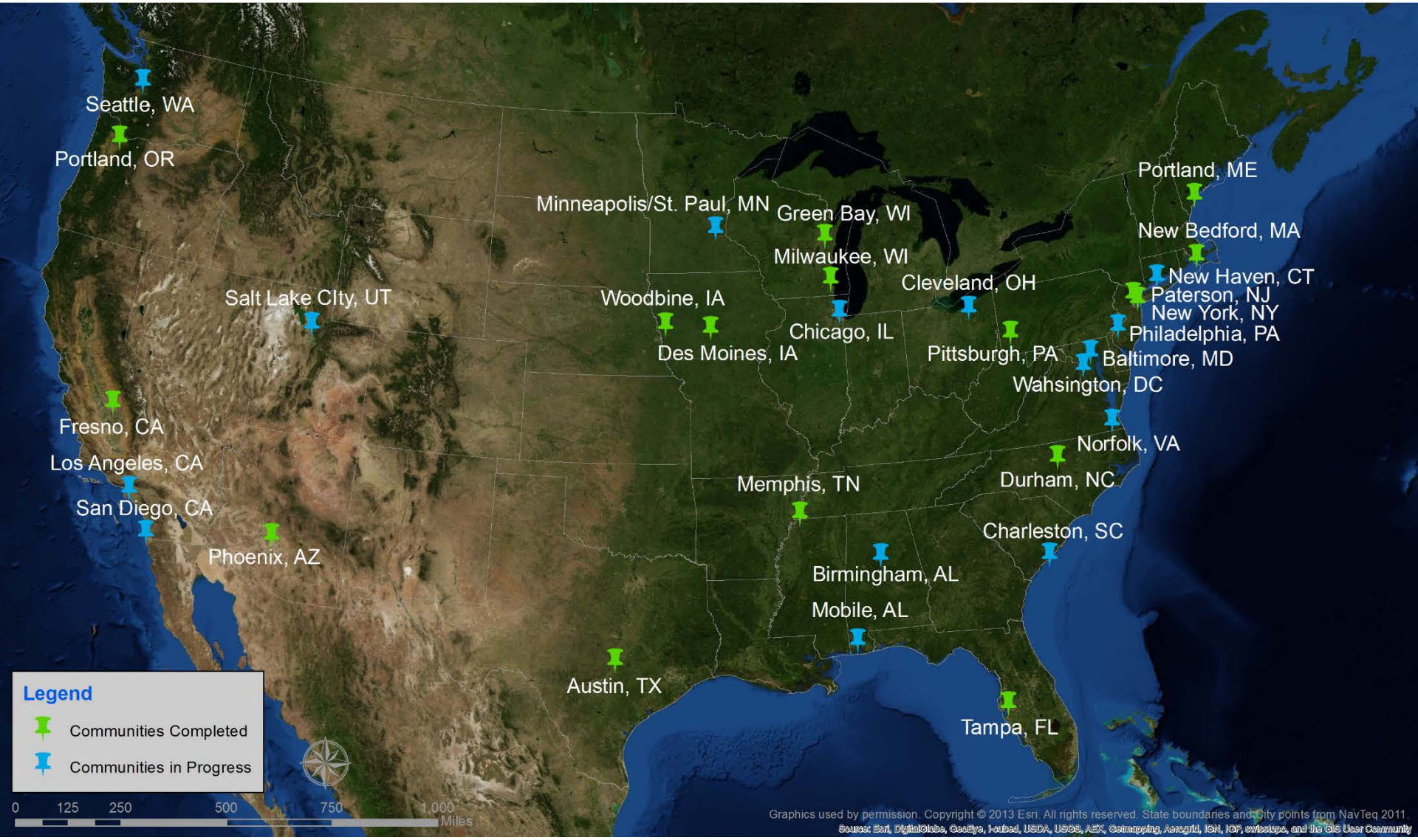


Green-to-impervious "heat" maps



Precise maps of tree cover along local roads & streams

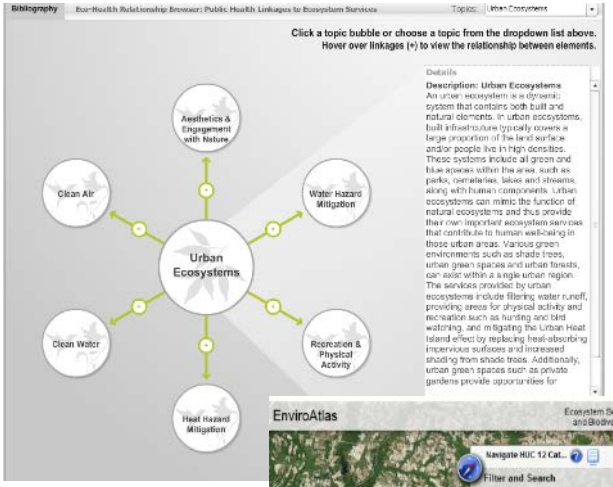
Comparable Block-Group & Finer-Scale Data for Urban & Suburban Areas across the U.S.

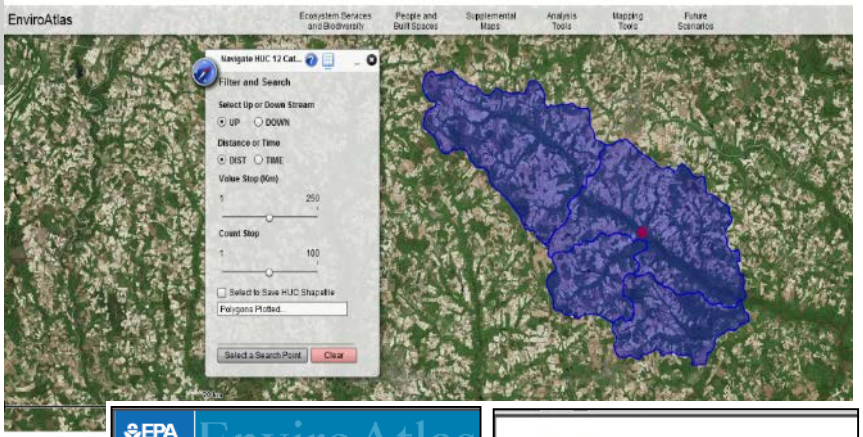


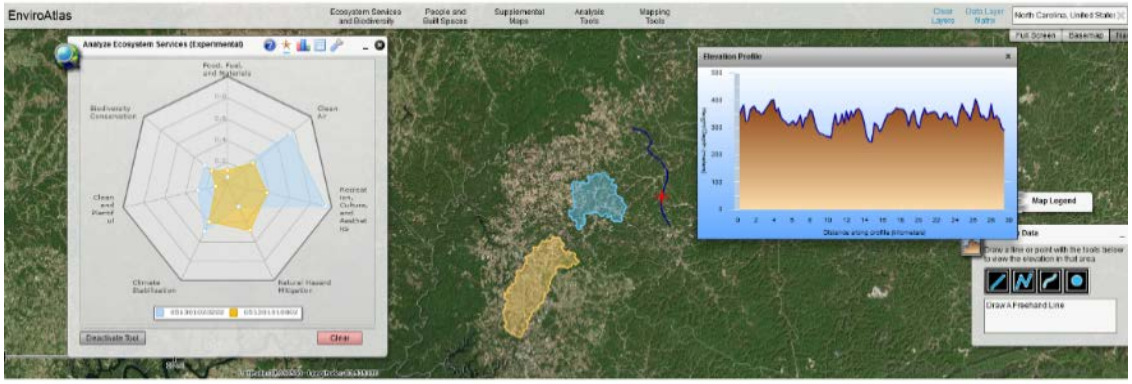
Tribal Partners Sought for the Development of Additional Tribal Communities!

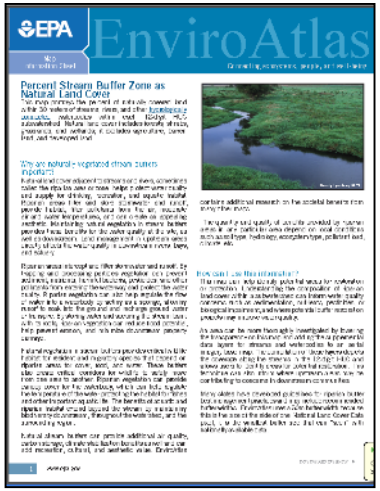
Also: Analysis Tools, Guides & Data Documentation

- Eco-Health Relationship Browser
- Mapping and analysis tools
- User added data
- Downloadable GIS toolboxes
- Jobs, transportation, built environment maps
- Use cases & guides for classroom and HIAs
- Interpretive fact sheets for every data layer



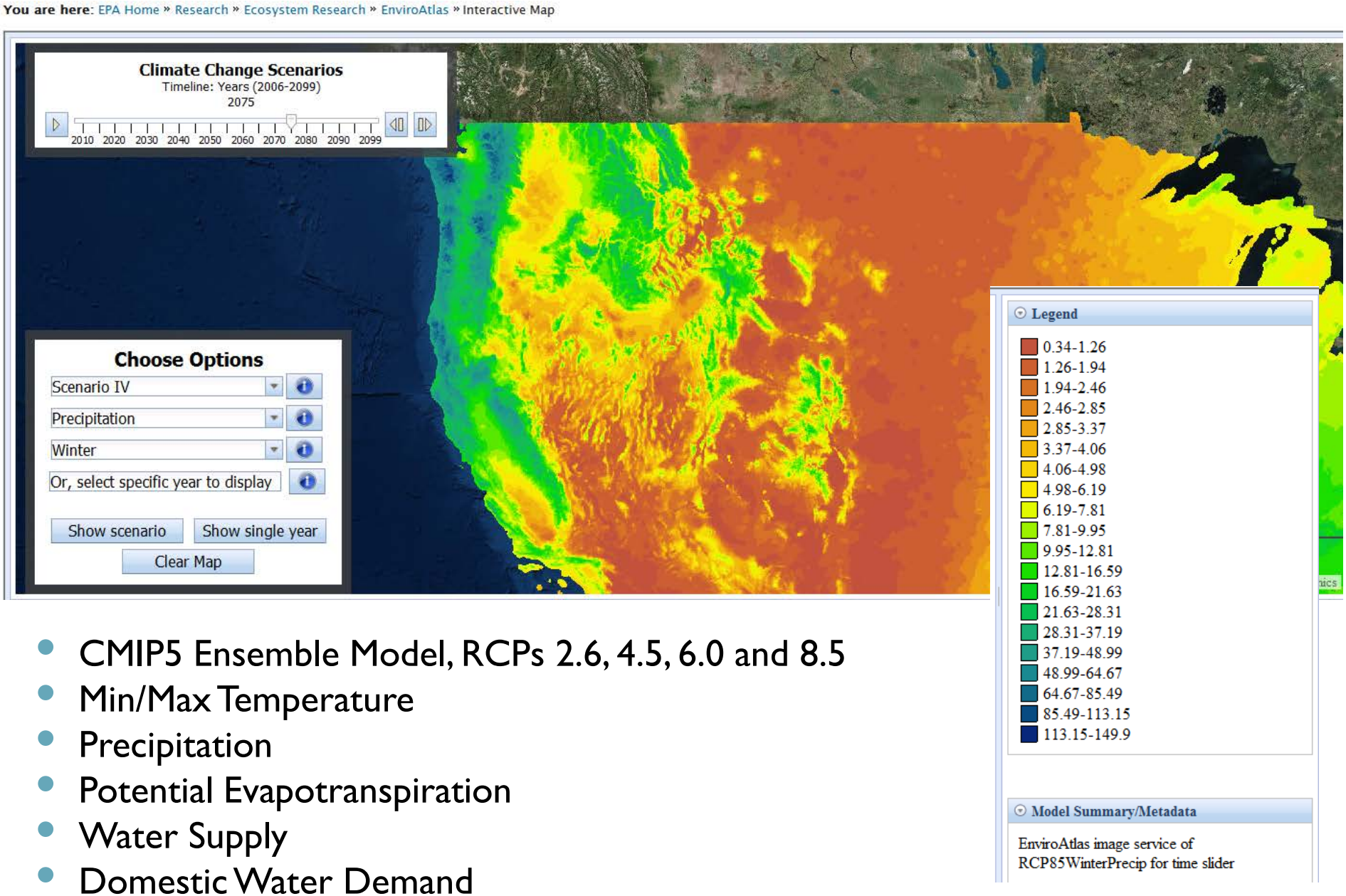






EPA Landscape NRCS USGS

Coming Soon: Climate Scenarios



- CMIP5 Ensemble Model, RCPs 2.6, 4.5, 6.0 and 8.5
- Min/Max Temperature
- Precipitation
- Potential Evapotranspiration
- Water Supply
- Domestic Water Demand

Online Demonstration:

- **Navigating the EnviroAtlas Website**
- **The Eco-Health Relationship Browser**

Thank You!

www.epa.gov/enviroatlas

Contact us:
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Extra Slides: Uses of EnviroAtlas

Uses (that we know about) of EnviroAtlas to Date

- Education – university classroom use, research projects; high-school class exercises
- US Forest Service – ecosystem services property valuation research
- Potentially restorable wetlands data used in Gulf Coast Plains conservation & restoration efforts
- Dasymetric population data used by a state government to prioritize cell tower placement
- Eco-Health Relationship Browser used in health dept. staff HIA training and HIA graduate course, data used in Tampa Bay Health Impact Assessment
- Data layers used to inform development of South Atlantic Landscape Conservation Cooperative Conservation Blueprint
- Data layers under consideration by FWS for tool to help inform land conservation decisions
- Office of Water, States – Addressing impaired waters, watershed recovery potential
- EPA Office of Enforcement, leaking barrels, wetlands restoration, greenway planning, etc.
- EPA Region 4 Watershed Integrity Index
- Transportation planning
- Durham, NC, tree planting prioritization and "Citizens' Compass" public website
- NYC Parks Dept. report on urban ecosystem services by neighborhood
- Greenway development in Colorado
- Multiple studies by USFS, Harvard School of Public Health, Oregon State U, ORD, & others investigating linkages between eco and human health.
- Emergency response
- Contaminated sites remediation

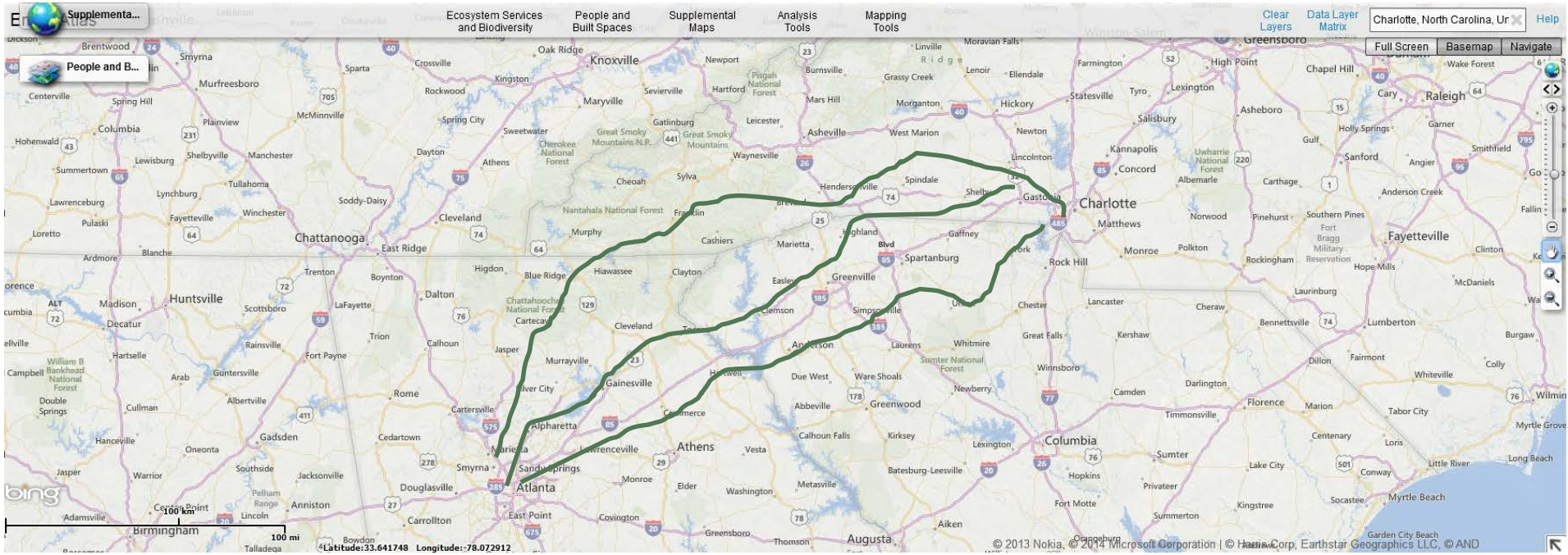
City of New York Parks & Recreation
Forestry, Horticulture & Natural Resources

NYC Parks

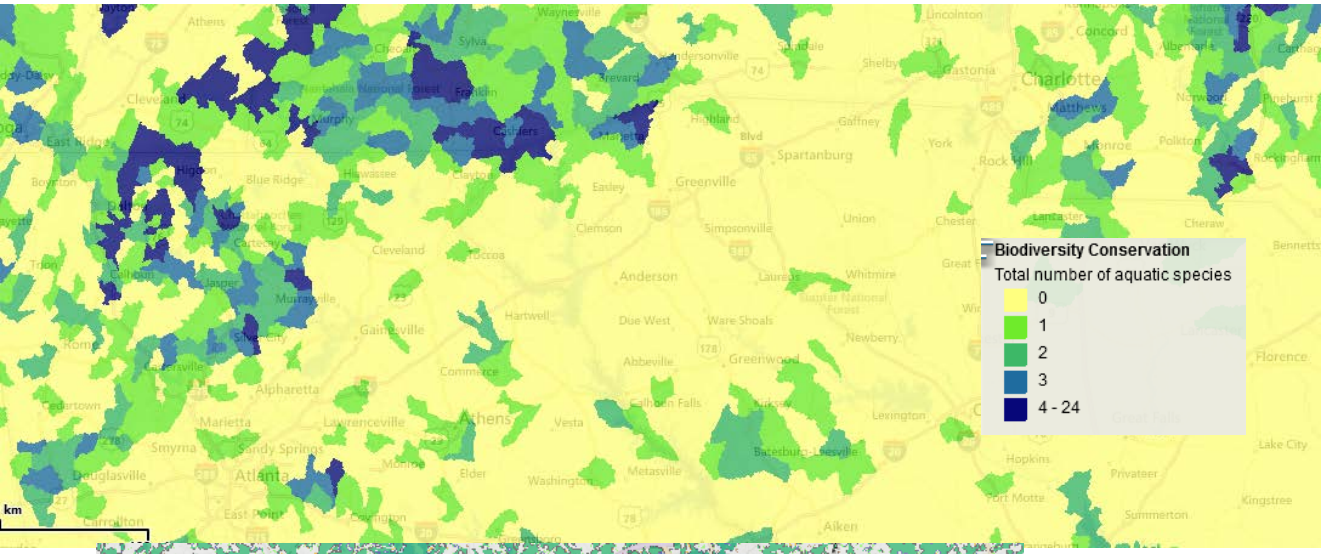
Jackson Heights, Queens – 1101 acres	Flatbush, Brooklyn – 1039 acres	Lower East Side, Manhattan – 536 acres
		
For every acre in Jackson Heights, there are 98 residents 1 box = 5 people, full rectangle = 1 acre	For every acre in Flatbush, there are 102 residents 1 box = 5 people, full rectangle = 1 acre	For every acre in Lower East Side, there are 136 residents 1 box = 5 people, full rectangle = 1 acre
Jackson Heights is 17% tree canopy and 24% green space	Flatbush is 23% tree canopy and 28% green space	Lower East Side is 27% tree canopy and 34% green space
Summer temp reduction: 0.70 °F	Summer temp reduction: 0.82 °F	Summer temp reduction: 1.01 °F
Runoff avoided (per acre): 1395 gallons	Runoff avoided (per acre): 1623 gallons	Runoff avoided (per acre): 1558 gallons
Respiratory health savings (per 10,000 residents): $1421	Respiratory health savings (per 10,000 residents): $3305	Respiratory health savings (per 10,000 residents): $4071
Schools with adequate green space (% of total): 50%	Schools with adequate green space (% of total): 33%	Schools with adequate green space (% of total): 79%
Green streets (% of total acreage): 1.4%	Green streets (% of total acreage): 1.2%	Green streets (% of total acreage): 4.9%
Community gardens: 0	Community gardens: 1	Community gardens: 29

Hypothetical Use Case

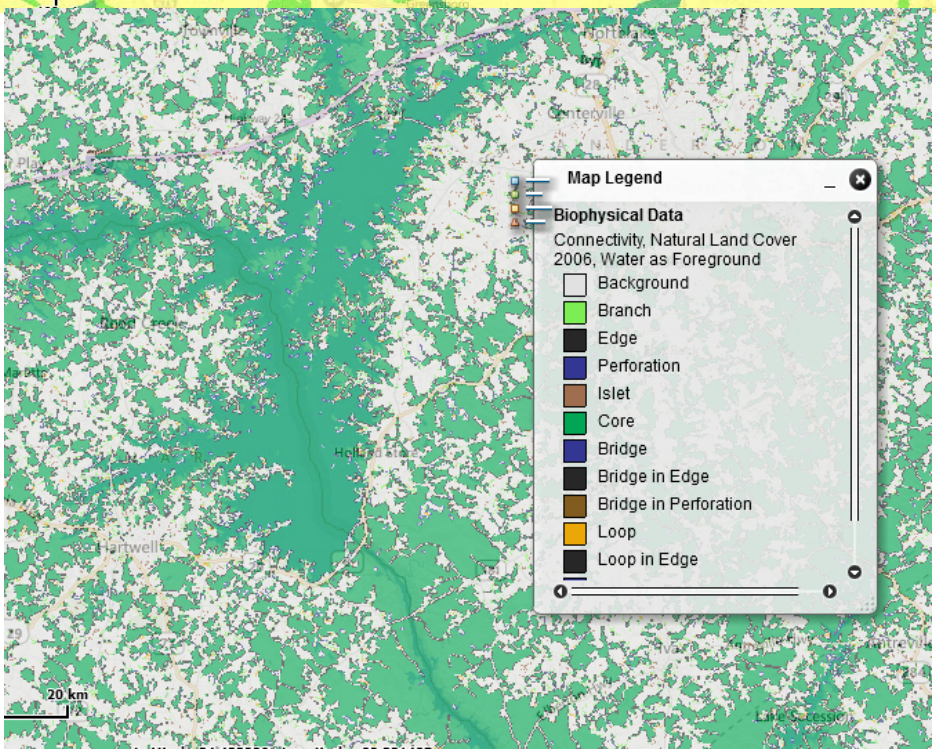
Six routes have been proposed for a high speed rail between Charlotte, NC and Atlanta, GA. Public meetings have been arranged to discuss alternate routes, representation from several interest groups.



Hypothetical Use Case

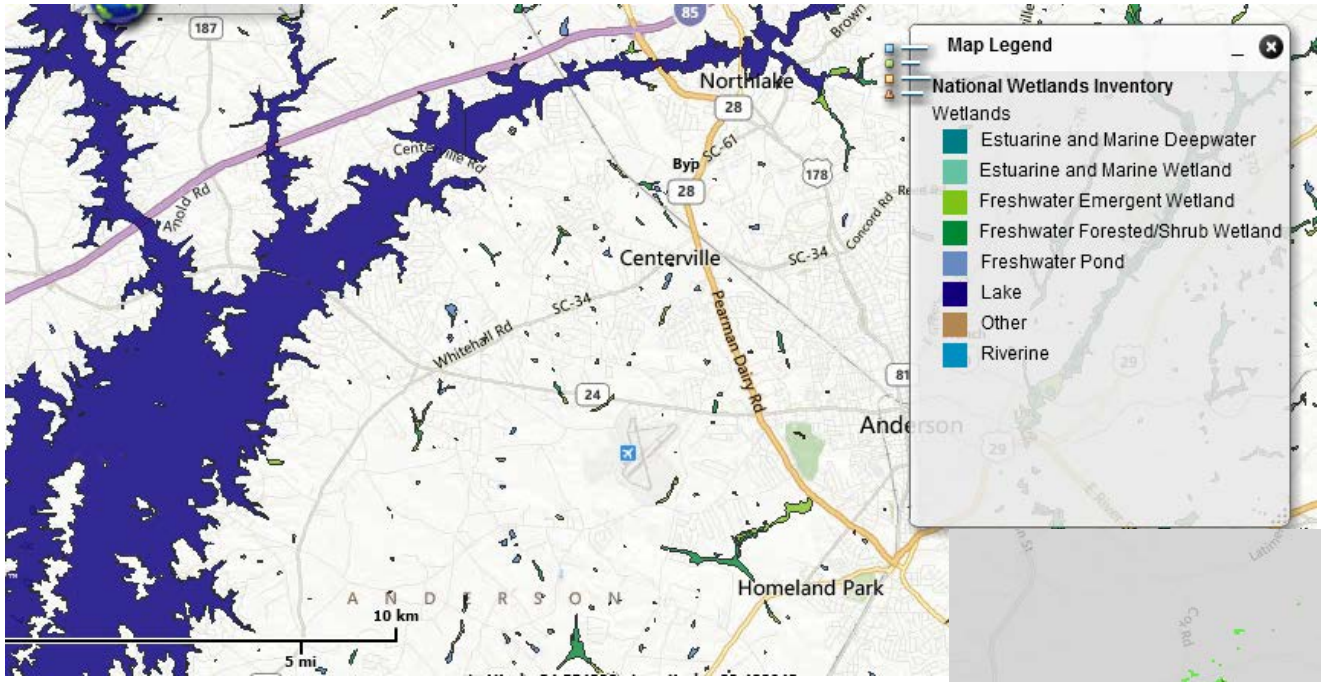


One group highlights presence Threated & Endangered Species



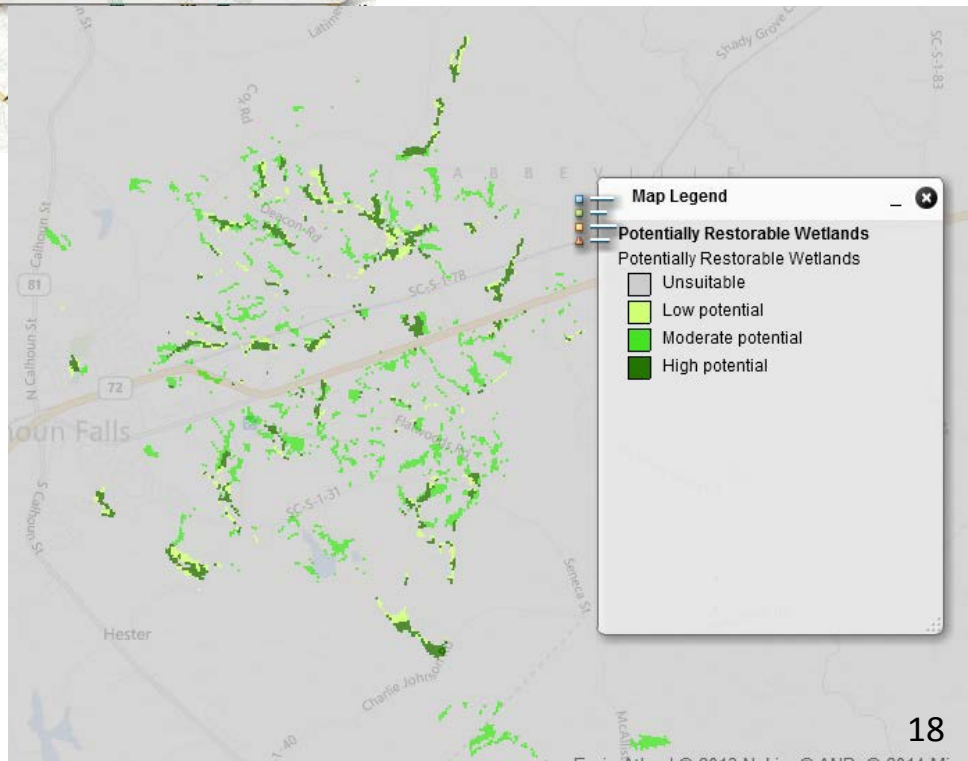
Another group illustrates how the landscape will be further fragmented depending on the route selected

Hypothetical Use Case

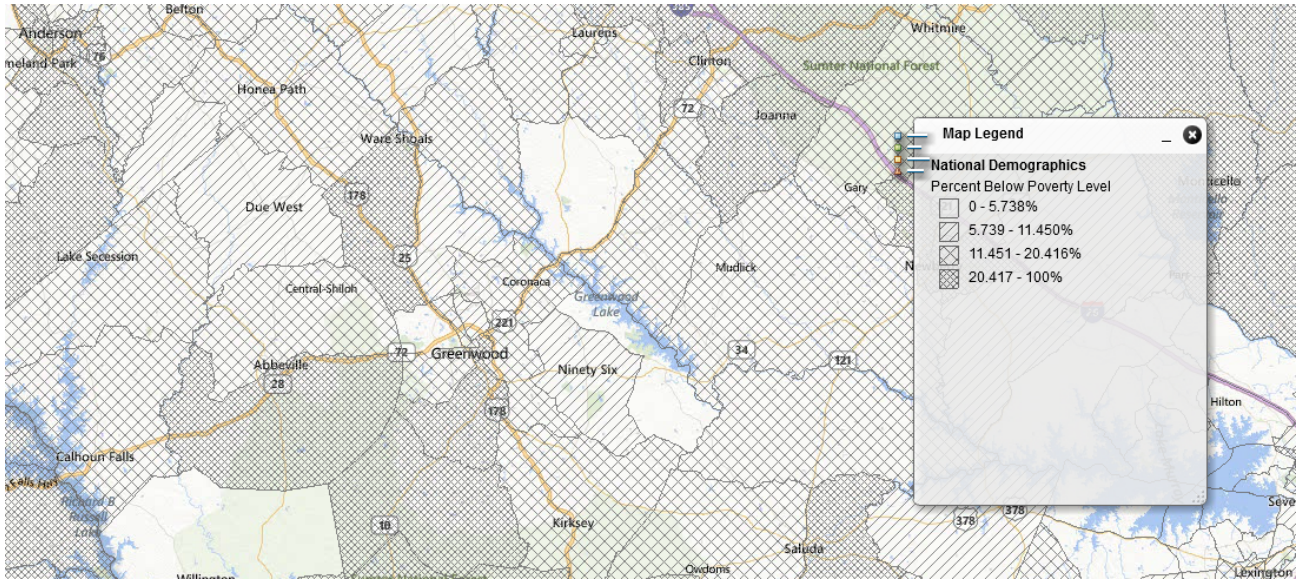


Another group points out that no matter how careful they are, there will be some wetlands mitigation required

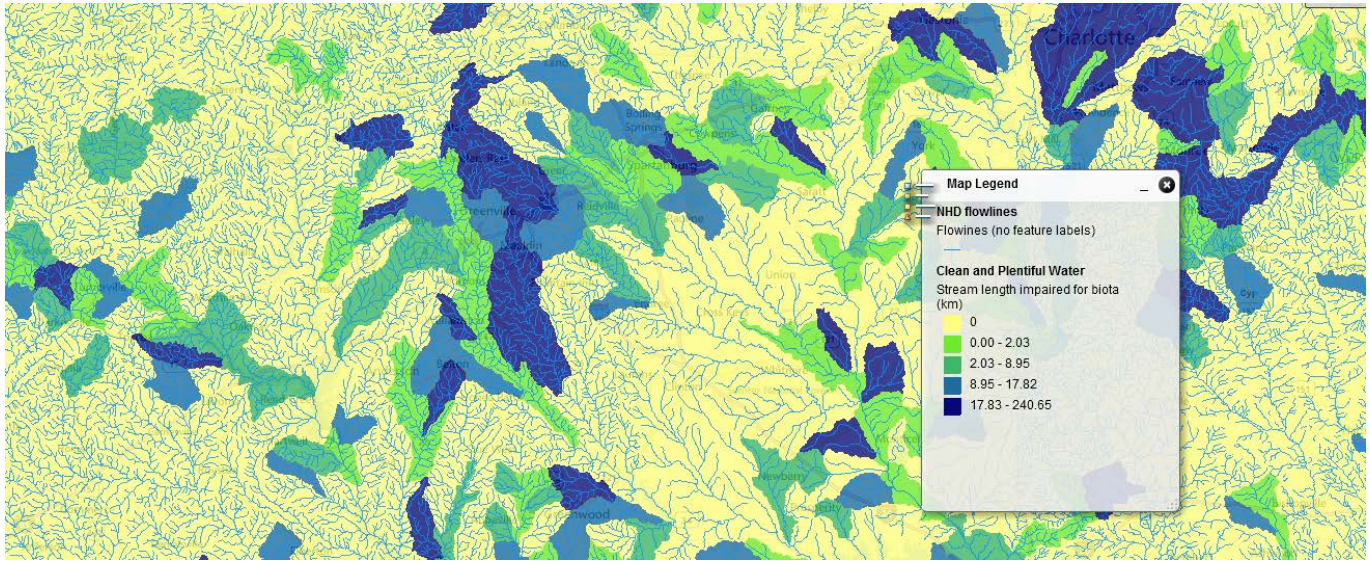
But they are prepared and have already looked into possible agricultural lands which would readily lend themselves to wetlands restoration for mitigation



Hypothetical Use Case

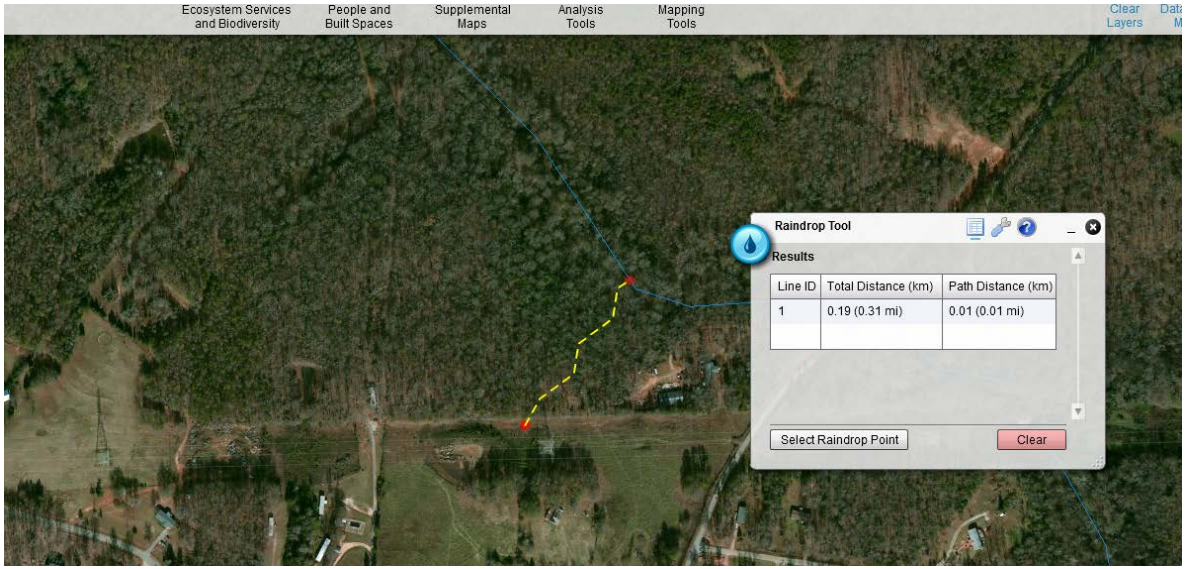


Several rural community planners are there and they note that a station could help their economically depressed community. A track with no station, however, would further afflict an already burdened community

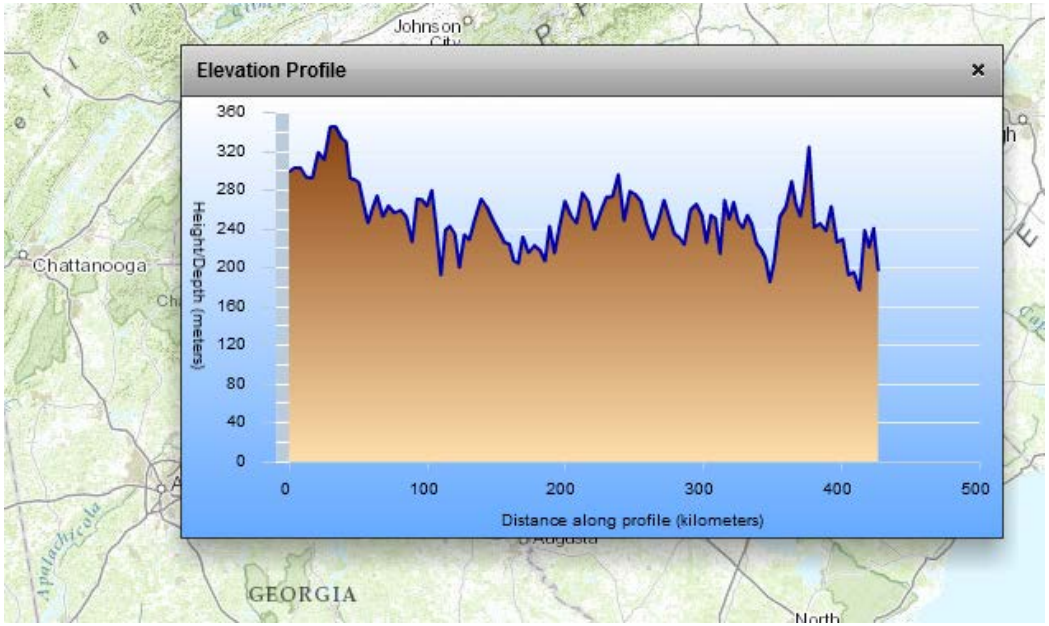


NC and GA have many stream kilometers on the 303d list for biota impairment, they express concern that construction of the rail line would add to that burden

Hypothetical Use Case



A representative from a rural drinking water utility is concerned because she has used the EnviroAtlas Raindrop Tool and noted that runoff from a proposed rail yard would flow directly into her community's drinking water source.



An engineer notes that one of the routes could be cheaper because there would be less elevation change and less chance of encountering endangered species