



Recent Updates to the EnviroAtlas Tool: Mapping Ecosystem Goods and Services



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Office of Research and Development



**Association of State Wetland Managers
Webinar Series
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The views expressed in this presentation are those of the author(s) and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency.

EnviroAtlas

An online tool giving users the ability to view, analyze, and download geospatial data and other resources; designed to inform decision-making, education, and additional research.

Serving data around a common theme:

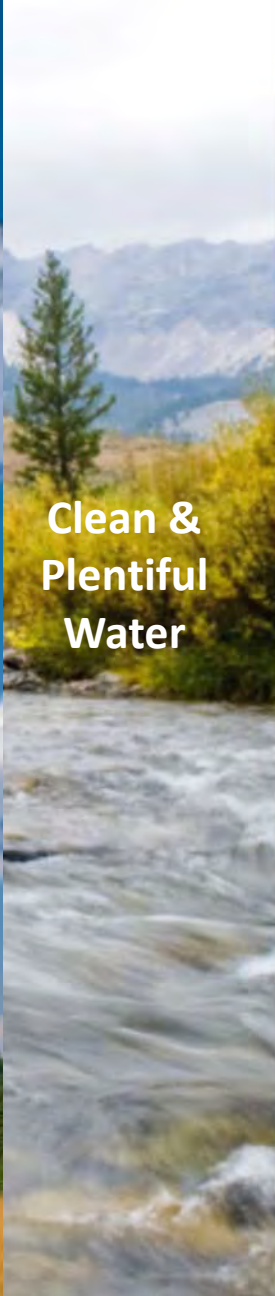
- Geospatial indicators/indices of EGS
- Supplemental data (e.g., boundaries, land cover, soils, hydrography, impaired water bodies, NWI, PADUS, demographics, built infrastructure, roads)
- Analytic and interpretive tools
- Ecosystem marketplace data



**Clean
Air**



**Clean &
Plentiful
Water**



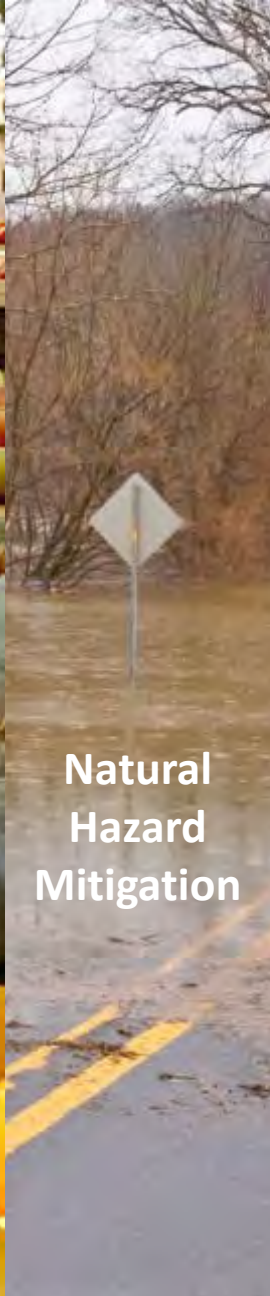
**Biodiversity
Conservation**



**Food,
Fuel, &
Materials**



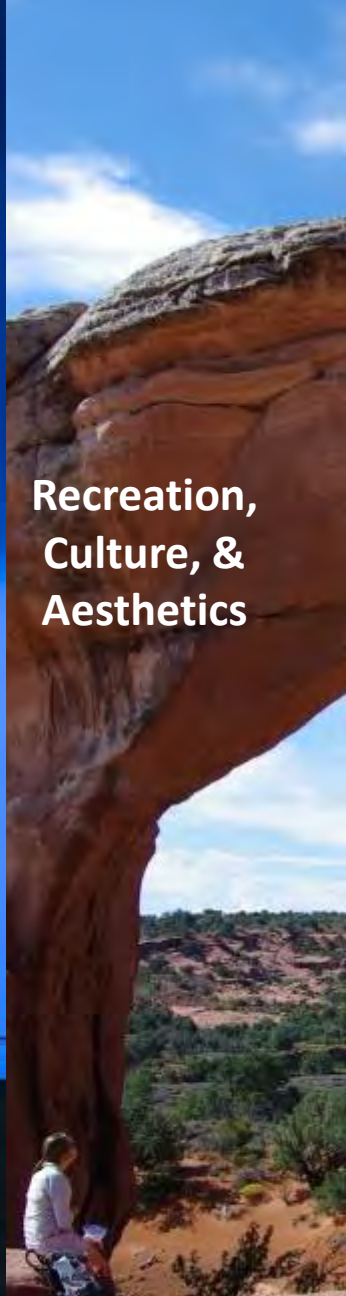
**Natural
Hazard
Mitigation**



**Climate
Stabilization**



**Recreation,
Culture, &
Aesthetics**



Our data are organized into 7 ecosystem service benefit categories.

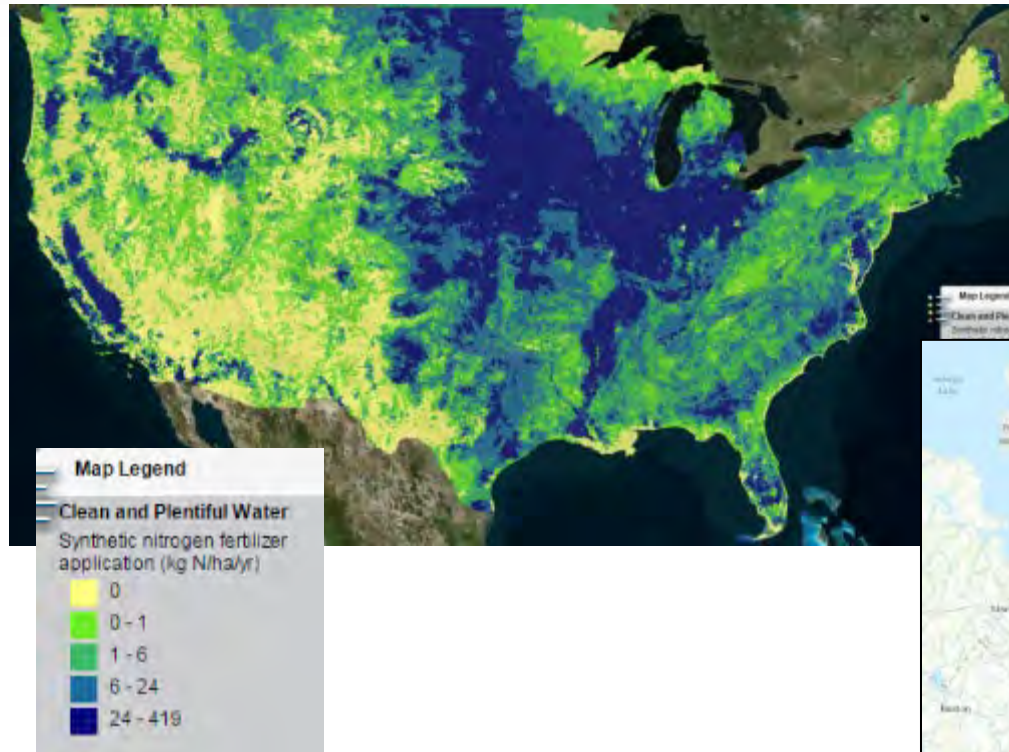
Collaborative Effort



+ Others...

Geospatial Data Developed for Two Primary Extents

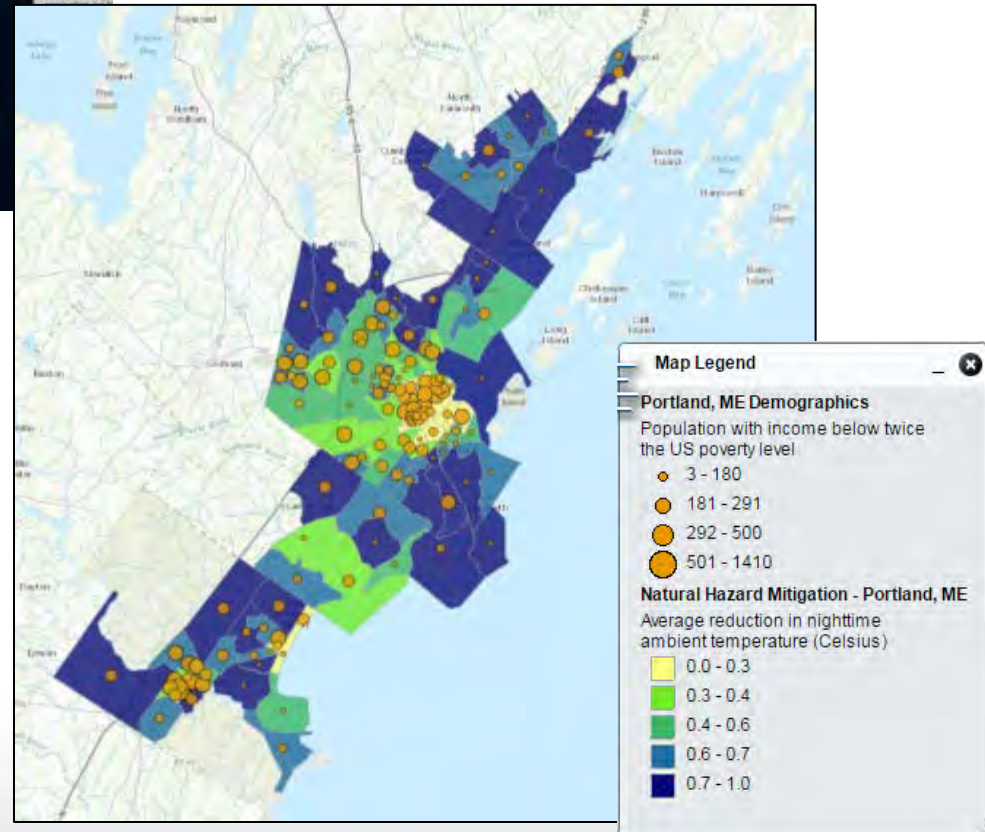
300+ map layers available online



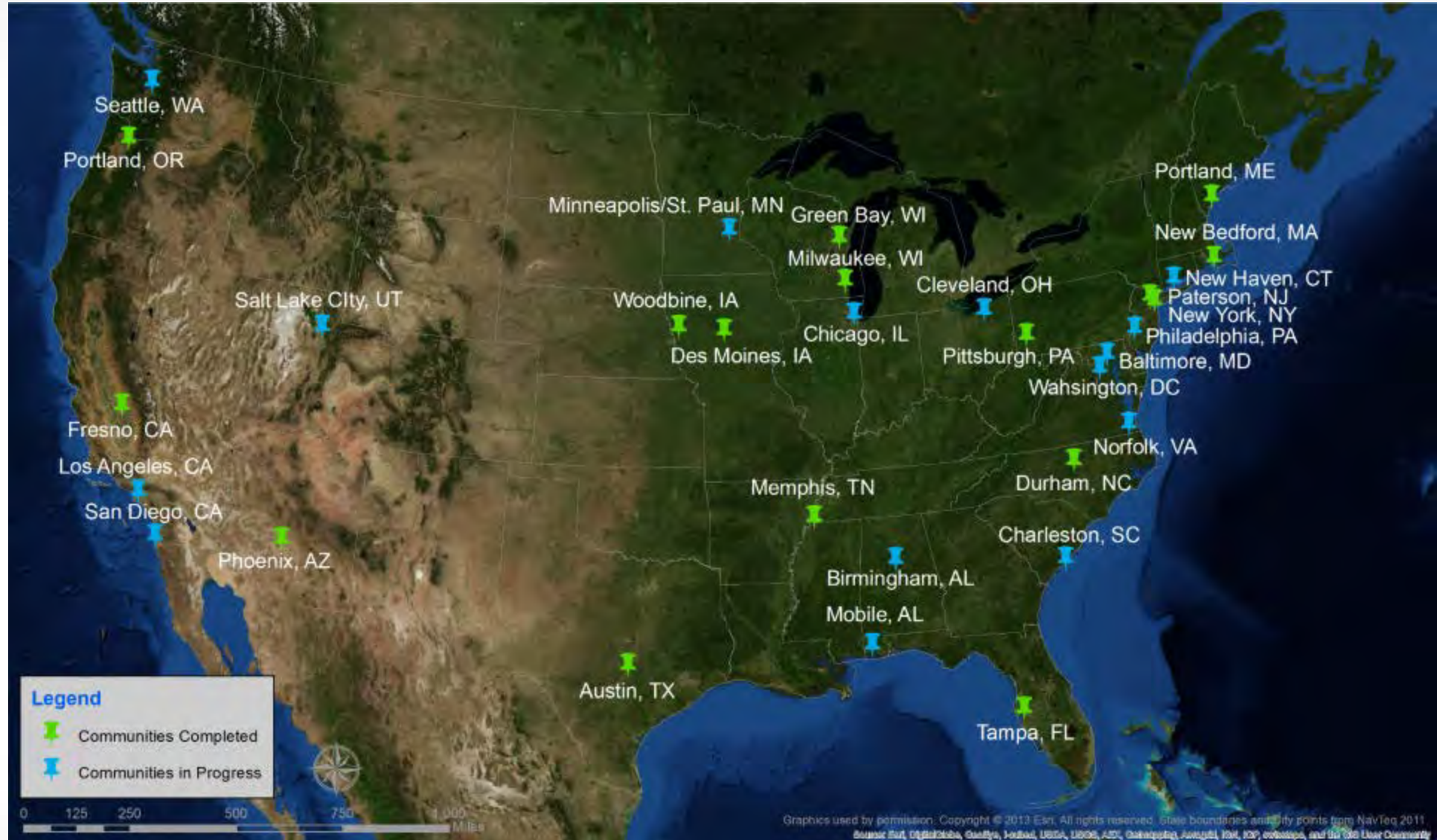
National: Wall-to-wall coverage for conterminous US; summarized by ~90,000 drainage basins (12-digit HUCs,); grids. 160+ data layers

Community: High resolution component for 50 populated places; summarized by US census block group; grids. 100+ data layers

Pictured: Greater Portland, ME



Comparable Data across 18 Communities in FY16



+ Data available for contiguous US.

EnviroAtlas Facilitates Data Access through Multiple Means

- **Access data via interactive map:**
 - Interactive analysis tools
 - Additional context
- **Access data via published web services:**
 - No download required, users always using most current data.

EcoINFORMA

Climate Resilience Toolkit

Data Basin

Climate.Data.gov

ESRI

Community mapping portals,
e.g., Durham, NC

EPA Geoplatform

- **Download the data and run:**

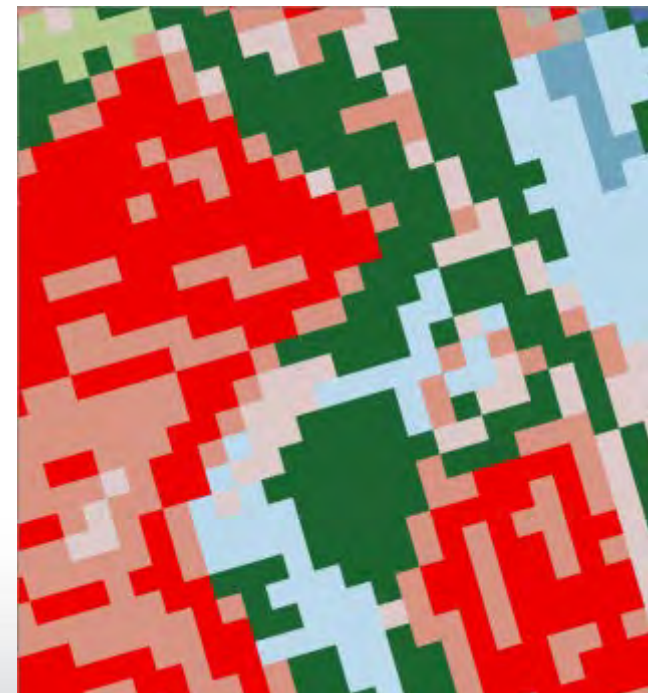
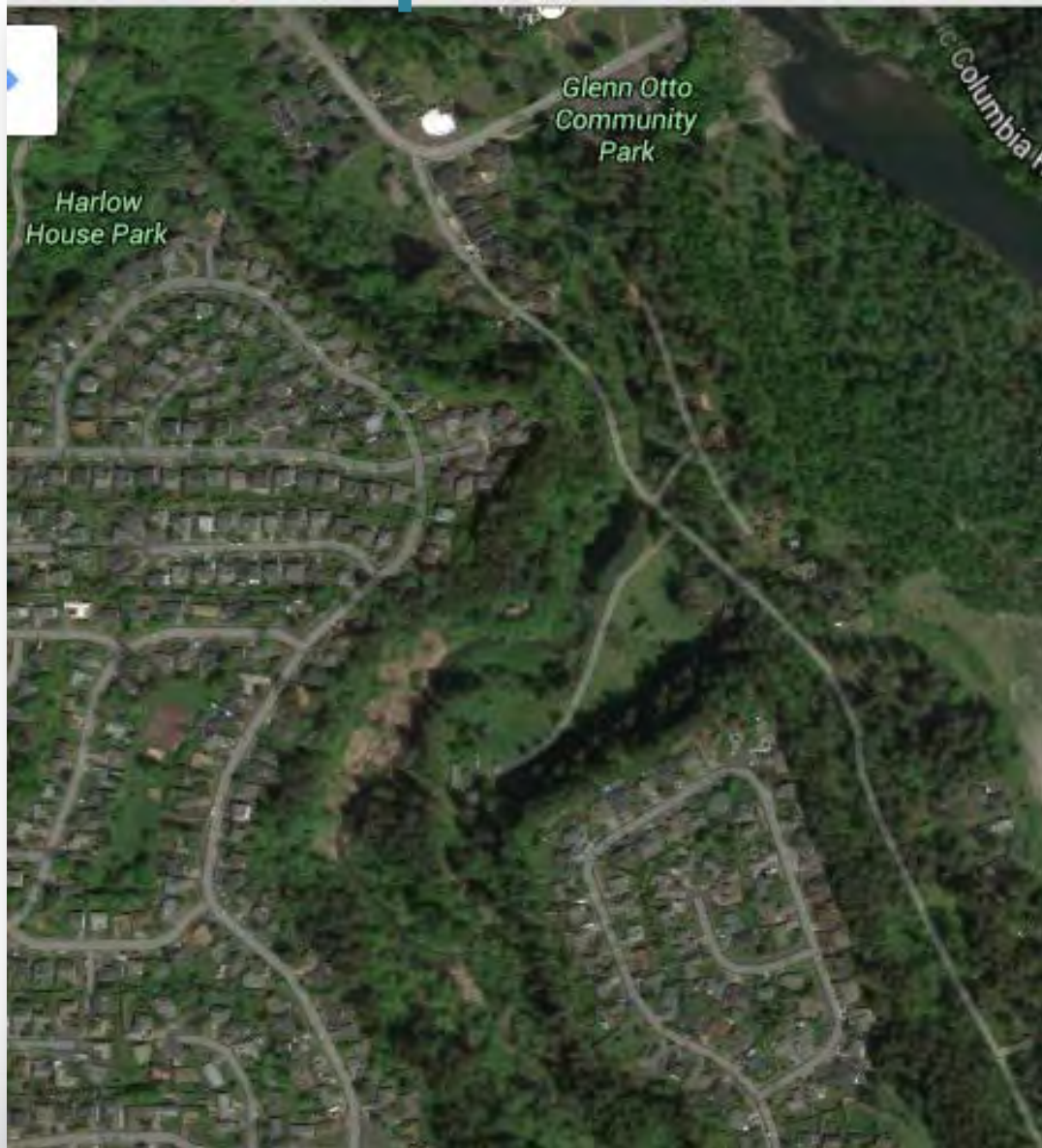
EcoINFORMA Data Hubs Data Catalog Map Viewer Related Topics Contact Ecosystems

Data Hubs

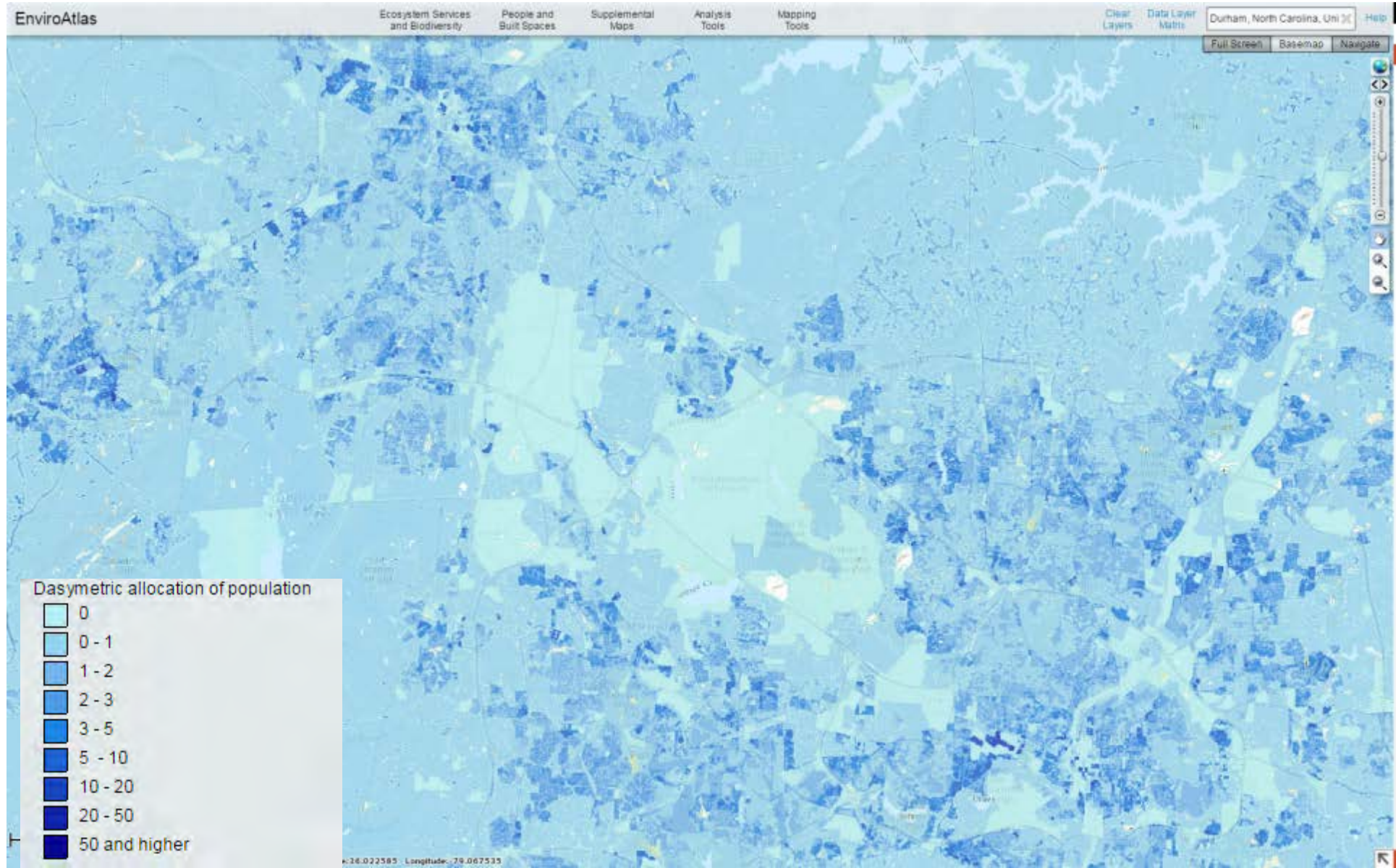
EcoINFORMA's Resource Hubs are data hubs that serve as primary entry points for access and visualization of data around common ecosystem-related themes and their corresponding communities of practice. Established resource hubs of EcoINFORMA can be accessed below.

Biodiversity Resource Hub	Ecosystem Services Resource Hub	Land Cover Dynamics Resource Hub
Biodiversity Information Serving Our Nation	EnviroAtlas	Multi-Resolution Land Characteristics Consortium
Biodiversity Information Serving Our Nation (BISON) is a web-based	EnviroAtlas is a web-based decision-support tool consisting of	The Multi-Resolution Land Characteristics Consortium (MRLC)

Land Cover is an Important Input

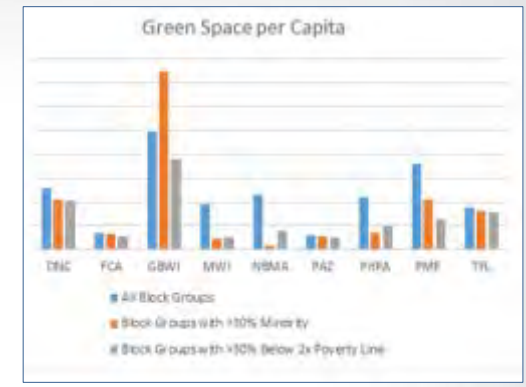


People are also an important input



Also Includes: Analysis Tools, Guides, and Information

- Eco-Health Browser
- Mapping and analysis tools
- User added data
- Downloadable GIS toolboxes
- Use cases
- Guides for classroom and HIAs
- Standardized interpretive fact sheets for every data layer



New to EnviroAtlas?

Ecosystem services are critically important to human health, but often overlooked. [EnviroAtlas works to bridge this gap \(YouTube\)](#) [Exit](#).



EnviroAtlas provides interactive tools and resources for exploring the benefits people receive from nature or "ecosystem goods and services". Ecosystem goods and services are critically important to human health and well-being, but they are often overlooked due to lack of information. Using EnviroAtlas, many types of users can access, view, and analyze diverse information to better understand the potential impacts of various decisions.

Get Started with EnviroAtlas



New to EnviroAtlas? Start with these resources.

- **Ecosystem Services in EnviroAtlas**
These benefits underpin almost every aspect of human well-being, including our food and water, security, health, and economy.
- **How to Use EnviroAtlas**
Demo videos and training documents, including examples of how these tools can be applied in a variety of ways.
- **EnviroAtlas Data**
Overview of EnviroAtlas data organization, spatial extents, & how to access.

Access Interactive Apps



The Interactive Map and Eco-Health Relationship Browser are the flagship EnviroAtlas applications.

- **EnviroAtlas Interactive Map**
A multi-extent Interactive Map with broad scale data for the lower 48 states and fine scale data for selected communities.
- **EnviroAtlas Eco-Health Relationship Browser**
An easy-to-use relational browser showing the linkages between ecosystems, the services they provide, and human health.

More GIS Resources



Already familiar with EnviroAtlas and GIS analysis? Explore these resources.

- **EnviroAtlas Tools**
Access several downloadable GIS toolboxes and ArcMap extensions that work with user-supplied data.
- **EnviroAtlas Data Download**
EnviroAtlas National and Community data are made freely available for download.
- **Resources for EnviroAtlas Collaborators**
Information and document templates to guide the development of data, metadata, widgets, tools and fact sheets.

National Example – Stream Density

EnviroAtlas

[Report Map Issues](#) [Contact Us](#) [Share](#)

You are here: [EPA Home](#) >> [EnviroAtlas](#) >> [Interactive Map](#)

EnviroAtlas

[Ecosystem Services
and Biodiversity](#)

[People and
Built Spaces](#)

[Supplemental
Maps](#)

[Analysis
Tools](#)

[Mapping
Tools](#)

[Clear
Layers](#)

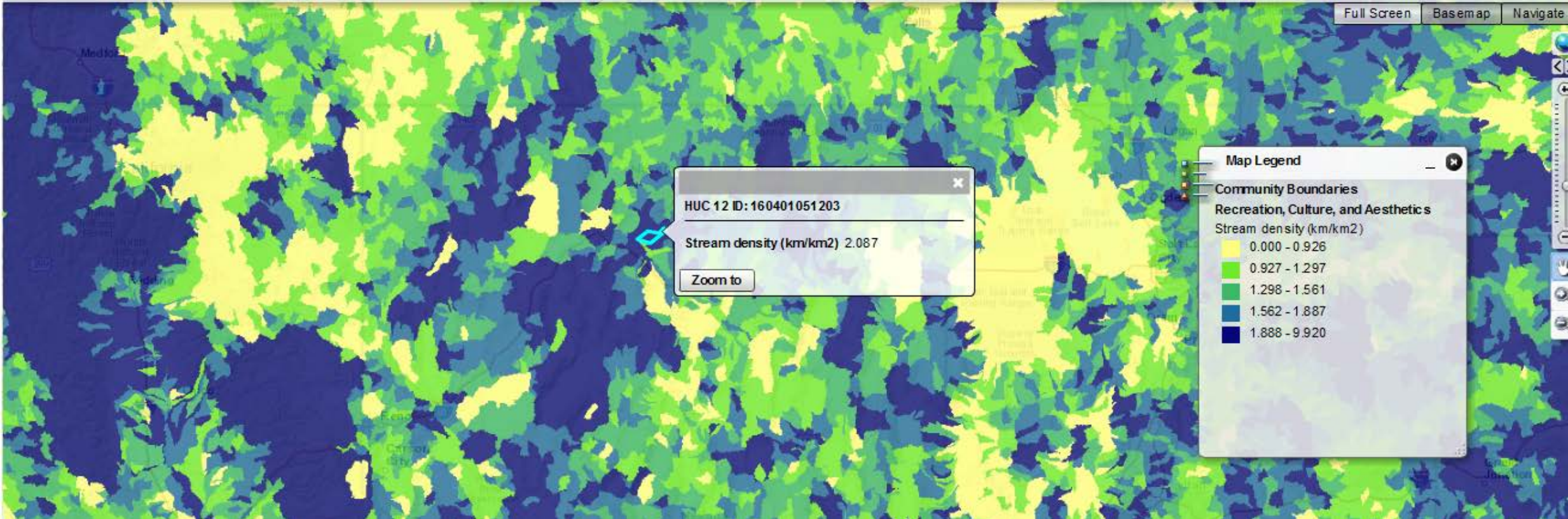
[Data Layer
Matrix](#)

[Help](#)

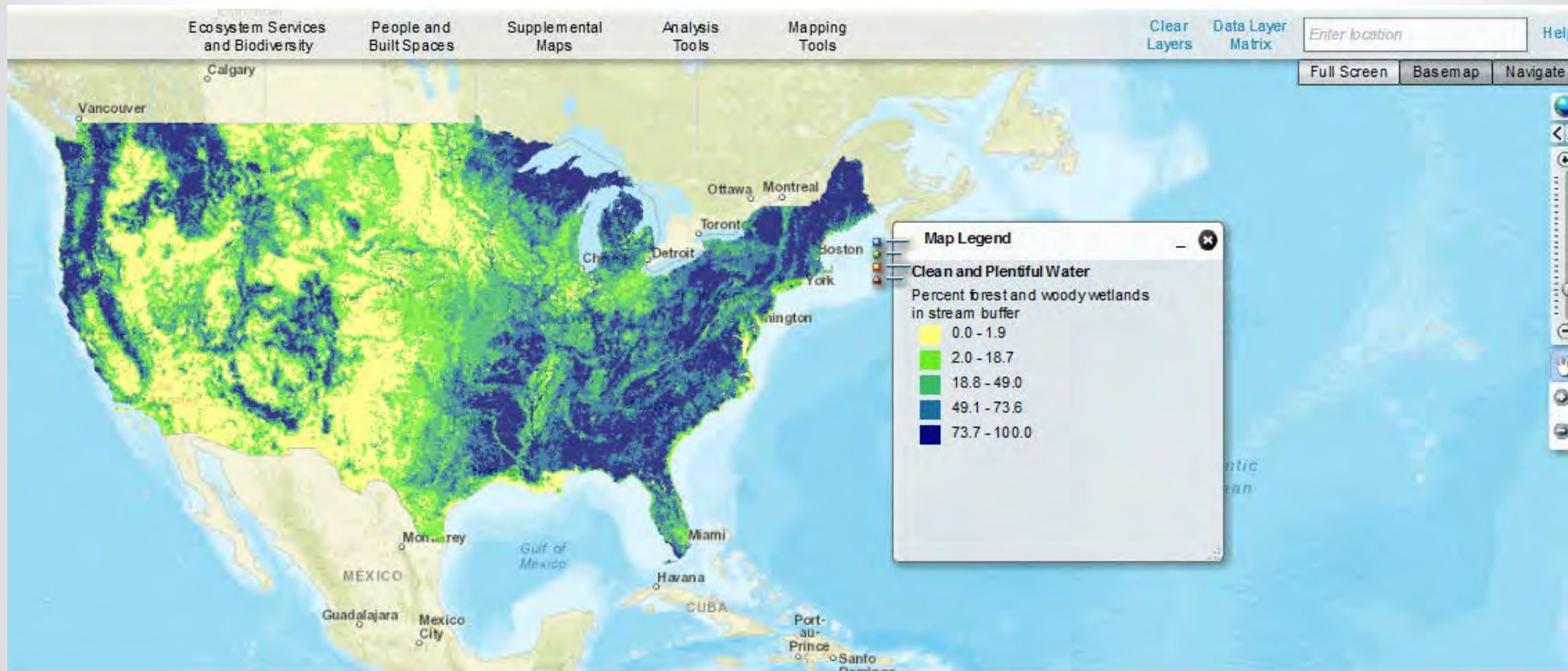
[Full Screen](#)

[Basemap](#)

[Navigate](#)



National Example – Land Cover in Water Body Buffers



National Example – Potentially Restorable Wetlands

EnviroAtlas

Ecosystem Services
and Biodiversity

People and
Built Spaces

Supplemental
Maps

Analysis
Tools

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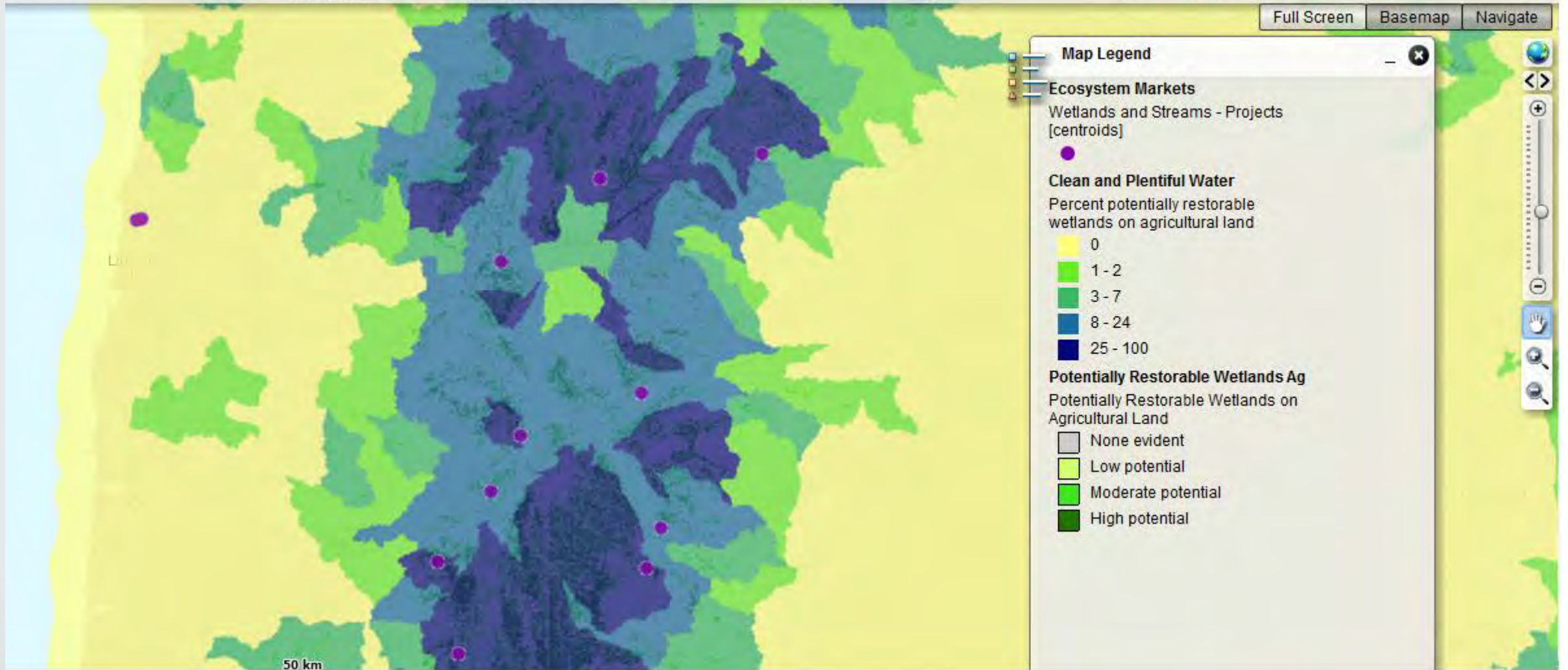
Bowling Green, Kentucky, Un X

Help

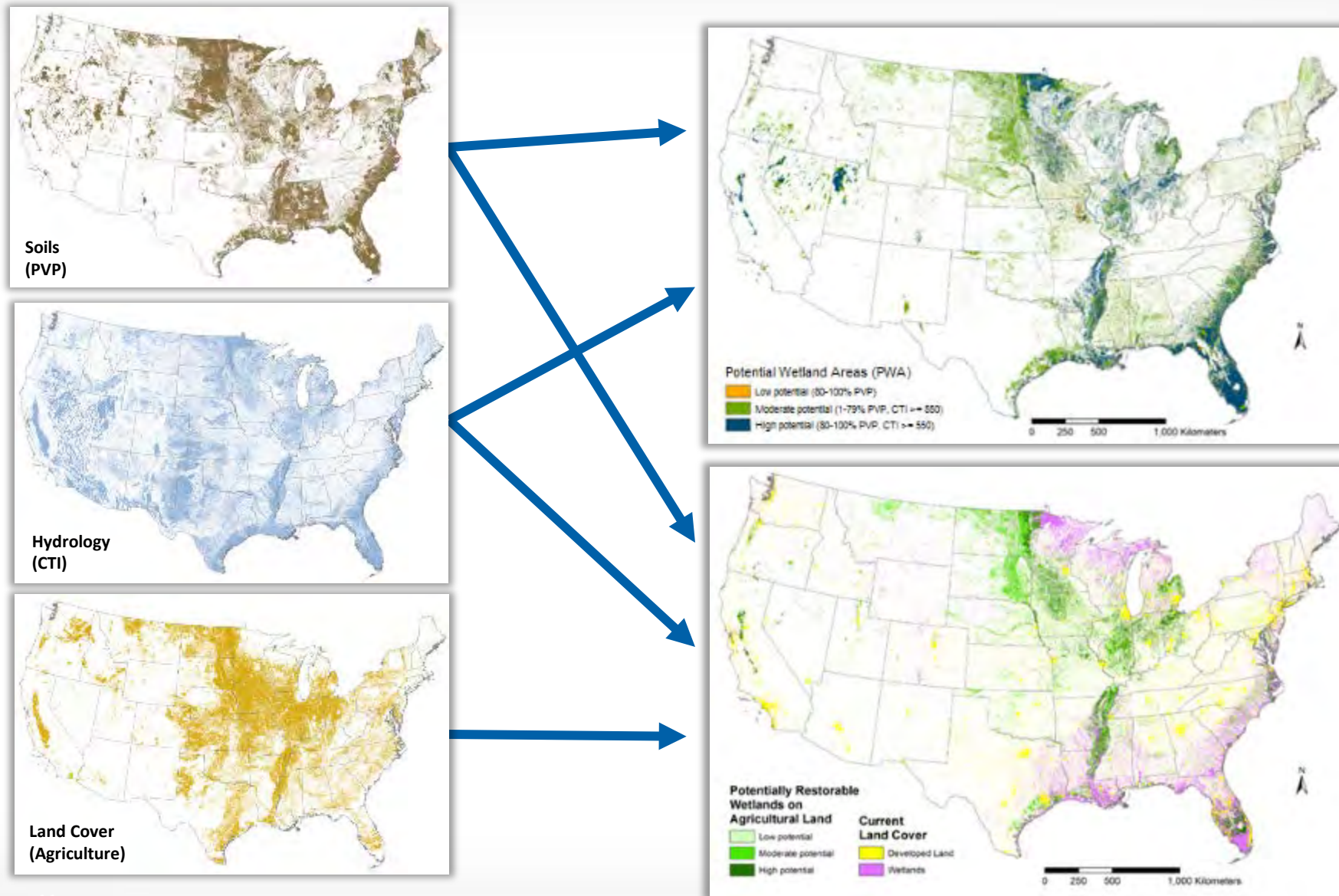
Full Screen

Basemap

Navigate



Potential Wetlands Layers

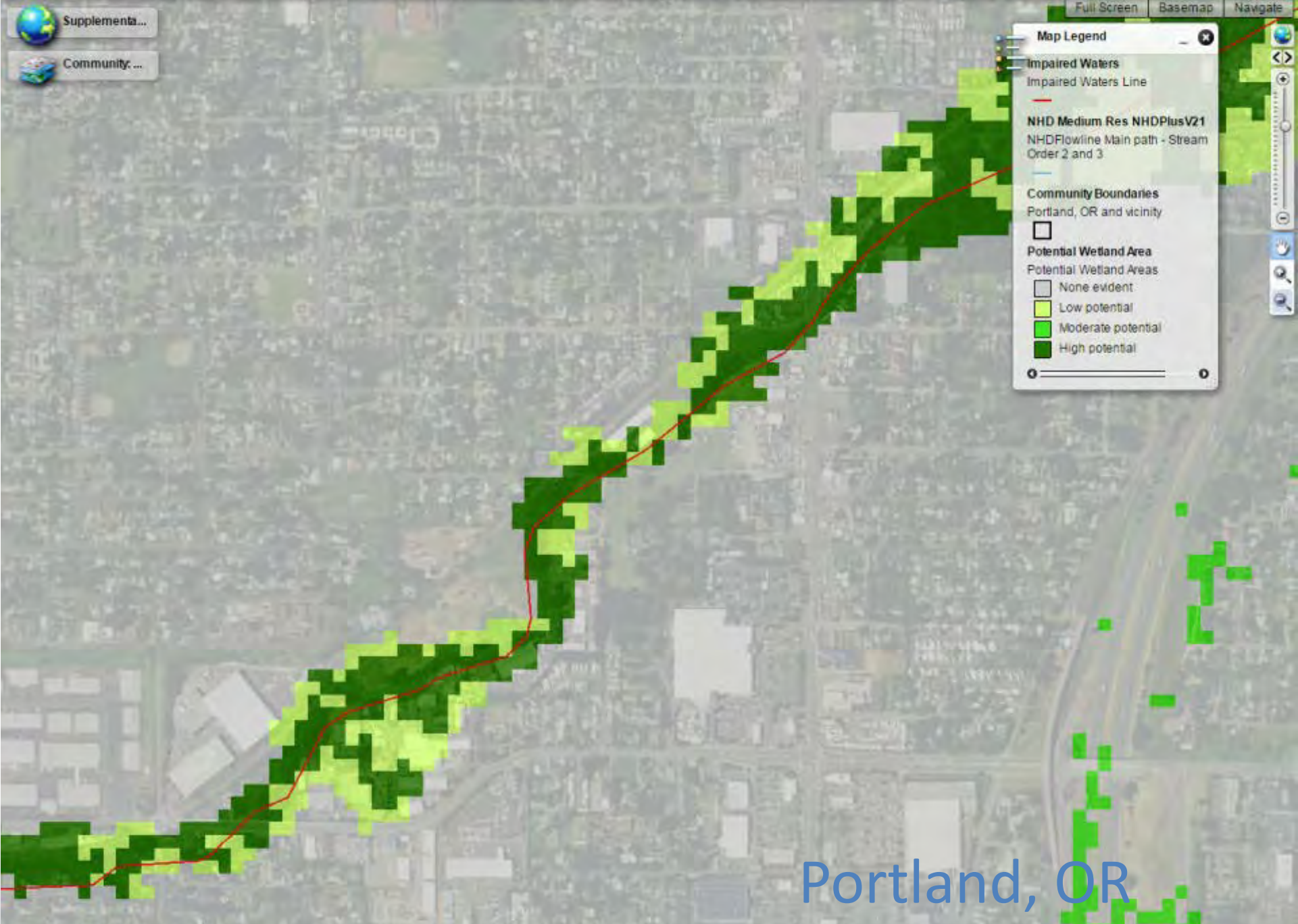


Supplementa...
Community, ...

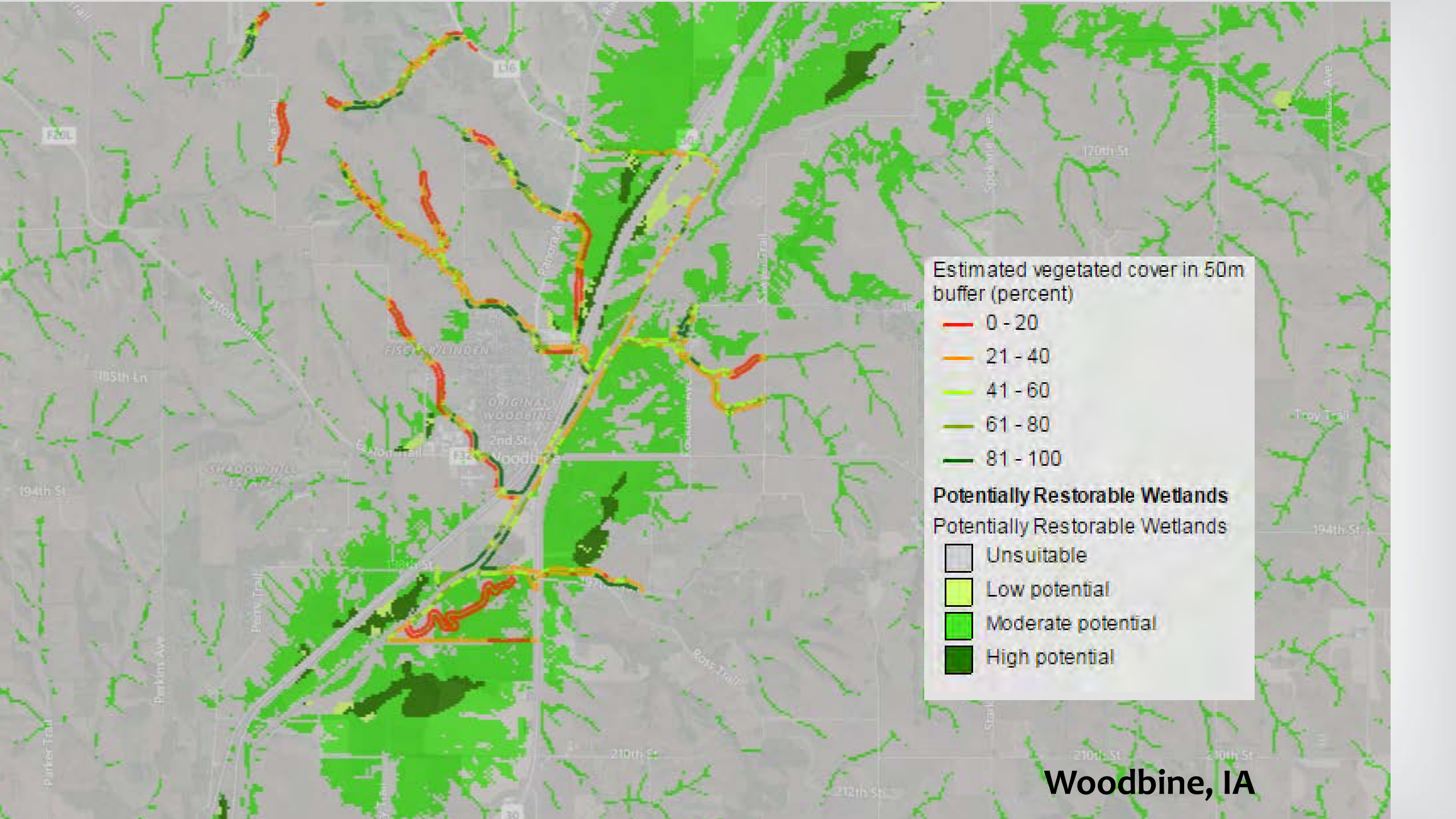
Full Screen Basemap Navigate

Map Legend

- Impaired Waters**
 - Impaired Waters Line
- NHD Medium Res NHDPlusV21**
 - NHDFlowline Main path - Stream Order 2 and 3
- Community Boundaries**
 - Portland, OR and vicinity
- Potential Wetland Area**
 - Potential Wetland Areas
 - None evident
 - Low potential
 - Moderate potential
 - High potential

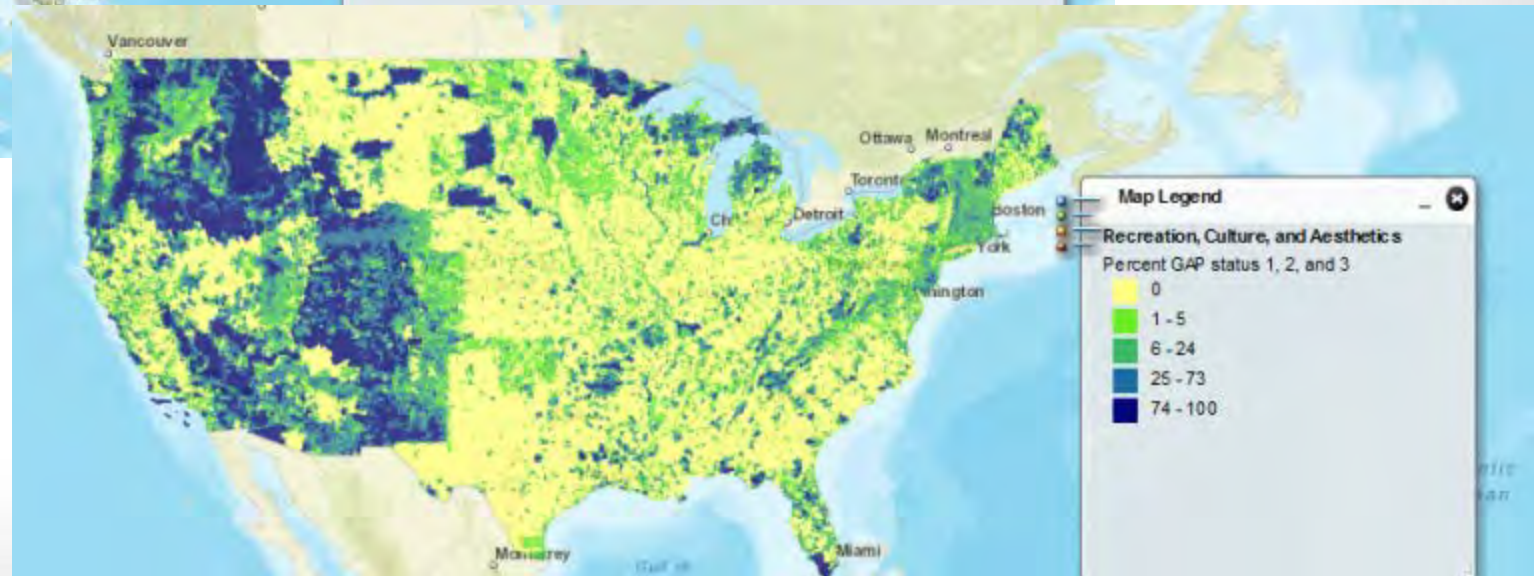
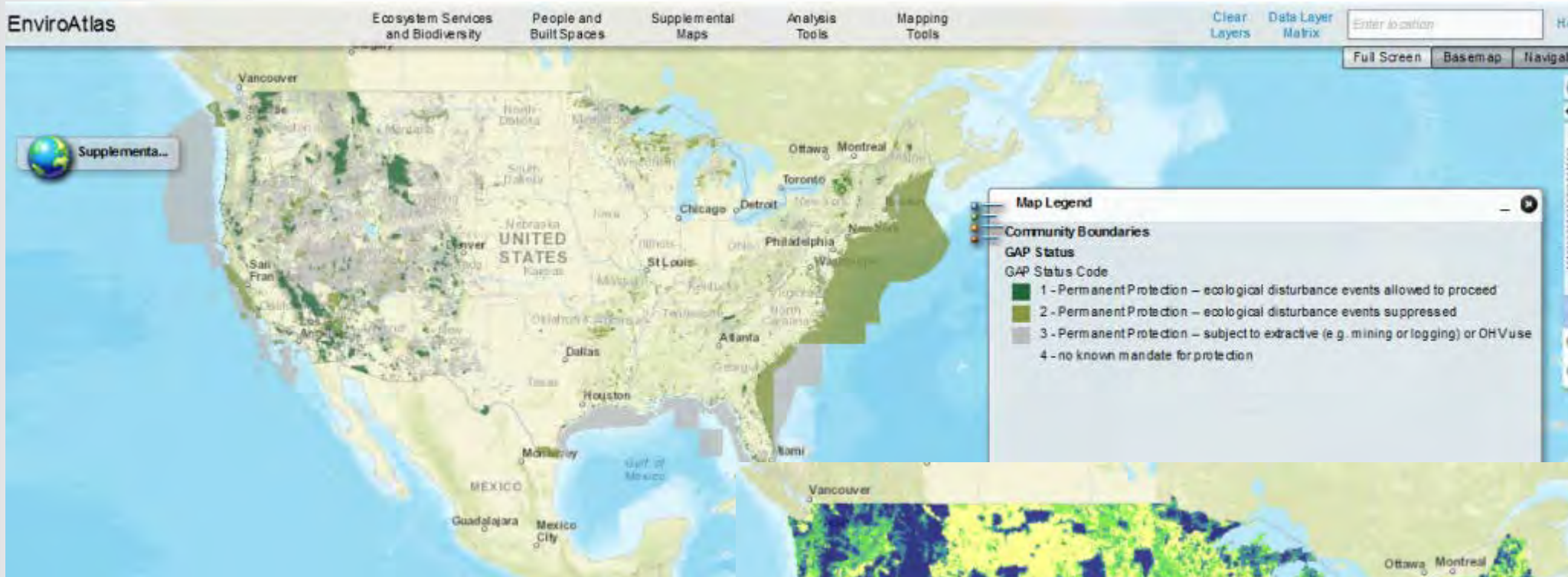


Portland, OR

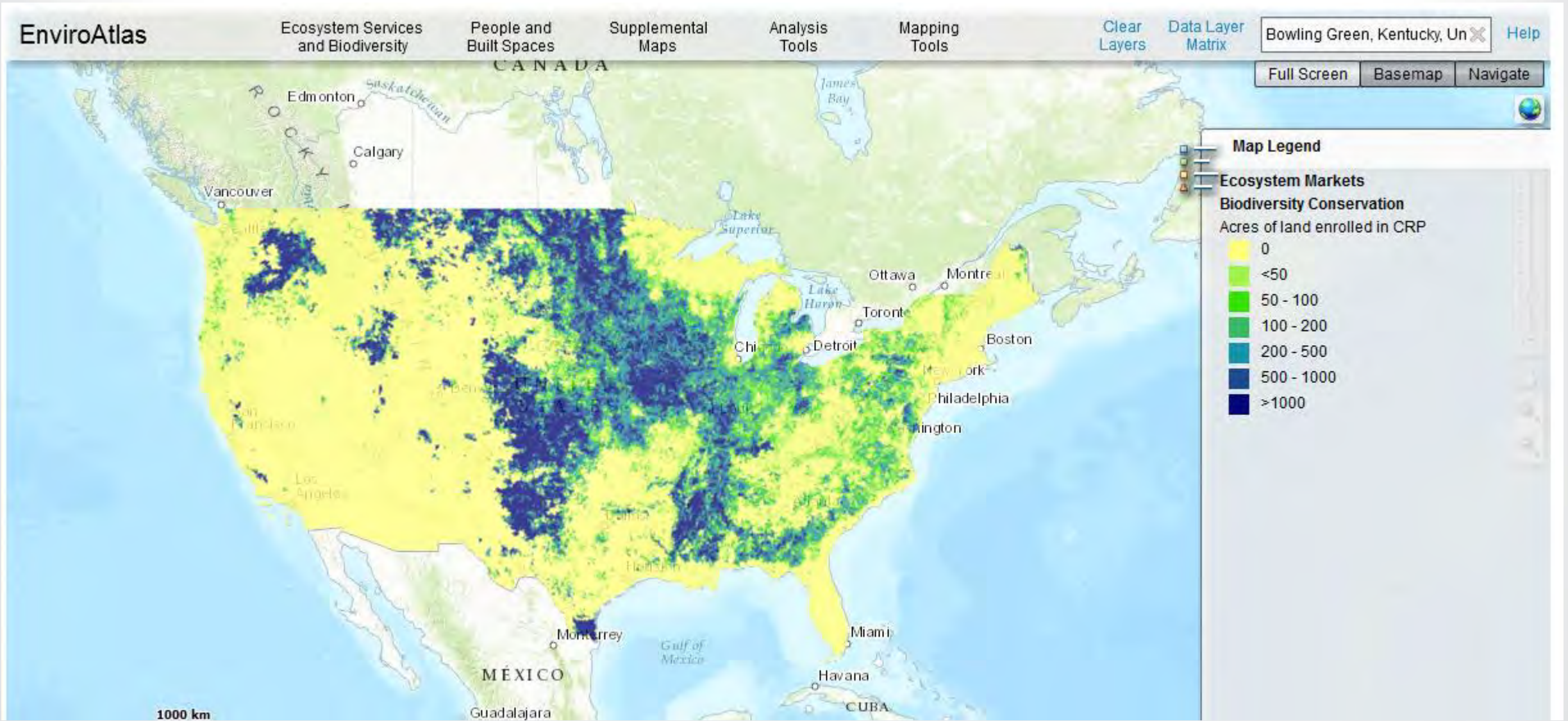


Woodbine, IA

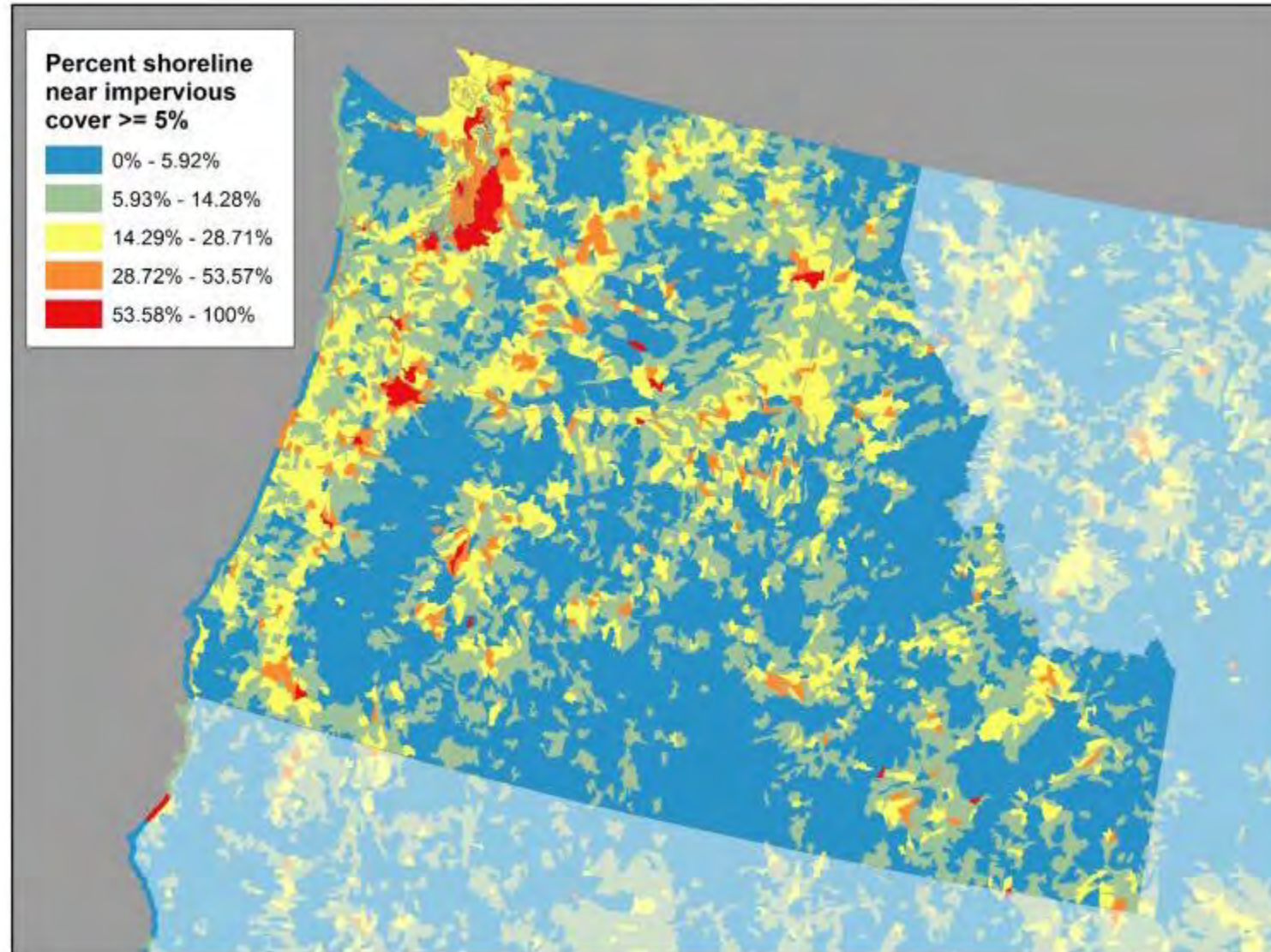
National Example – Protected Lands (PADUS)



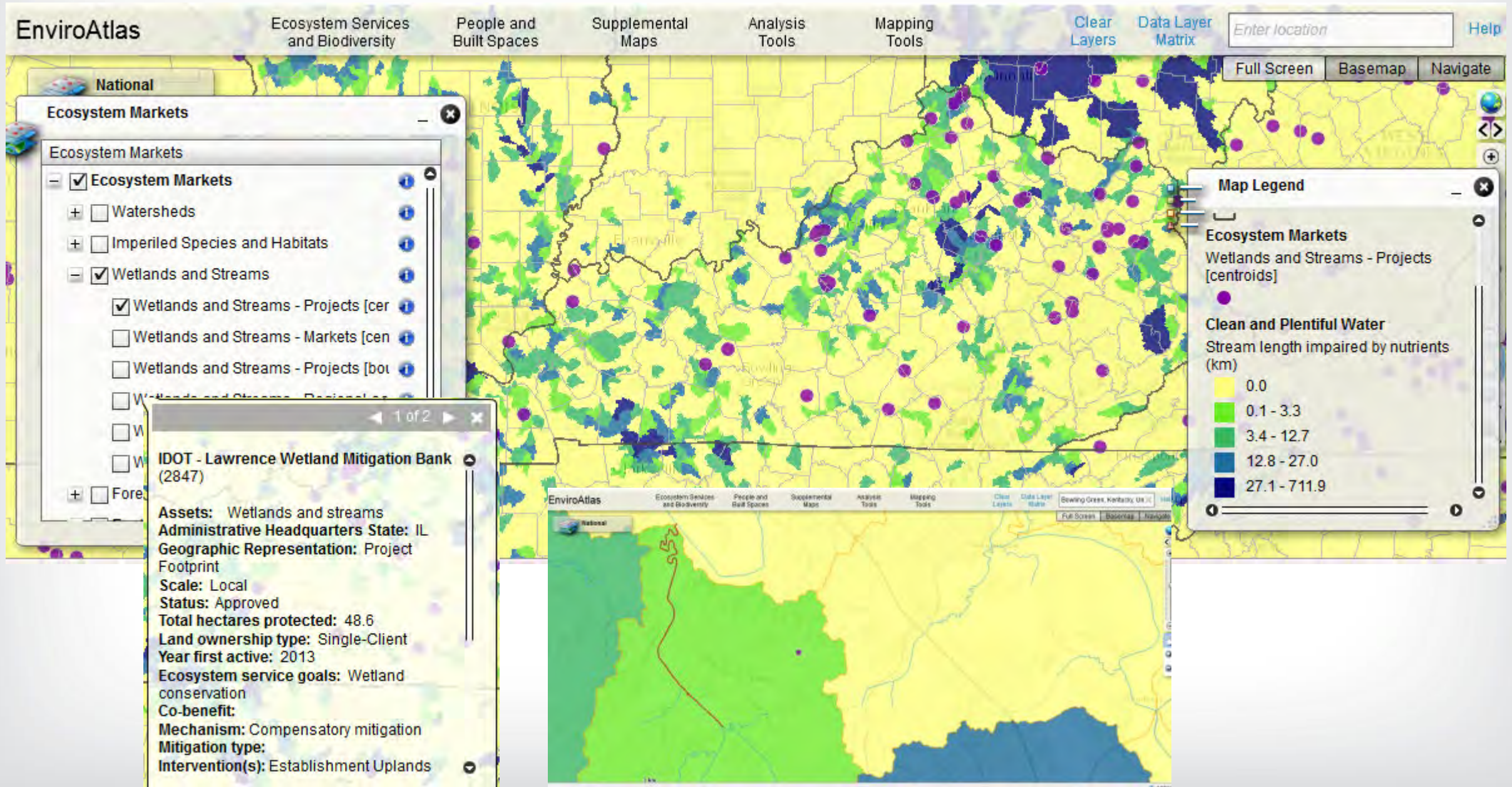
National Example – Acres of Land in the Conservation Reserve Program



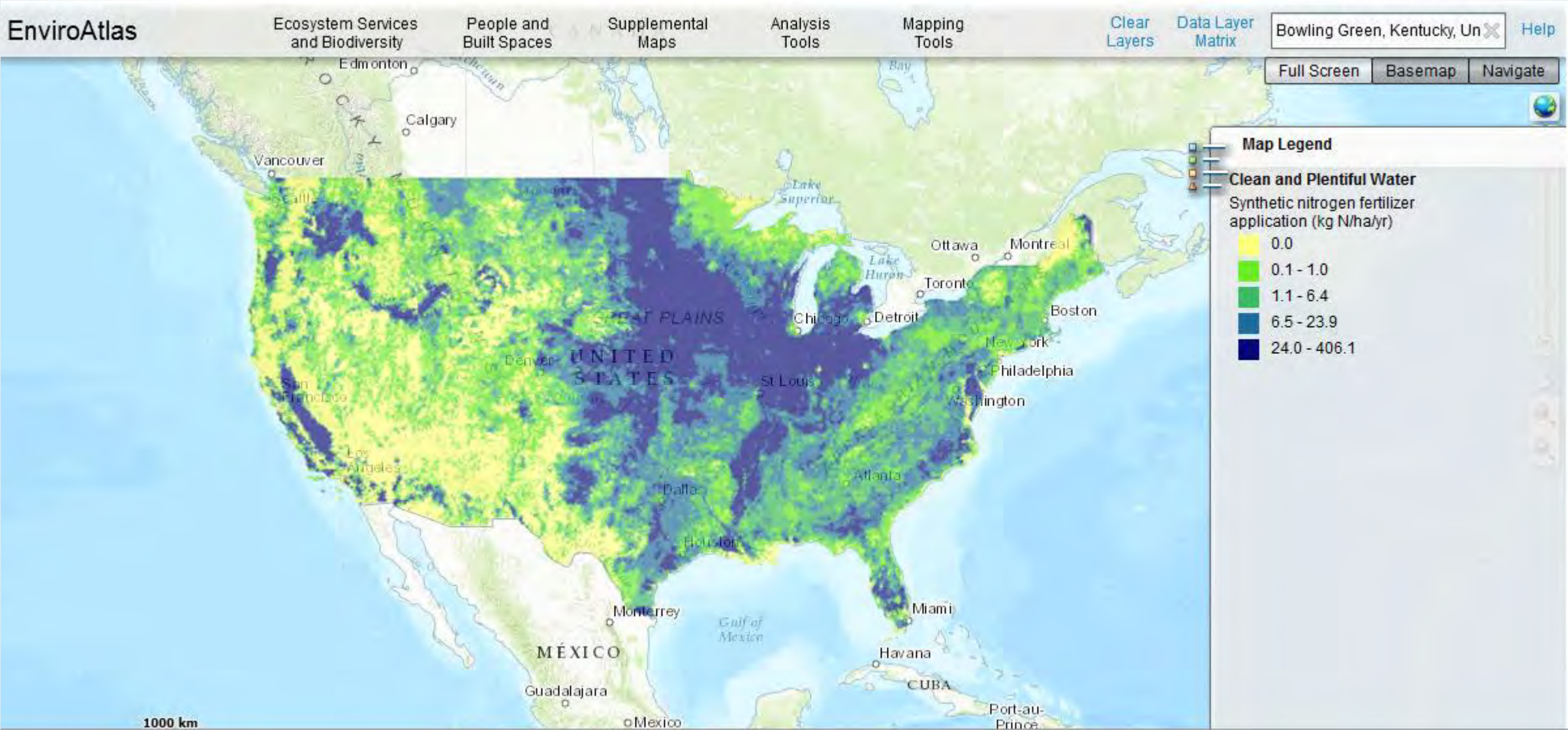
Percentage of Stream and Water Body Shoreline Lengths that have Impervious Surface Cover $\geq 5\%$ within 30 meters



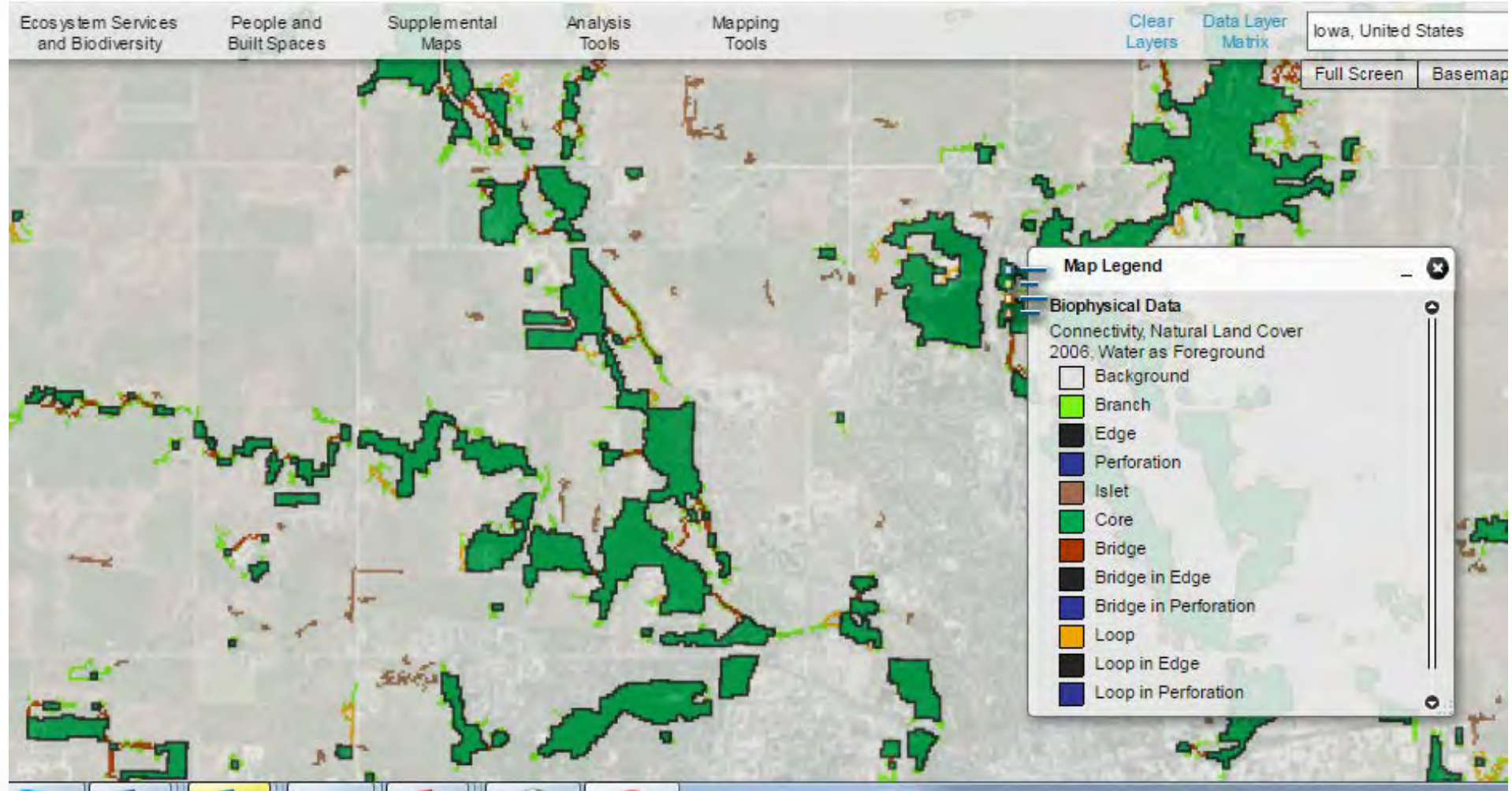
National Example – Impaired Waters, Ecosystem Markets



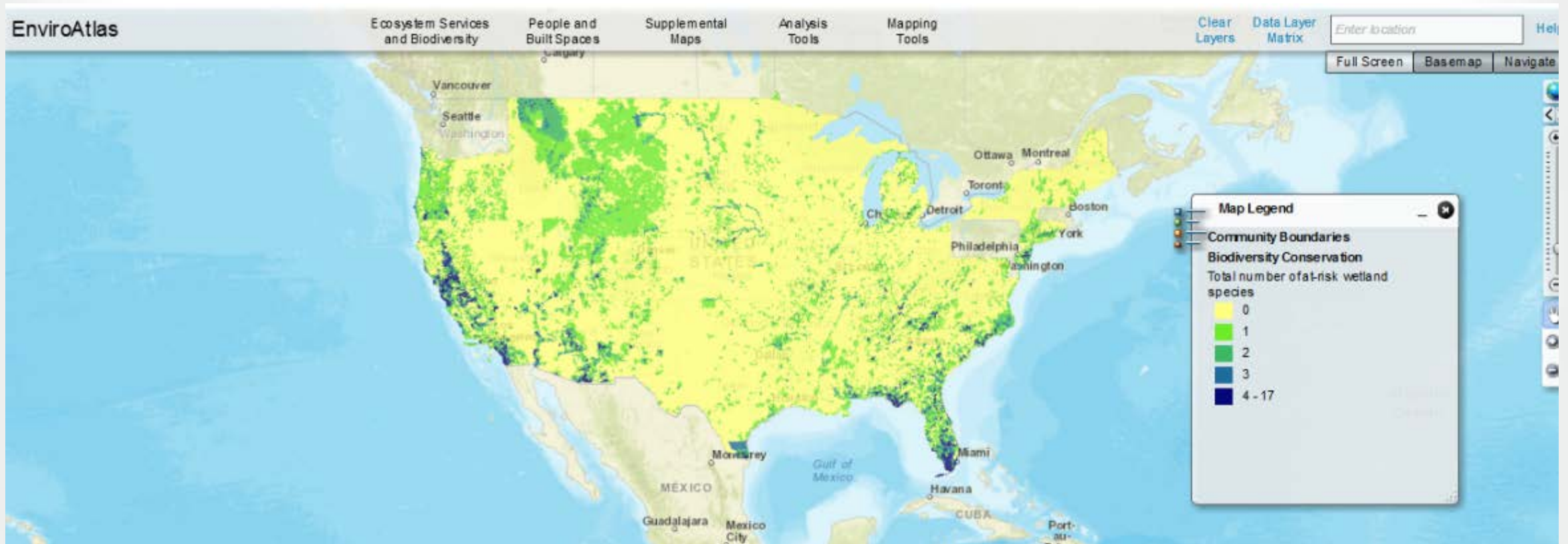
National Example – Synthetic Nitrogen Fertilizer Application



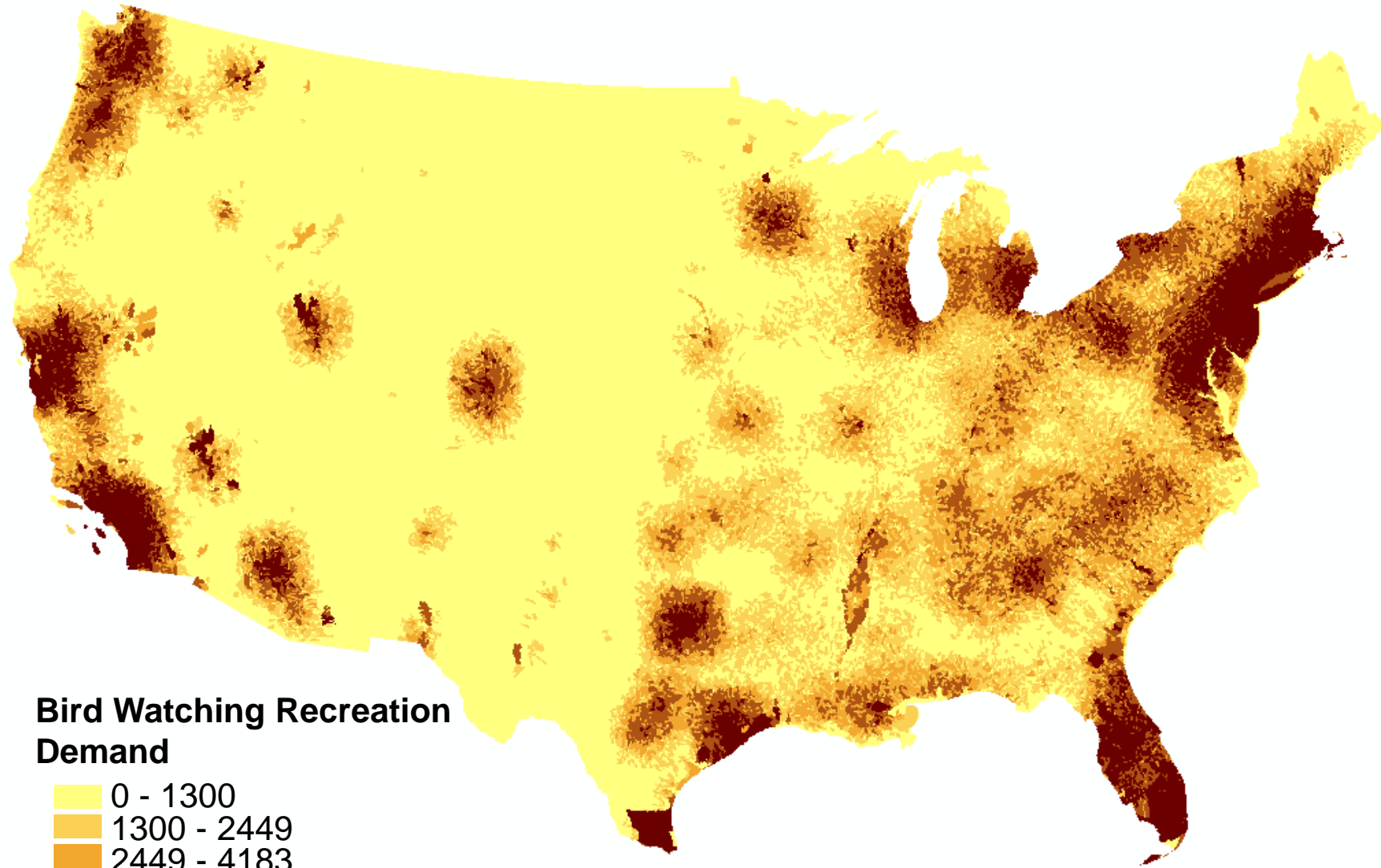
Natural Land Cover Connectivity



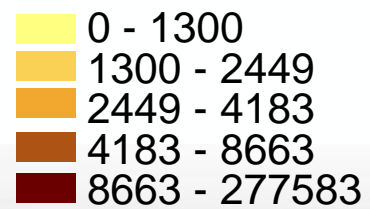
National Example – Total Number of At-risk Wetland Species Observed

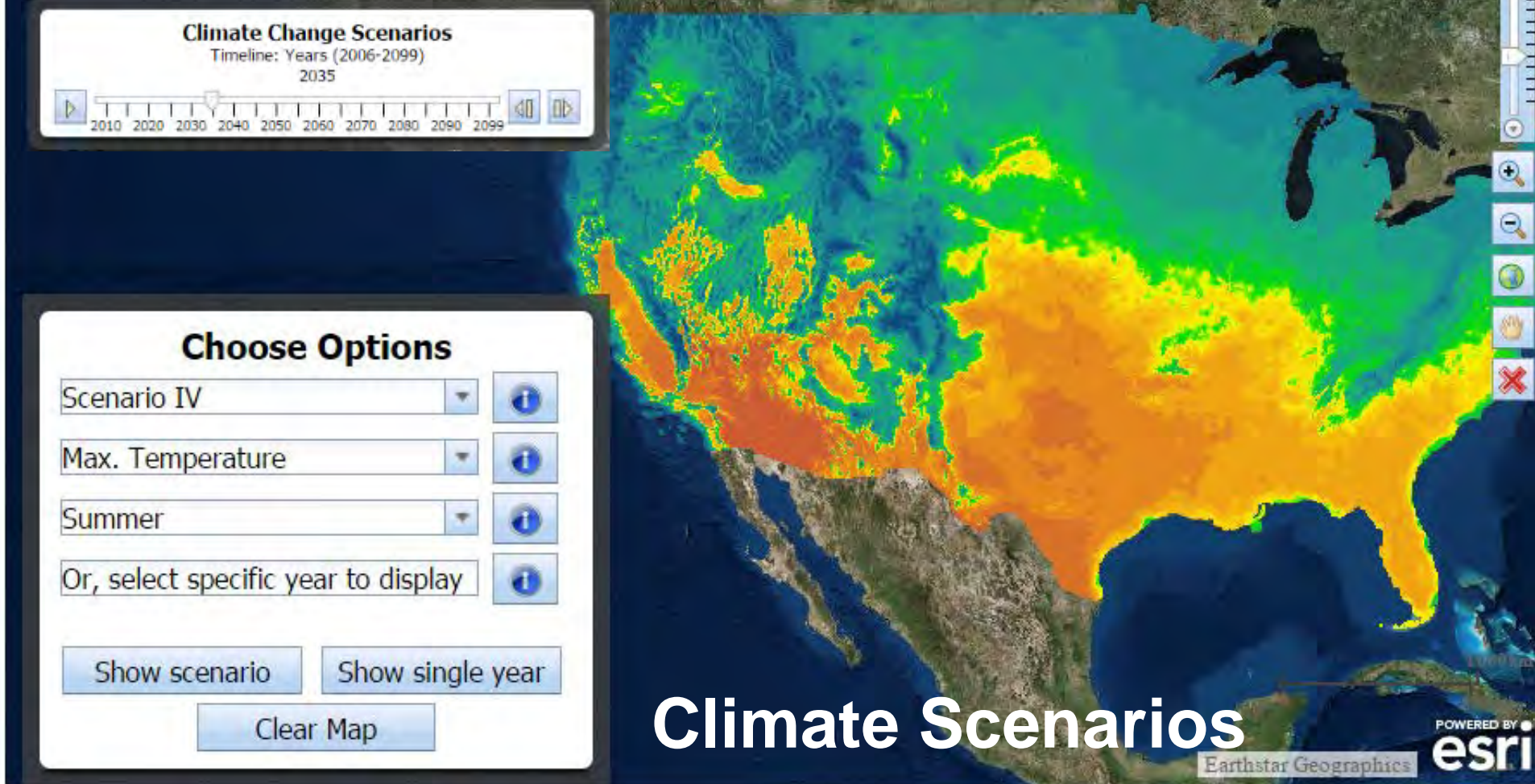


Bird Watching Day Trip Demand



Bird Watching Recreation Demand

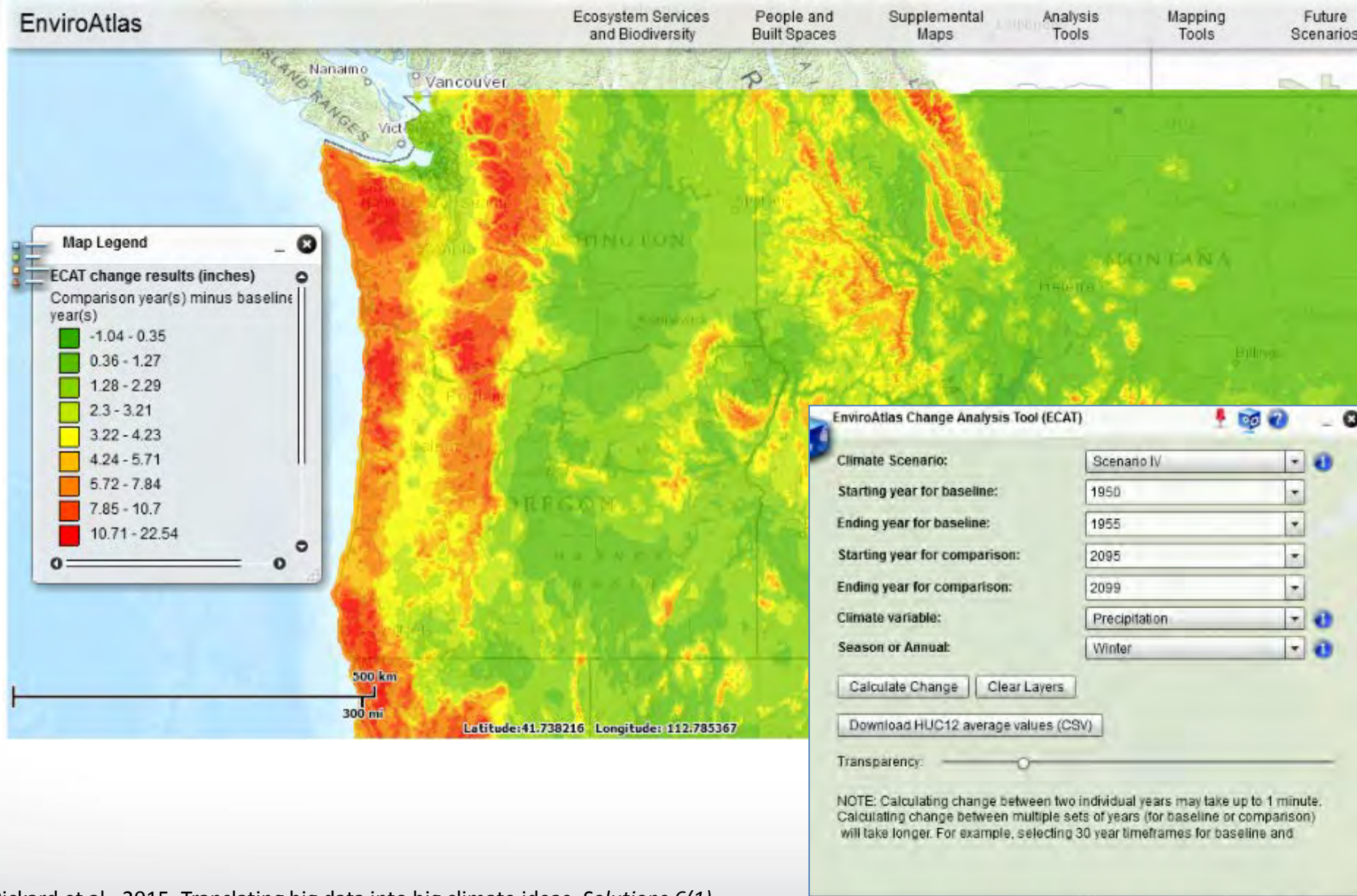




Current variables included/in development:

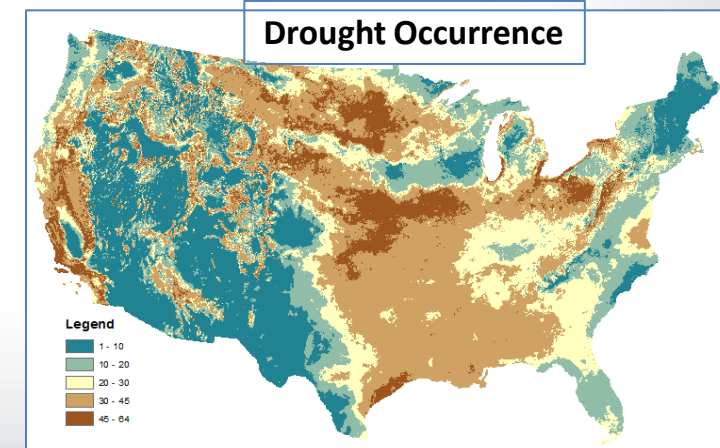
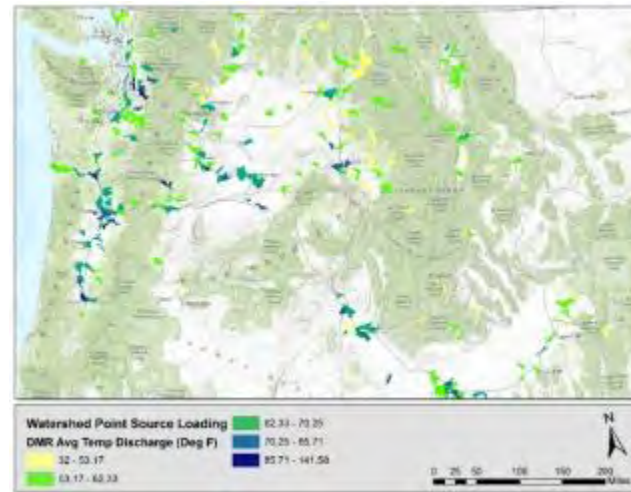
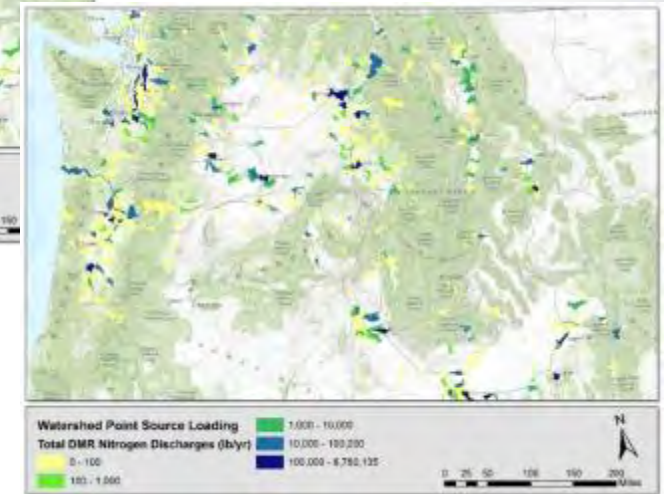
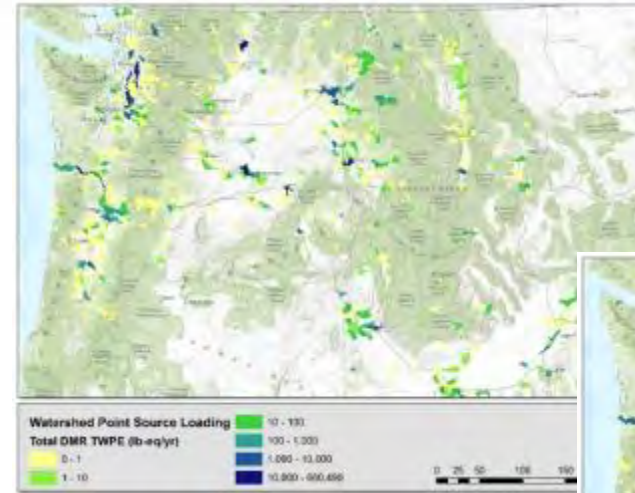
- precipitation
- potential evapotranspiration
- minimum temperature
- maximum temperature
- water supply (PPT-PET)
- Drought
- Groundwater recharge
- LULC

EnviroAtlas Change Analysis Tool



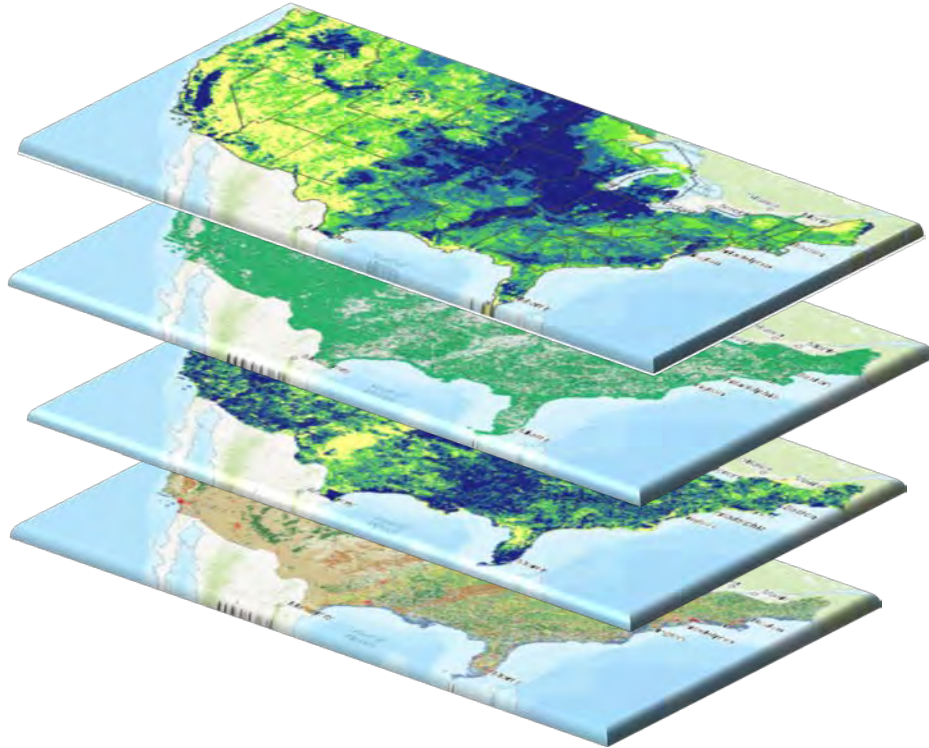
Coming to EnviroAtlas Soon

- [Summarized point discharges](#)
- [More spatially explicit riparian buffer metrics](#)
- [Runoff and recharge metrics](#)
- Remote-sensing derived harmful algal bloom data (close to real-time)
- [Drought projections & impacts](#)
- Flood plain projection mapping
- Pesticide loadings to streams
- Climate vulnerable birds



Summary

- Broadly applicable across scales, topic areas, uses
- Provides streamlined access to wealth of data
- Usable by decision-makers, educators, and researchers
- Consistent format and documentation
- Facilitates technology transfer



Thank You

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