EPA United States Environmental Protection Agency

EPA Tools & Resources Training Webinar

EnviroAtlas

Connecting People, Nature, Health and the Economy

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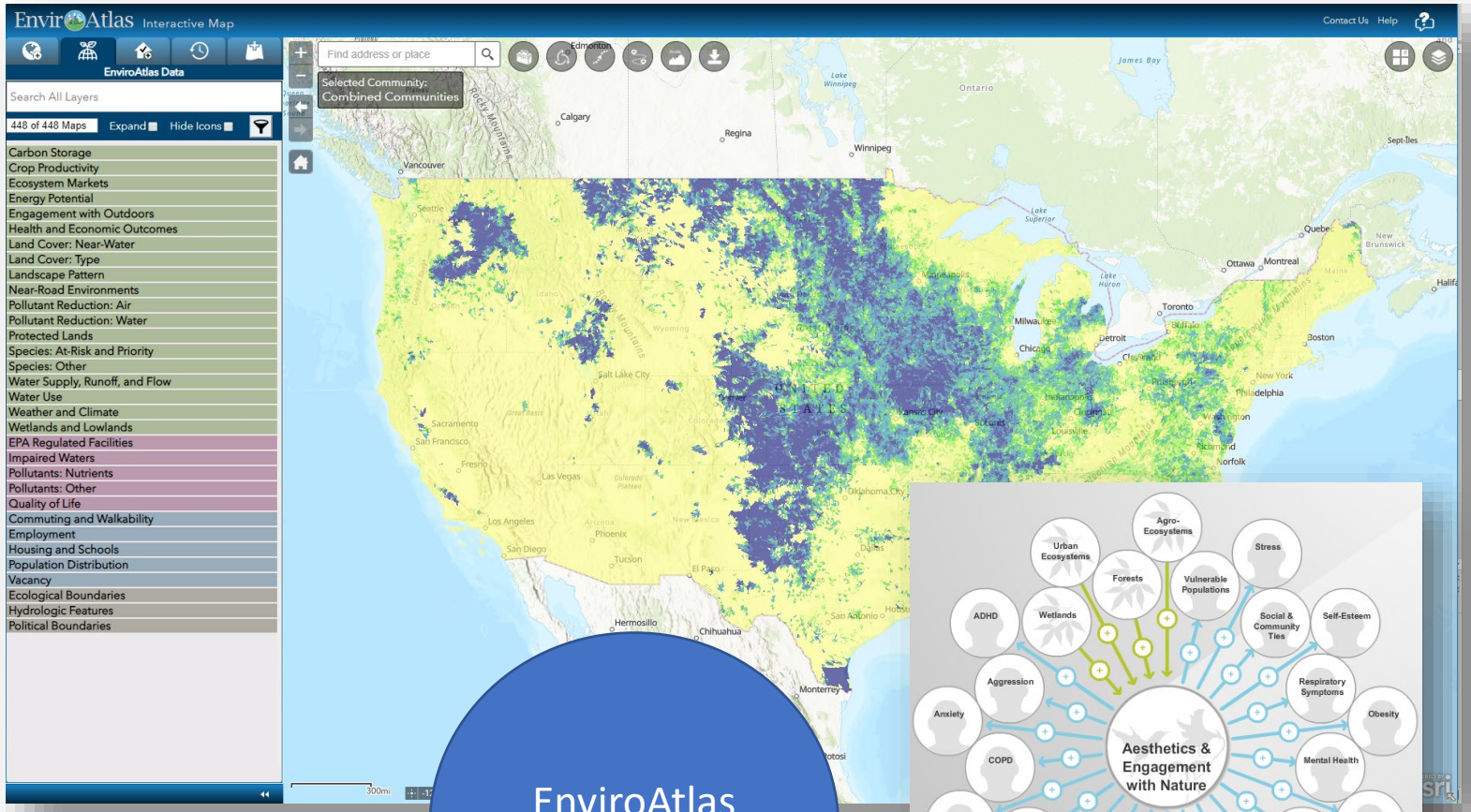
EnviroAtlas is an online resource providing geospatial data, easy-to-use tools, and other resources related to ecosystem services, their chemical and non-chemical stressors, connections to human health, and equity.

EnviroAtlas Includes:

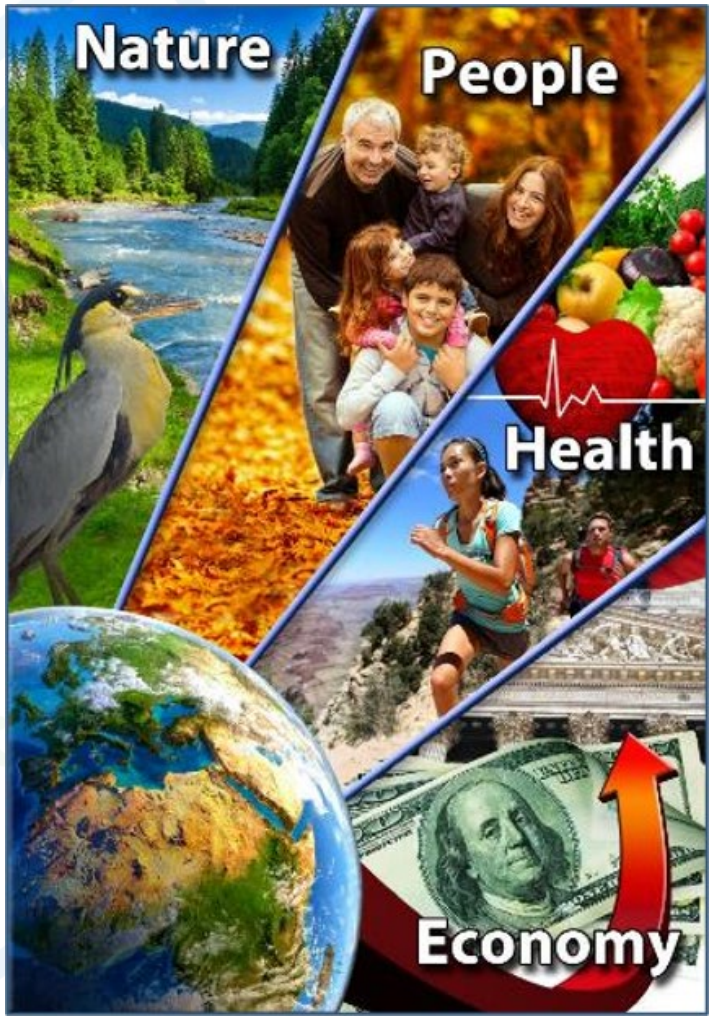
- Over 500 map layers, environmental and demographic
- **Interactive Mapping Application**
- **Eco-Health Relationship Browser**
- Analytic and Interpretive Tools
- GIS Toolboxes



EnviroAtlas Flagship tools

EnviroAtlas Objectives

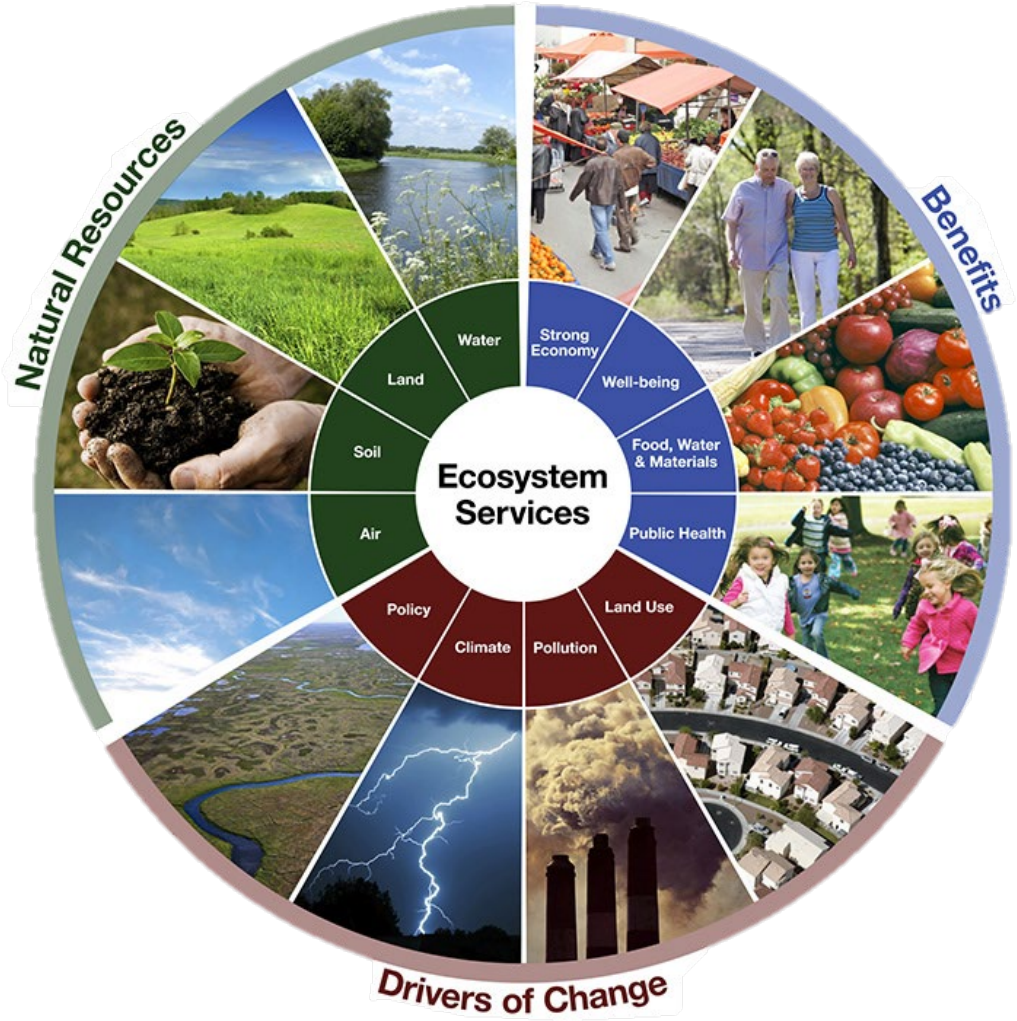
- Conduct research to produce data and tools linking nature, people, health, and the economy
- Publish that research in the science literature
- Integrate those products with other relevant data in an accessible application and website
- Reach a broad audience, including decision-makers, academia, and educators



Ecosystem Services

- ***Ecosystem services*** are the direct and indirect contributions of ecosystems to our well-being

- EnviroAtlas includes data layers representing the natural resources supplying the services, the benefits and beneficiaries, and the drivers of change

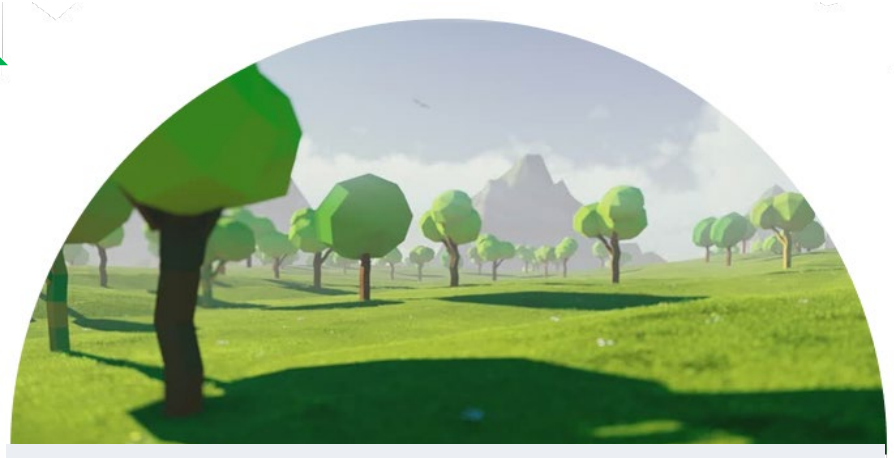


Ecosystem Services Benefit Categories

The Eco-Health Paradigm

i.e., ecosystem services

Beneficial Factors



Improved Human Health & Well-being

Detrimental Factors

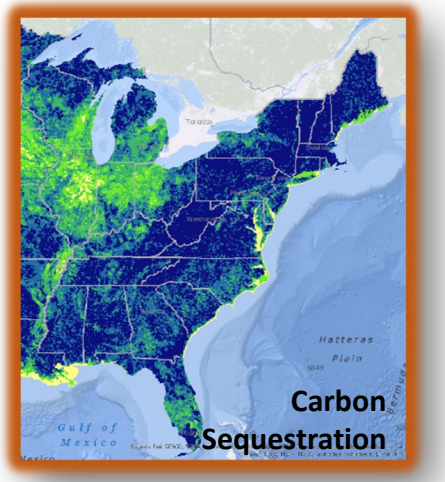
e.g., Exposure to air toxics, proximity to contaminated sites, poor water quality

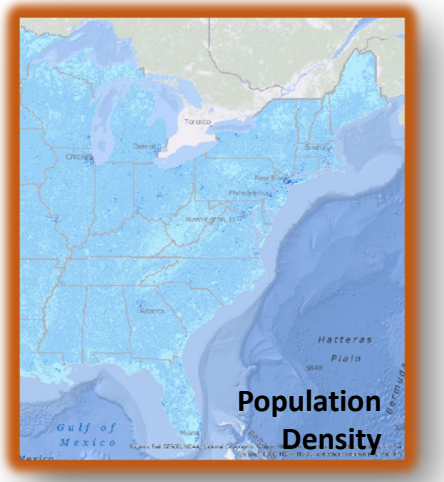
Ecosystem Services

Health Promotional
Physical activity
Social interactions
Engagement with nature
Adventure

Hazard Buffering
Air pollutant mitigation
Water pollutant mitigation
Heat reduction
Noise reduction
Flood buffering

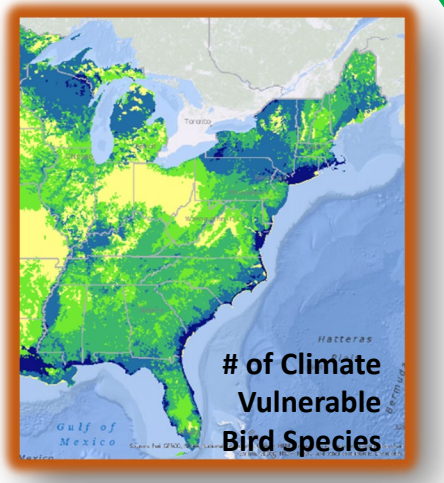
Health Maintenance
Clean air
Clean water
Conditions to grow healthy food





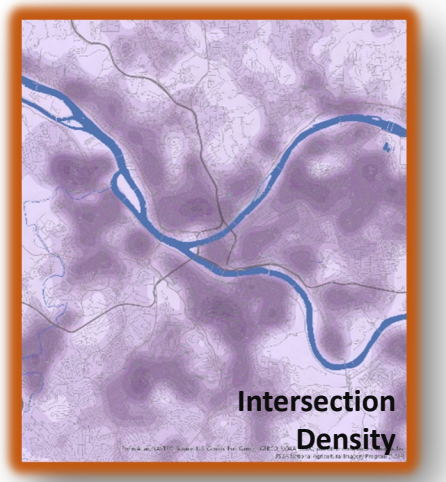
National Data

30-meter land cover
400+ unique data layers
Consistent data for the conterminous US



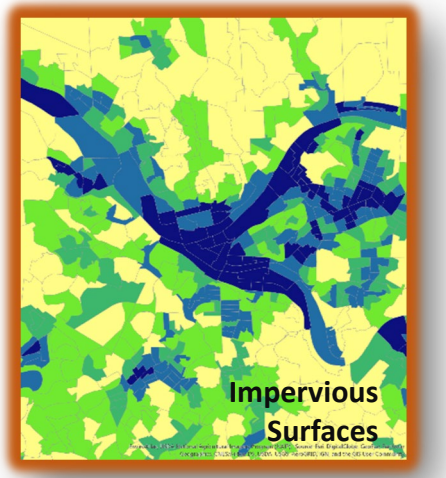
EnviroAtlas

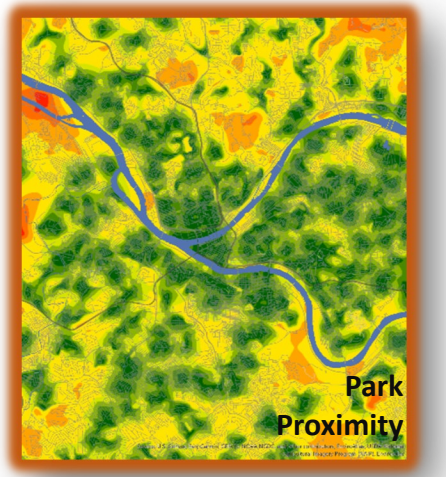
Peer-reviewed
Standard Metadata
Open access



Community Data

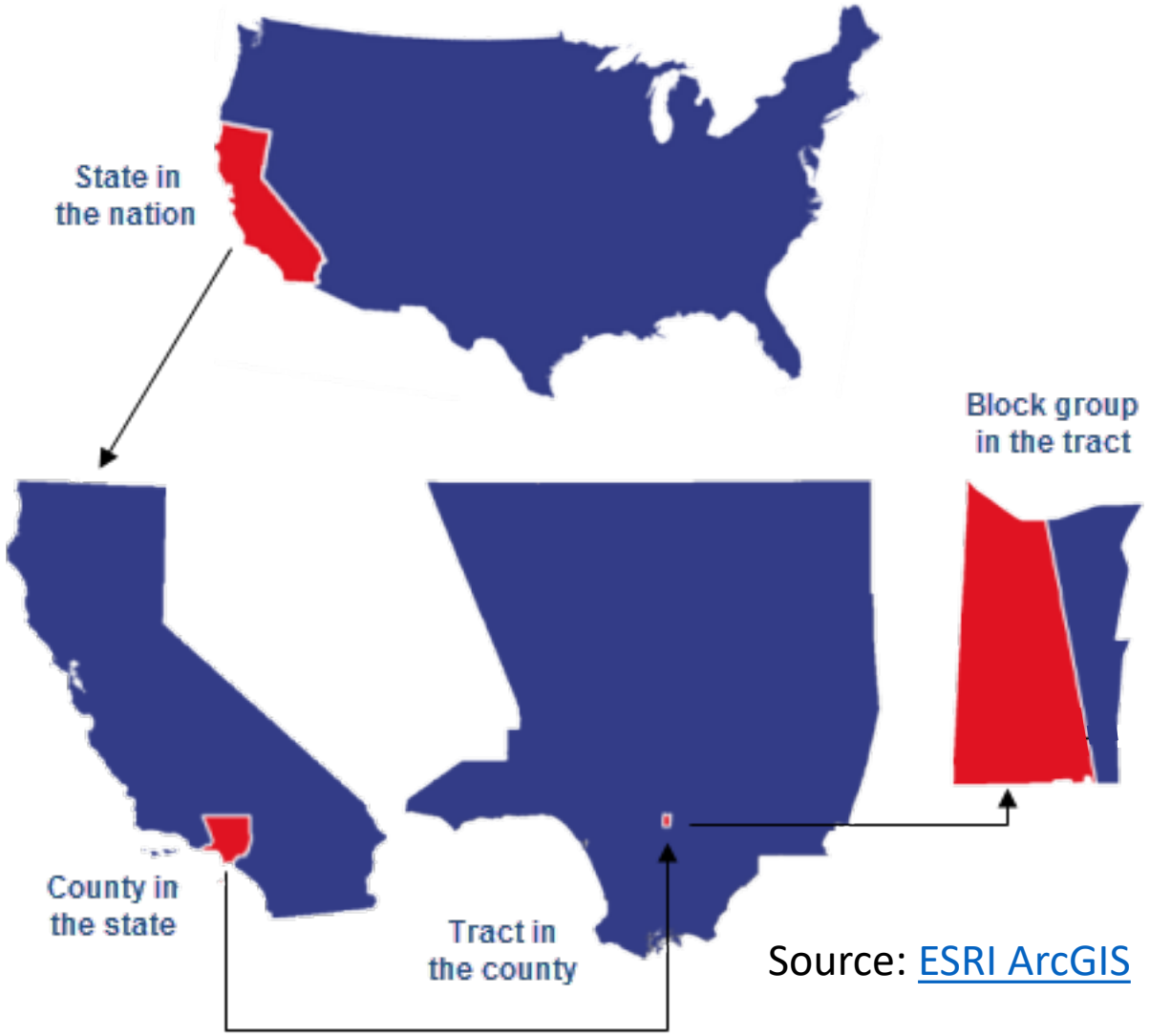
1-meter land cover
100+ unique data layers
30 metropolitan areas
1450 cities & towns (65+ million people)





Summarized Data

Source: USGS



Source: ESRI ArcGIS

~100,000 HUC12 units in US

~218,000 block groups in US

Data in EnviroAtlas

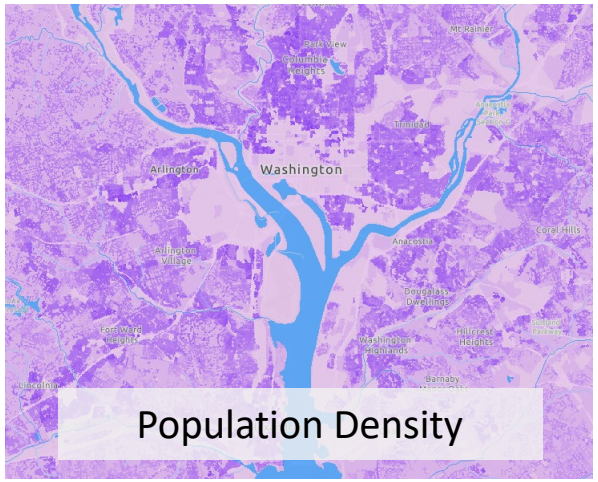
- EnviroAtlas provides data at multiple extents and scales

Summaries by geographic unit

- Allows for data overlays

Pixel based / Raster

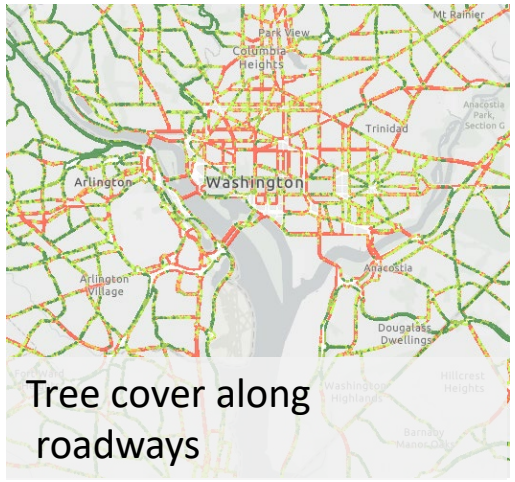
- Fine detail



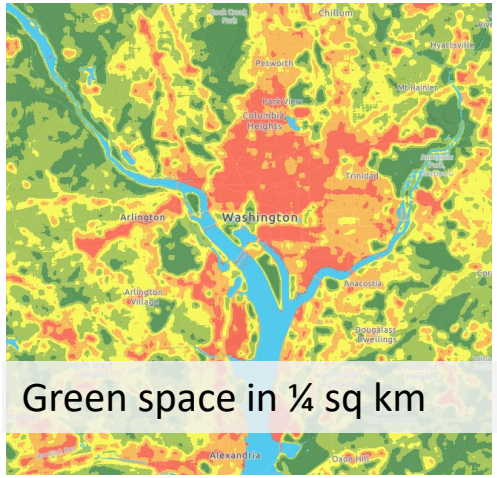
Population Density

Lines/Vectors

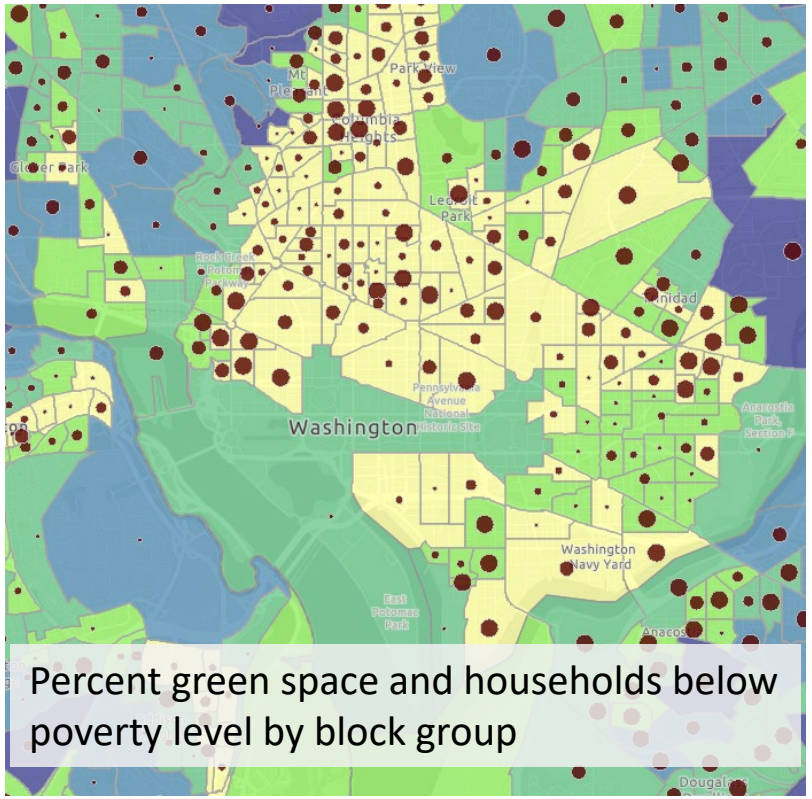
- Individual features



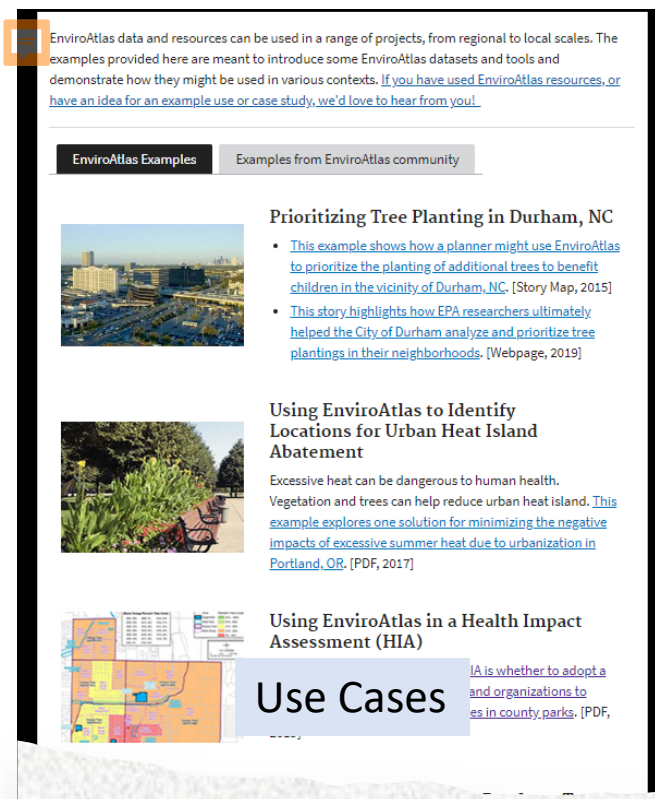
Tree cover along roadways

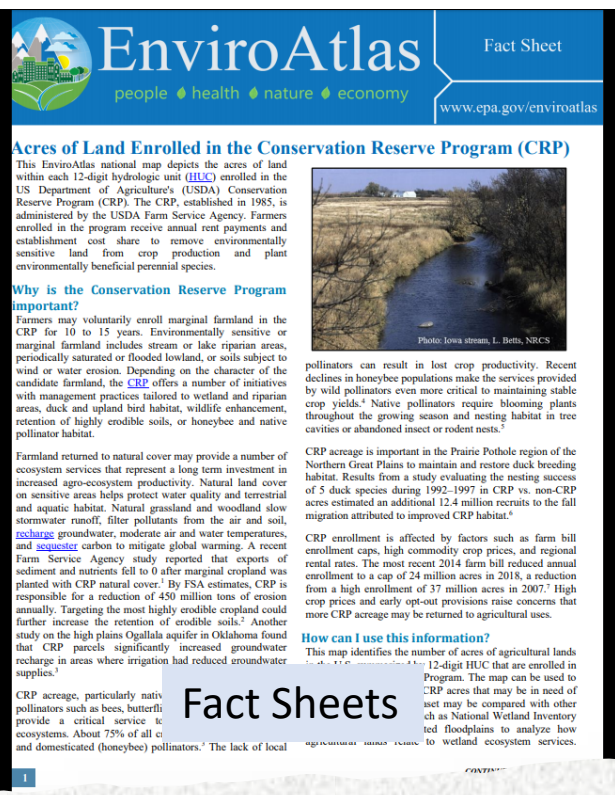


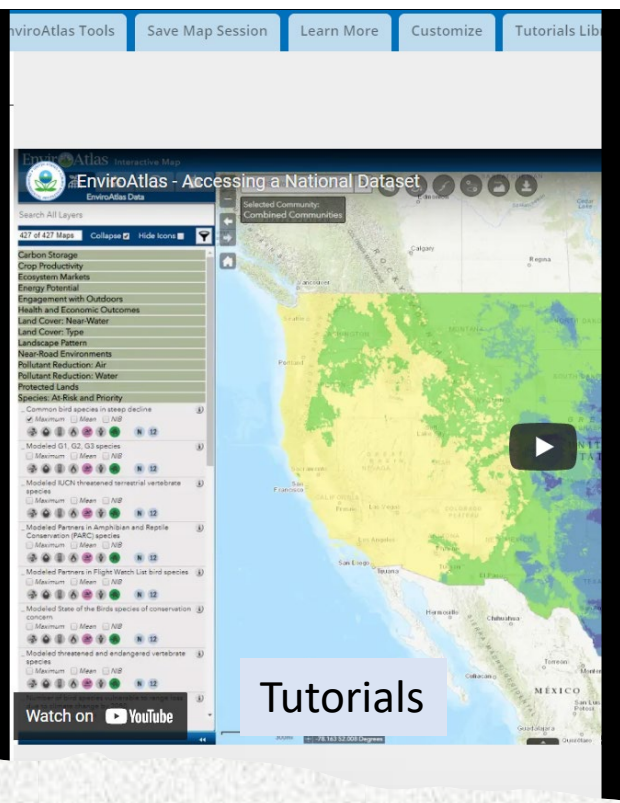
Green space in ¼ sq km

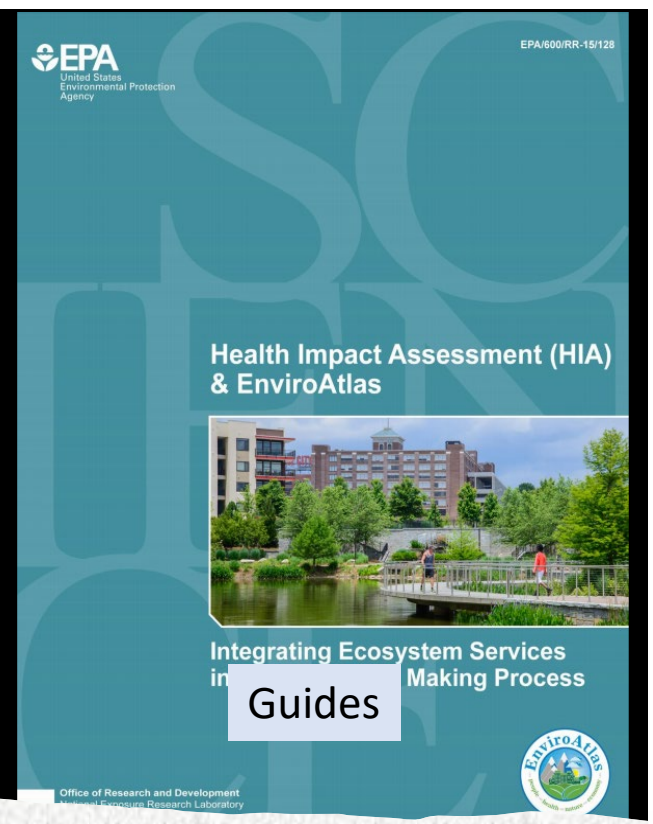


Percent green space and households below poverty level by block group









Data and tools are not enough

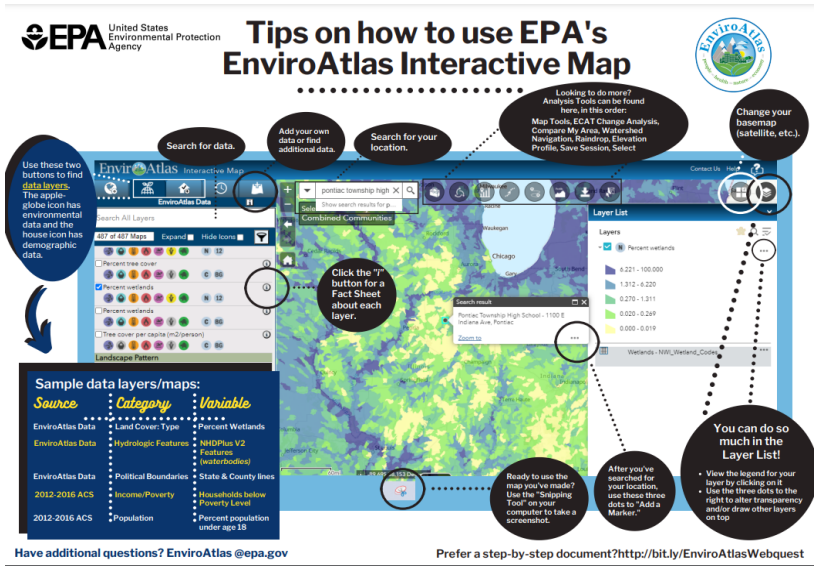
Educational materials

K- 6	4 - 6	*4 -12+*	9 - 12+
Exploring Your Watershed	*Introduction to Ecosystem Services*	*Connecting Ecosystems and Human Health*	*Building a Greenway Case Study*

Let’s join the
18,850 people who
used EnviroAtlas
last month and go
live!

Relevant Links

https://enviroatlas.epa.gov/enviroatlas



https://www.epa.gov/enviroatlas/tutorials

Analytical Tools Interface for Landscape Assessments (ATtILA)

ATtILA is an easy to use Esri ArcGIS toolbox that calculates landscape and landscape/human interaction metrics, including many of those found in EnviroAtlas. It accepts data from a broad range of sources and is equally suitable across all landscapes, from deserts to rain forests to urban areas.

Three Metric Groups are Included in the Toolbox:

1. Landscape Characteristics: Metrics related to land cover proportions and patch metrics (e.g. percent forest cover or number and size of forest patches)
2. People in the Landscape: Metrics related to population, roads, and the built environment (e.g. population change or road/stream crossings)
3. Riparian Characteristics: Metrics related to land cover adjacent to streams and lowlands (e.g. percent of crop land within 30 meters of streams)

To learn more about the toolbox, please refer to the ATtILA Fact Sheet (pdf) (331.7 KB) . Detailed information for technical users of the toolbox can be found on the ATtILA repository.

https://www.epa.gov/enviroatlas/attila-toolbox

https://www.epa.gov/enviroatlas/enviroatlas-use-cases

EnviroAtlas Use Cases

EnviroAtlas data and resources can be used to inform a range of projects, from regional to local scales. For example, EnviroAtlas data have been used to support conservation planning, to understand the benefits of ecosystems for public health, and to implement nature-based solutions. The examples provided here are meant to introduce some EnviroAtlas datasets and tools and demonstrate how they might be used in various contexts. If you have used EnviroAtlas resources, or have an idea for an example use or case study, we'd love to hear from you!

On this page: EnviroAtlas Examples | Examples from our User Community

Prioritizing Tree Planting in Durham, NC

- This example shows how a planner might use EnviroAtlas to prioritize the planting of additional trees to benefit children in the vicinity of Durham, NC. [Story Map, 2015]
- This story highlights how EPA researchers ultimately helped the City of Durham analyze and prioritize tree plantings in their neighborhoods. [Webpage, 2019]

Using EnviroAtlas to Identify Locations for Urban Heat Island Abatement

Excessive heat can be dangerous to human health. Planting trees and other vegetation in cities is a nature-based solution that can help reduce urban heat islands. This example explores one solution for minimizing the negative impacts of excessive summer heat due to urbanization in Portland, OR. [PDF, 2017]

https://www.epa.gov/enviroatlas/status-enviroatlas

Status of EnviroAtlas

Current Status

EnviroAtlas has been publicly available since May 2014 (News Release, May 7, 2014). Development plans for EnviroAtlas extend through 2025, with regular updates taking place as they become available. View the EnviroAtlas Dynamic Data Matrix to search and sort through a list of currently available EnviroAtlas data.

Recent Updates/Changes to EnviroAtlas

Review the list of recent changes and updates to the EnviroAtlas Interactive Map.

Update Bulletins

Read our latest Update Bulletin (February 2024) or look through the bulletin archives to learn about the newest changes and additions to EnviroAtlas.

EnviroAtlas Update Bulletin

Our quarterly bulletins cover the latest EnviroAtlas updates including new publications, data, features, and resources such as lesson plans.

Subscribe to receive our Update Bulletins

Recent Webinars

- 01/27/2022 | EnviroAtlas Introduction for Watershed Resources Registry (WRR) PowerHour

https://www.epa.gov/enviroatlas/enviroatlas-educational-materials

EnviroAtlas Educational Materials

Overview of Educational Materials

- EnviroAtlas tools can be used in formal and informal educational settings.
- There are ready-made lesson plans for every grade level, from kindergarten through undergraduate.
- All lessons are aligned with Next Generation and State Science Standards for each grade in the Appendix.

Exploring Your Watershed (Grades K - 6)

Intro to Ecosystem Services (Grades 4 - 6)

Key Takeaways

EnviroAtlas resources are:

- Easy to use
- Used by all levels of government, non-profit organizations, researchers, universities, K-12 schools
- Used to inform a myriad of environmental / socioeconomic issues, e.g.,
  - Climate resilience planning
  - Conservation planning
  - Environmental justice
  - Exposure assessments
  - Total Maximum Daily Loads (TMDLs) to meet water quality standards
  - Tree planting
  - Education
- Used to inspire additional data development / tools
- ***Dependent on you, the users for feedback to improve the tool!***

Contact Us

Please contact us with questions, to provide feedback, or to share with us how you are using EnviroAtlas!

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