

ENVIROATLAS: A TOOL TO INFORM ENVIRONMENTAL RESTORATION, ECOSYSTEMS SERVICES, AND COMMUNITY REVITALIZATION

Anne Neale

EnviroAtlas Lead, US Environmental Protection Agency, Office of
Research and Development

October 22, 2019

EnviroAtlas: A tool to inform restoration, ecosystem services, and revitalization

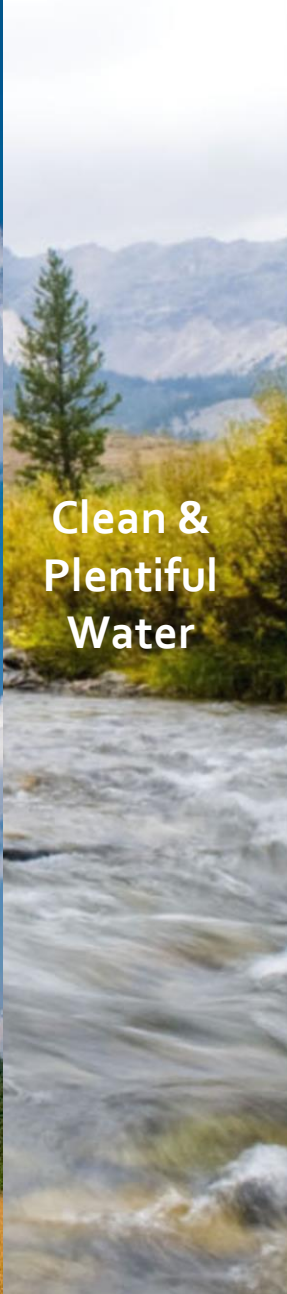
- Free and open access, online tool
- Users can view, analyse, and download geospatial data and other resources
- Contains unique data
- Easy to use, no technical skills or software required
- Stakeholder-driven



Clean
Air



Clean &
Plentiful
Water



Biodiversity
Conservation



Food,
Fuel, &
Materials



Natural
Hazard
Mitigation



Climate
Stabilization



Recreation,
Culture, &
Aesthetics



Data are associated with 7 ecosystem service benefit categories

Designed to Inform:



1

Decision-making

Data and tools are being used widely by communities

2

Research

Data are used in research projects advancing the state of the science

3

Education

Education modules are being used in the classroom helping educate tomorrow's decision-makers

#ICMA2019

EnviroAtlas

CONTACT US

SHARE



New Version: Eco-Health Relationship Browser

Now compatible with all devices and web browsers! [See the many linkages between ecosystem services and human health.](#)



Subscribe to our email list

Human health and well-being are closely tied to the environment, which provides benefits such as clean water, clean air, and protection from natural hazards. Chemical and non-chemical stressors can impact the environment's ability to provide these benefits, also known as ecosystem goods and services. EnviroAtlas provides geospatial data, easy-to-use tools, and other resources related to ecosystem services, their stressors, and human health.

Get started with EnviroAtlas

- [Project Fact Sheet](#)
- [Community Component Fact Sheet](#)
- [Current Status of EnviroAtlas](#)
- [EnviroAtlas Introduction Video](#)

Access Interactive Apps

- [EnviroAtlas Interactive Map](#) - Discover and use hundreds of maps
- [Eco-Health Relationship Browser](#) - See the many linkages between ecosystem services and human health

EnviroAtlas Data

- [Learn about EnviroAtlas Data](#) - Spatial extents, organization, and approach
- [Data Matrix](#) - Search and sort 300+ maps
- [Data Download](#)

Learn How to Use EnviroAtlas

- [What are Ecosystem Services?](#)
- [Explore Example Uses of Our Tools](#)

EnviroAtlas in the Classroom

- [Access Educational Modules for Grades K-12 and Beyond](#)

More Resources

- [Learn about Featured Communities](#)
- [EnviroAtlas Tools and Toolboxes](#)
- [EnviroAtlas Publications](#)

Contact Us to ask a question, provide feedback, or report a problem.

www.epa.gov/enviroatlas

enviroatlas@epa.gov

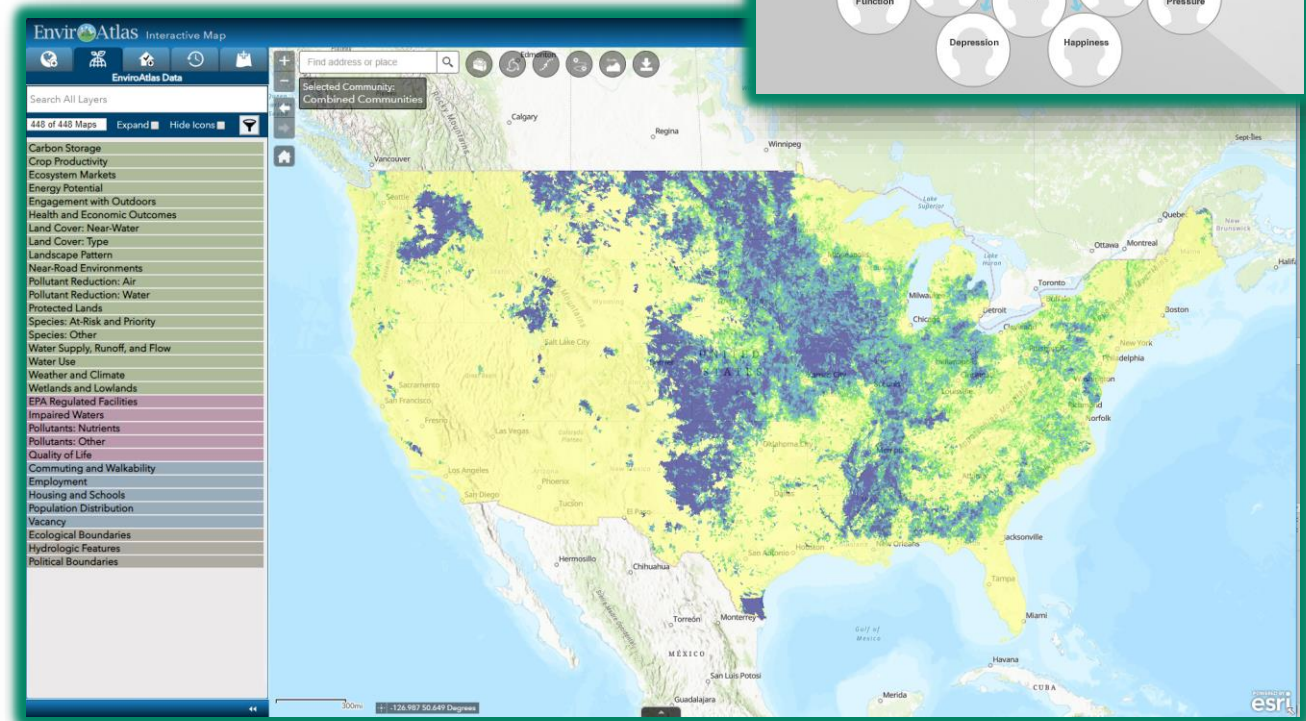
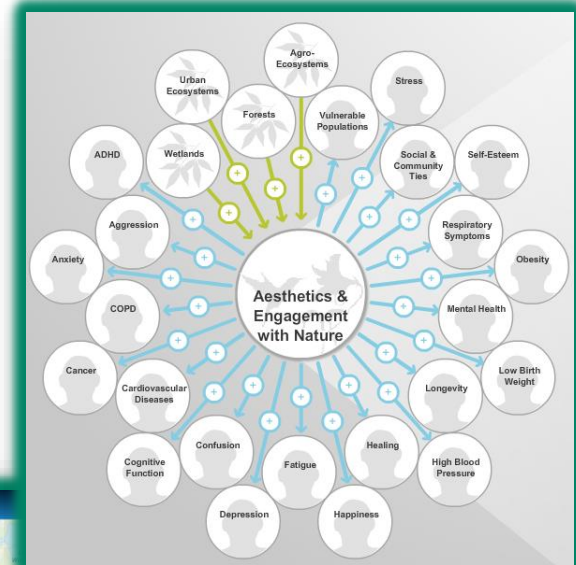
Sign up for newsletter

#ICMA2019

EnviroAtlas Includes:

- Interactive Mapping Application
- Eco-Health Relationship Browser
- 450+ Geospatial Datasets (maps)
- Analytic and Interpretive Tools
- GIS Toolboxes
- Video Tutorials
- Education Lesson Plans
- Guides for use in multiple decision contexts

EnviroAtlas
Flagship
tools



#ICMA2019

Organization

Category and topic
Search or filter

Access

Interactive Map
Web Services
Download

Geometry

HUC-12
Census block groups
Raster
Vector

#ICMA2019

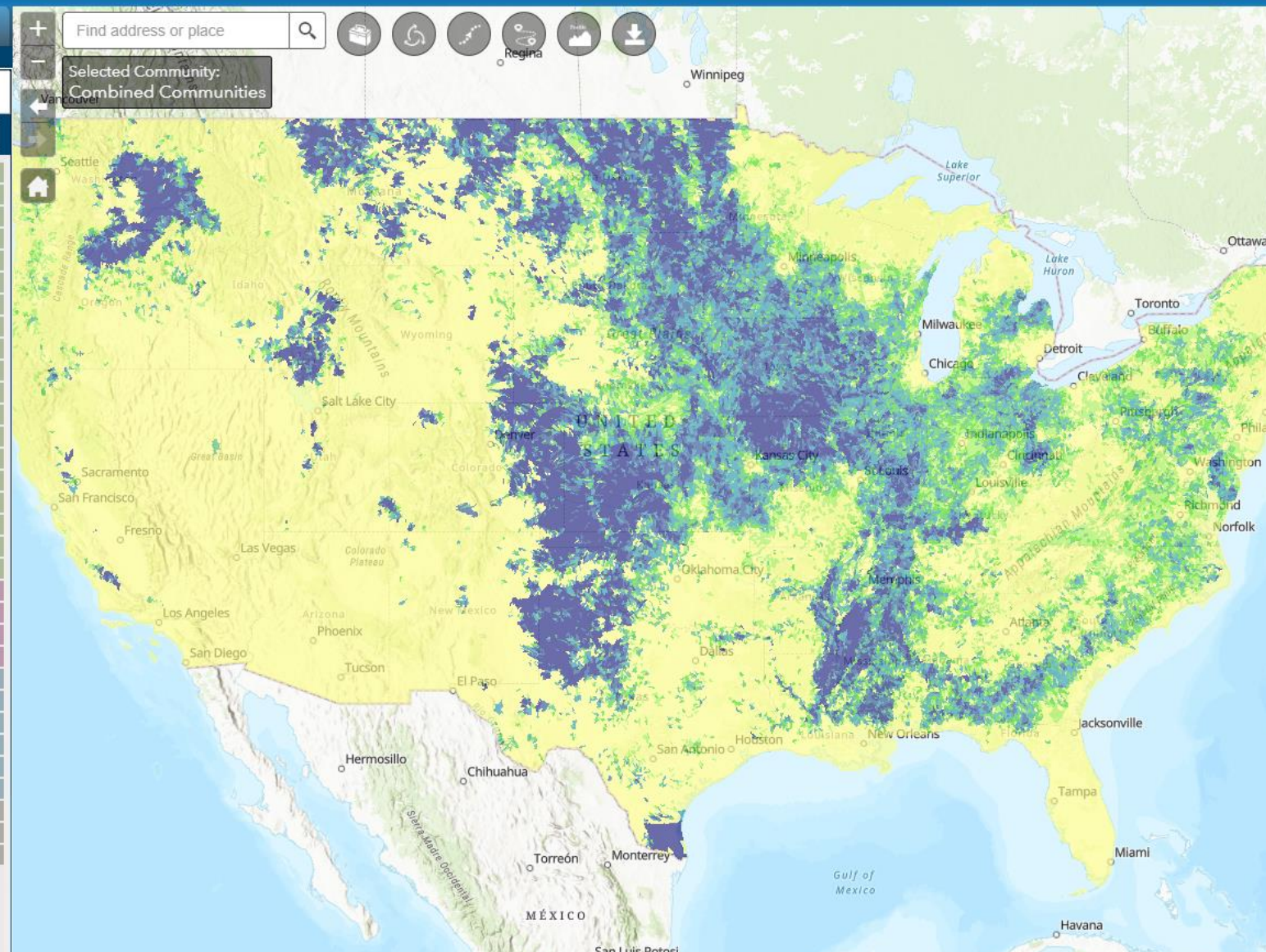
▼ Ecosystem Services and Biodiversity	
Carbon Storage	Pollutant Reduction: Air
Crop Productivity	Pollutant Reduction: Water
Ecosystem Markets	Protected Lands
Energy Potential	Species: At-Risk and Priority
Engagement with Outdoors	Species: Other
Health and Economic Outcomes	Water Supply, Runoff, and Flow
Land Cover: Near-Water	Water Use
Land Cover: Type	Weather and Climate
Landscape Pattern	Wetlands and Lowlands
Near-Road Environments	
▼ Pollution Sources and Impacts	
EPA Regulated Facilities	Pollutants: Other
Impaired Waters	Pollutants: Nutrients
▼ People And Built Spaces	
Commuting and Walkability	Population Distribution
Employment	Quality of Life
Housing and Schools	Vacancy
▼ Boundaries	
Ecological Boundaries	Political Boundaries
Hydrologic Features	

EnviroAtlas Data

Search All Layers

427 of 427 Maps Expand Hide Icons

- Carbon Storage
- Crop Productivity
- Ecosystem Markets
- Energy Potential
- Engagement with Outdoors
- Health and Economic Outcomes
- Land Cover: Near-Water
- Land Cover: Type
- Landscape Pattern
- Near-Road Environments
- Pollutant Reduction: Air
- Pollutant Reduction: Water
- Protected Lands
- Species: At-Risk and Priority
- Species: Other
- Water Supply, Runoff, and Flow
- Water Use
- Weather and Climate
- Wetlands and Lowlands
- EPA Regulated Facilities
- Impaired Waters
- Pollutants: Nutrients
- Pollutants: Other
- Commuting and Walkability
- Employment
- Housing and Schools
- Population Distribution
- Quality of Life
- Vacancy
- Ecological Boundaries
- Hydrologic Features
- Political Boundaries



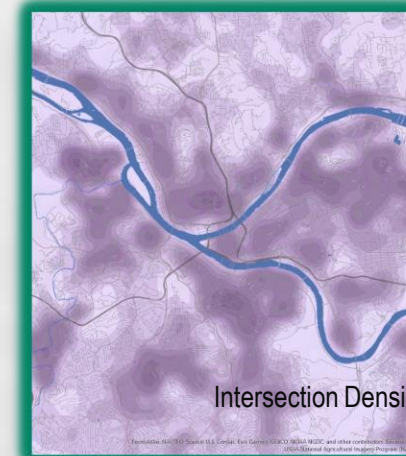
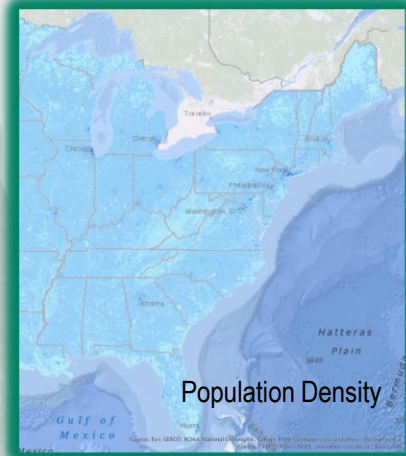
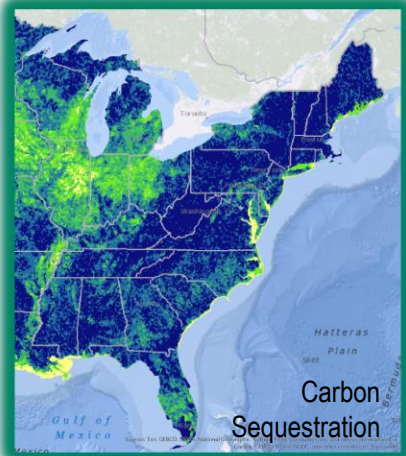
Layer List

Layers

☒ N Acres of land enrolled in CRP

- 0
- <50
- 50 - 100
- 100 - 200
- 200 - 500
- 500 - 1000
- >1000

450+ indicators of Ecosystem Goods and Services & Demographic and other Supplemental data



National Data

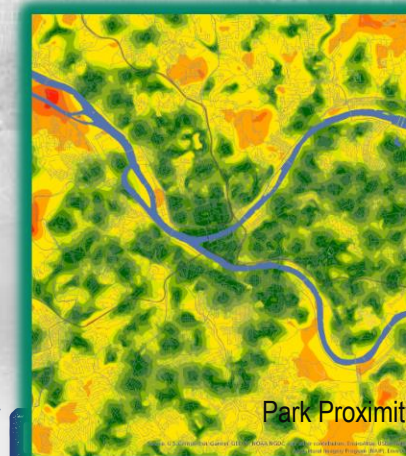
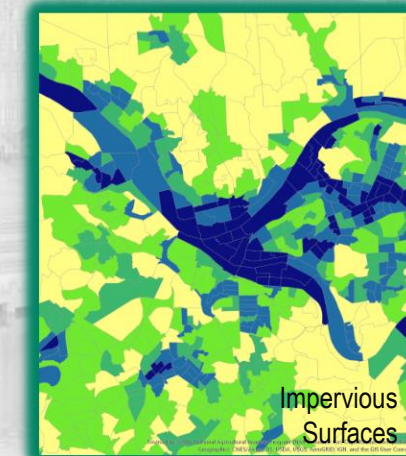
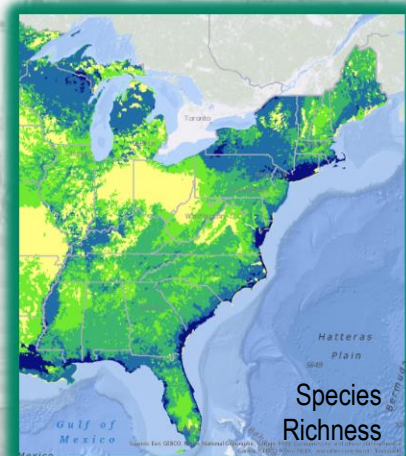
30-meter land cover
300+ unique data layers
Consistent data for the
conterminous U.S.

EnviroAtlas

Data Fact Sheets
Peer-reviewed
Standard Metadata
Open access

Community Data

1-meter land cover
30 metropolitan areas
1450 cities & towns
65+ million people



EnviroAtlas Communities



EnviroAtlas Use Cases

[EnviroAtlas Home](#)[Interactive Map](#)[Eco-Health Browser](#)[Ecosystem Services](#)[How to Use](#)[Example Uses](#)[Guides & Training](#)[Educational Materials](#)[Data](#)[Fact Sheets](#)[Tools](#)[Publications](#)[Resources for Collaborators](#)[Project Status](#)[Frequent Questions](#)[About Us](#)[Related Links](#)

EnviroAtlas Use Cases

EnviroAtlas data and resources can be used in a range of projects, from regional to local scales. 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!](#)



The use of EnviroAtlas in a Health Impact Assessment (HIA), Town 'n' Country area of Tampa Bay, Florida

This use case is an example of how EnviroAtlas can be used in a Health Impact Assessment (HIA) to address community health concerns and needs. [The key decision assessed in this HIA is whether to adopt a policy permitting local businesses and organizations to provide free outdoor exercise classes in county parks.](#)



Using EnviroAtlas to Identify Locations for Urban Heat Island Abatement

Excessive heat in the summer months can be dangerous to human health and increases demand for water and electricity. Vegetation and trees can help reduce the urban heat island effect. [This example explores one solution for minimizing the negative impacts of excessive summer heat due to urbanization.](#)



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.](#) Tree cover provides multiple health benefits to communities. In particular, children may receive significant physical and mental health benefits from tree plantings in the areas where they live, learn, and play.



Managing Clean Air with Roadway Tree Buffers

This example shows how EnviroAtlas may be used to [identify residential populations that are vulnerable to the negative health impacts of roadway air pollution.](#)



Integrating Local Green Assets into Brownfields Redevelopment



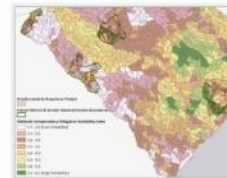
Integrating Local Green Assets into Brownfields Redevelopment

[Learn how EnviroAtlas' high resolution data can be used to incorporate local green infrastructure into brownfields redevelopment to benefit public health \(poster\).](#)



Identifying Cost-effective Locations for Manure Management Incentives

This use case explores [one solution for minimizing the negative impacts of excess manure application in the Chesapeake Bay watershed](#) using EnviroAtlas national data.



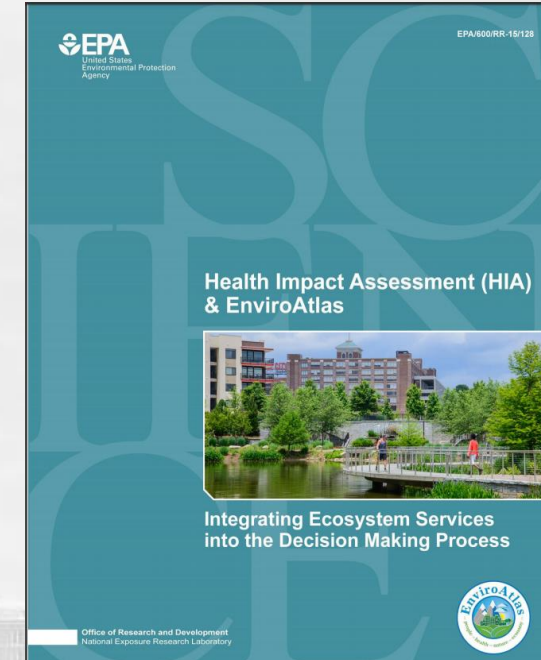
Assessing the compatibility of wetlands compensatory mitigation of lands prioritized for protection adjacent to Forest Service-owned lands

This use case [explores a method for evaluating properties prioritized for protection](#) (e.g., private inholdings and properties adjacent to National Forest System lands) for compatibility with wetland compensatory mitigation.



Evaluating sites for an agricultural wetlands mitigation bank in Illinois

Wetland ecosystems provide many valuable services to society. This use case [explores a method for evaluating potential sites for agricultural wetland mitigation banking](#) under the NRCS wetland mitigation banking program.



#ICMA2019

Final Ecosystem Goods and Services Classification System / EnviroAtlas Crosswalk

About this Crosswalk

The crosswalk between each EnviroAtlas data layer and the FEES-CS was guided by three main questions:

- Does the data layer describe how a human would *directly* or *indirectly* benefit from access to, consumption of, or experience with the good or service;
- Is the good or service in question *wholly* a product of the natural environment; and
- Which human(s) or group(s) of humans would *directly* or *indirectly* benefit from the good or service.

The crosswalk identifies the *Type of Service* addressed by each EnviroAtlas data layer and the potential *Beneficiary*. Note that a single data layer may address the needs of only a single beneficiary, multiple beneficiaries, or no beneficiaries at all.

- Use the column headers to filter the table results.
- Click the linked data layer name to access the fact sheet.

Search: <input type="text"/>			
EnviroAtlas Layer	Scale	Level of Service	Beneficiaries
	ALL	ALL	ALL
Acres of pollinated crops with no nearby pollinator habitat	National	Final Service	• Farmers
Acute respiratory symptoms avoided due to ozone removed by tree cover (cases/yr)	Community	Social or Economic Outcome	• All Humans
Acute respiratory symptoms avoided due to particulate matter [PM2.5] removed by tree cover (cases/yr)	Community	Social or Economic Outcome	• All Humans
Agricultural land per capita (m2/person)	Community	Intermediate Service	• Experiencers and Viewers • Spiritual and Ceremonial Participants and Participants of Celebration • Artists • Educators and Students • Researchers • People Who Care (Existence) • People Who Care (Option / Bequest)
Agricultural water use (million gallons/day)	National	Social or Economic Outcome	• Irrigators
			• CAFO Operators

THANK YOU

Questions?



Contact Info:

neale.anne@epa.gov

enviroatlas@epa.gov

www.epa.gov/enviroatlas

ICMA | conference