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Session 7D

Quantification of Ecosystem Services

Standard Methods and Tools



GOVERNMENT'S ROLE IN TOOL DEVELOPMENT FOR ENVIRONMENTAL MARKETS

A Community on Ecosystem Services - December 11, 2014



Christopher Hartley and Kate Zook
United States Department of Agriculture - Office of Environmental Markets



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Unpacking the Toolbox





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Why do we care about tools?

In the 2008 Farm Bill, Congress instructed USDA to establish uniform guidelines for science-based methods to measure ecosystem services benefits ... and facilitate the participation of farmers, ranchers, and forest landowners in emerging ecosystem services markets.



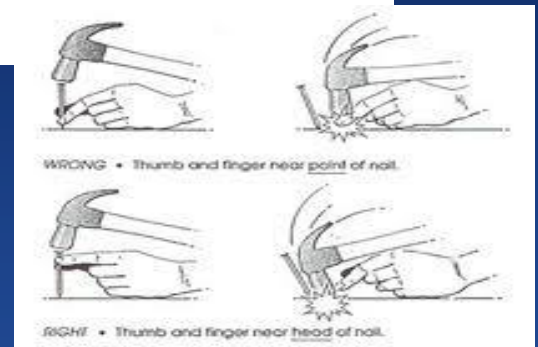
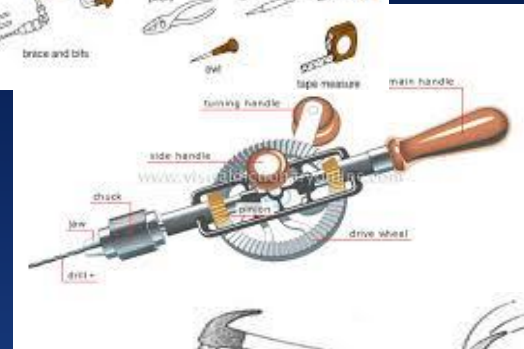
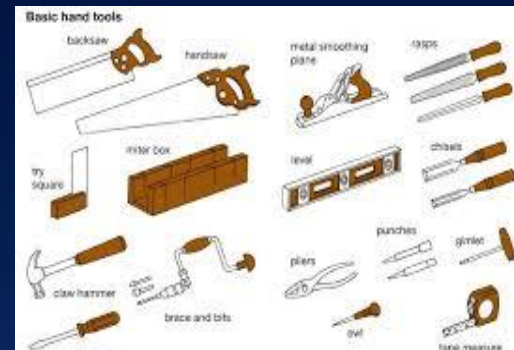
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What is a tool?



Properties of Effective Tools

- Transparent
- Science-based
- User-friendly
- Meaningful
- Appropriate
- Consistent
- Accepted
- Cost Effective
- Meet Regulatory Criteria





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Information Management Tools

Example: Water Quality Trading Roadmap



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Water Quality Trading Roadmap

Provide stakeholders with a web-based information resource to assist in the design, participation, and implementation of water quality trading and offset programs.





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Water Quality Trading Roadmap

Example

I am a...

Landowner/producer/credit seller

Point source emitter/credit purchaser

Market administrator

I would like to...

Learn how the CWA applies to WQT

Learn about EPA WQT Policy

Find additional resources

In 2003, U.S. EPA released its national policy framework for water quality trading, which describes conditions for allowing off-site compliance for NPDES permit effluent limits. Trades and trading programs in impaired waters for which a TMDL has been approved or established by EPA should be consistent with the assumptions and requirements upon which the TMDL is established.

Download the 2003 Policy

Find additional resources

Submit a question



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Water Quality Trading Roadmap *Timeline*

- Now: Categorize resources and examples
- Next: Link database to “Ask the Expert” tool
- Next 3 months: Beta test tool
- September 2015: Final tool released



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Analytical Tools

Example: EnviroAtlas Market Plug-in

What is EnviroAtlas?

A web tool giving users ability to view, analyze, and download information to inform decisions concerning the places in which we live, work, derive resources, and play

- Multi-agency effort – EPA, DOI, USDA
- Geospatial indicators and indices of the supply, demand, and benefits
- Drivers of change
- Reference data (e.g., boundaries, land cover, soils, hydrography, impaired water bodies, wetlands, demographics, community design)
- Analytic, mapping, and interpretive tools





EnviroAtlas: Connecting Ecosystems, People, and Well-being



LEARN THE ISSUES SCIENCE & TECHNOLOGY LAWS & REGULATIONS ABOUT EPA

EnviroAtlas

You are here: EPA Home » Research » Ecosystem Research » EnviroAtlas Home



What is EnviroAtlas?

EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem services. Key components of EnviroAtlas include the following:

- A multi-scaled **Interactive Map** with broad scale data for the lower 48 states and fine scale data for selected communities
- The **Eco-Health Relationship Browser**, which shows the linkages between ecosystems, the services they provide, and human health
- **Ecosystem services information**, GIS and analysis tools, and written resources

Why is EnviroAtlas useful?

Though critically important to human well-being, ecosystem services are often overlooked. EnviroAtlas seeks to measure and communicate the type, quality, and extent of the goods and services that humans receive from nature so that their true value can be considered in decision-making processes.

Using EnviroAtlas, many types of users can access, view, and analyze diverse information to better understand how various decisions can affect an array of ecological and human health outcomes. EnviroAtlas is available to the public and houses a wealth of data and research.

Learn how to use EnviroAtlas

Watch the EnviroAtlas demonstration video to learn more about the Interactive Map and its functions.



- See how people are using EnviroAtlas
- Browse the available EnviroAtlas data (22pp, 210K, About PDF)

About Us

EnviroAtlas is a collaborative project developed by EPA, in cooperation with the US Geological Survey (USGS), the US Department of Agriculture's Natural Resources Conservation Service (NRCS) and Forest Service, and Landscape America. Produced by the collective effort of federal employees, contractors, and non-governmental organizations, EnviroAtlas develops and incorporates data from federal, state, community, and non-governmental organizations.

Meet the EnviroAtlas team...

Learn more about EnviroAtlas...

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Navigating EnviroAtlas

- What are ecosystem services?
- How to use EnviroAtlas
- EnviroAtlas data
- Downloadable GIS tools
- Resources and publications
- Status of EnviroAtlas
- FAQs
- Tell us what you think

EnviroAtlas Interactive Map



Eco-Health Browser



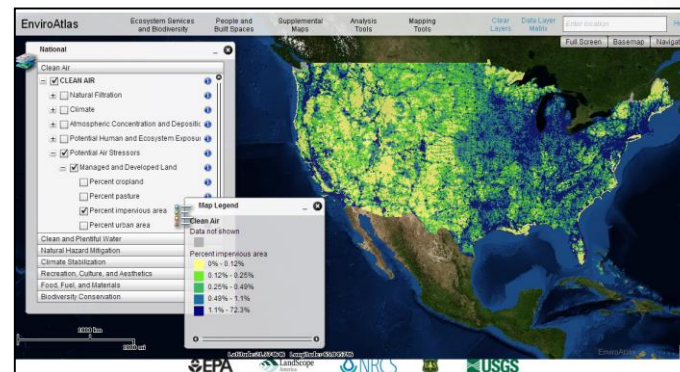
Related Links: General

- Research at EPA
- Ecosystems Research
- Health Science Research
- Promoting Sustainability at the EPA
- Tampa Bay Ecosystems Research

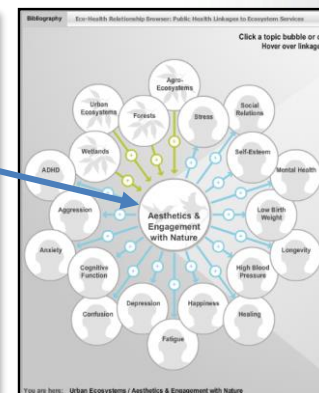
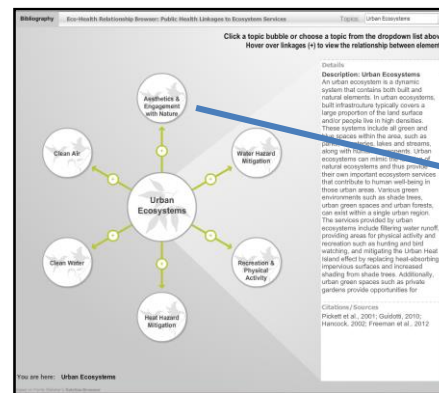
Disclaimer

This is the first release of EnviroAtlas; the content will continue to be updated and may not be fully reviewed.

Full disclaimer



Interactive Mapping Application



Eco-Health Relationship Browser

<http://enviroatlas.epa.gov>



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A Map-Based, Strategic Planning Tool for Environmental Markets

Collaboration between Federal agencies and Forest Trends' Ecosystem Marketplace to: *“Improve the quality and availability of information on environmental markets for market participants, administrators, and policy makers.”*

<http://www.ecosystemmarketplace.com/>



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EnviroAtlas Market Plug-in



Data and analytics on markets and payments for ecosystem services

Market Fundamentals

- Map of programs
 - Water, carbon, biodiversity
 - Active and developing
 - Public, private, PPP
- Map of opportunities
- Map of barriers
- Map of outcomes
- Map of investment levels
- Map of growth

Markets in Context

- Markets vs climate risk
- Markets vs conservation priorities
- Markets vs ecosystem service value
- Markets vs public health indicators
- Markets vs economic indicator
- Markets vs productive lands
- Markets vs public & private lands





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EnviroAtlas Market Plug-in *Timeline*

- Now: Scoping & Establishment of advisory group
- Next: Data collection and organization
- Next 15 months: Tool design, build and test
- Sept. 2016: Demonstration project complete



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Questions?

Chris Hartley
chartley@oce.usda.gov
202-690-0832

Kate Zook
kzook@oce.usda.gov
202-690-3592

