

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE



TWRA Partners' Workshop
Crossville, TN
February 9-10 2017



Workshop Objectives

- Gain knowledge of the landscape-level approach to conservation planning
- Identify how your efforts fit into this “bigger” picture
- Know how to access and use AppLCC resources
- See the utility of AppLCC resources for your conservation efforts
- See how AppLCC resources can be applied to TN SWAP strategies
- Develop an understanding and identify the utility of Regional Conservation Designs
- Provide feedback to enhance AppLCC resources for end-users

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE



Jean Brennan PhD
*Coordinator and
Science
Coordinator*



Matthew Cimitile
*Communications
Coordinator*



Kelly Rene
*Education
Outreach Intern*



Gillian Bee
*Landscape
Conservation
Fellow*



Rose Hessmiller



How AppLCC resource can help with efficiency and effectiveness of conservation action

Session Outline

- Objectives of this session
- RSVP survey results
- AppLCC Portal
- AppLCC Product Categories
- Management Question #1: How can I make decisions to protect resources and biodiversity if their status or location is unknown or inadequately surveyed?
- Management Question #2: How can I prioritize conservation action based on future industry or land-use change projections?

How AppLCC resource can help with efficiency and effectiveness of conservation action

Session Objectives

- Familiarize yourself with several AppLCC resources (datasets, tools, portal)
- Know WHICH resources can be used for WHAT
- Know HOW TO ACCESS resources
- Know how to receive additional information or TRAINING on resources when needed
- See the UTILITY of APPLICATION in your local and regional conservation planning efforts

Workshop Participant Feedback

Management questions

	1	2	3	4	Total	Score
How can I make decisions to protect resources and biodiversity if their status or location is unknown or inadequately surveyed?	45.00% 9	20.00% 4	20.00% 4	15.00% 3	20	2.95
Given our limited resources, how can I make the best investment now, to protect resources into the future?	20.00% 4	40.00% 8	10.00% 2	30.00% 6	20	2.50
How can I prioritize conservation action based on future industry or land-use change projections?	10.00% 2	30.00% 6	40.00% 8	20.00% 4	20	2.30
Do I have consistent info across the range to help in my planning?	25.00% 5	10.00% 2	30.00% 6	35.00% 7	20	2.25

Workshop Participant Feedback

AppLCC Resources

	1	2	3	4	5	6	Total	Score
Ecosystem Benefits & Risks	30.00% 6	30.00% 6	20.00% 4	5.00% 1	10.00% 2	5.00% 1	20	4.50
Riparian Restoration Decision Support Tool	20.00% 4	30.00% 6	20.00% 4	20.00% 4	5.00% 1	5.00% 1	20	4.25
Classification and Mapping of Cave and Karst Resources	20.00% 4	5.00% 1	20.00% 4	20.00% 4	30.00% 6	5.00% 1	20	3.50
Climate Change Vulnerability in the Appalachians	15.00% 3	20.00% 4	5.00% 1	20.00% 4	10.00% 2	30.00% 6	20	3.20
A Stream Classification System for the Appalachian Landscape Conservation Cooperative	10.00% 2	10.00% 2	20.00% 4	10.00% 2	25.00% 5	25.00% 5	20	2.95
Assessing Future Energy Development	5.00% 1	5.00% 1	15.00% 3	25.00% 5	20.00% 4	30.00% 6	20	2.60

APPALACHIAN LANDSCAPE CONSERVATION COOPERATIVE

Search Site Search

only in current section

Companion Sites

Cooperative Research Plan & Design Focal Areas Issues Partner Projects People News Resources

REGISTER

LOG IN

You are here: Home

Navigate Resources



Enhancing Landscape Conservation



Delivering the Science:
Tools and Assessments



Coordinating Landscape
Planning and Design



Networking for the
Conservation Community



Sharing Maps
and Data

OVERVIEW: Using AppLCC Science Investments



GET STARTED

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE

Resources - Product Categories

AppLCC Funded Research	Science Information/Data	Decision Support Info/Tool	Inventory/Trends Analysis	Predictive/Risk Assessment
A Stream Classification System for the AppLCC	✘			
Assessing Future Energy Development			✘	✘
Classification & Mapping of Cave and Karst Resources	✘			
Climate Change Vulnerability				✘
Riparian Prioritization for Climate Change Resiliency		✘		
Landscape Conservation Design				✘
Ecosystem Benefits & Risks	✘		✘	

Know WHICH resources can be used for WHAT

Management Question #1

How can I make decisions to protect resources and biodiversity if their status or location is unknown or inadequately surveyed?



**Classification and Mapping
of Cave and Karst Resources**

Where do I go to see if foundational info/data exists?





Classification and Mapping of Cave and Karst Resources across the Appalachian Landscape

- Mapped cave locations region wide
- Developed classification system for cave biodiversity
- Modeled probable level of biodiversity in areas not yet surveyed

Science
Information / Data

The screenshot shows the AppLCC website with a navigation bar containing: Cooperative, Research, Plan & Design, Focal Areas, Issues, Partner Projects, People, News, Resources. A dropdown menu under 'Research' is open, listing: AppLCC Funded Projects, Research Search, Share Your Research, Funding Opportunities. Below the navigation is a search bar and social media icons. The main content area features an article titled 'Classification System for the Appalachian Landscape Conservation' with a map thumbnail. Below it is an article 'Assessing Future Energy' with a landscape thumbnail. At the bottom, an article 'Classification and Mapping' is highlighted with a red dashed border, featuring a cave entrance thumbnail. The text for 'Classification and Mapping' reads: 'Cave and karst systems are unique environments with a diverse array of species and are an important part of the landscape. Due to a lack of classification and mapping information, it is difficult to develop and deliver landscape-level information where cave and karst habitats and resources occur across the landscape. We will develop a series of deliverables, including data tables, geospatial maps, and a user-friendly web application.' A 'Read More...' link is visible below the article.

- amphipods
- crayfish
- isopods
- beetles
- millipedes
- pseudoscorpions
- spiders
- springtails

Available Resources – Guide to Cave/Karst Resources across the Appalachian LCC

Quicklinks

► Classification and Mapping of Cave and Karst Resources

Cave/Karst Resources Across the Appalachian LCC: A Visual Guide

Gallery: Cave and Karst Maps

Cave and Karst Data Access

Review of Subterranean Faunal Studies of the Appalachians and Models of Subterranean Species Richness

Background Materials:
Classification and Mapping of Cave and Karst Resources Project

Cave/Karst Resources Across the Appalachian LCC A Visual Guide to Results

David C. Culver (P.I.)
American University

Mary C. Christman (Co-P.I.)
University of Florida & MCC Associates

Daniel H. Doctor (Co-P.I.)
U.S. Geological Survey

Matthew L. Niemiller (Co-P.I.)
University of Illinois

David J. Weary (Co-P.I.)
U.S. Geological Survey

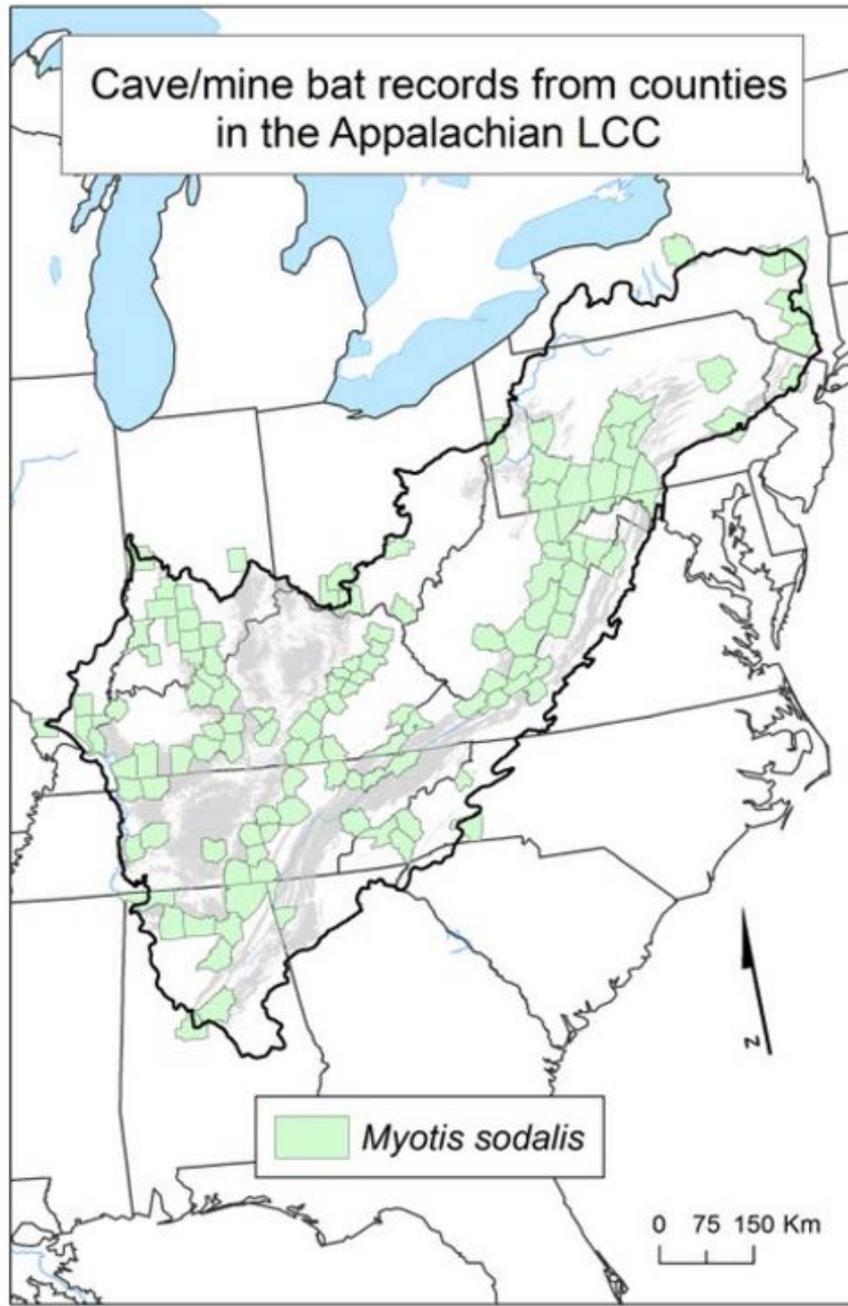
John A. Young (Co-P.I.)
U.S. Geological Survey

Kirk S. Ziegler (Co-P.I.)
University of the South

Science
Information / Data

- Distribution of known caves and karst within the region
- Taxonomic distribution of obligate cave-dwelling fauna
- Geographic patterns of species richness and ranges of major faunal groups
- Landscape and physical features that are potential predictors of species richness
- Predictions of the presence of nine major ecological groups
- Geography of risk to the subterranean fauna
- Geographic patterns of bat utilization of caves

Available Resources – Cave and Karst Map Gallery



Maps of:

- Foundational datasets
- Land-use and potential risks
- Modeling inputs
- Probability of presence of species groups
- Bat Records by county

* To obtain specific datasets inquire American University

Available Resources – Predictive Models of Cave Organisms

Cave and Karst Data Access



Ecosystem Benefits and Risks



Tennessee River Basin Biodiversity Network



Landscape Conservation Design



Cave and Karst Resources



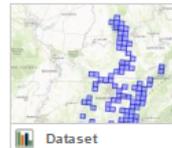
Energy Forecast Model



<https://applcc.databasin.org/>

Gallery Contents Gallery Credits

Sort by: Display:



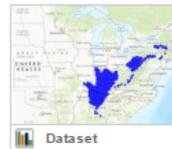
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted troglotibotic fish in sampled 20km grid cells

Young, John A.
Niemi, Matthew L.
Zigler, Kirk S.
Culver, David C.
Christman, Mary C.
Doctor, Daniel H.
Weary, David J.

30 Datasets

We developed spatial summary (GIS) layers for a study of factors influencing the distribution of cave and karst associated fauna within the Appalachian Landscape Conservation Cooperative region, one of 22 public-private partnerships established by ...

AppLCC_admin (Last modified September 22, 2016)

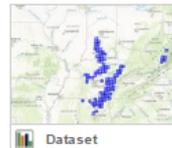


Cave and Karst Biota Modeling in the Appalachian LCC - Predicted troglotibotic fish in all 20km grid cells in karst

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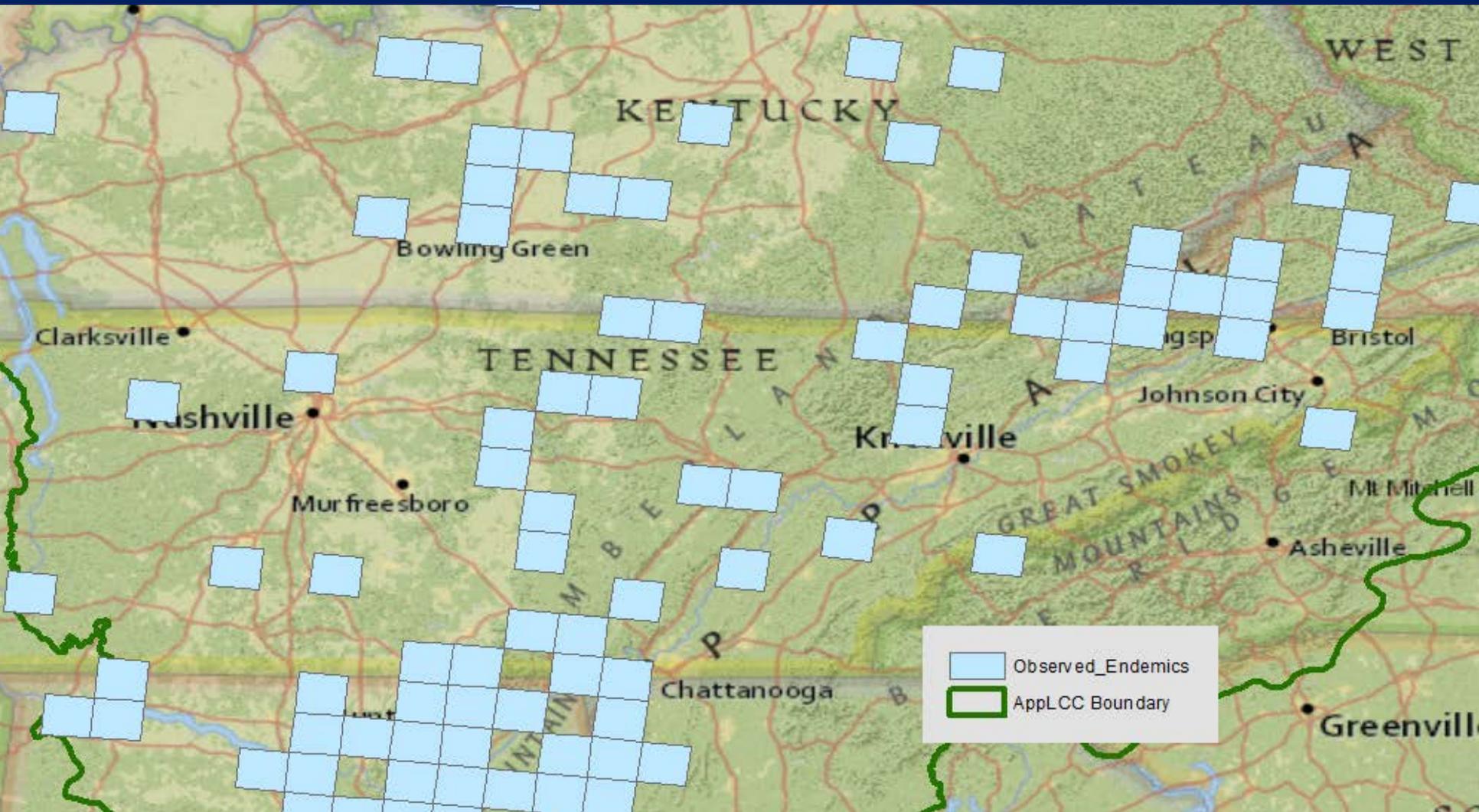


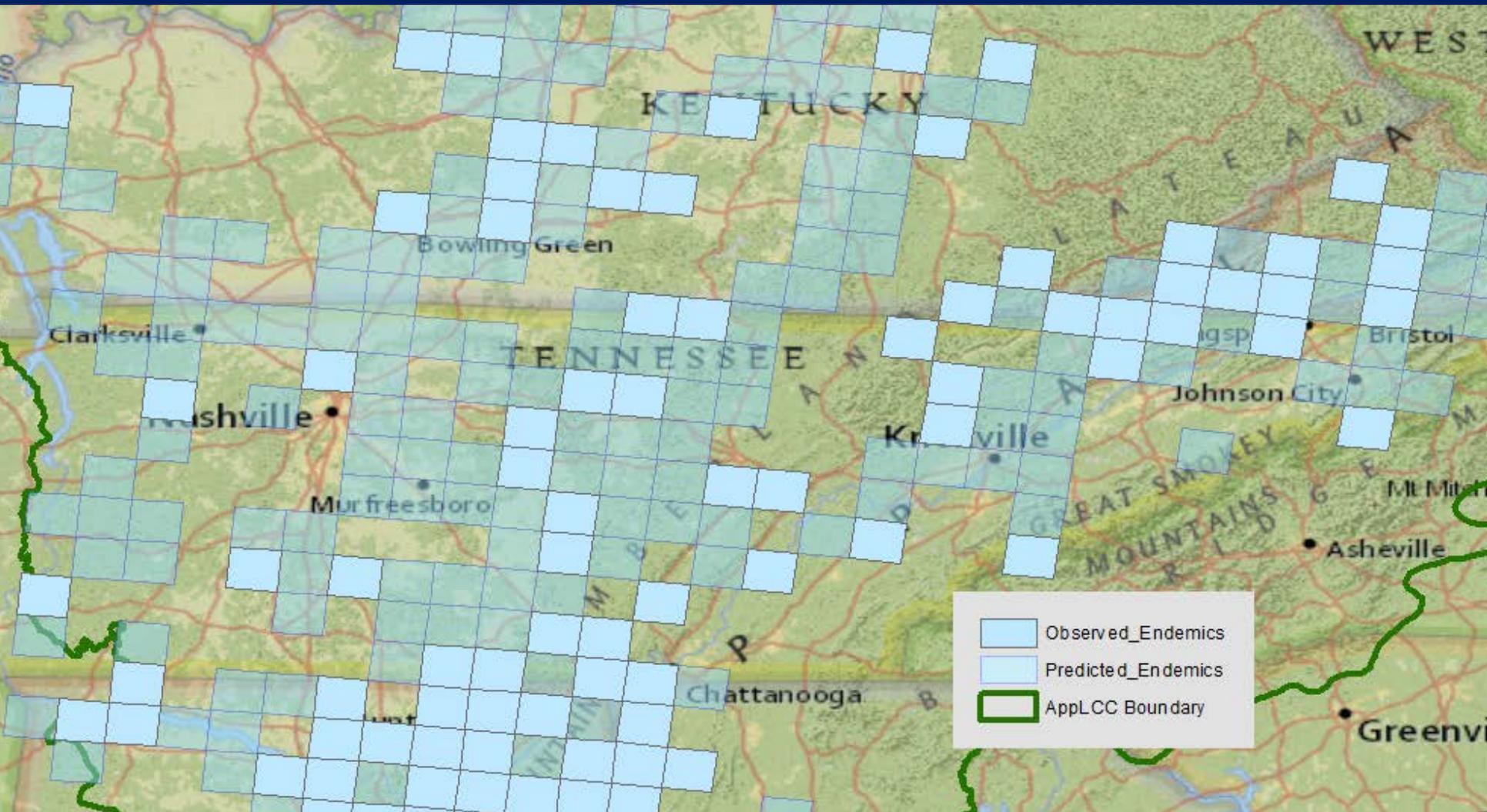
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted springtails in sampled 20km grid cells

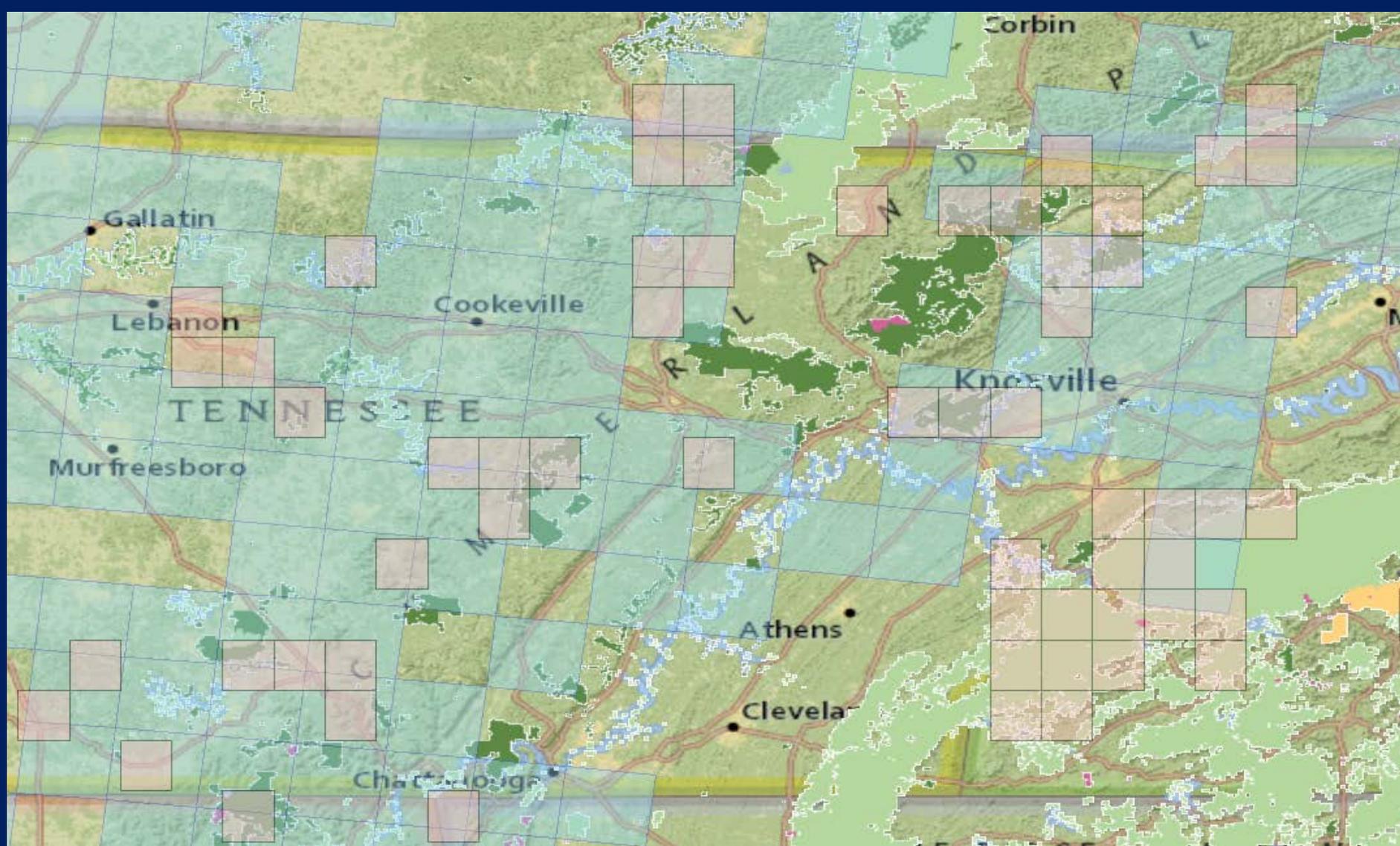
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**Examples of how you
could apply this resource**

Questions

Search for Foundational Information

The screenshot displays the website for the Appalachian Landscape Conservation Cooperative. At the top, the logo reads "APPALACHIAN LANDSCAPE CONSERVATION COOPERATIVE". A search bar in the top right corner contains the text "Search Site" and "only in current section". Below the logo is a navigation bar with the following items: Cooperative, Research, Plan & Design, Focal Areas, Issues, Partner Projects, People, News, and Resources. The "Plan & Design" menu is open, showing a list of sub-items: Conservation Planning & GIS, Conservation Design, Conservation Planning Atlas, Training and Online Learning, Home, Conservation Planning, Tools & Resources, Planning In Practice, Data, Training, News, and ApplCC Home. A "2015 Annual Report" section is visible on the left, with a "READ REPORT" button. On the right, there are "REGISTER" and "LOG IN" buttons, social media icons for Twitter, Facebook, LinkedIn, and Email, and a "2015 ANNUAL REPORT" banner with a "GET STARTED" button. A video player icon is also present at the bottom left of the banner area.

Search for Foundational Information

Foundational Data

(Datasets which are common to conservation planning efforts)

- **Red Spruce *Picea rubens* Distribution in WV:** Central Appalachian Spruce Restoration Initiative (CASRI) and its partners have completed a red spruce distribution map that covers the state of west Virginia and is current as of 2013.
- **Priority Areas for Golden Wing Warbler and Cerulean Warbler:** Appalachian Mountain Joint Venture has identified priority areas for restoration throughout their geography for two key bird species.
- **Important Bird Areas:** A global initiative of BirdLife International, implemented by Audubon and local partners in the United States, the Important Bird Areas Program (IBA) is an effort to identify and conserve areas that are vital to birds and other biodiversity. By working with Audubon chapters, landowners, public agencies, community groups, and other non-profits, Audubon endeavors to interest and activate a broad network of supporters to ensure that all Important Bird Areas are properly managed and conserved.
- **Marcellus Fish Collection Database:** The Marcellus Fish collection database was built the existing MARIS fish database as a template for compiling fish data from New York, Pennsylvania, Ohio, and West Virginia. MARIS fish data was combined for NY (1976-2007), PA (1975-2007), and WVA (1997-2010) with additional data from Ohio EPA (1978-2012), the USEPA EMAP program (1993-1998), and the USGS NAWQA program (1993-2012). There are 35512 locations represented within the database. There are 14707 unique fish collection locations within the Marcellus Shale boundary with 10238 locations having at least one fish record. There are 437045 fish records within the database with 150507 individual species counts recorded from sites within the Marcellus Shale boundary. The database can be queried using any number of criteria related to location, time, sampling methods, etc.

LCC or Partner Funded Data

(Datasets which can aid in conservation planning but are either new or not widely available)

Search Our Members Expertise Database

Check the expertise categories below or simply type in a Members Name, Organization, and/or State. To see all members in the directory, just click the SEARCH button with no categories or fields selected. Hit RESET to start a new search.



Not a Member of the AppLCC and the Expertise Database?

JOIN NOW!



Already a Member and want to edit your member profile?

ADD YOUR EXPERTISE!



Need help using the Expertise Search?

READ OUR GUIDES



Networking for the Conservation Community

Bill Reeves



Bill Reeves is currently Chief of Biodiversity with the Tennessee Wildlife Resources Agency (TWRA) where he administers the state wildlife grant, ESA Section 6 and wildlife diversity programs. In his 39 years of experience, Reeves has held the positions of Chief of Fisheries (TWRA), Assistant Chief of Fisheries, Community Lakes Supervisor, and District Fisheries Biologist (Alabama Game and Fish Division). Reeves is a Certified Fisheries Scientist and has served as the President of the Alabama Fisheries Association, Chairman of the Mississippi Interstate Resources Association (MICRA), co-founder and co-chair of the Southeast Aquatic Resources Partnership (SARP), member of the core team for the National Fish Habitat Initiative, member of the Tennessee Tech University Advisory Board for the Center for the Management, Utilization, and Protection of Water Resources, member of the University of Tennessee, Forestry, Fisheries and Wildlife, Board of Friends and the Tennessee Aquaculture Advisory Board. He received his B.S. and M.S. degrees from Auburn University in Zoology and Fisheries Management, respectively.

Expertise

Organization	Southeast Aquatic Resources Partnership
Title/Position	Chief of the Biodiversity TWRA
Department	
E-mail	Send e-mail
Expertise Regions	

Organization

State (live/work)

Search

Reset

Management Question #2

How can I prioritize conservation action based on future industry or land-use change projections?

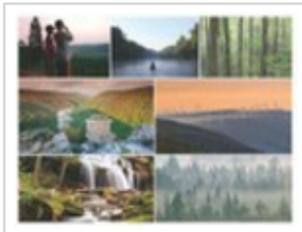


Assessing Potential Future Energy Impacts

Assessing Potential **Future** Impacts of **Energy Extraction** in the Appalachian Mountains

Inventory / Trends
Analysis

Predictive / Risk
Assessment



Assessing Future Energy Development across the Appalachian LCC uses models that combine data on energy development trends and identifies where these may intersect with important natural resource and ecosystem services to give a more comprehensive picture of what potential energy development could look like in the Appalachians. A web-based mapping tool allows policy makers, land management agencies, industries, and others to see where development may likely occur and intersect with important natural values to inform regional landscape planning decisions. Ultimately this information is intended to support dialogue and conservation on how to effectively avoid, minimize, and offset impacts from energy development to important natural areas and the valuable services they provide.

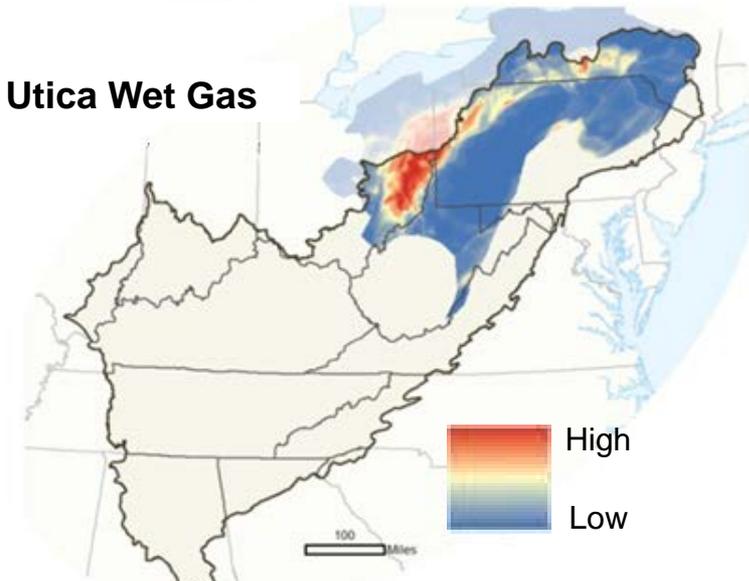
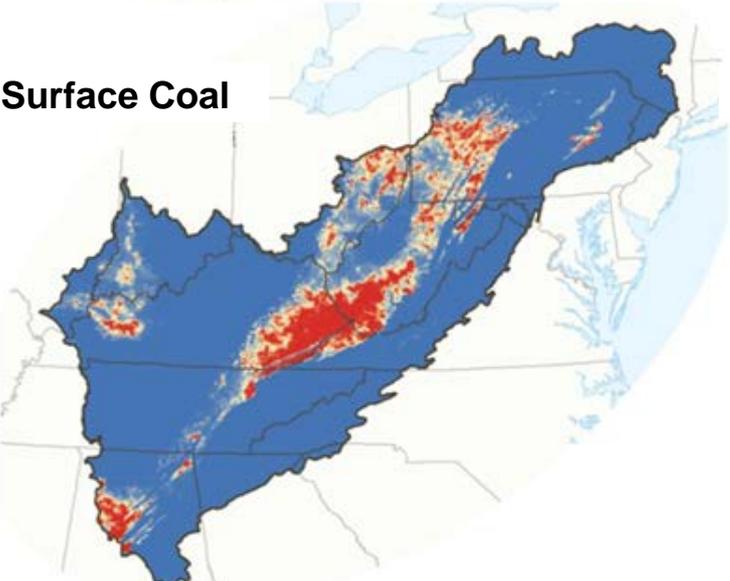
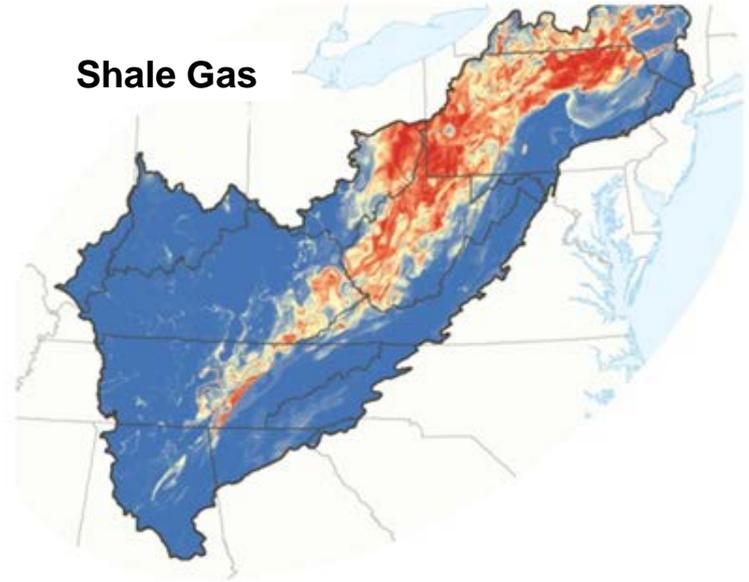
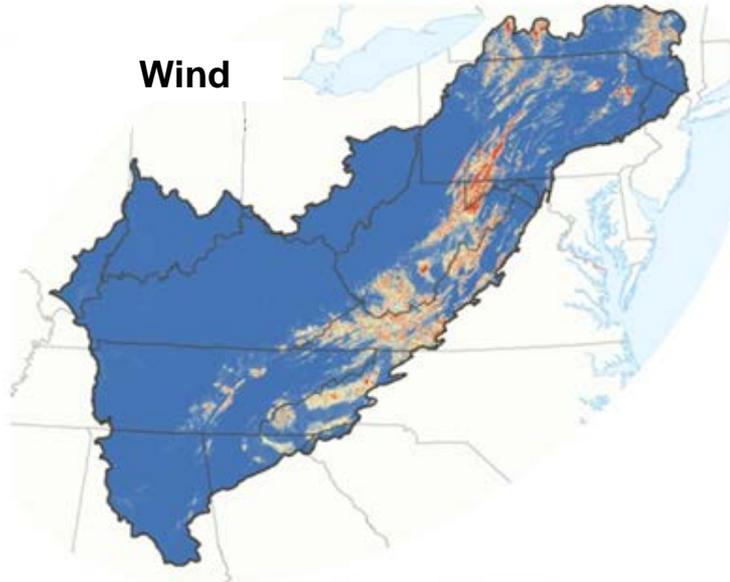


The Nature
Conservancy
Protecting nature. Preserving life.

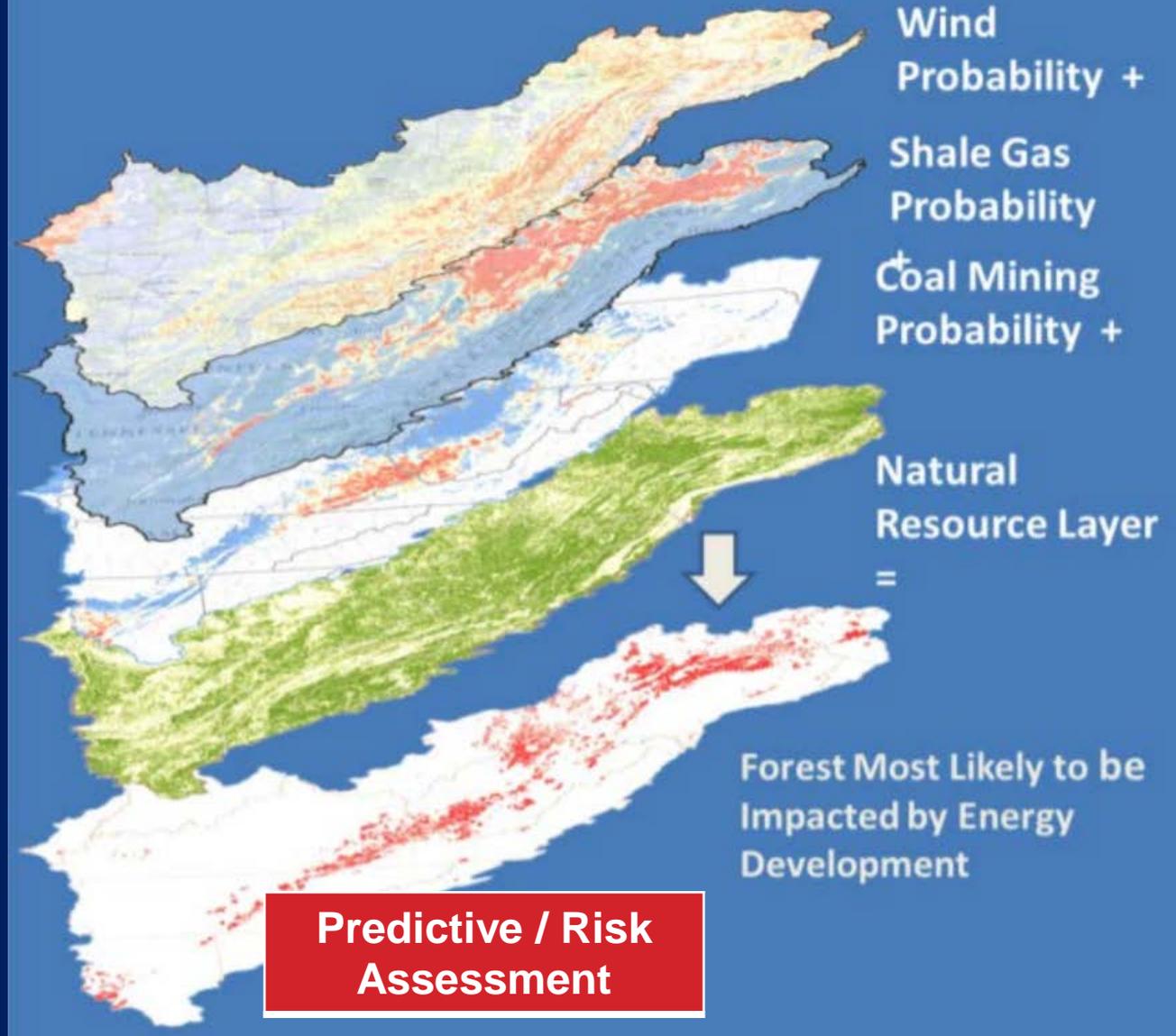


Energy Development Probability

Inventory / Trends Analysis



- Forest Habitat
- Aquatic Habitat
- Cave & Karst Habitat
- Drinking Water
- Protected Areas



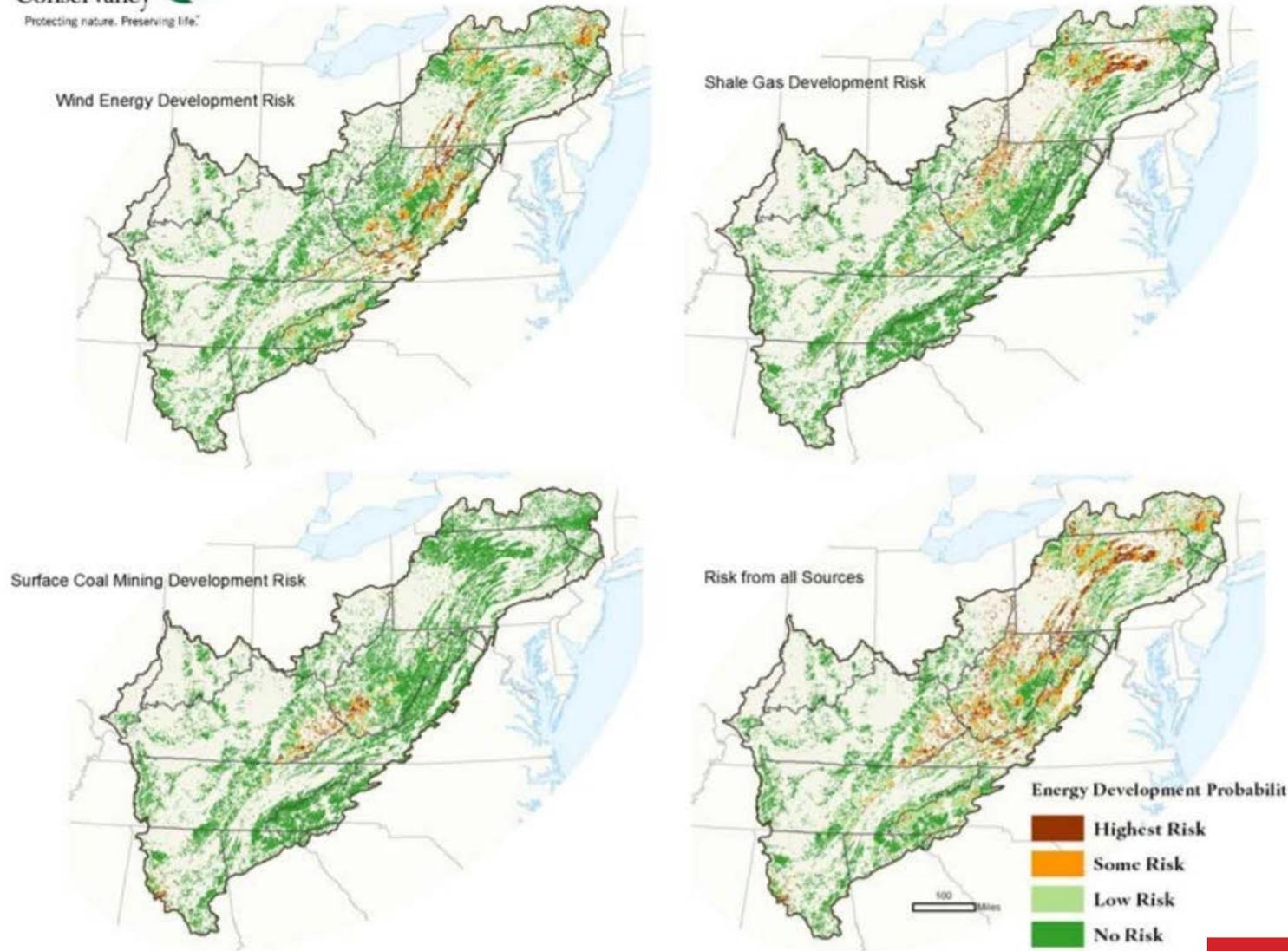
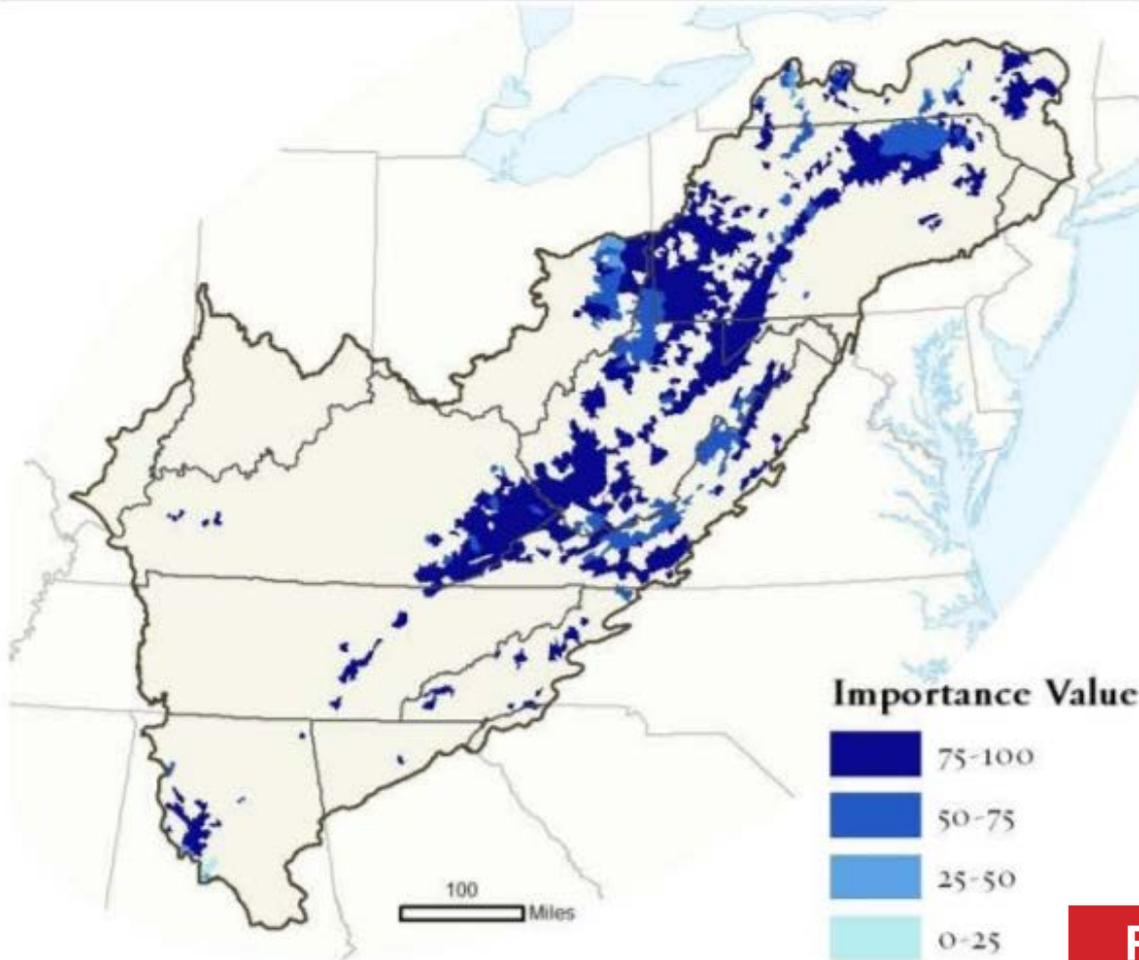


Figure 10: Cumulative Risk of Energy Development to Forest Cores

- Forest Habitat
- Aquatic Habitat
- Cave & Karst Habitat
- Drinking Water
- Protected Areas

Predictive / Risk Assessment

Watershed Importance to Drinking Water in Appalachian LCC Watersheds at Highest Risk of Energy Development



- Forest Habitat
- Aquatic Habitat
- Cave & Karst Habitat
- Drinking Water
- Protected Areas

Predictive / Risk Assessment

Available Resources

Assessing Future Energy Development across the Appalachian Landscape Conservation Cooperative



Judy K. Dunscomb¹*, Jeffrey S. Evans², Jacqueline M. Strager³, Michael P. Strager³ and Joseph M. Kiesecker⁴*

¹The Nature Conservancy, Charlottesville, VA. ²The Nature Conservancy, Laramie WY. ³Division of Resource Management, West Virginia University, Morgantown, WV ⁴The Nature Conservancy, Fort Collins, CO.

*To whom correspondence should be directed
Email: jdunscomb@tnc.org; jkiesecker@tnc.org

Technical Report Submitted to the Appalachian Landscape Conservation Cooperative in partial completion of Grant #2012-02

Three Products

1. Report
2. Web Map Application
3. Model Data

Quicklinks

▶ [Assessing Future Energy Development](#)

[Products and Tools](#)

[Foundational Research](#)

[Awareness and Outreach](#)

[Data Access](#)

[Background Materials:
Assessing Future Energy Development Across the Appalachians](#)

The Appalachian LCC Energy Forecast Model

Resources

- Appalachian LCC Energy Buildout Study Area
- Appalachian Trail

Energy Impact Analysis

- Intersection Between High Probability Energy Development and
 - No Intersection
 - Wind
 - Shale Gas
 - Shale Gas and Wind
 - Coal
 - Coal and Shale Gas

Forest Cores

- Wind Energy Development Risk to Forest Cores
- Shale Gas Development Risk to Forest Cores
- Surface Coal Mining Risk to Forest Cores
- Energy Sources Combined Risk to Forest Cores
- Energy Sources Combined Risk to Protected Forest Cores

Watersheds

- Wind Development Risk by Watershed
- Shale Gas Development Risk by Watershed
- Coal Development Risk by Watershed
- Cumulative Energy Development Risk by Watershed
- Analyses for Watersheds at Highest Energy Development

Partner Layers

- Energy Data

Energy Data

- Wind Model
 - LCC Wind Development Probability greater than 90
 - LCC Wind Development Probability
- Shale Gas Model
 - Utica Wet Gas Development Probability

Data Request

Name:

Affiliation:

Country:

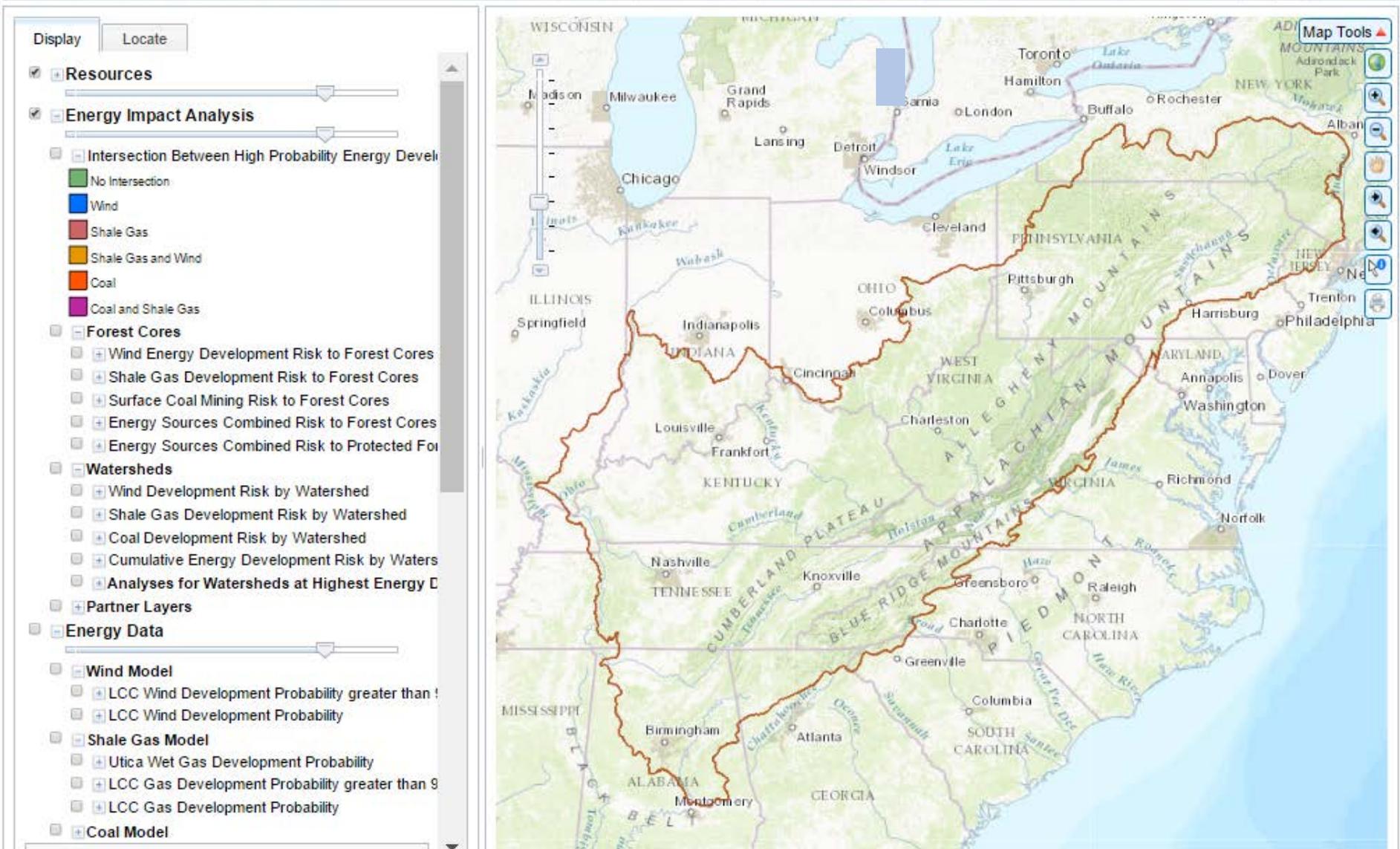
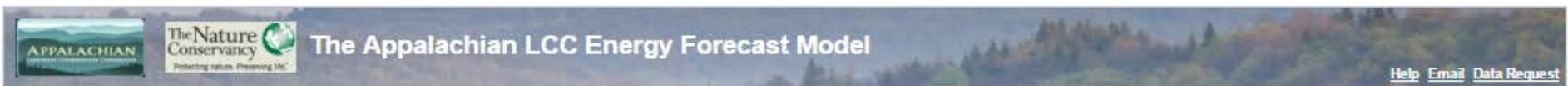
Email:

Accept Data Use Clause I agree.

[\(View Clause\)](#)

<http://applcc.org/assessing-future-energy-development>

Web Map Application



Display Appalachian Trail

Energy Impact Analysis

Intersection Between High Probability Energy Development and Forest Cover

Forest Cores

- Wind Energy Development Risk to Forest Cores
- Shale Gas Development Risk to Forest Cores
- Surface Coal Mining Risk to Forest Cores
- Energy Sources Combined Risk to Forest Cores
- Energy Sources Combined Risk to Protected Forest Cores

Watersheds

Partner Layers

- AMJV Cerulean Warbler Priority Areas at Risk to Energy Development
- Audubon Important Bird Areas and Forest Priorities at Risk to Energy Development
- ILP Priority Areas at Risk to Energy Development
- Core Forests Along Appalachian Trail at Risk to Energy Development
- Forest Cores in TNC Terrestrial Portfolio at Risk to Energy Development
- Ohio River Partnership Fish and Mussel Priority Watersheds at Risk to Energy Development
- Wild and Scenic River Watersheds at Risk to Energy Development

Energy Data

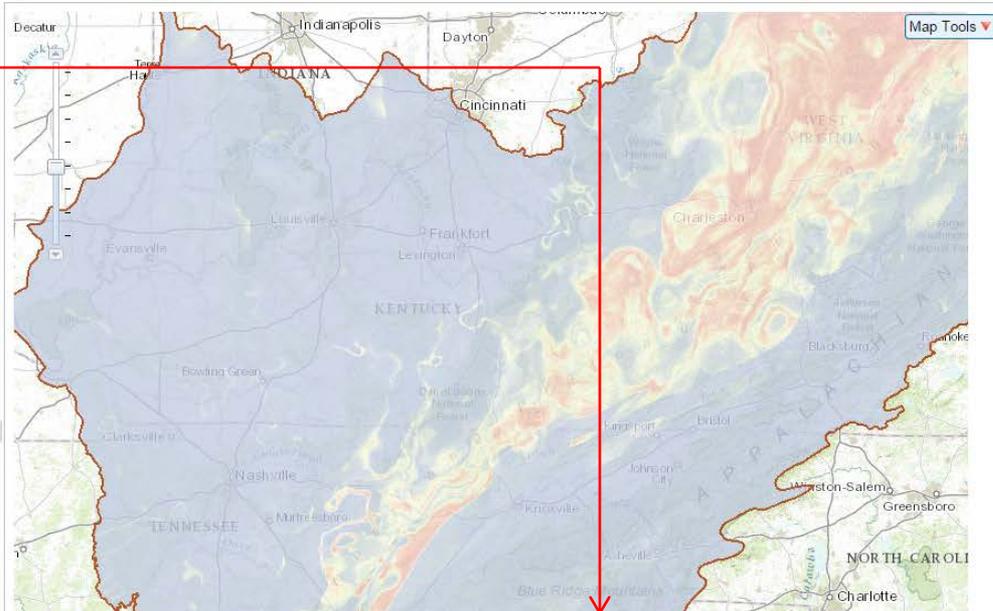
Wind Model

Shale Gas Model

- Utica Wet Gas Development Probability
- LCC Gas Development Probability greater than 90
- LCC Gas Development Probability

Coal Model

Reference Layers



Energy Impact Analysis

- Intersection Between High Probability Energy Development and Forest Cover
- Forest Cores
- Watersheds
- Partner Layers

Intersection Between High Probability Energy Development and Forest Cover

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- Coal and Shale Gas

Forest Cores

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Watersheds

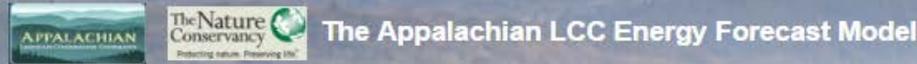
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Partner Layers

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Analysis Data

Partner Layers



Display

Resources

Energy Impact Analysis

Intersection Between High Probability Energy Development and Forest Cover

Forest Cores

Watersheds

Partner Layers

AMJV Cerulean Warbler Priority Areas at Risk to Energy Development

AMJV Cerulean Warbler Priority Areas

Risk to Forest Cores in Cerulean Warbler Priority Areas

Highest Risk from One or More Sources

Some Risk from One or More Sources

Low Risk from One or More Sources

No Risk

Audubon Important Bird Areas and Forest Priorities at Risk to Energy Development

ILP Priority Areas at Risk to Energy Development

Core Forests Along Appalachian Trail at Risk to Energy Development

Forest Cores in TNC Terrestrial Portfolio at Risk to Energy Development

Ohio River Partnership Fish and Mussel Priority Watersheds at Risk to Energy Development

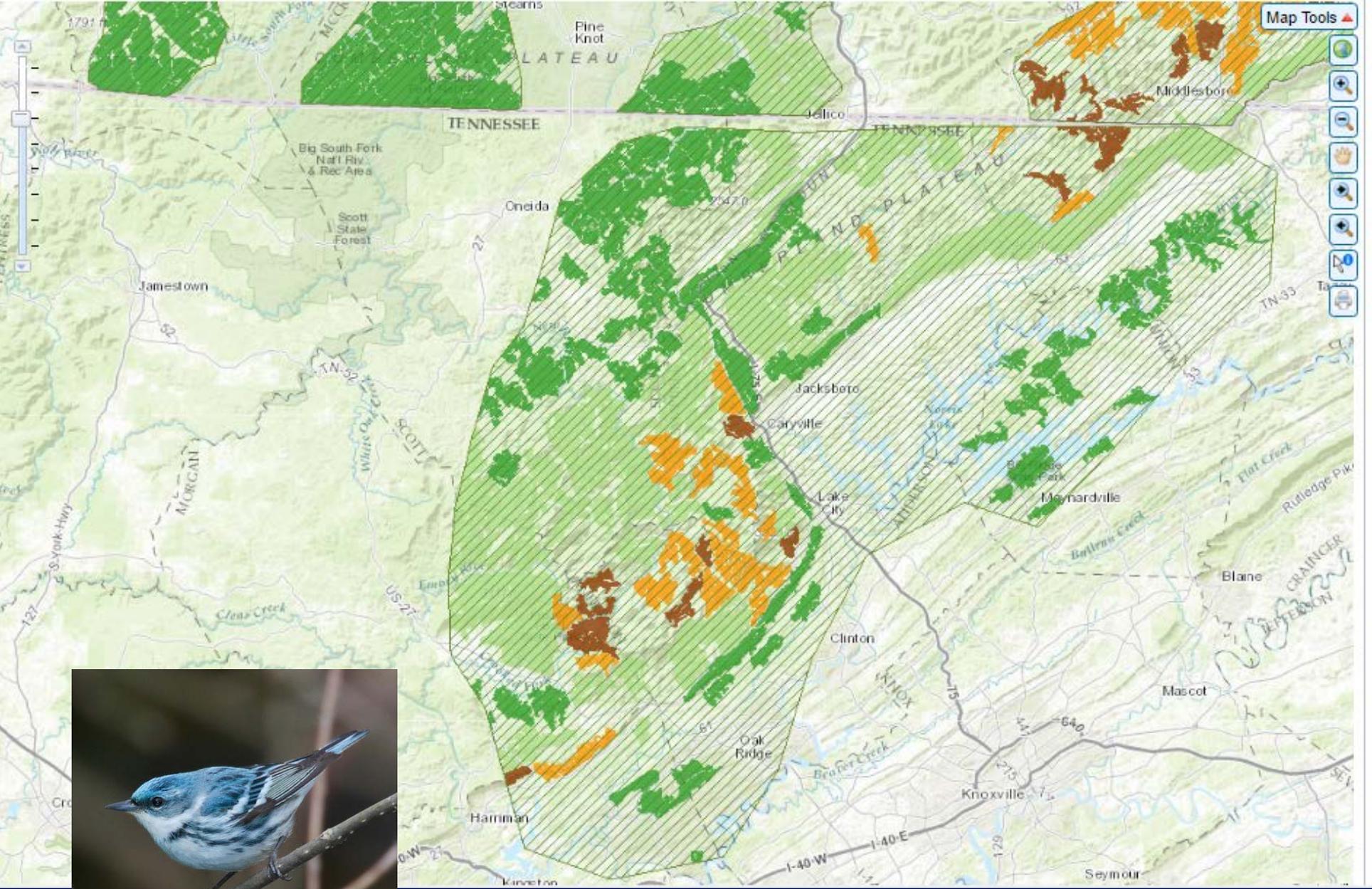
Wild and Scenic River Watersheds at Risk to Energy Development

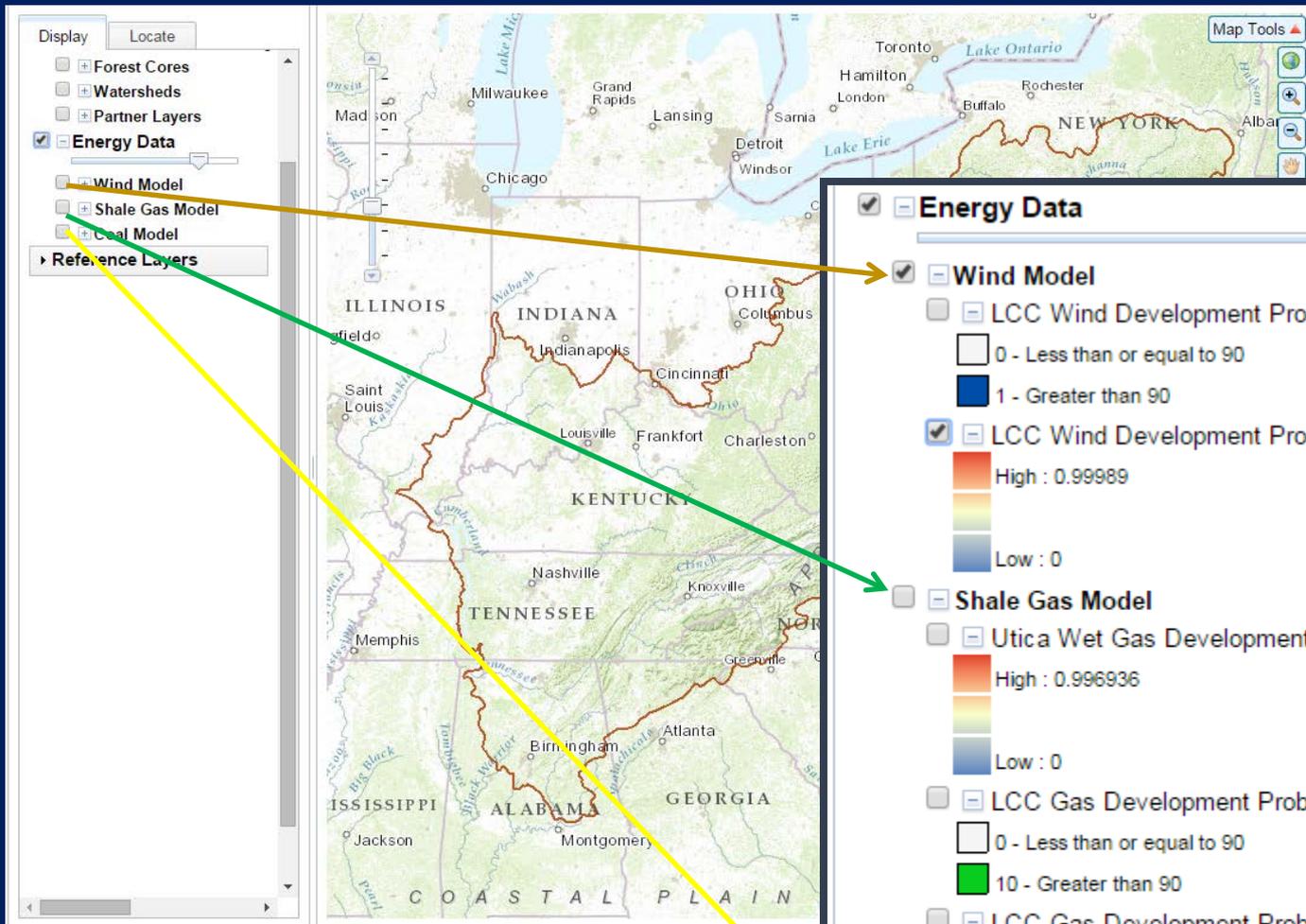
Energy Data

Reference Layers



APPALACHIAN
MOUNTAINS
JOINT VENTURE





Energy Model Data

The Appalachian LCC Energy Forecast Model

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Country:

Email:

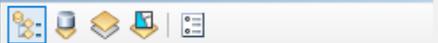
Accept Data Use Clause I agree.

[View Clause](#)

Layer Name	File Access
Relative Development Risks to Forest Cores	Cores.zip
Relative Development Risks to Watersheds	Watersheds.zip
Wind Model	Wind.zip
Shale Gas Model	ShaleGas.zip
Coal Model	Coal.zip

Download Energy Model Data

Table Of Contents



Layers

- WindProb90
 - 1
- Wind Prob
 - Value
 - High : 1
 - Low : 0

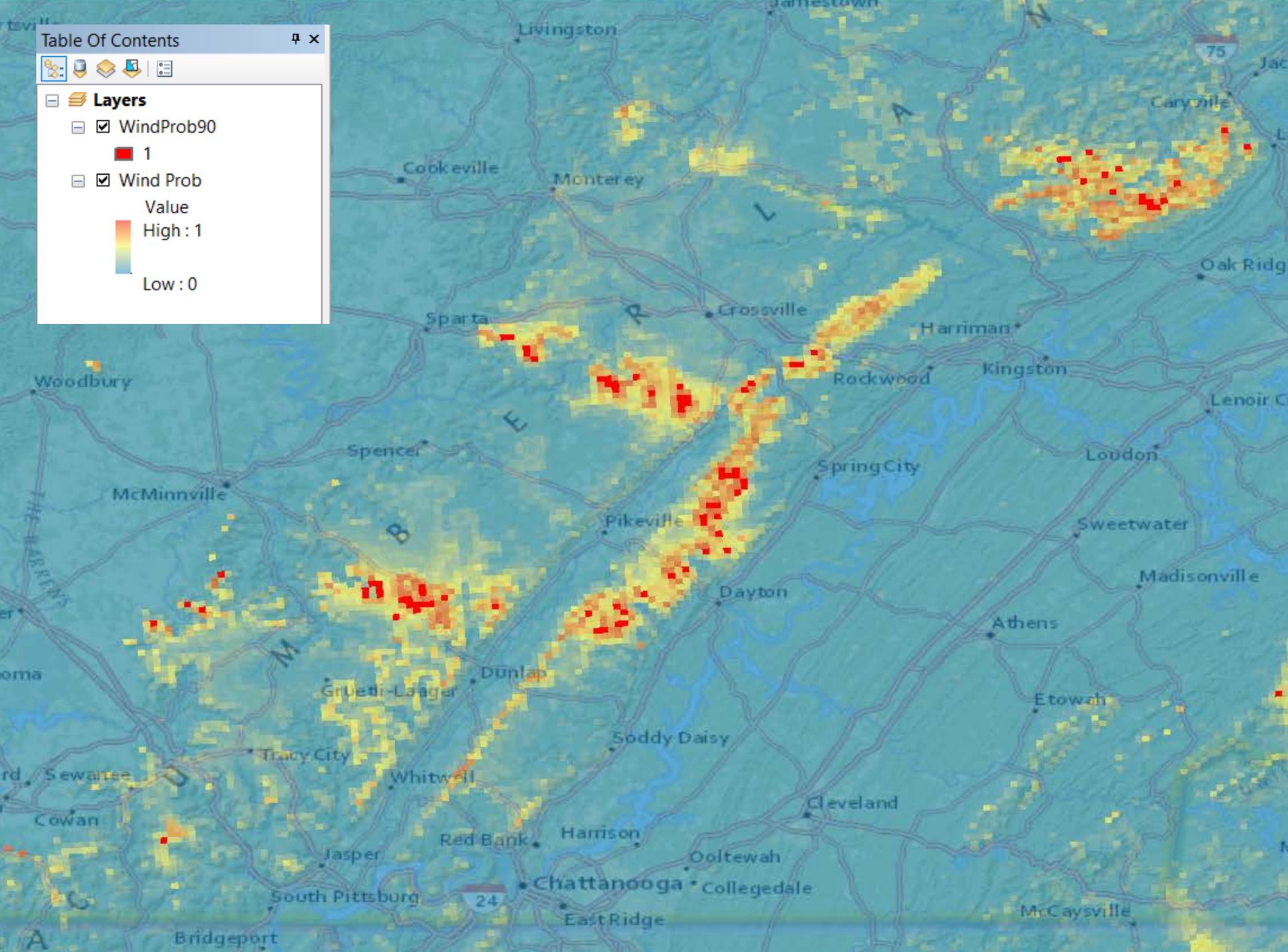


Table Of Contents



Layers

GOEA_Migration

WindProb90



1

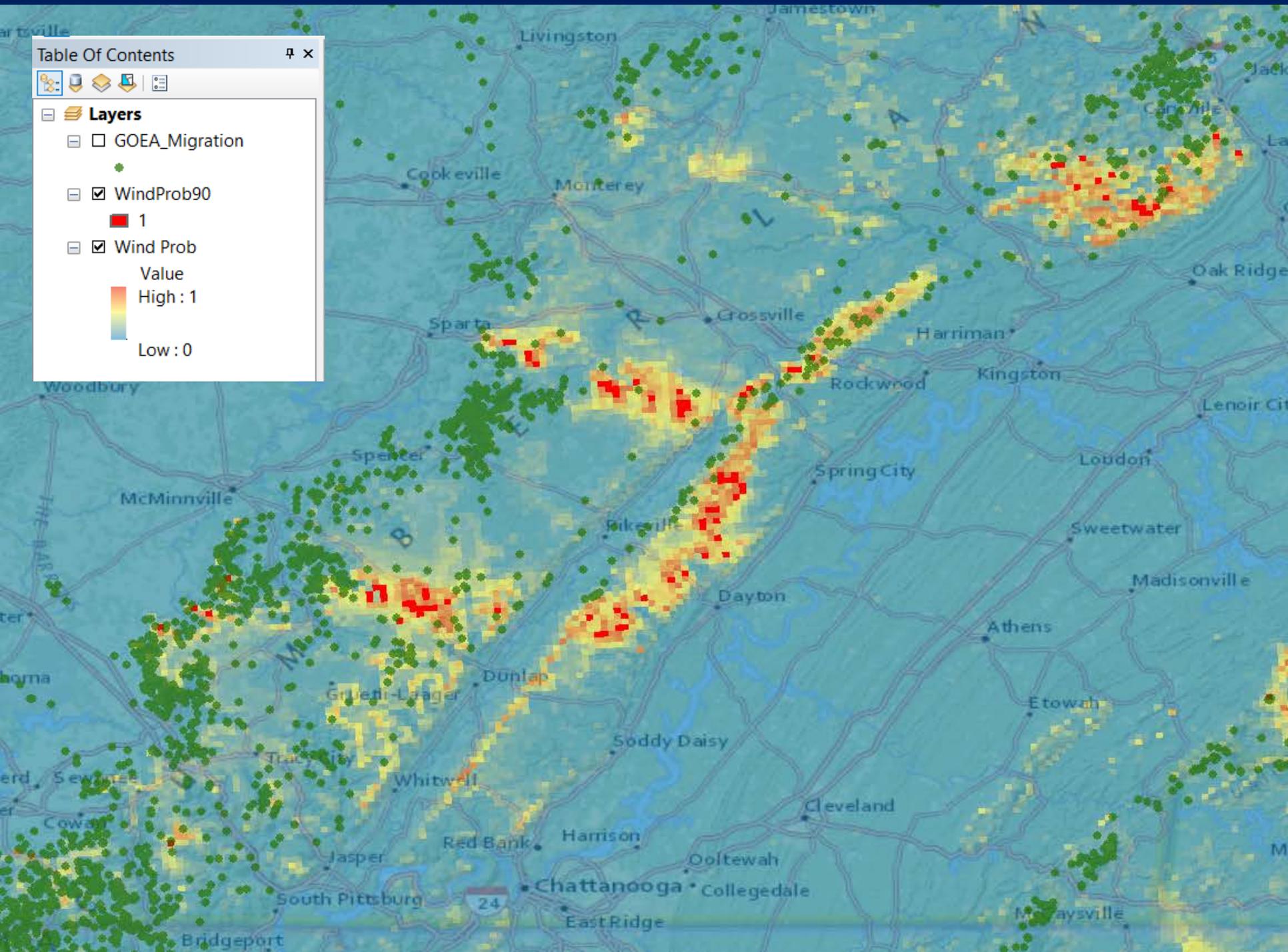
Wind Prob

Value

High : 1



Low : 0



Training Opportunities

Pre-recorded Webinar

View a video presentation that provides a detailed overview of how to use the Energy Forecast Mapping Tool



Self-paced On-line Classes



The Science Applications Online Learning Management System's self-paced tutorials and classes highlight the intended uses of decision-support tools and other products by giving a step-by-step demonstration of how to apply tools to specific natural resource issues. Once completing the course, users can work with LCC staff directly to discuss how to incorporate these LCC products in their own work.

[ENTER THE ONLINE LEARNING MANAGEMENT SYSTEM](#) ▶

Science Applications ONLINE LEARNING MANAGEMENT SYSTEM

Building Capacity for Science Delivery

COURSES ▾ MARXAN TRAINING COMPANION SITES ▾

- Decision Support ▸
 - Overview and Registration
 - Energy Forecast Modelling
 - Riparian Restoration to Promote Climate Change Resilience



ations.org/course/view.php?id=3

<http://www.scienceapplications.org>



Energy Forecast Modeling

Introduction

Module 1 - The Science behind Energy Forecast Model

Module 2 - How to Use Energy Forecast Model

Module 3 - Decision Support Tool Using Case Study Examples

Module 4 - Case Study Activity

Module 5 - Assessment Quiz

Module 6 - Participant Feedback

Questions

How people are integral to our efficiency and effectiveness of conservation action

Session Outline

- Session Objectives – communicate the value, enhance networking and info. sharing capabilities, support to AppLCC partners' collaborative efforts
- AppLCC Portal
- AppLCC resources that can be used to help instill the value of natural resources and your conservation efforts to your constituents
 - Ecosystem Benefits & Risks – AppLCC Funded Research
 - Video Inventory
 - Conservation Action Map
 - Partner Projects/Research Database
- AppLCC support to networks and science-based collaboratives (Tennessee River Basin Network & Little TN Native Fish Conservation Partnership)

You are here: Home

Navigate Resources

Enhancing Landscape Conservation



Delivering the Science:
Tools and Assessments



Coordinating Landscape
Planning and Design



Networking for the
Conservation Community



Sharing Maps
and Data

OVERVIEW: Using AppLCC Science Investments



GET STARTED

How people are integral to our efficiency and effectiveness of conservation action

“People protect what they value”

— David Whitehurst,
Director, Bureau of Wildlife Resources
VA Dept. Game & Inland Fisheries



Deliver the Message: Ecosystem Services



- Cooperative
- Research
- Plan & Design
- Focal Areas
- Issues**
- Partner Projects
- People
- News
- Resources



Guide
(Key References)



Assessments
(and Reviews)



Atlas
(Maps & Data)



Ecosystem Benefits
& Risks

**Delivering the Science:
Tools and Assessments**



**Sharing Maps
and Data**



The type of information you can access



Benefits

- Forest Carbon
- Harvested Species
- Landscape Values and Sense of Place
- Water and Soils



Risks

- Climate Change
- Energy Development
- Invasive Species and Forest Pathogens
- Urbanization
- Wildland Fire



The Human Landscape

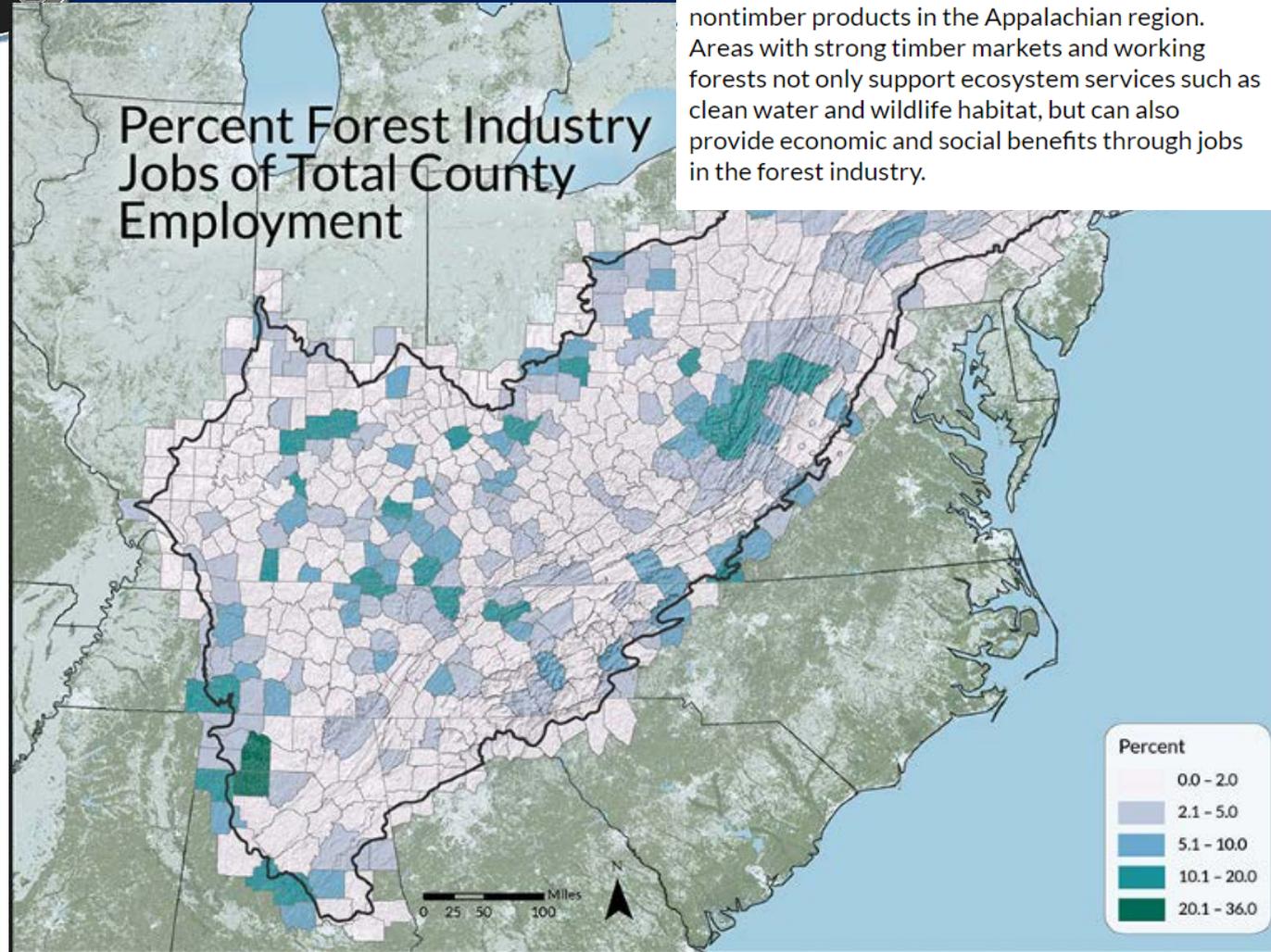
- Demographics
- Economics
- Land Use



Data Atlas

Forest Industry

Economic and social factors have an important relationship to the production of timber and nontimber products in the Appalachian region. Areas with strong timber markets and working forests not only support ecosystem services such as clean water and wildlife habitat, but can also provide economic and social benefits through jobs in the forest industry.



The type of information you can access

Navigate Resources

APPALACHIAN LANDSCAPE CONSERVATION COOPERATIVE Conservation Planning Atlas

powered by DATA BASIN

Get Started Explore Create My Workspace

Ecosystem Benefits and Risks

Created by ApplCC_admin Jul 19, 2016 (Last modified Sep 29, 2018)

About
Ecosystem services are the benefits people receive from nature. These are abundant in the Appalachians, from clean drinking water and sustainably harvested forest products to nature-based tourism. They also include the sense of home that communities find in rural landscapes and the values that Americans place on conserving biodiversity. These essential services and the natural resources they depend on are extremely valuable to society, but are placed at risk by processes driving landscape change in the Appalachians such as urbanization and climate change. Some processes, such as energy development, produce both risks and benefits to society. This gallery includes a collection of data which comprises the ecosystem benefits and risks within the Appalachian LCC region.

Tags
risks, appalachian, lcc, ecosystem benefits, applcc

This gallery is visible to everyone

Gallery contains:
4 Folders
41 Datasets
1 Maps

Gallery Contents Gallery Credits

Sort by: Default Display

- Benefits (8 items)
- Data Atlas (4 items)
- Human Landscape (16 items)
- Risks (14 items)

Gallery Contents Gallery Credits

Sort by: Default Display

- Benefits (8 items)
 - PRISM: Summer Maximum Temperature Normal (1981-2010)
 - USDA Forest to Faucets: Forest Importance to Drinking Water
 - PRISM: Average Annual Normal Precipitation (1981-2010)
 - PRISM: Average Normal Annual Temperature (1981-2010)
 - ForWam: Mean Summer NDVI, 2009-2013
 - Total Basal Area of All Tree Species, 2012

USDA Forest to Faucets: Forest Importance to Drinking Water

Updated by Ian Johnson Sep 29, 2016

Download... Open in Map

Description:
The USDA Forest Service Forests to Faucets project uses GIS to model and map the continental United States land areas most important to surface drinking water, the role forests play in protecting these areas, and the extent to which these forests are threatened by development, insects and disease, and wildfire fire. The Forest to Faucets dataset provides a watershed index of surface drinking water importance, a watershed index of forest importance to surface drinking water, and a watershed index to highlight the extent to which development, fire, and insects and disease threaten forests important to surface drinking water. The dataset displayed here displays the index of forest importance to surface drinking water, by each HUC-12 watershed. For more information on this dataset, please visit: ApplCC's Ecosystem Services Conservation Atlas | From the Forest to the Faucet

This dataset is visible to everyone

Details Data Layers (1)

Data Provided by:
USDA Forest Service
USDA Forest Service's EFETAC
UNC Asheville's NEMAC

Data Hosted by:
ScienceBase (USGS) View Record

Map Service URL:
<https://www.sciencebase.gov/catalog/item/58f958bbe4b0e9d4007ed/MapServer/>

Content date: 2001-2006

Citation:
USDA Forest Service, Forests to Faucets

Spatial Resolution: EPSG: 4326

Contact Organization:
Ecosystem Services & Markets, ecosystemservices@fs.fed.us
USDA Forest Service, Cooperative Forestry/Washington, DC

Contact Person(s):
not specified

Use Constraints:
CC BY-NC-SA This work is licensed under a Creative Commons Attribution 3.0 License.

Dataset Type: External Map Service (ArcGIS)

Tags:
usfs, forests to faucets, usda forest service, applcc

Included In 1 Public Gallery
Ecosystem Benefits and Risks



Deliver the Message: Instill the value of natural resources and our conservation efforts

The Power of Film



Voices from the Appalachian Community

Videos Around the Basin

Through this collection of over 40 videos about the ecology, threats, conservation efforts, and pride within the Tennessee River Basin, we hope to increase awareness of the conservation and natural resource management taking place within the region. This inventory will give partners a better understanding of who is doing what, where in the Basin and can be utilized to engage with the broader public to communicate on the many values of nature the River Basin provides human communities and wildlife.



Threats



Conservation Efforts



Pride of Place



TRB Ecology 101

AppLCC Support to Networks and Collaboratives



- Enhance networking and information sharing capabilities
- Help to incorporate AppLCC science-based resources into efforts

Deliver the Message: Web presence to share our efforts

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE

only in current section

Search

Companion Sites

Cooperative Research Plan & Design Focal Areas Issues Partner Projects People News Resources

You are here: Home > Partner Projects

REGISTER | LOG IN

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Partner Projects

The scientific and conservation community uses research supported by the Appalachian LCC for delivering on-the-ground conservation activities and projects. Activities such as restoring streams for trout and managing forests to create greater habitat for threatened bird species are just a few of the many conservation projects taking place to create a sustainable landscape for wildlife and people. Find here a list of conservation activities and projects within the region.

Submit a Project

FEATURED PROJECTS

Assessment and Restoration of Southern Appalachian Brook Trout



This project will complete an assessment of brook trout in-stream habitat, water quality, and fish distribution information in all Jocassee Gorges streams during the first two years of the project.

1 2 3 4 >

Search Results

Sort by: Alphabetical Most recent Oldest first

Maple North Fork of the Fall
 Habitat Survey of Upper Middle-class Spring Run



A Floral Survey of Cliff Habitats Along Bull Run at Manassas National Battlefield Park
 Courtney James- Biological Science Technician, NPS, Manassas National Battlefield Park, Esther D. Stroh, Matthew A. Struckhoff, and Keith W. Grabner, U.S. Geological Survey, Columbia Environmental Research Center

A Golden Anniversary in a Diamond Year
 Kimberly Robinson - Museum Curator, NPS, George Washington Memorial Parkway

Accuracy Assessment Results for NCR vegetation maps
 Judy Teague - Senior Ecologist, NatureServe Diane Pevck - Research Coordinator, Botanist NPS, National Capital Region



TAXONOMIC GROUPS

- Amphibians
- Aquatic Macrofauna
- Bivalves
- Birds
- Fish
- Mammals
- Reptiles

STRESSORS

- Climate Change Impacts
- Energy Development
- Geographic Isolation
- Invasives, Disease and Pathogens
- Urbanization and Infrastructure

Ahoy Ye Landlubber! Submerged Cultural Resources along the GWMP

Bradley Krueger- Cultural Resource Specialist, NPS, George Washington Memorial Parkway

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE

only in current section

Search

Companion Sites

Cooperative Research Plan & Design Focal Areas Issues Partner Projects People News Resources

You are here: Home > Research

REGISTER | LOG IN

[f](#) [t](#) [in](#) [+](#)

Research

The Appalachian LCC funds research of the conservation community's top science needs to address the landscape conservation challenges within the region. By identifying, prioritizing, and supporting fundamental scientific research through coordination and strategic investment of scarce resources, the Appalachian LCC is fostering the development and application of vital information and decision-support tools. Find here a list of the Appalachian LCC funded research as well as that of their partners and additional organizations within the region.

FEATURED RESEARCH

Classification and Mapping of Cave and Karst Resources



It has been recognized by the Appalachian LCC partnership that to develop and deliver landscape-level planning tools, it is essential to develop an Appalachian-wide map depicting where cave and karst habitats and resources occur across the landscape. For the past 18 months, researchers for the Appalachian LCC funded "Classification and Georeferencing Cave/Karst Resources across the Appalachian LCC" project have been gathering and analyzing data on caves and karst region wide. This work has produced a series of deliverables, including narratives, data tables, geospatial information layers, and a variety of maps. The maps and files provide a comprehensive overview of data availability for examining relationships between environmental factors and biological diversity and distribution within karst areas of the Appalachian LCC.

1 2 3 4 >

Search Results

Sort by: Alphabetical Most recent Oldest first AppLCC-funded

AppLCC Science Delivered: Tools, Reports, Assessments



Submit Research

AppLCC Funded Research



A Stream Classification System for the Appalachian Landscape Conservation Cooperative

Unifying state-based stream classifications into a single consistent system, principal investigators at The Nature Conservancy developed a hierarchical classification system and map for stream and river systems for the Appalachian LCC that represents the region's natural flowing-water aquatic habitats. This river classification information is needed to develop and implement instream flow standards and management recommendations so that environmental flows can become integral to all water management decisions from the onset.

Assessing climate-sensitive ecosystems in the southeastern United States

The southeastern U.S. contains a unique diversity of ecosystems that provide important benefits, including habitat for wildlife and plants, water quality, and recreation opportunities. As climate changes, a better understanding of how our ecosystems will be affected is vital for identifying strategies to protect these ecosystems. While information on climate change effects exists for some ecosystems and some places, a synthesis of this information for key ecosystems across the entire Southeast will enable regional decision-makers, including the LCCs, to prioritize current efforts and plan future research and monitoring.

Completion Date
2014

Assessing Forest Fragmentation from Marcellus Shale Gas Development

Expansion of drilling sites and associated infrastructure to extract natural gas from the Marcellus shale deposits has the potential to significantly reduce existing forest cover across the Marcellus field and leave what remains in a fragmented state.

Assessing Future Energy Development Across the Appalachians

Networking and Information Sharing for our Conservation Community

Across the
TENNESSEE RIVER BASIN

Search Site Search
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Companion Sites

Home TRB Network **Communities of Practice** Science & Management Engagement Resources Partners Training Data

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You are here: Home > Communities of Practice

[Twitter](#) [Facebook](#) [LinkedIn](#) [Email](#) [+](#)

Communities of Practice

The Tennessee River Basin Network is comprised of two Communities of Practice (Science & Management, Communication & Outreach) to promote engagement and collective learning in a shared domain. By bringing members of shared expertise and experience together regularly, partners are given the opportunity to help one another and share information and resources. Throughout the year there will be opportunities to engage with members of your Community of Practice in addition to our Network-wide efforts. Collaborative space to build networks, identify good practices, and find solutions.

Join a TRB Community!

JOIN A GROUP 

REQUEST A GROUP 

NEED HELP? 

 **RSS FEEDS**
Our Work News Research Projects

 **HELP**

 SITE DESIGN BY FERGUSONLYNCH.COM

Powered by Plone & Python

 LANDSCAPE CONSERVATION COOPERATIVES

Connecting our community through collaborative work space



You are here: [Home](#) > [People](#) > [Group Work Space](#)

[REGISTER](#) [> LOG IN](#)



Group Work Space

Welcome to the Group Work Spaces, an area of the web portal where we are supporting collaborative work for various communities. These communities range from working groups within our Steering Committee, project groups overseeing the development of Appalachian LCC funded projects, Communities of Practice or Species Specific groups with experts and concerned individuals working towards a common conservation goal related to a species or habitat.

These Work Spaces offer a platform to enhance work flow and facilitate efficient sharing of ideas, datasets, products, publications, and more with others who have similar interests or missions.

The Appalachian LCC Work Spaces are bringing together a diverse set of individuals and expertise to promote dialogue and coordination.

You can join a community of practice, request to create a new group, and browse through our help section below.



- File sharing
- Discussions
- Calendar
- Google Docs Integration

Questions

Conservation Planning Atlas

<https://applcc.databasin.org/>

Sign Up Sign In Support

APPALACHIAN

LANDSCAPE CONSERVATION COOPERATIVE
Conservation Planning Atlas

Search by keyword or location

powered by DATA BASIN

Get Started Explore Create My Workspace

What is the Conservation Planning Atlas?

What is the Appalachian LCC?

What can I do?

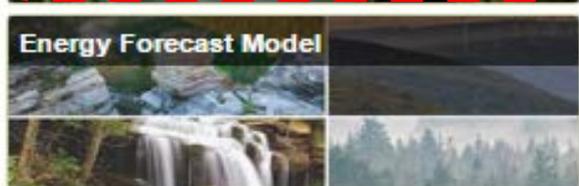
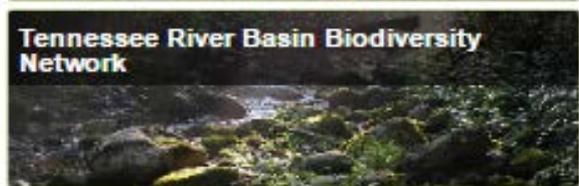
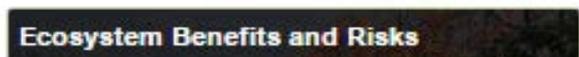
How do I start exploring?

The Appalachian LCC Conservation Planning Atlas (CPA) is a platform for data discovery, sharing and collaboration for stakeholders throughout the Appalachian LCC region. With the CPA you can search for spatial datasets, visualize LCC-supported projects, and learn more about conservation science and design in the region.

Start Tour

DATA BASIN

Galleries



Maps

Appalachian LCC Boundary Overview



Overview map of the Appalachian LCC

Datasets



Potential of Wind Energy Development across the Appalachian LCC - 90 ...



USDA Forest to Faucets: Percent of HUC Threatened by Insects and Disease



CMIP5: Projected Change in Annual Temperature Normal (2031-2060)

Galleries - 12
Maps - 17
Datasets - 356

Conservation Planning Atlas

Navigate Resources



APPALACHIAN LCC CIPA | GALLERIES | CAVE AND KARST RESOURCES

Cave and Karst Resources

Created by AppLCC_admin Jul 19, 2016 (Last modified)

Add to... Recommended by AppLCC_admin This gallery is visible to everyone



About
Cave-limited species display patchy and restricted distributions, but are challenging to study in situ because of the difficulty of sampling. It is often unclear whether the observed distribution is a sampling artifact or a true restriction in range. Further, the drivers of the distribution could be local environmental conditions, such as cave humidity, or they could be associated with surface features that are surrogates for cave conditions. If surface features can be used to predict the distribution of important cave taxa, then conservation management goals can be more easily obtained. These GIS data represent the input and results of a spatial statistical model used to examine the hypothesis that the presence of major faunal groups of cave obligate species could be predicted based on features of the Earth surface. Georeferenced records of cave obligate amphipods, crayfish, fish, isopods, beetles, millipedes, pseudoscorpions, spiders, and springtails within the area of Appalachian Landscape Conservation Cooperative (LCC) in the eastern United States (Illinois to Virginia, and New York

to Alabama) were assigned to 20 x 20 km grid cells. Habitat suitability for these faunal groups was modeled using logistic regression with twenty predictor variables within each grid cell, such as percent karst, soil features, temperature, precipitation, and elevation. The models successfully predicted the presence of a group greater than 65 percent of the time (mean=88 percent) for the presence of single grid cell endemics, and for all faunal groups except pseudoscorpions. The most common predictor variables were latitude, percent karst, and the standard deviation of the Topographic Position Index (TPI), a measure of landscape rugosity within each grid cell. The overall success of these models points to a number of important connections between the surface and cave environments, and some of these, especially soil features and topographic variability, suggest new research directions. These models should prove to be useful tools in predicting the presence of species in understudied areas. The data within the gallery provides information and a summary of the cave/karst resources within the Appalachian LCC region.

Tags
topography, appalachian, cave, troglotitan, soils, range, biodiversity, species distribution model, baseflow, precipitation, karst, lcc

Gallery Contents Gallery Credits

Sort by: Default Display

Dataset
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted ...

Dataset
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted ...

Dataset
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted ...

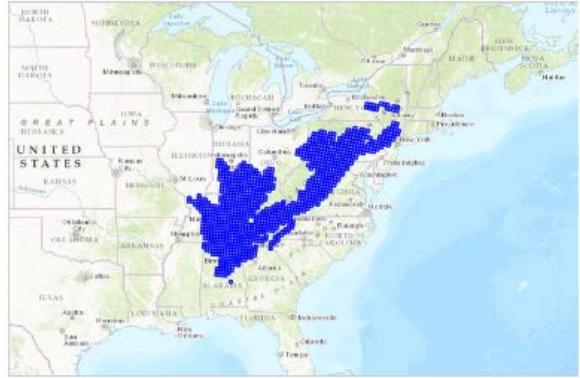
Dataset
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted ...

Dataset
Cave and Karst Biota Modeling in the Appalachian LCC - Predicted ...

Cave and Karst Biota Modeling in the Appalachian LCC - Predicted springtails in all 20km grid cells in karst

Uploaded by AppLCC_admin Sep 22, 2016

Add to... Download... Open in Map



Description:
We developed spatial summary (GIS) layers for a study of factors influencing the distribution of cave and karst associated fauna within the Appalachian Landscape Conservation Cooperative region, one of 22 public-private partnerships established by the United States Fish and Wildlife Service to aid in developing landscape scale solutions to conservation problems (<https://connetwork.org/lcc/appalachian>). We gathered occurrence data on cave-limited terrestrial and aquatic troglotitan species from a variety of sources within the Appalachian LCC region covering portions of 15 states. Occurrence records were developed from the scientific literature, existing biodiversity databases, personal records of the authors, museum accessions, state Natural Heritage programs, and The Nature Conservancy (for Tennessee). Occurrence records were identified by location and translated into a GIS database. Although the precise locations cannot be made public due to the sensitivity of the information, data sharing agreements, and restrictions under the Federal Cave Resources Protection Act of 1988, we summarized the data spatially using a coarse 20x20km vector grid. We used these occurrence records, summarized at the 20x20km grid resolution in statistical modeling to examine physical factors prediction of cave dwelling biota. Troglotitan occurrence

Details Data Layers (1) This dataset is visible to everyone

Data Provided By:
Young, John A.
Nemiller, Matthew L.
Zigler, Kirk S.
Culver, David C.
Christman, Mary C.
Dozier, Daniel H.
Weary, David J.

Data Hosted by:
ScienceBase (USGS) View Record

Map Service URL:
<https://www.sciencebase.gov/catalog/Maps/mapping/ows/57759844e4b07d4077c77016>

Content date: 2016-08-29 (Publication Date)

Contact Organization:
U.S. Geological Survey, Northeast Region
U.S. Geological Survey - ScienceBase

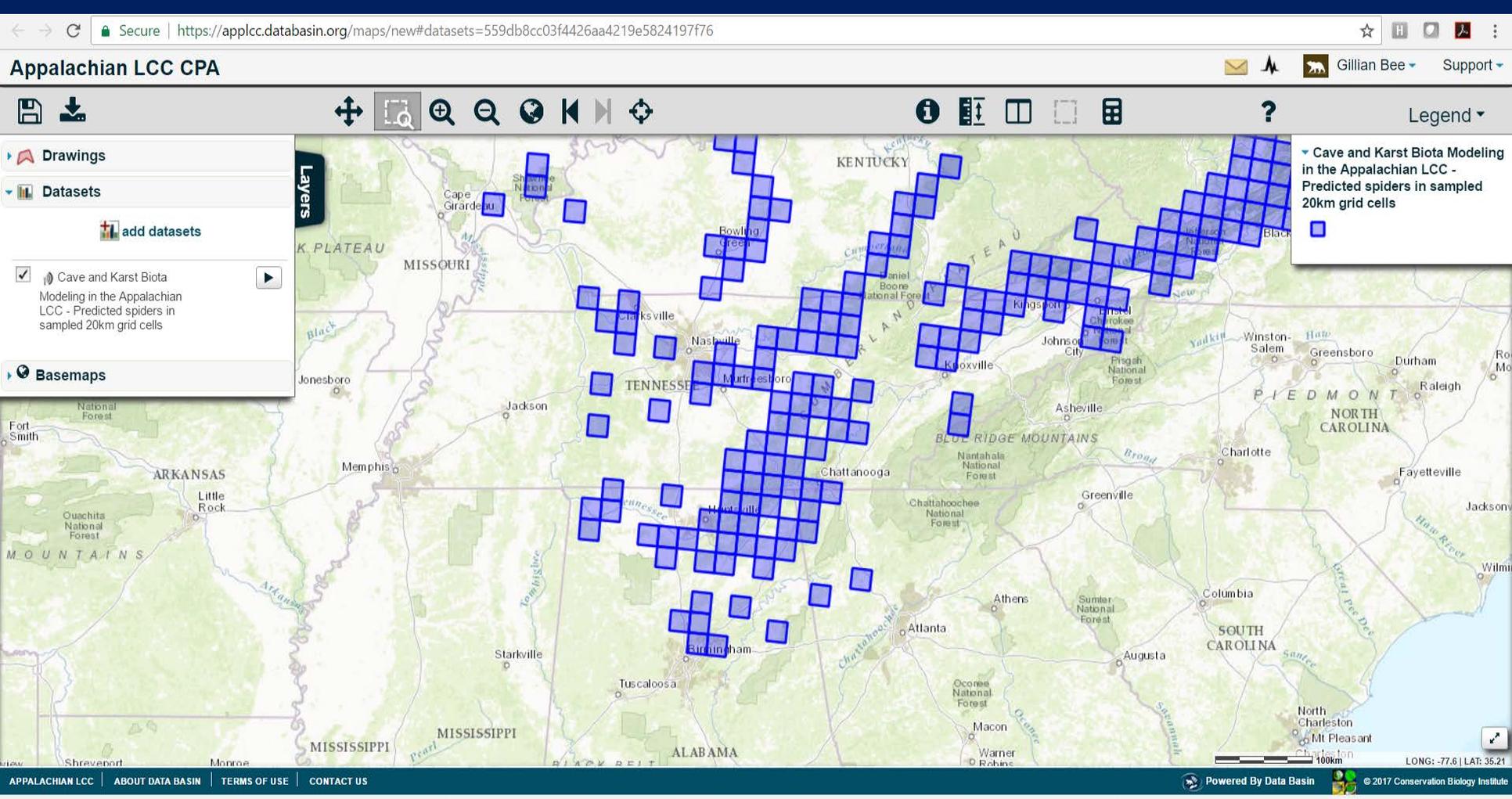
Contact Person(s):
John A Young

Use Constraints:
None

Dataset Type: External Map Service (WMS)

Tags:
biota, caves, karst

Included in 1 Public Gallery:
Cave and Karst Resources



Create your own map specific to your needs

- Add polygon, points, lines
- Add additional datasets
- Save map to your Data Basin Workspace
- Export map (PDF, PPT)

Download Data



Cave and Karst Biota Modeling in the Appalachian LCC - Predicted springtails in all 20km grid cells in karst

Uploaded by AppLCC_admin

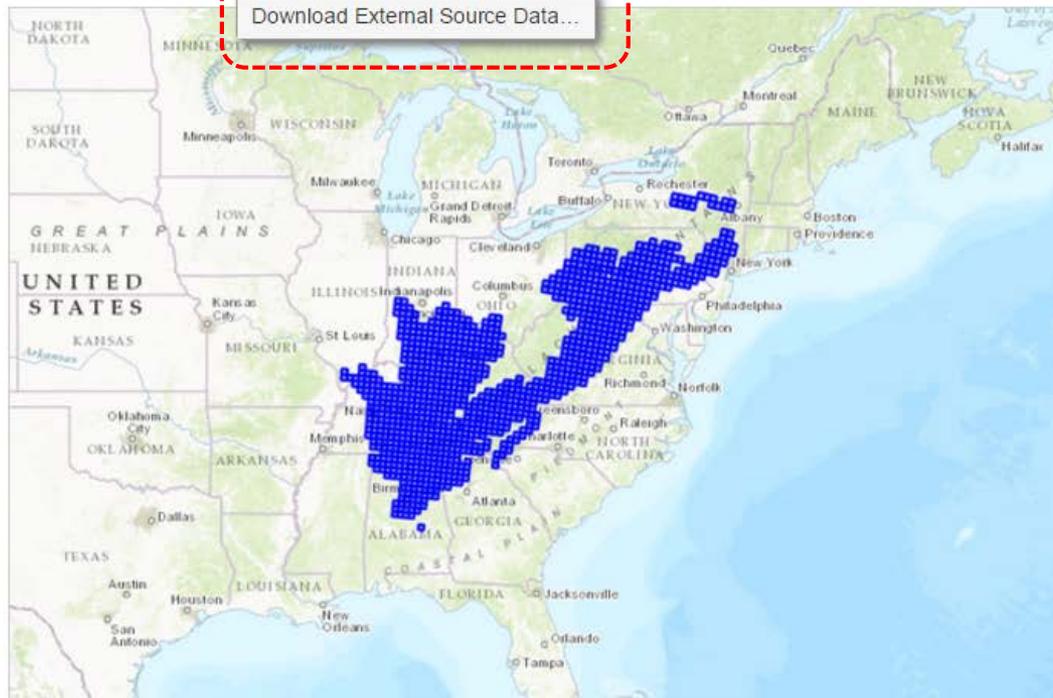
Sep 22, 2016 (Last modified Nov 19, 2016)

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Download...

Download External Source Data...

Open in Map



Description:

We developed spatial summary (GIS) layers for a study of factors influencing the distribution of cave and karst associated fauna within the Appalachian Landscape Conservation Cooperative region, one of 22 public-private partnerships established by the United States Fish and Wildlife Service to aid in developing landscape scale solutions to conservation problems

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