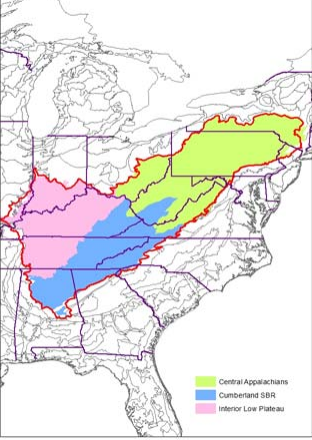



APPALACHIAN
LANDSCAPE CONSERVATION COOPERATIVE




1. Prior Analyses
 - *Science Needs Portfolio 2012*
 - "103 Report"
2. Suggestion: "Creative Funding Opportunities"

3. Update: 5-Year Work Plan (HOs_8-11)
4. Update: Funded Research Projects (HOs_12)
5. Follow-on: Tim Murtha Webinar² // AMJV Communication Mtg



Sept 5th 2014. Steering Committee Business Meeting: NCTC

Human Dimension Work Group



Southern Appalachian Man and the Biosphere

SAMAB
MAN AND THE BIOSPHERE

Old Forge Wetland Ecosystem, Tuscarora National Forest, Great Smoky Mountains National Park, and the Great Smoky Mountains National Park

Socio-Economic

SAMAB


Southern Appalachian Man & the Biosphere[^]

Rick Durbrow (EPA)
Judy Frances (NC DNER)
Jim Fox (NEMAC)

Cultural / Historic / Heritage

NPS-HQ (DC) & National Capital Region

Dan Odess,
Perry Wheelock,
Patrick Campbell,
Jennifer Talken-Spauding



NATIONAL PARK SERVICE

Chesapeake and Ohio Canal

ME, WV, VA



Science Needs Portfolio *(Reflections on Priority Resources)*

Thematic Areas:

1. Aquatic
2. Cave/Karst Minelands
3. Wetlands
4. Forestlands
5. Open-lands / Grasslands
6. Working Lands
7. Human Dimensions
8. Climate Change

Science Needs Portfolio

Thematic Areas: 1. Aquatic
“protection of freshwater biodiversity and maintenance of goods & services they provide”

(Re: Threat...Mgmt)	Resource	Service
<ul style="list-style-type: none"> • natural refugia => (potential reserves/captive holdings of ESUs) 	<ul style="list-style-type: none"> • maintain endemic aquatic species 	<ul style="list-style-type: none"> • deliver key aquatic ecosystem services <ul style="list-style-type: none"> • water quality / quantity
	<ul style="list-style-type: none"> • T & E species <ul style="list-style-type: none"> ○ mussel / fish 	
	<ul style="list-style-type: none"> • at-risk species / at-risk populations 	
	<ul style="list-style-type: none"> • benthic macro invertebrates 	

Thematic Areas: **2. Cave/Karst - Minelands**
 “significant regional subterranean c/k systems & communities”

(Re: Threat...Mgmt)	Resource	Service
	<ul style="list-style-type: none"> species of greatest conservation need 	
	<ul style="list-style-type: none"> bat populations (post-WNS) 	

Thematic Areas: **3. Wetlands**
 “significant regional wetland habitats”

(Re: Threat...Mgmt)	Resource	Service
<ul style="list-style-type: none"> wetlands vulnerable to climate change 	<ul style="list-style-type: none"> vernal pool species / (meta-population structure) 	<ul style="list-style-type: none"> naturally functioning floodplains (support priority habitat and species)
	<ul style="list-style-type: none"> (amphibians) 	<ul style="list-style-type: none"> ecosystem services (contribution to nutrient cycling to both aquatic and terrestrial systems)

Thematic Areas: **4. Forest lands**
 “regional forest habitats and communities to foster resiliency”

(Re: Threat...Mgmt)	Resource	Service
<ul style="list-style-type: none"> (seral stage w/in community type) species-specific needs 	<ul style="list-style-type: none"> rare and unique species and communities 	<ul style="list-style-type: none"> (water) to large human population centers
<ul style="list-style-type: none"> (taxa-specific priority areas) (e.g., salamanders, birds etc.) 	<ul style="list-style-type: none"> Priority Amphibian & Reptile Conservation Areas (PARCAs) (vulnerable to climate change) 	<ul style="list-style-type: none"> canopy targets (storm water flows)
	<ul style="list-style-type: none"> prioritized forest blocks (TNC connectivity models, Audubon, JVs) 	
	<ul style="list-style-type: none"> spruce forest <ul style="list-style-type: none"> high priority forest communities 	
	<ul style="list-style-type: none"> endemic species 	
	<ul style="list-style-type: none"> at-risk species / communities 	

Thematic Areas: **5. Open-lands or Grasslands**
 “significant regional grassland / open-land communities”

(Re: Threat...Mgmt)	Resource	Service
<ul style="list-style-type: none"> (<i>carrying capacity of early successional habitat</i>) for birds 	<ul style="list-style-type: none"> endemic species 	

Thematic Areas: **6. Working Lands** (which includes urbanized, agricultural, forestry, industrial, and energy development)

“to collaboratively meet economic development and conservation management goals through improved decision-making and resource management”

(Re: Threat...Mgmt)	Resource	Service
<ul style="list-style-type: none"> (<i>development ... conservation value of lands</i>) mitigation banking, carbon sequestration, monetizing ecosystem services 		<ul style="list-style-type: none"> (<i>minimize future conflict</i>) human communities, wildlife, and ecosystem service functions

Thematic Areas: **7. Human Dimensions**

(Re: Threat...Mgmt)	Resource	Service
	<ul style="list-style-type: none"> predators (<i>potential human-wildlife conflict</i>) 	<ul style="list-style-type: none"> vulnerable ecosystem services
	<ul style="list-style-type: none"> (<i>conflicts between human and fish & wildlife</i>) for water <ul style="list-style-type: none"> o drinking water in SE 	<ul style="list-style-type: none"> outdoor recreational activities
	<ul style="list-style-type: none"> (<i>economic valuation of goods and services provided by</i>) bivalves 	<ul style="list-style-type: none"> viewsheds
	<ul style="list-style-type: none"> (<i>focus</i>) brook trout & FW mussel 	

Thematic Areas: **8. Climate Change**

(Re: Threat...Mgmt)	Resource	Service
	<ul style="list-style-type: none"> highly vulnerable soils 	<ul style="list-style-type: none"> hydrologic regime change
		<ul style="list-style-type: none"> inter-annual variation in snow pack

5-Year Work Plan 2012-2017

Goal 1: Create and deliver a landscape-level data sharing strategy and scalable toolsets		
Objective 1.1 -- Conduct Appl.LCC data needs assessment <i>Ranking: (4/6) Years 1.1)</i>		
Task 1.1.1	Assess the applicability of the neighboring LCC contract and survey instruments, as a model for identifying Appl.LCC data needs. -Staff	FY13: Completed
Task 1.1.2	Canvas and assess applicability of other LCCs efforts to identify data needs. -Staff	FY13: Completed
Task 1.1.3	Assess the scope of work required to generate a data needs assessment project (internal vs. contract) and make recommendation to Steering Committee. -Work Group, contractor	FY13: Completed
Task 1.1.4	Develop and define common language, standards and protocols (with consideration of National LCC Network efforts/integrate National LCC Data Mgmt. Group Recommendations while further defining Appl.LCC data collection protocols and management). -Staff (in collaboration with National LCC Data Management Work Group), Work Group	FY13 update (ongoing): [report out by Paul Leonard] The National Data Management Work Group is struggling to find its niche and a new coordinator after drafting 'Best Practice' guidance in the summer. The Appalachian LCC agrees with many of the suggestions made by this group and have incorporated those standards into its own Data Sharing and Management

Goal 1 (data/tools)

- Create and deliver a landscape-level data sharing strategy and scalable toolset

Goal 2 (planning/models)

- Deliver landscape-level conservation plans for regional use

Goal 3 (reaching out)

- Promote engagement and dialogue across the Appalachian LCC region

Goal 4 (working within)

- Align conservation actions to achieve Cooperative Members' shared vision

only in current section

The Cooperative
Our Work
Research
Projects
Work Space
Resources
News
Calendar
LCC Networks
Members
Help

Foundational

A Stream Classification System for the Appalachian Landscape Conservation Cooperative:

*Anderson (TNC)
Olivier (ORNL)
[Oct 2014]*

FY 11 Funding

A Stream Classification System for the Appalachian Landscape Conservation Cooperative

This research will develop a hierarchical classification for stream and river systems and a GIS map for aquatic ecosystems within the Appalachian LCC. The study will include a report describing the methods used to evaluate and develop the classification system, a literature review of existing stream classifications, and a GIS stream data set.

1st

Stressor / Threat

Assessing Future Impacts of Energy Extraction in the Appalachian Mountains:

*Kiesecker (TNC)
Dunscomb (TNC)
[Sept 2014]*

Assessing Future Impacts of Energy Extraction in the Appalachians

Models of wind, shale gas, and coal development potential for the entire study area will be created to predict potential future energy development and impacts to natural resources within the Appalachians. Natural resource GIS layers will overlay onto results from energy development models to provide context on anticipated impacts to natural resources such as intact forests, vital watersheds, and biodiversity. Models and data from all development projections will populate a web-based map server to help inform regional and local landscape planning decisions.


✓

The Cooperative **Research** Projects GIS & Planning Work Space Resources News Calendar LCC Networks Members

Vulnerability / Impact

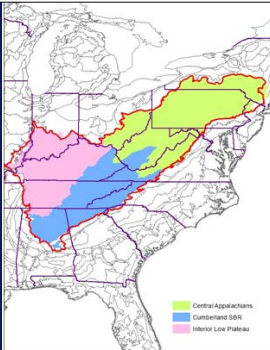
Support for Understanding Land Use and Climate Change in the Appalachian Landscape:

*Young (NatureServe)
Sneddon (NatureServe)*
[Oct/Dec 2014]





Support for Understanding Land Use and Climate Change in the Appalachian Landscape

Research will compile climate change vulnerability assessments and other relevant information on vulnerable species and habitats, discern the various methodologies and criteria used in these assessments, and use a team of expert peer reviewers to recommend the most efficient, effective, and appropriate methods for adoption by the Appalachian LCC for conservation and adaptation planning. The recommended method will then be deployed, resulting in vulnerability assessments for a suite of key species/habitats selected in consultation with partners of the Appalachian LCC. A database will be created of the vulnerability assessments of selected species and habitat. The database will be easily accessible on the web.




Alternatives for Climate Change Vulnerability Assessment

Report to the Appalachian Landscape Conservation Cooperative
Draft Final Report
2013

1st




The Cooperative **Research** Projects GIS & Planning Work Space Resources News Calendar LCC Networks Members

Management Response / DST


Development of a Hydrologic Foundation and Flow-ecology Relationships for Monitoring Riverine Resources in the Marcellus Shale Region:

Walter (Cornell)
[2015]



Development of a Hydrologic Foundation and Flow-ecology Relationships for Monitoring Riverine Resources in the Marcellus Shale Region

The study will provide a report assessing availability of hydrologic and ecological flow model(s) suitable for the region, a georeference assessment of available ecological data to inform the ecological flow model(s), the application of the model(s) to anticipate how altered flow regimes will affect critical conditions, and a report that forecasts changes in hydrology and associated predicted biological responses in relation to different water resource development scenarios for critical watersheds.



1st

APPALACHIAN LANDSCAPE CONSERVATION COOPERATIVE GRANT 2013-2015 REPORT

Grant Number: 2013-03

Grant Title:
Development of a hydrologic, geospatial and flow-ecology relationships for monitoring riverine resources in the Marcellus Shale region

Phase 1 Project Report

Submitted by:
William L. Fisher
U. S. Geological Survey
New York Cooperative Fish and Wildlife Research Unit
Cornell University, Ithaca, NY 14853
Contact Information: WLF@cornell.edu, 867-255-2839

From: Teriler and Mary Whitman-Fahn
New York Cooperative Fish and Wildlife Research Unit
Cornell University, Ithaca, NY 14853

30 Nov 2013 (revised 25 July 2013, final 19 August 2013)

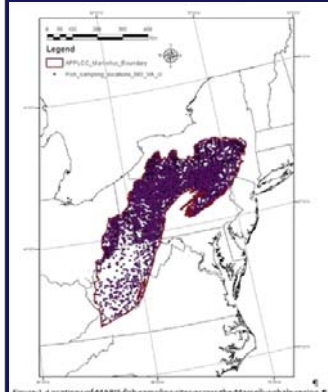


Figure 1. Locations of MARCS fish sampling sites across the Marcellus shale region, NY.



APPALACHIAN
LANDSCAPE CONSERVATION COOPERATIVE

only in current section

The Cooperative
Our Work
Research
Projects
Work Space
Resources
News
Calendar
LCC Networks
Members
Help

Foundational

Data Needs Assessment
(data architecture)
[Aug 2014] ✓

Support Conservation
Planning for the
AppLCC:

1st
Baldwin (Clemson)
[Aug 2015]

FY 12 Funding



Data Needs Assessment

This research will produce an analysis of tools, data, and processes to deliver usable, open-source data products and identify critical new data needs, within a short time frame. Extended time frame includes manipulating and producing new versions of critical datasets customized for the Appalachian LCC. A specific conservation planning process will also be developed and execute portions of that process that are possible with available data. Lastly, as these become available, this research will integrate deliverables achieved through science needs projects funded by the Appalachian LCC and currently underway.





Data Needs for the Appalachian LCC

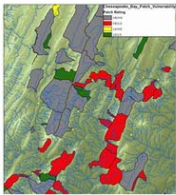
Quick Review
Rob Baldwin and Trishna Dutta
Clemson University

The Cooperative
Research
Projects
GIS & Planning
Work Space
Resources
News
Calendar
LCC Networks
Members

Management Response / DST


Web-Based Tool for Riparian Restoration Prioritization to Promote Climate Change Resilience in Eastern US Streams:


Nislow (USFS)
Coombs (UMass)
[Aug 2014] ✓



Riparian Restoration to Promote Climate Change Resilience in Eastern U.S. Streams

This research will develop and implement a user-friendly web-based tool to identify priority areas for riparian restoration in the context of predicted climate change at the appropriate scale needed by practitioners. First, a 'shovel ready' prioritization tool for managers facing immediate on-the-ground decisions will be developed. The research will then link directly to ongoing and future stream flow, temperature, and biological response modeling projects and decision support tools. In addition, a short article in a peer-reviewed journal detailing this project will be published.





2013 Funding and Proposed (IAA)

Foundational	Stressor / Threat	Vulnerability / Impact	Management Response / DST
<p style="color: red; font-weight: bold;">Classification and Geo-Referencing Cave/Karst Resources</p> <p>across the Appalachian LCC:</p> <p>Culver (Am U) [Sept 2015]</p>	<p>Preliminary Assessment and <b style="color: red;">Inventory (Landscape-level) <b style="color: red;">Threats across the Appalachian Landscape:</p> <p>(TBI FY14)</p>	<p>Preliminary Assessment and <b style="color: red;">Inventory of Ecosystem Services across the Appalachian Landscape:</p> <p>(TBI FY14)</p>	

Classification and Georeferencing Cave/Karst Resources across the Appalachian LCC

Research will assemble and identify key location and classification data while developing products that depict and map cave and karst habitats and biological resources across the Appalachian LCC. Based on a critical review of earlier and existing efforts, the project will collect and synthesize data to present cave and karst resource information. Researchers will then propose the most appropriate classification system for these habitats within Appalachia. Maps of the physical and biological resources will be made widely available in order to facilitate easy access and support coordinated conservation efforts throughout the Appalachians.

1st

