



CWT LTER

Coweeta Long Term
Ecological Research Program

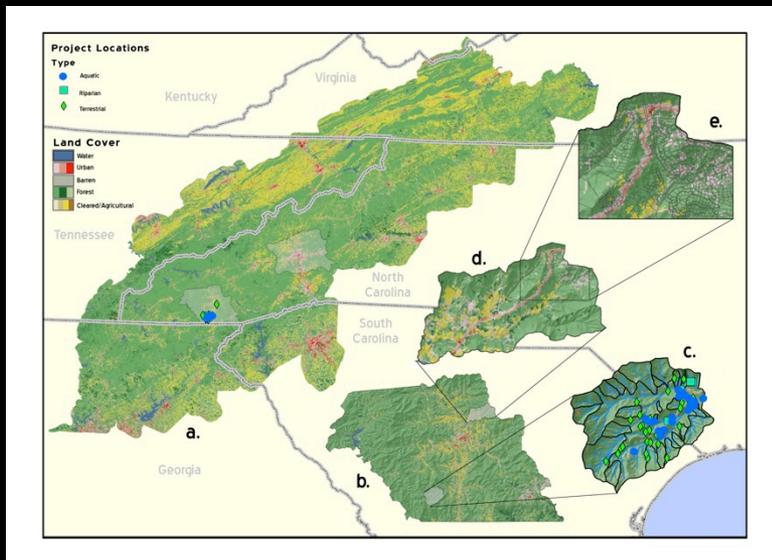
Established: 1980

Location: Southern Appalachian Mountains,
Blue Ridge Physiographic Province

Lead PI: Ted L Gragson

Lead Institution: University of Georgia

How will key ecosystem processes and the focal ecosystem services of water quantity, water quality, and biodiversity be impacted by the (1) transition in land uses from wildland to urban and peri-urban, (2) changes in climate, and (3) interactions between changes in land use and climate including both on-site and offsite feedbacks?



Coweeta Hydrologic Laboratory: USDA Forest Service Experimental Forest



Established 1934, 5400 ac forest



16 Active Weirs, 5 Climate Stations,
9 Precipitation Stations
Climate and Streamflow data since 1934
Stream Chemistry since 1967

- Dormitory
- Field House
- Conference Center
- Chemistry Lab
- Data Processing and Hydrology & Data Processing Building
- Ecosystems Building
- Machine and Tool Shop
- Storage Shed
- Fleet Shed



8 Scientists,
8 Professional and
Support Staff



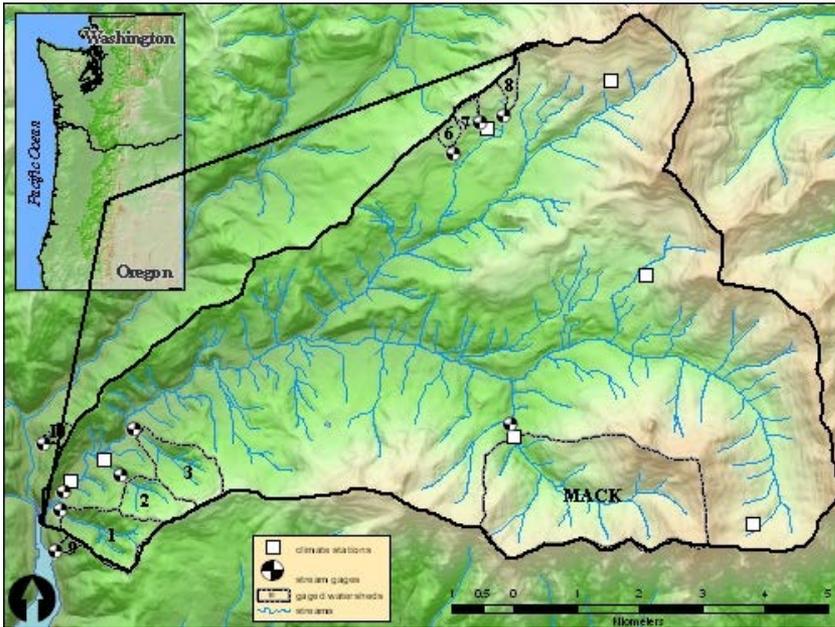
The H.J. Andrews Experimental Forest



Est. as LTER in 1980

Located in the Oregon Cascades

Lead PI – Michael P. Nelson,
Oregon State University



Key Research –
Forests influences on Carbon,
Forests as mitigation of climate change,
Water quality responses to forest management





**Located at the HJ Andrews
Experimental Forest – est. 1948**

USFS Funding for research:

- Vegetation Dynamics, overstory and understory, est. 1948**
- Hydrology and water quality, est. 1953**

5 research scientists, 1 data manager, 2 field technicians, 1 GIS, and site manager

USFS provides facilities and maintenance



Established: 1980

Location: Rocky Mountains of Colorado

Ecosystem type: Alpine tundra

Lead PI: Mark Williams

Lead Institution: University of Colorado

Our overarching hypothesis is that changes in the amount and timing of snow and snowmelt, along with increasing N deposition and increasing dust deposition, and punctuated disturbance such as the MPB outbreak, will decrease hydrologic connectivity among landscapes, leading to decreased biodiversity, less heterogeneity of high-elevation landscapes and a decrease in ecosystem services.

Luquillo LTER (LUQ)

1988 – LUQ began; Puerto Rico – location

University of Puerto Rico (Nick Brokaw) – Lead Institution (PI)

Guiding question –

How do long-term changes in climate, disturbance, and land use alter biotic structure, biogeochemical cycles, and ecosystem services in the tropics?



Luquillo Experimental Forest

(Coterminous with USDA El Yunque National Forest)

1956 – established

USDA International Institute of Tropical Forestry

(Ariel Lugo) – Lead institution (Director)

Contributions to LUQ –

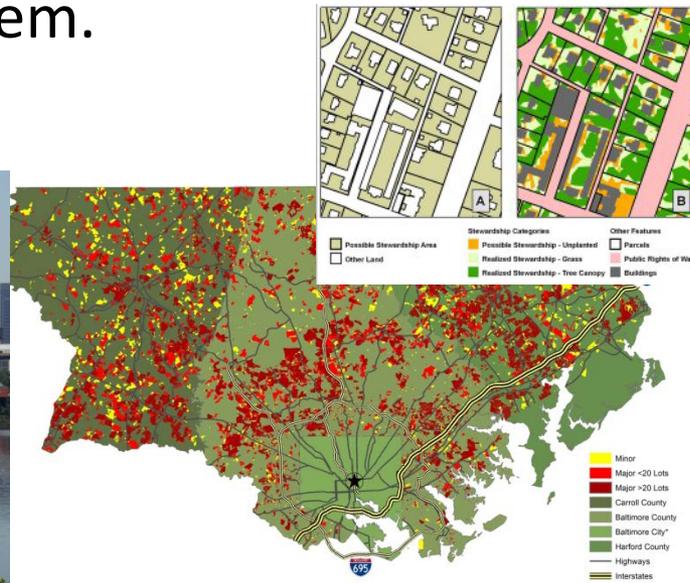
- Scientific direction
- Site management
- Data collection
- Labs and analyses
- Field, meeting facilities
- Publications
- Outreach





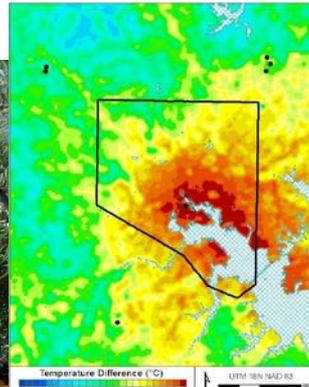
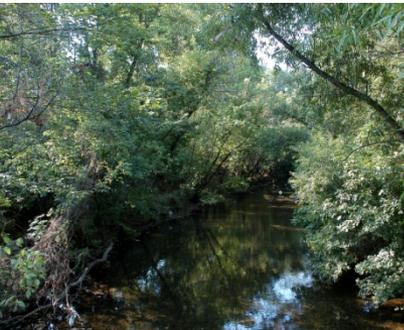
Baltimore Ecosystem Study

- Funded by NSF since 1997
- Metropolitan Baltimore, MD
- Steward T.A. Pickett, Lead PI
- Lead Institution: Cary Institute of Ecosystem Studies, Millbrook, NY
- To understand metropolitan Baltimore as a social-ecological system; Investigate transformation of “sanitary city” to sustainable urban system.



BES and the US Forest Service

- Several Co-PIs are USFS research, education & outreach staff; USFS Research Technicians work in BES.
- Northern Research Station has an Urban Field Station in Baltimore with a Team Leader and staff from several work units.
- USFS Field Station co-located with U. Maryland, Baltimore County, Center for Urban Research and Education, and USGS MD-DE-DC office.
- BES is a “cooperating” member of the Experimental Forest and Range Network (EFRN).
- Eddy flux tower; Field Station office.
- Staff time and other USFS support = ca. \$1 M/yr (1997-present)





Harvard Forest

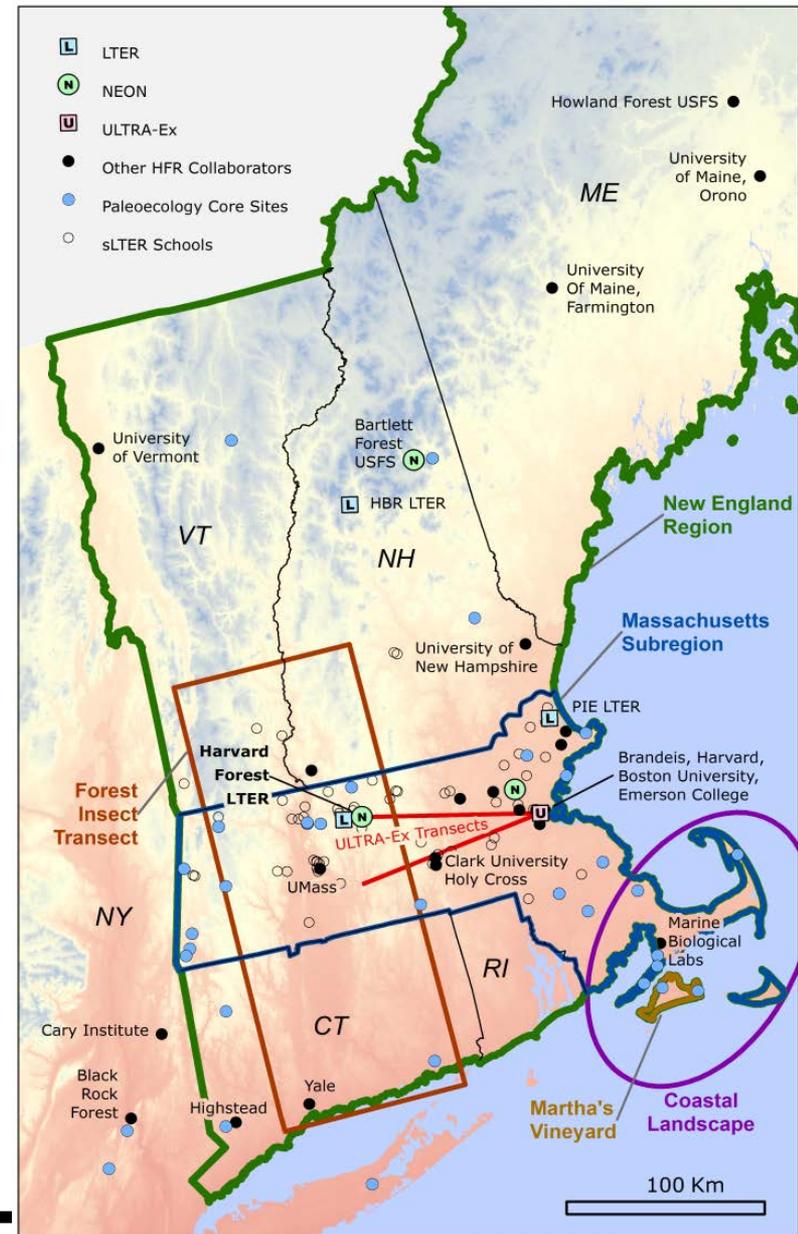
HARVARD UNIVERSITY

- LTER site since 1988
 - Petersham, Massachusetts
 - PI David R. Foster

- LTER research focus:

What will be the effects of climate change, natural disturbances, biotic interactions, human land-use, and forest dynamics on landscape-scale ecosystem dynamics, processes, and services over the next 50 years?

- NEON core site for Northeast domain
- ULTRA-X site for 2 urban-rural gradients





Harvard Forest

Est. 1907

HARVARD UNIVERSITY

Collaborations with other forest sites:

- ***Science Policy Exchange***: Cary Institute, Hubbard Brook, MBL Ecosystems Center, Syracuse University, University of New Hampshire.
- ***LTEArts***: Andrews LTER, Bonanza Creek LTER, North Temperate Lakes LTER
- ***Future Scenarios of Climate and Land Use (Macrosystems Proposal)***: Andrews LTER, Bonanza Creek LTER, Coweeta LTER, Hubbard Brook LTER, North Temperate Lakes LTER



Luquillo LTER (LUQ)

1988 – LUQ began; Puerto Rico – location

University of Puerto Rico (Nick Brokaw) – Lead Institution (PI)

Guiding question –

How do long-term changes in climate, disturbance, and land use alter biotic structure, biogeochemical cycles, and ecosystem services in the tropics?



Luquillo Experimental Forest

(Coterminous with USDA El Yunque National Forest)

1956 – established

USDA International Institute of Tropical Forestry

(Ariel Lugo) – Lead institution (Director)

Contributions to LUQ –

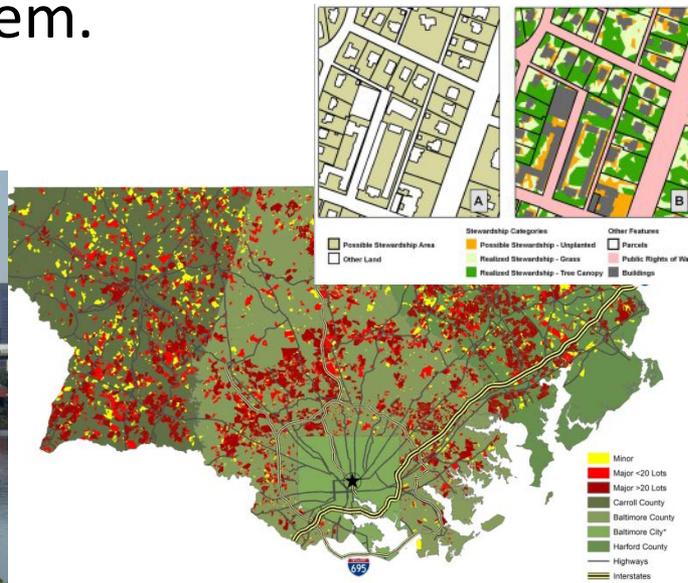
- Scientific direction
- Site management
- Data collection
- Labs and analyses
- Field, meeting facilities
- Publications
- Outreach





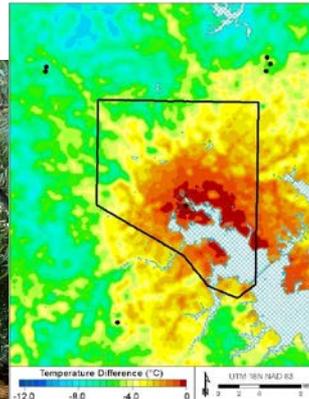
Baltimore Ecosystem Study

- Funded by NSF since 1997
- Metropolitan Baltimore, MD
- Steward T.A. Pickett, Lead PI
- Lead Institution: Cary Institute of Ecosystem Studies, Millbrook, NY
- To understand metropolitan Baltimore as a social-ecological system; Investigate transformation of “sanitary city” to sustainable urban system.



BES and the US Forest Service

- Several Co-PIs are USFS research, education & outreach staff; USFS Research Technicians work in BES.
- Northern Research Station has an Urban Field Station in Baltimore with a Team Leader and staff from several work units.
- USFS Field Station co-located with U. Maryland, Baltimore County, Center for Urban Research and Education, and USGS MD-DE-DC office.
- BES is a “cooperating” member of the Experimental Forest and Range Network (EFRN).
- Eddy flux tower; Field Station office.
- Staff time and other USFS support = ca. \$1 M/yr (1997-present)





Harvard Forest

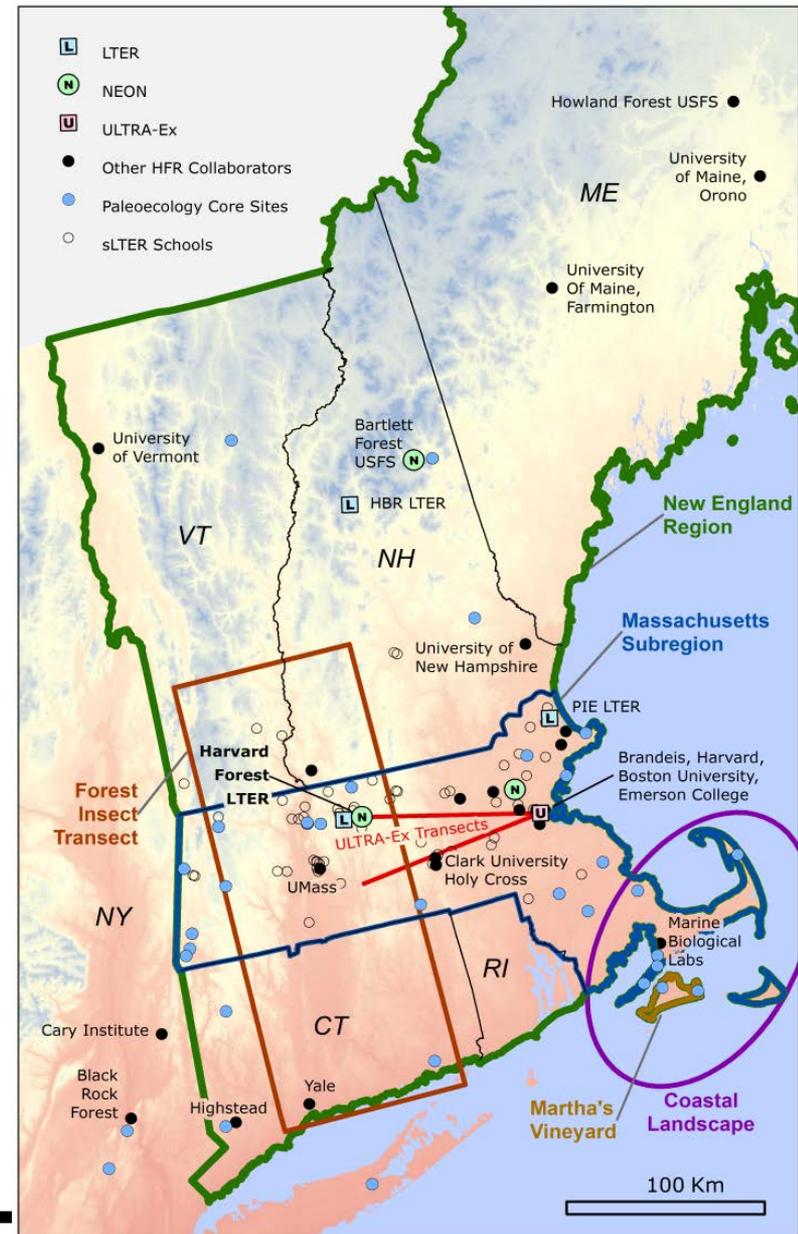
HARVARD UNIVERSITY

- LTER site since 1988
 - Petersham, Massachusetts
 - PI David R. Foster

- LTER research focus:

What will be the effects of climate change, natural disturbances, biotic interactions, human land-use, and forest dynamics on landscape-scale ecosystem dynamics, processes, and services over the next 50 years?

- NEON core site for Northeast domain
- ULTRA-X site for 2 urban-rural gradients





Harvard Forest

Est. 1907

HARVARD UNIVERSITY

Collaborations with other forest sites:

- ***Science Policy Exchange***: Cary Institute, Hubbard Brook, MBL Ecosystems Center, Syracuse University, University of New Hampshire.
- ***LTEArts***: Andrews LTER, Bonanza Creek LTER, North Temperate Lakes LTER
- ***Future Scenarios of Climate and Land Use (Macrosystems Proposal)***: Andrews LTER, Bonanza Creek LTER, Coweeta LTER, Hubbard Brook LTER, North Temperate Lakes LTER

