Appalachian Trail MEGA-Transect Deposition Effects

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Purpose

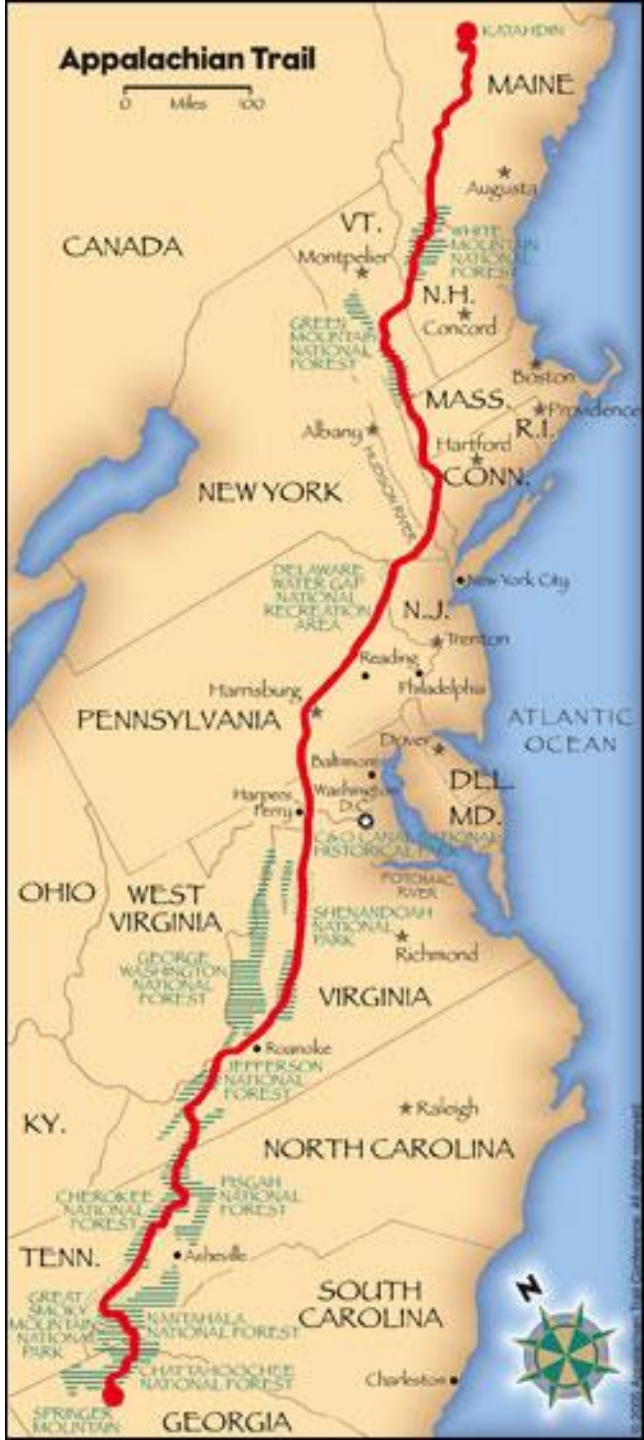
Assess deposition levels, impacts, and recovery capabilities

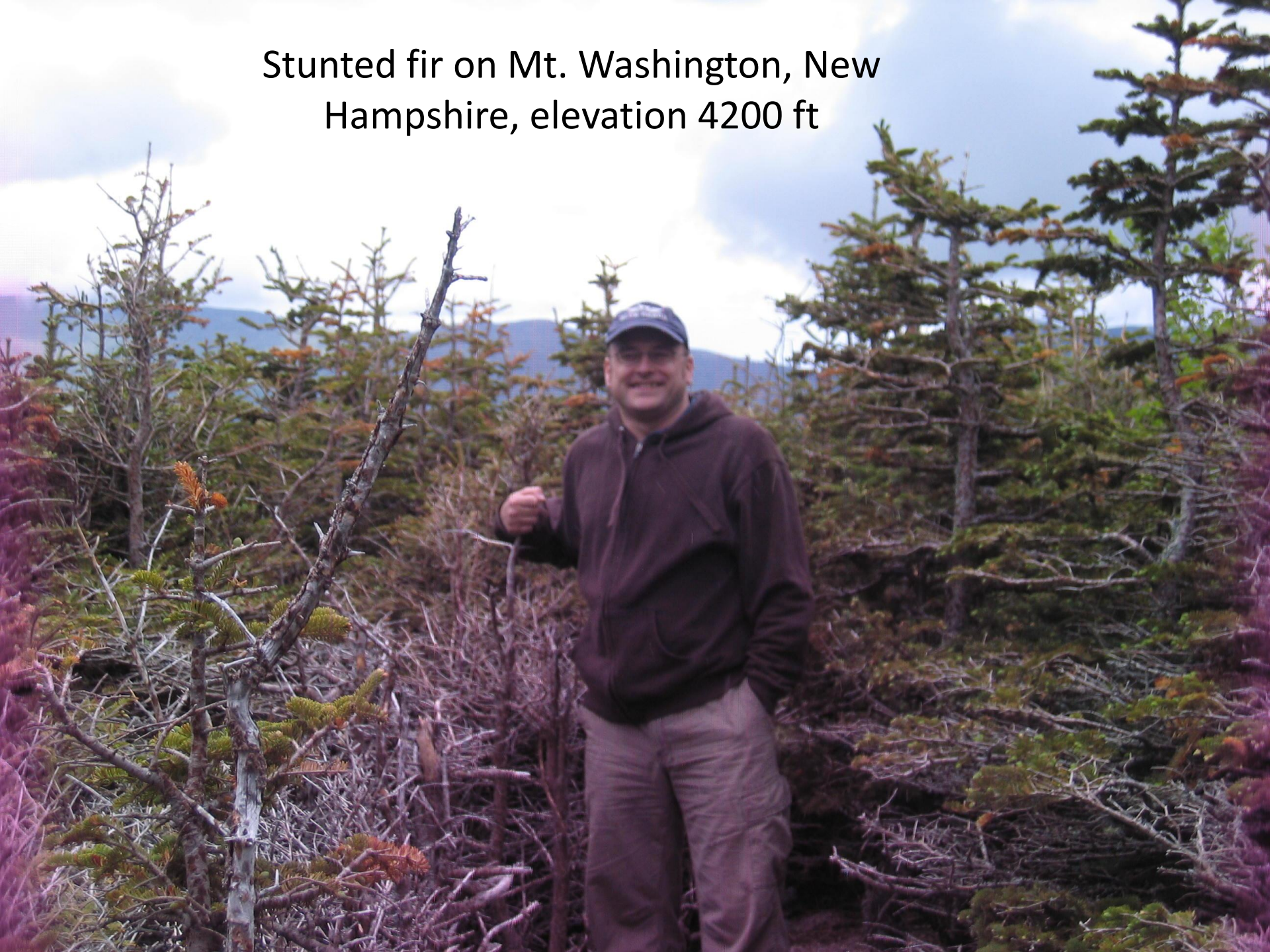
Extend knowledge of baseline conditions and provide repeatable monitoring measures for climate change and recovery management.

Experience Your America

Appalachian Trail MEGA-Transect as a Monitoring Tool

1. Spans over 2000 miles north to south.
2. Includes a wide range of climatic and elevational gradients.
3. Represents a wide array of ecological diversity.
4. Travels along ridgetops—highly sensitive ecosystems that contain many rare species.

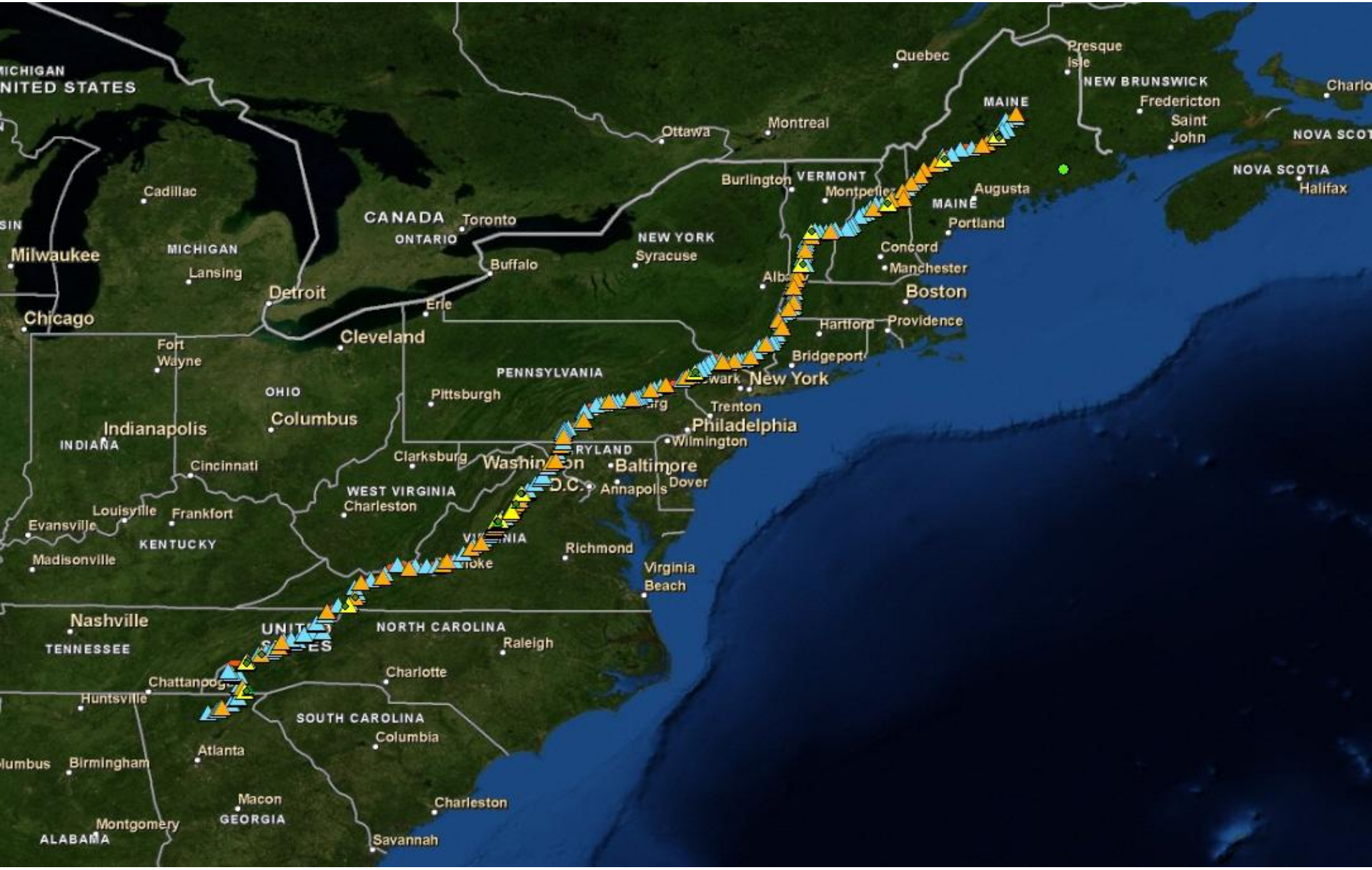



Stunted fir on Mt. Washington, New Hampshire, elevation 4200 ft


Old growth sugar maple in GSMNP, Tennessee, elevation 4200 ft

Project Components

- Geological sensitivity map – site selection (Sullivan – whole team)
- Atmospheric deposition model (Weathers)
- Soil surveys (Lawrence, Bailey)
- Water analyses (Burns, Rice)
- Vegetation composition and stress (Leopold, Dovčiak, Minocha)
- Critical loads modeling (Cosby, Sullivan)
- Extrapolation (McDonnell, Sullivan)


MICHIGAN
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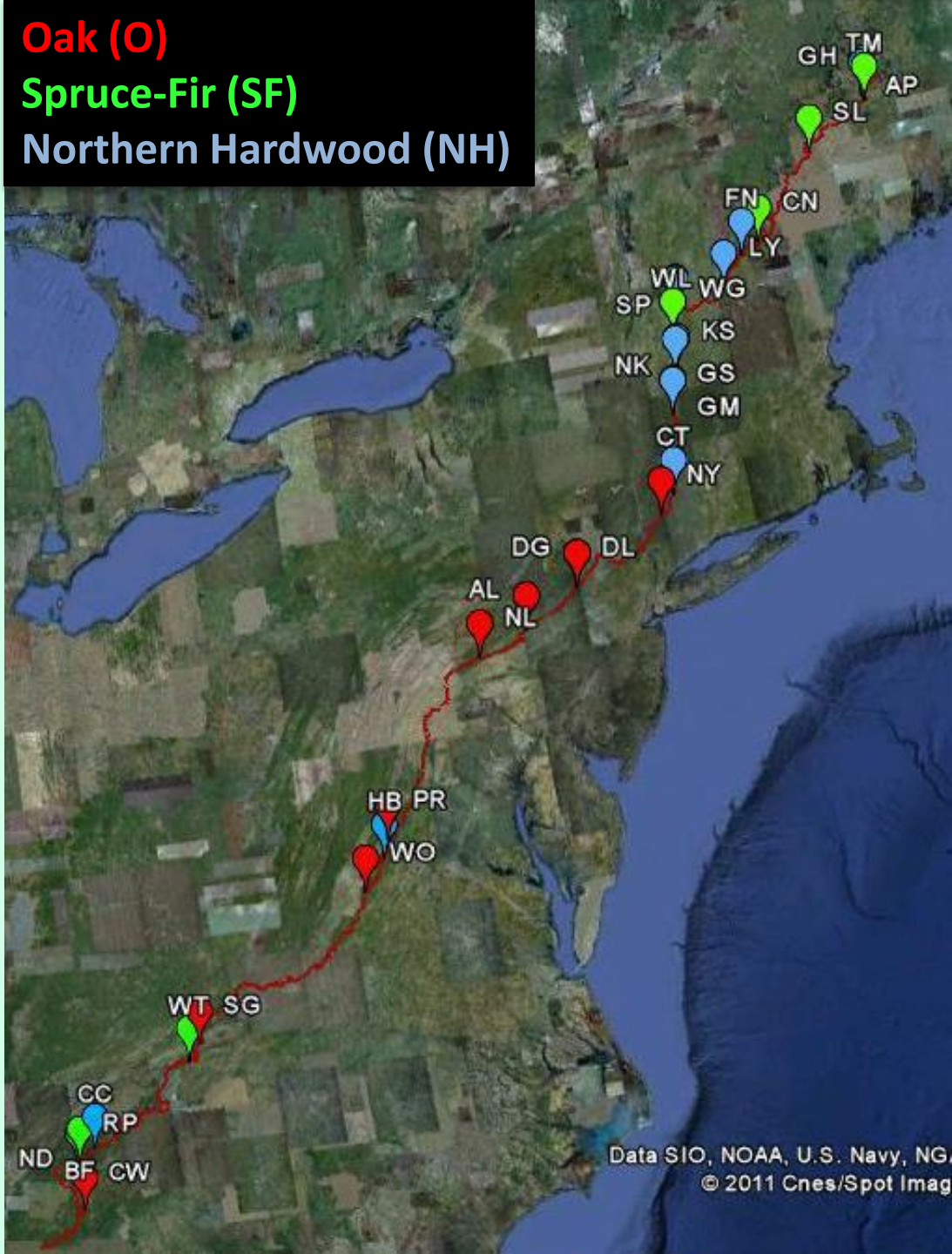
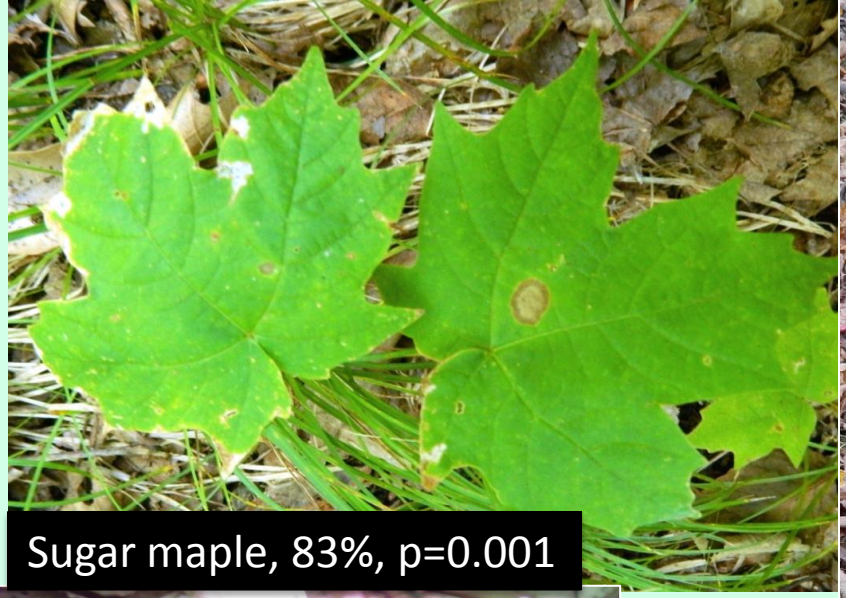
Columbia
Atlanta
Birmingham
Macon
Charleston
GEORGIA
Montgomery
ALABAMA
Savannah

Forest Types

- Distribution
- Why do they matter?
  - Site selection
  - Proxy for environmental variables
  - Affect understory community composition



Indicator Species: Northern Hardwood



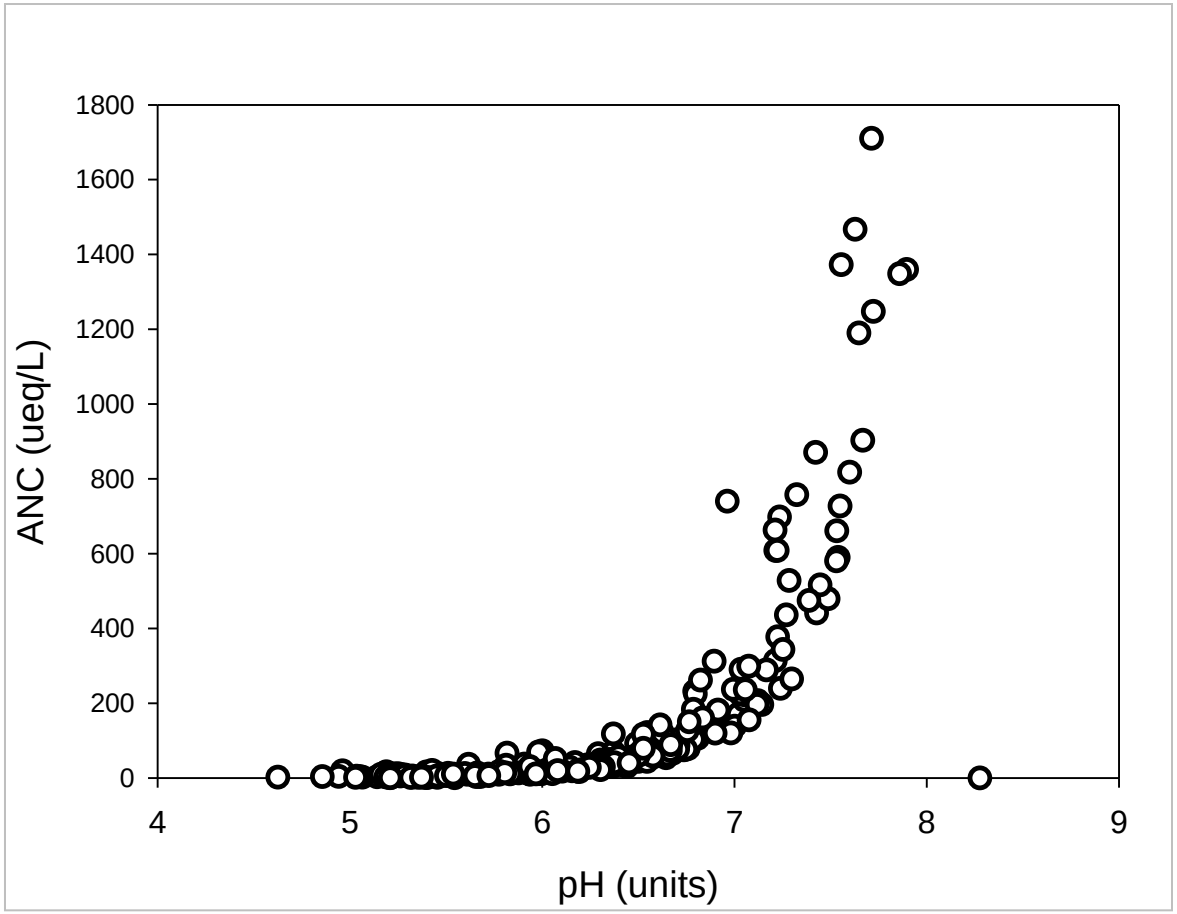
Sugar maple, 83%, p=0.001

American beech: 72%, p=0.002

Sessile-leaved bellwort, 55%, p=0.008

Trillium spp, 51%, p=0.011

pH and ANC - North



Completion date for all samples—May 15th

Technology Transfer

- Final agency summary report
- Fact sheet of project highlights
- Manuscripts for the peer-reviewed literature
- GIS coverages
- Presentations at professional meetings
- Archived soils for future analysis
- Soils data available on public webpage