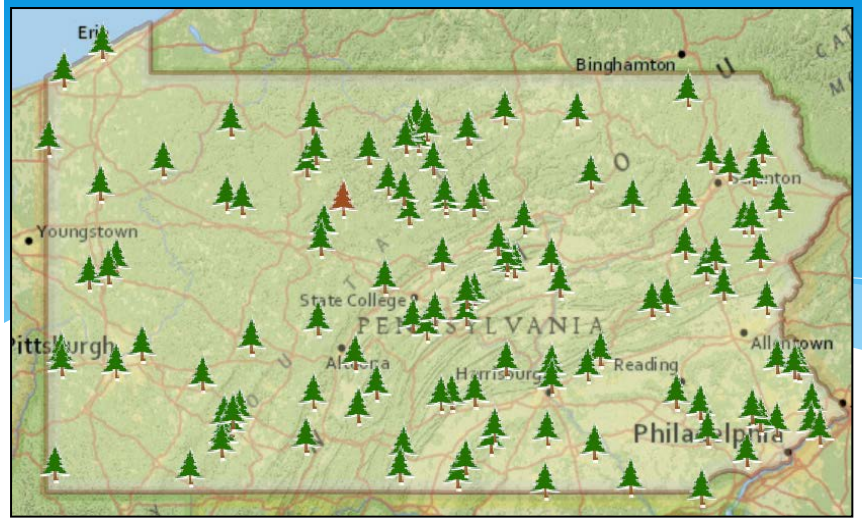
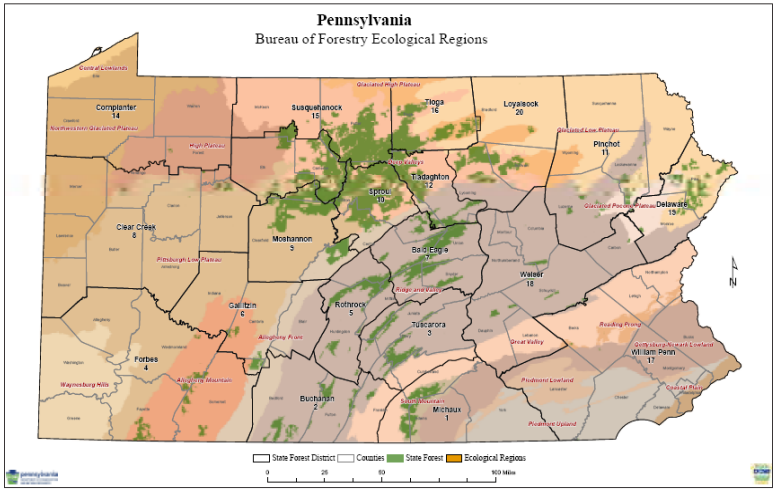
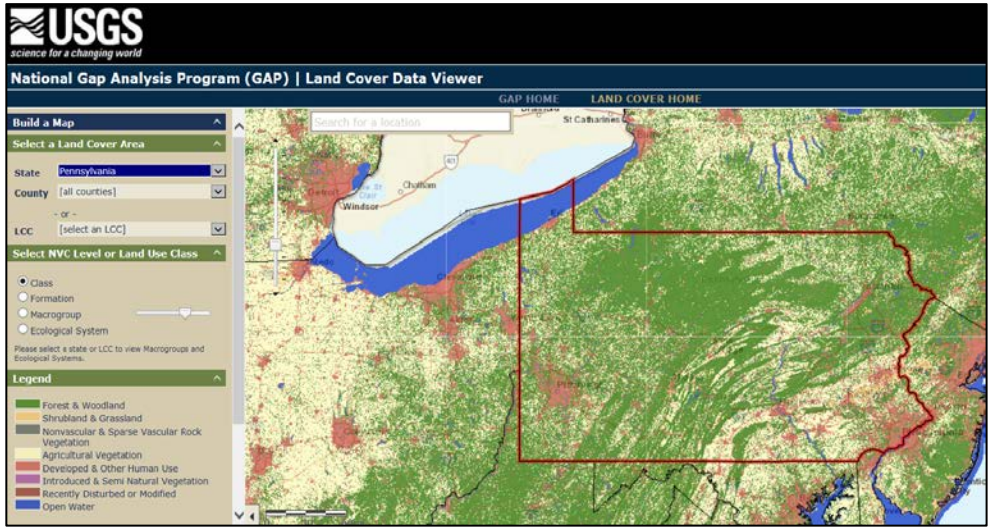


pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

121 State Parks

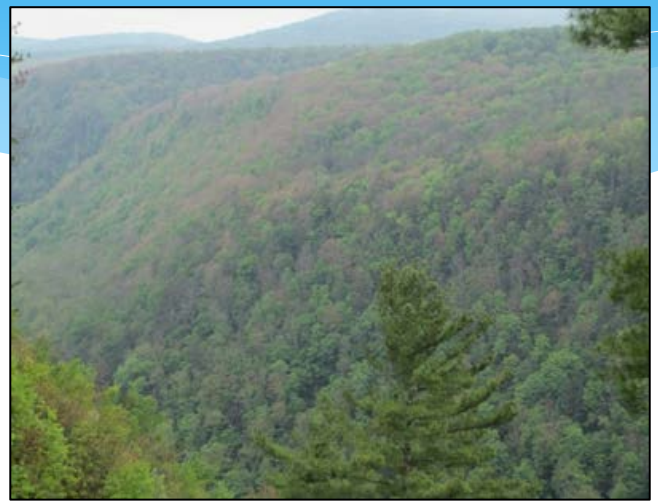


2.2 Million Acres of
State Forest

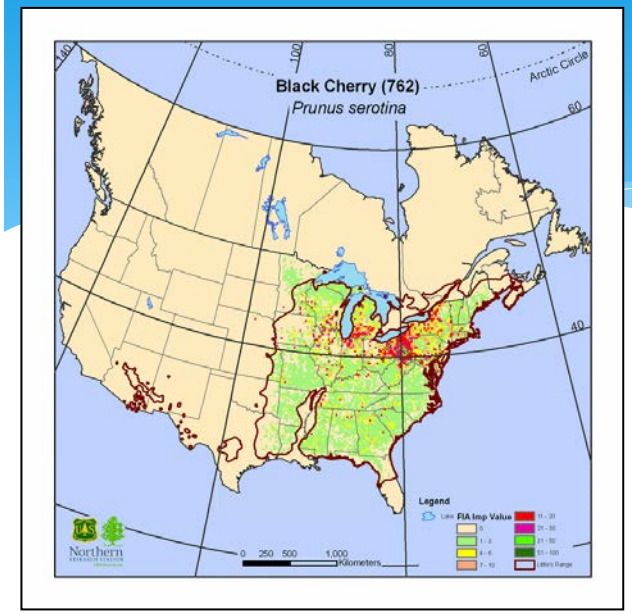


Climate Change Impacts & Vulnerabilities

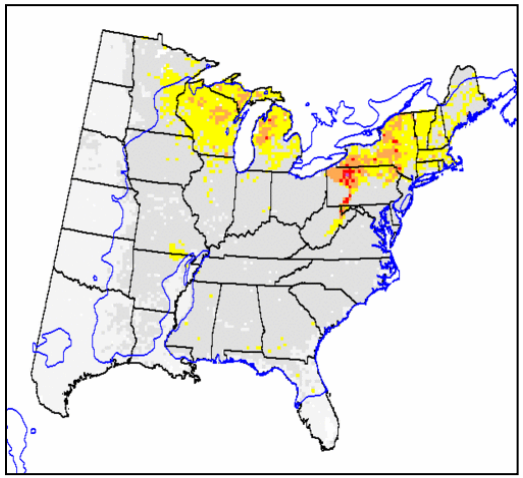
- Increased storm damage
- Reduced snow pack
- Frost damage to forests
- Changes in stream temperatures & timing of peak flows
- More pests and invasive species
- Changes in species and natural communities
- Loss of genetic and species diversity
- Phenological shifts
- Forest regeneration



Mid-Atlantic Forest Climate Change Vulnerability Assessment



Current distribution



Doubling of CO_2

Potential Losers

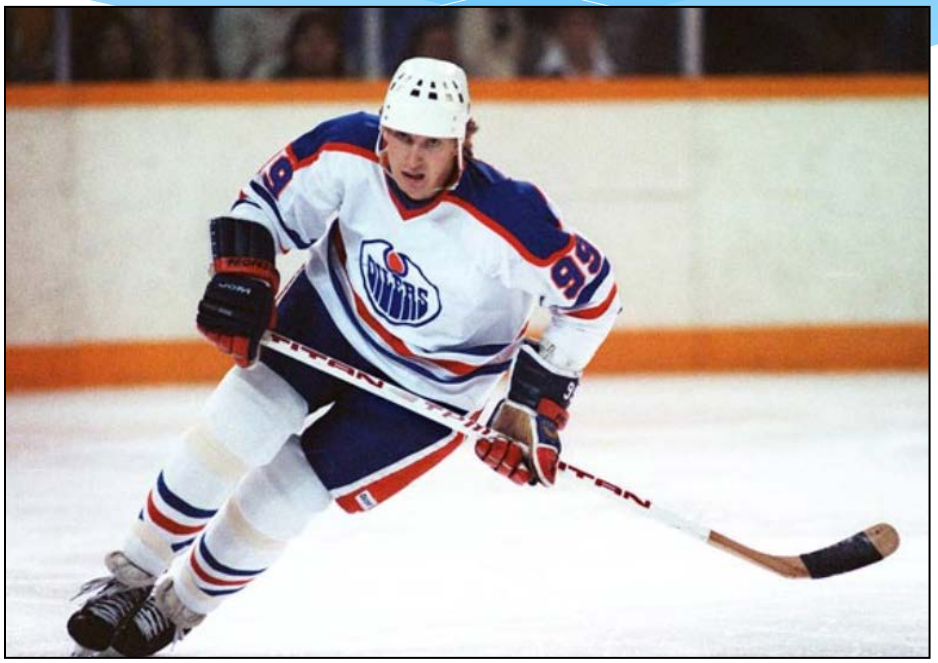
- Sugar maple
- Paper Birch
- Hemlock
- White Pine
- American Beech

Potential Winners

- Eastern Redbud
- Shagbark Hickory
- Sweetgum
- Sycamore
- Eastern Cottonwood

The New Conservation Paradigm

- Manage for change and not some ideal end point
- Focus on maintaining ecological integrity, not just species
- Create arenas of evolution, not museums of the past



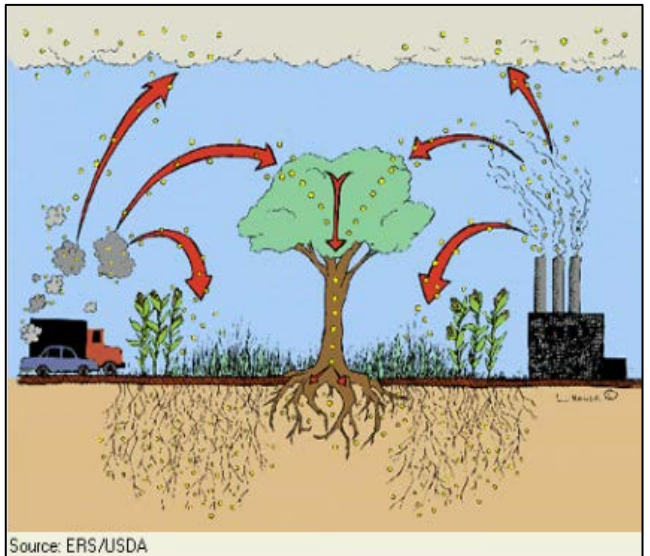
"I skate to where the puck is going to be, not where it's been."

Wayne Gretzky

Adaptation & Mitigation

- Enhance genetic diversity
- Increase ecosystem redundancy
- Prioritize species & ecosystems for conservation efforts
- Address habitat fragmentation
- Identify and protect vital corridors & refugia
- Connect our work with surrounding states
- Build resilience by addressing non-climate stressors
- Consider use of non-native tree species
- Carefully consider assisted migration if no other options
- Increase forest carbon sequestration through afforestation and forest management

NIACS
Northern Institute of Applied Climate Science


Source: ERS/USDA