



# Strategizing for Climate Change

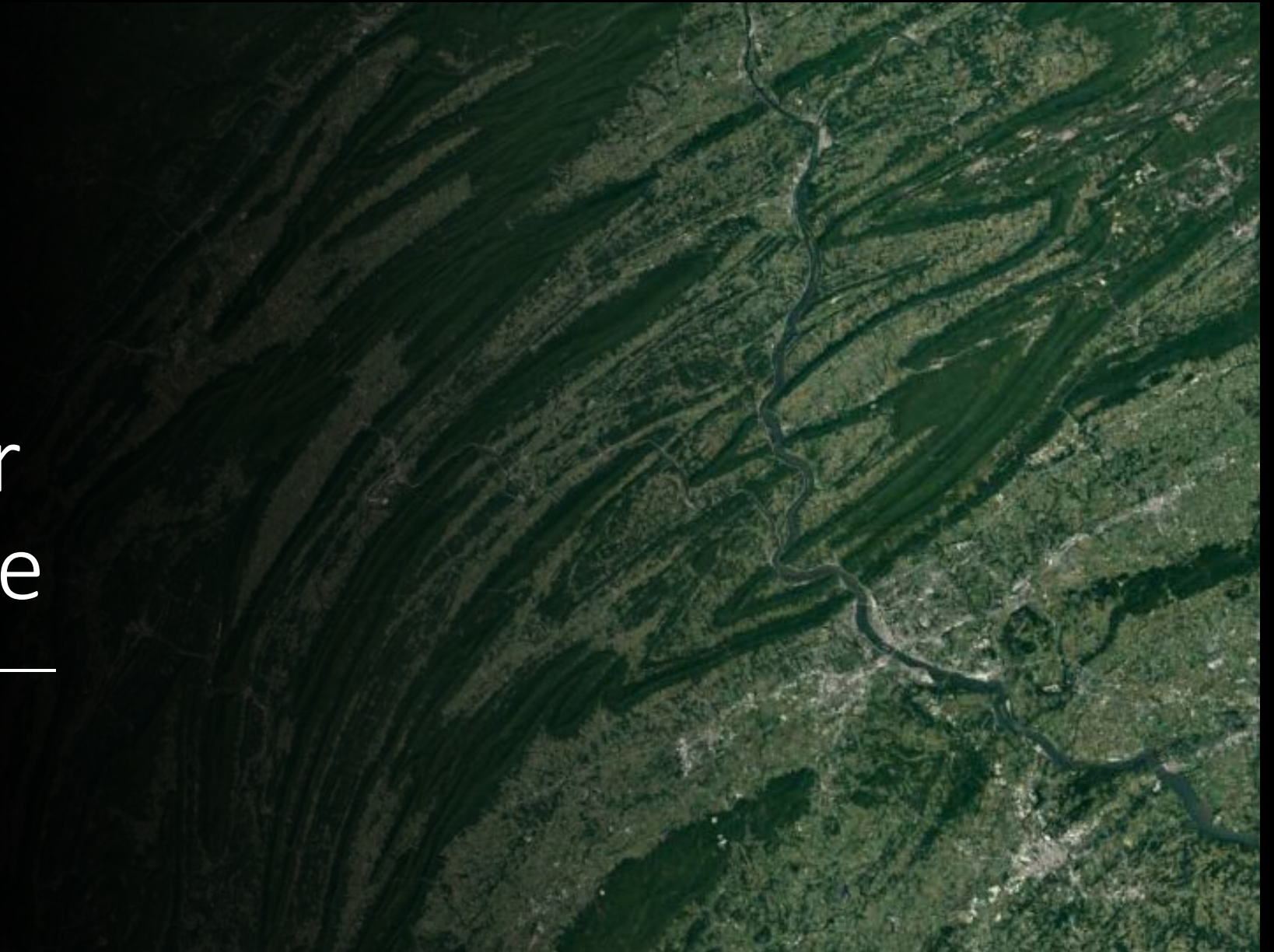
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DCNR Bureau of Forestry

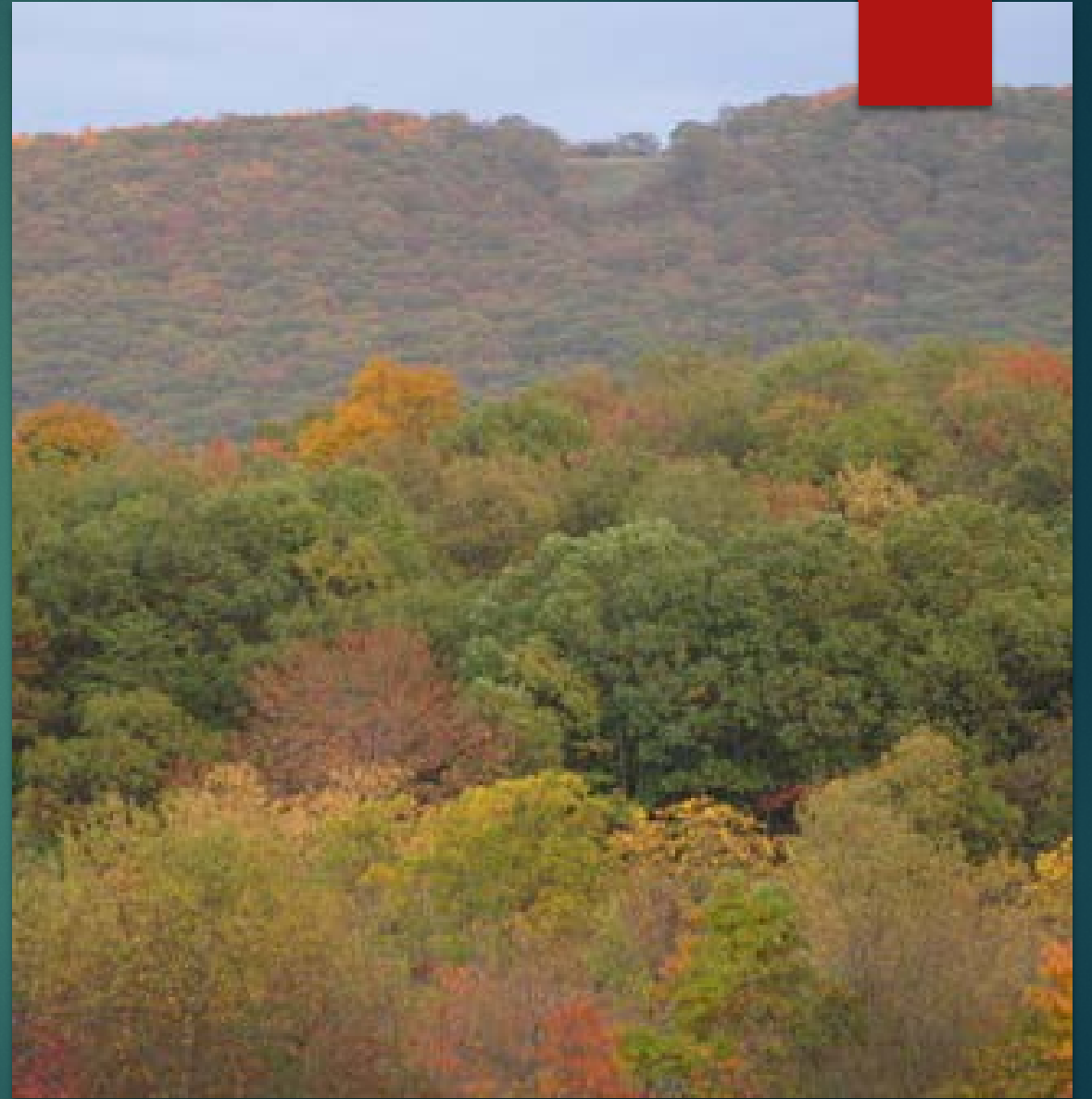
Natural Gas Advisory Committee

March 2021



# Introduction

- ▶ Why important to DCNR/BOF
- ▶ Climate and forests
- ▶ DCNR Plan
- ▶ Looking ahead
- ▶ NGAC specific topics
- ▶ Discussion





# Why is Climate Important: Public Service

- ▶ As public servants, professionals, we respond to societal needs and values
- ▶ Lion Poll data
- ▶ Public sentiment



# Why is Climate Important? Relevance

- ▶ National Working Group
- ▶ USDA Forest Service
- ▶ Federal Government
- ▶ Partners
  - ▶ Acquisitions
  - ▶ Grants
  - ▶ Carbon Storage
  - ▶ FSC standards
  - ▶ Wood products
- ▶ Commonwealth (CCAC; DCNR plan; SFRMP, SFAP, Strategic Plan)
  - ▶ RGGI
  - ▶ Solar
- ▶ Forests are front and center in the climate conversation



# Our role as an agency/conservation community:

## **Adaptation**

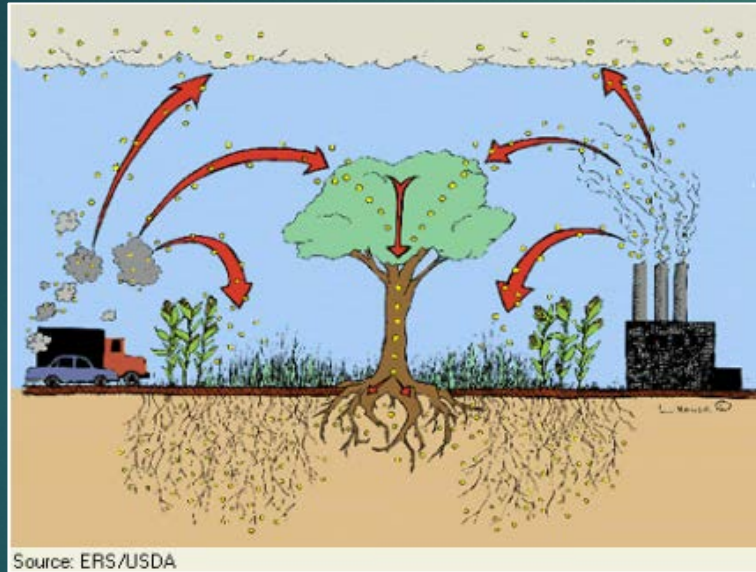
Predict and prepare for unavoidable consequences of climate change

## **Mitigation**

Reduce greenhouse gas emissions

Remove carbon from the atmosphere

# Forest Carbon Sequestration

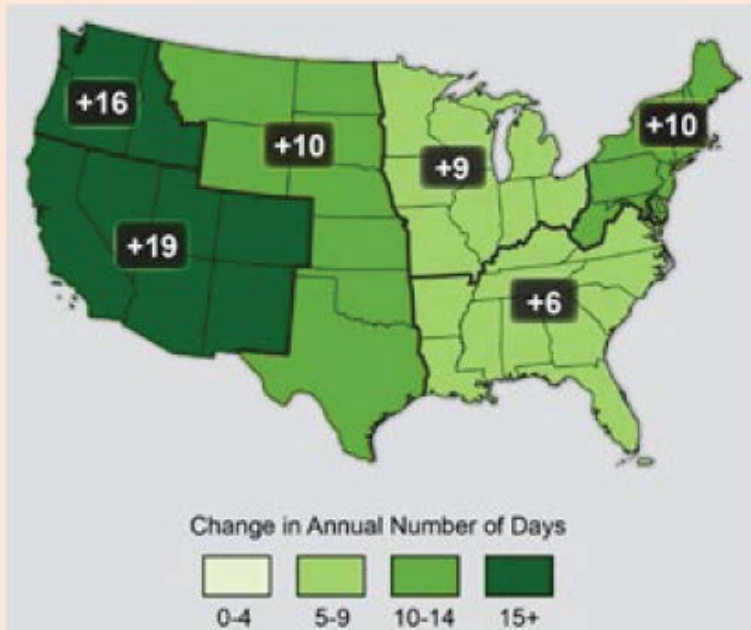


- 50% of a tree's weight is Carbon
- US forests sequester 41% of US power plant emissions
- PA State Forests sequester 4.7 million tons of CO<sub>2</sub>



# Growing Season

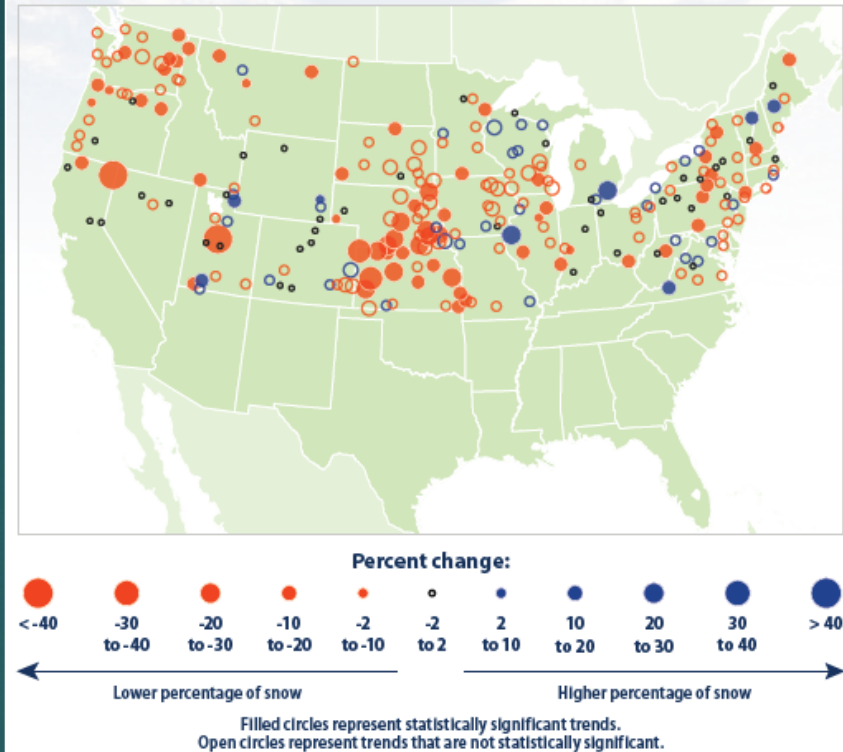
Observed Increase in Frost-Free Season Length



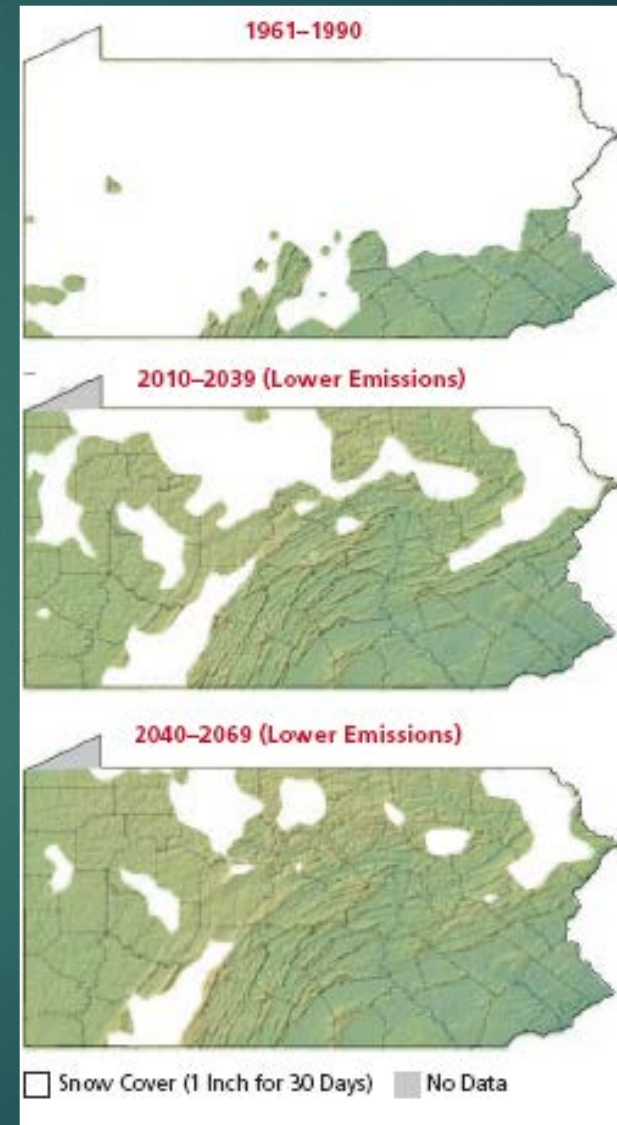


# Reduced Snow Cover

Change In Snow-to-Precipitation Ratio In the Contiguous 48 States, 1949–2016



This figure shows the percentage change in winter snow-to-precipitation ratio from 1949 to 2016 at 246 weather stations in the contiguous 48 states. This ratio measures what percentage of total winter precipitation falls in the form of snow. A decrease (red circle) indicates that more precipitation is falling in the form of rain instead of snow. Solid-color circles represent stations where the trend was statistically significant. Data source: NOAA, 2016<sup>16</sup>





# Invasive Species & Pests



Kudzu is reproducing  
in Pennsylvania (photo  
from Lebanon County)

The hemlock wooly adelgid has been  
spreading north as winters warm

Most invasives spread and thrive in a changing climate.





## CLIMATE CHANGE PROJECTIONS FOR INDIVIDUAL TREE SPECIES RIDGE AND VALLEY (PENNSYLVANIA SUBREGION 4)

### LIKELY TO DECREASE

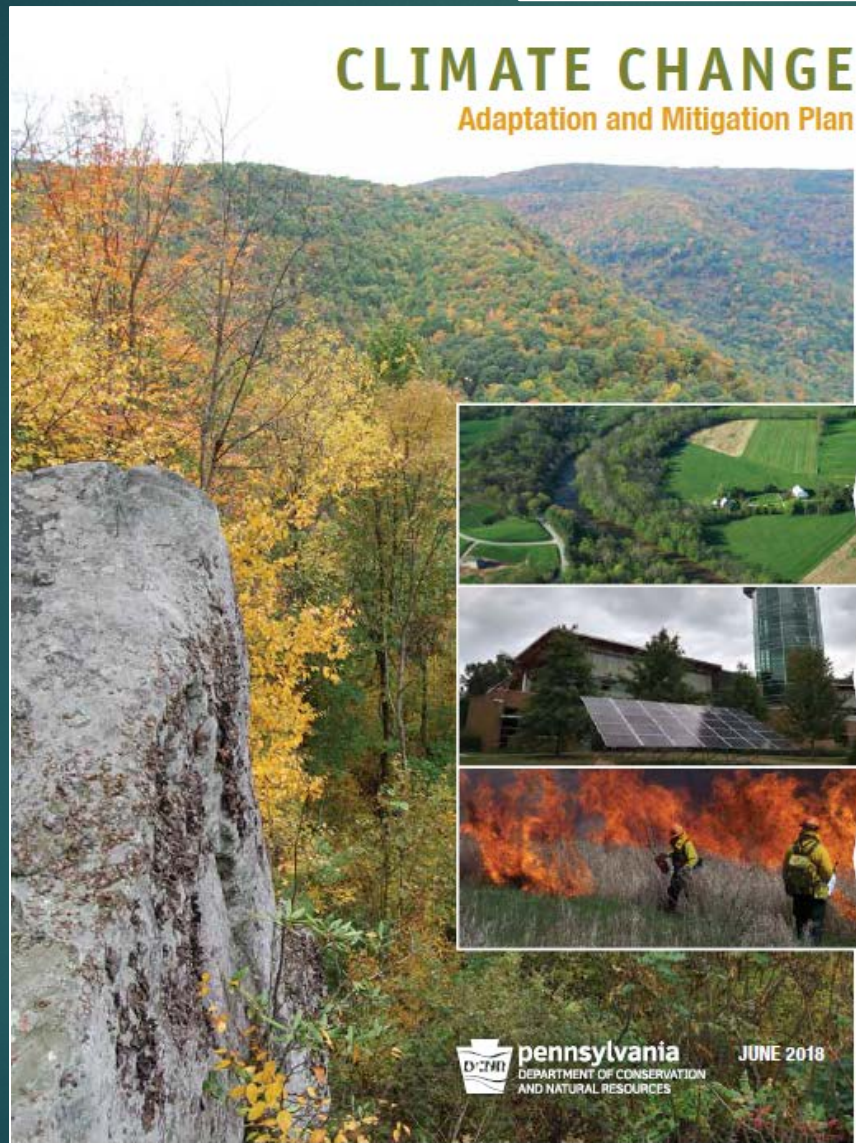
American basswood
American beech
American mountain-ash
Atlantic white-cedar
Balsam poplar
Bigtooth aspen
Black ash
Black spruce
Butternut
Chokecherry
Eastern hemlock



### LIKELY TO INCREASE

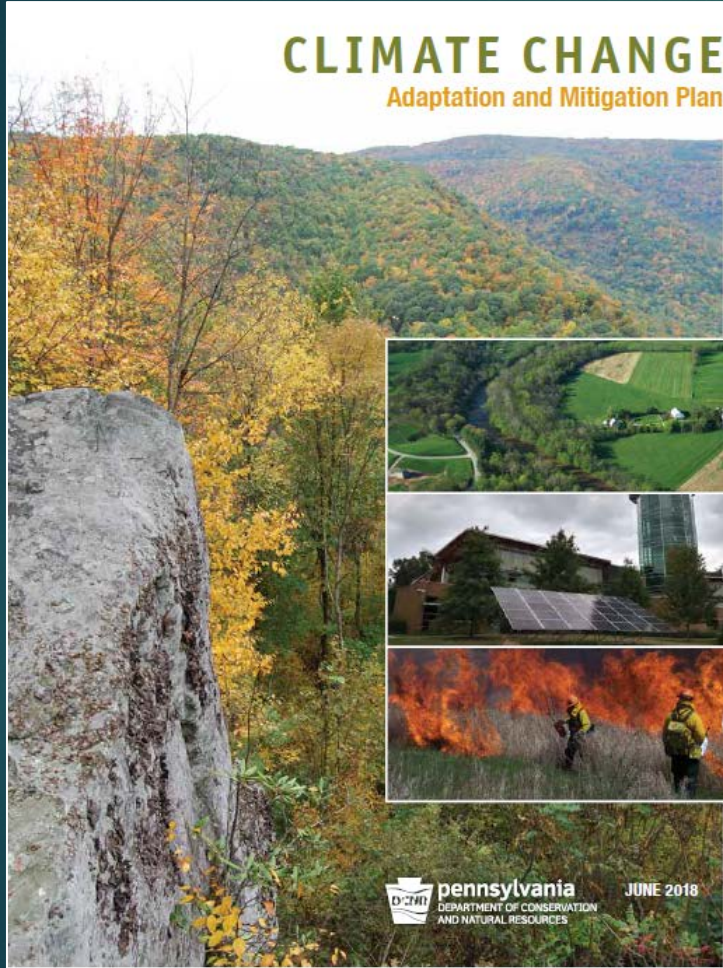
Bear oak: scrub oak
Bitternut hickory
Black walnut
Blackgum
Persimmon







# Some vulnerabilities:



- ▶ Changing forest conditions
- ▶ Changing recreation
- ▶ Flooding and Infrastructure
- ▶ Energy Demands
- ▶ Prolonged and more intense wildfire seasons
- ▶ Reducing atmospheric carbon emissions



# Accomplishments:



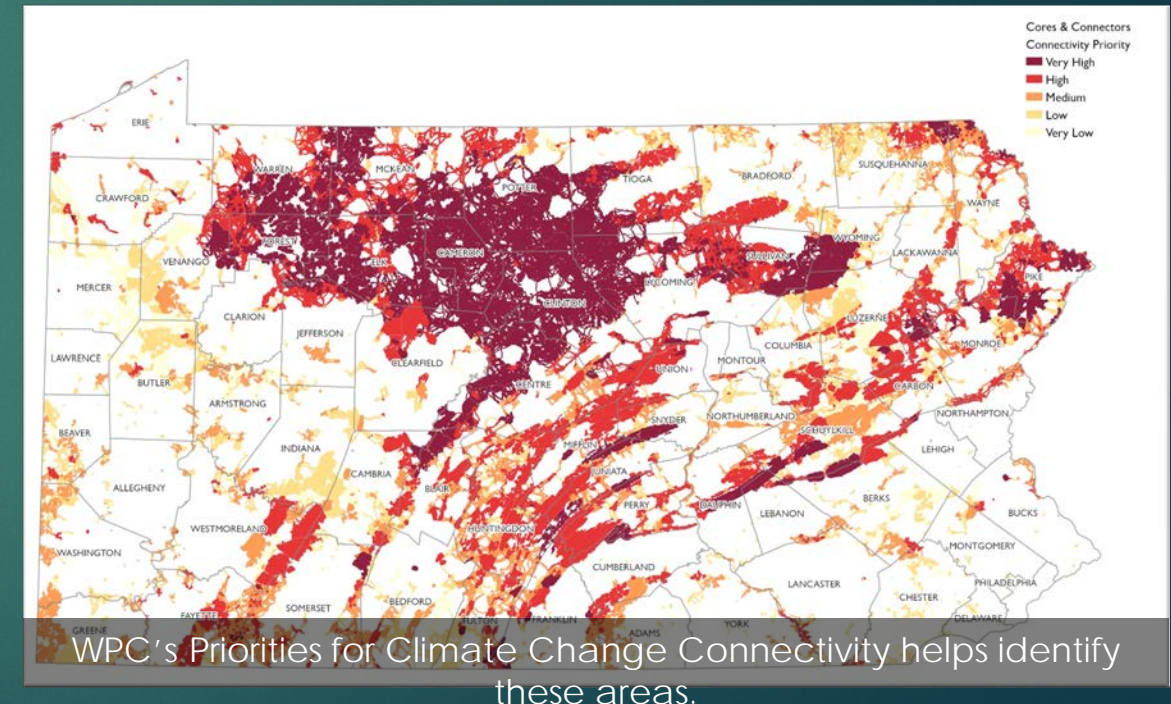
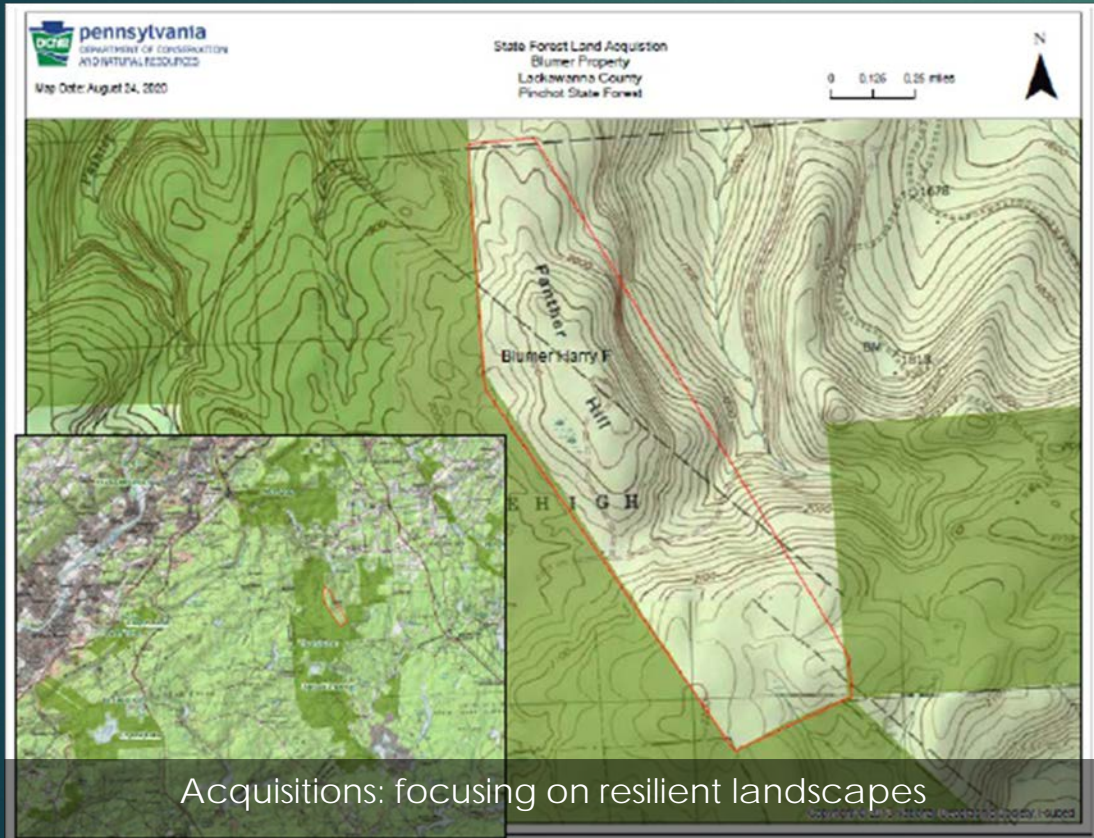
Seed Zone research by Dr. Laura Leites



Carbon Capture work with NASA



# Some accomplishments:





# Renewable Energy & Sustainable Transportation



DCNR has a goal to derive **50%** of its electricity from renewable sources by **2022**.



By **2025** Convert **25%** of passenger vehicles to either EVs or PHEVs.



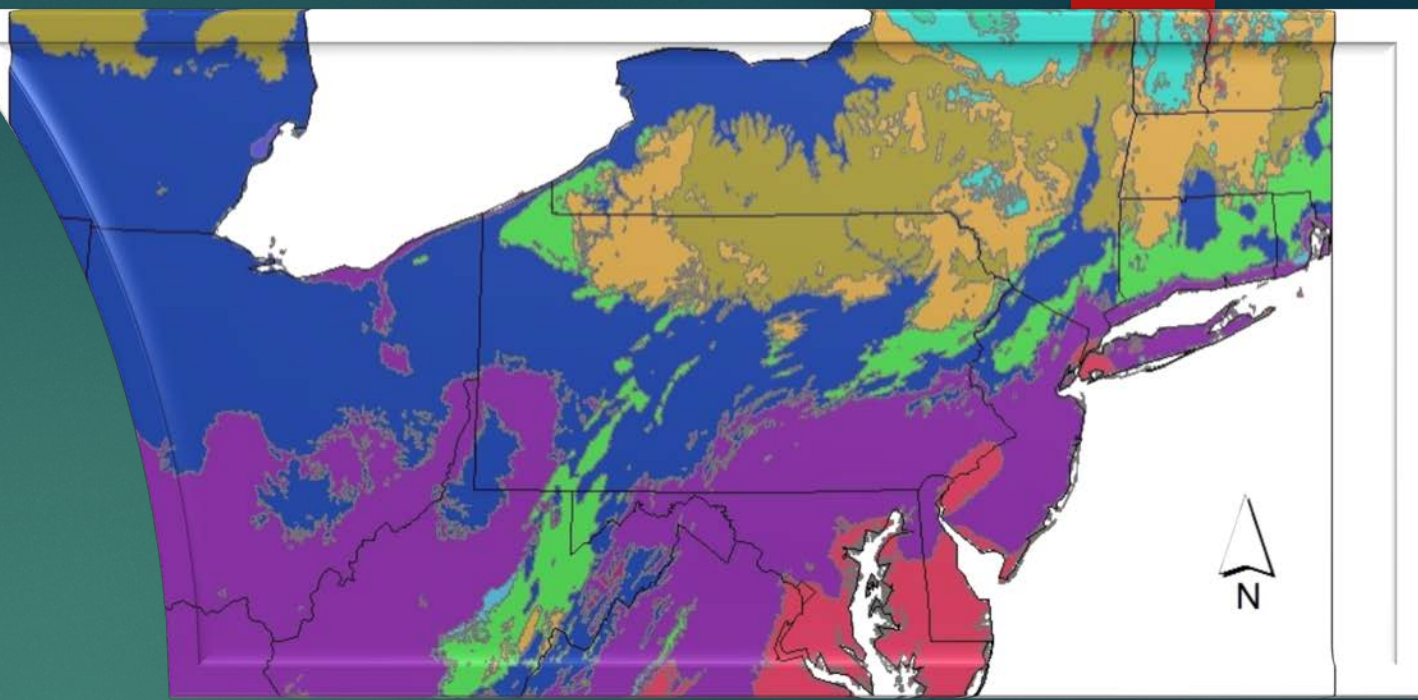
By the end of **2021**

Total of 39 visitor charging station installations across the state



# BOF Climate Work Teams:

- ▶ Seed zones/Assisted migration



- ▶ Ecological Monitoring





# BOF Climate Work Teams:

- ▶ Forestry Resource Management Practices
- ▶ Carbon Sequestration & Mitigation





# BOF Climate Work Teams:

► BOF Communications



► Land Conservation





# BOF Climate Work Teams:

- ▶ Research
- ▶ State Forest Operations & Management





# Geologic Topics:

- ▶ Carbon Capture and Storage
- ▶ Plugging abandoned wells

