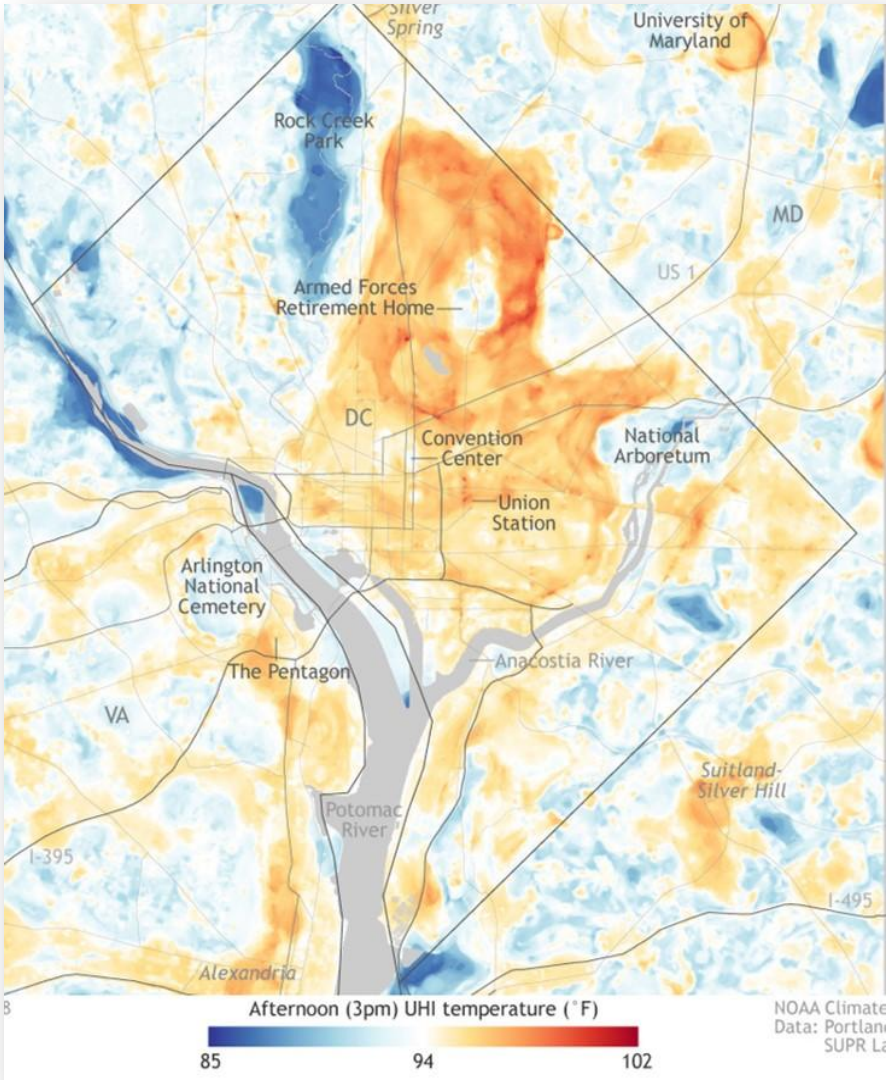
Rock Creek Resilience

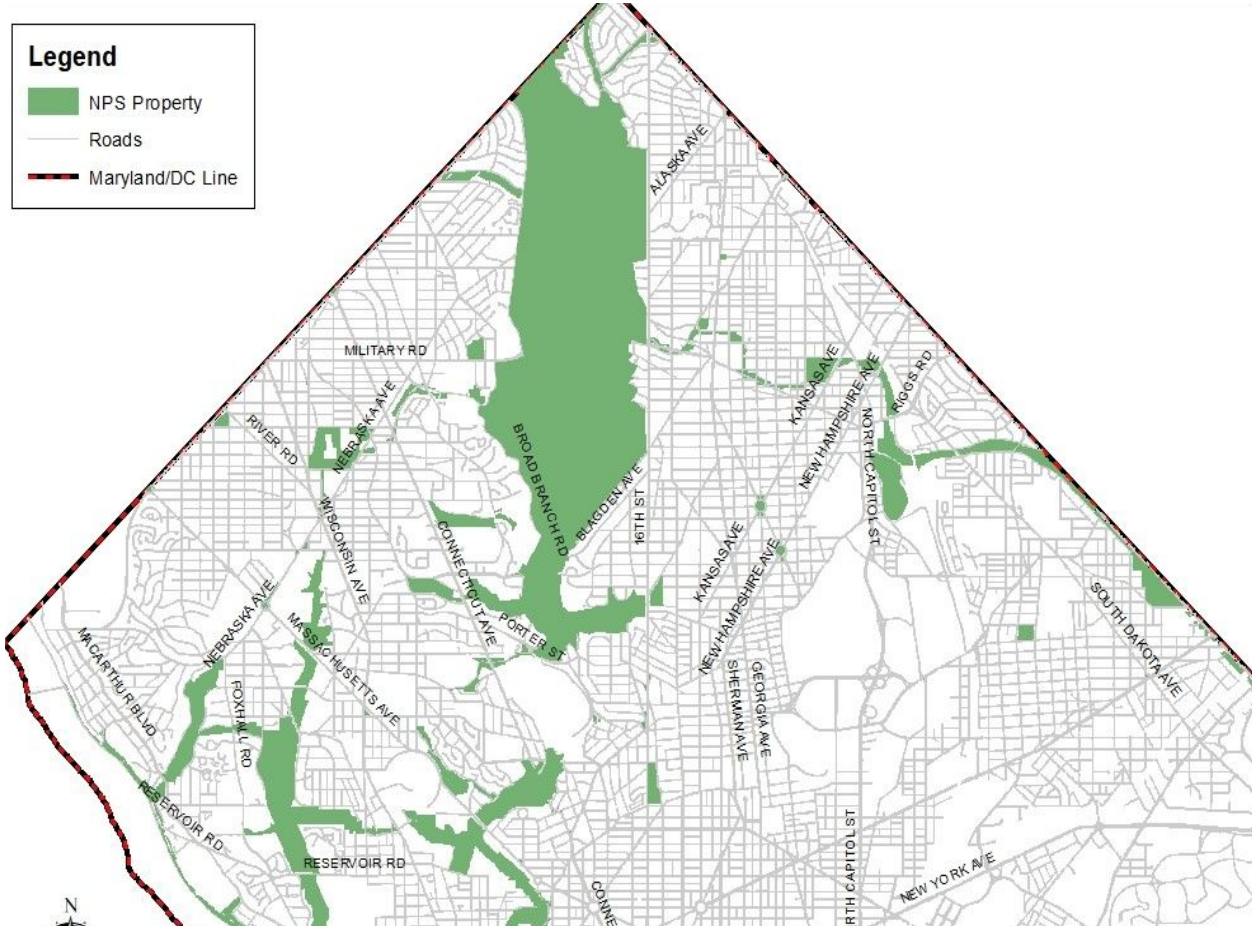
Jeanne Braha
Rock Creek Conservancy

Climate and Social Resilience

"I couldn't live here without Rock Creek!"



“I couldn’t live here without Rock Creek!”



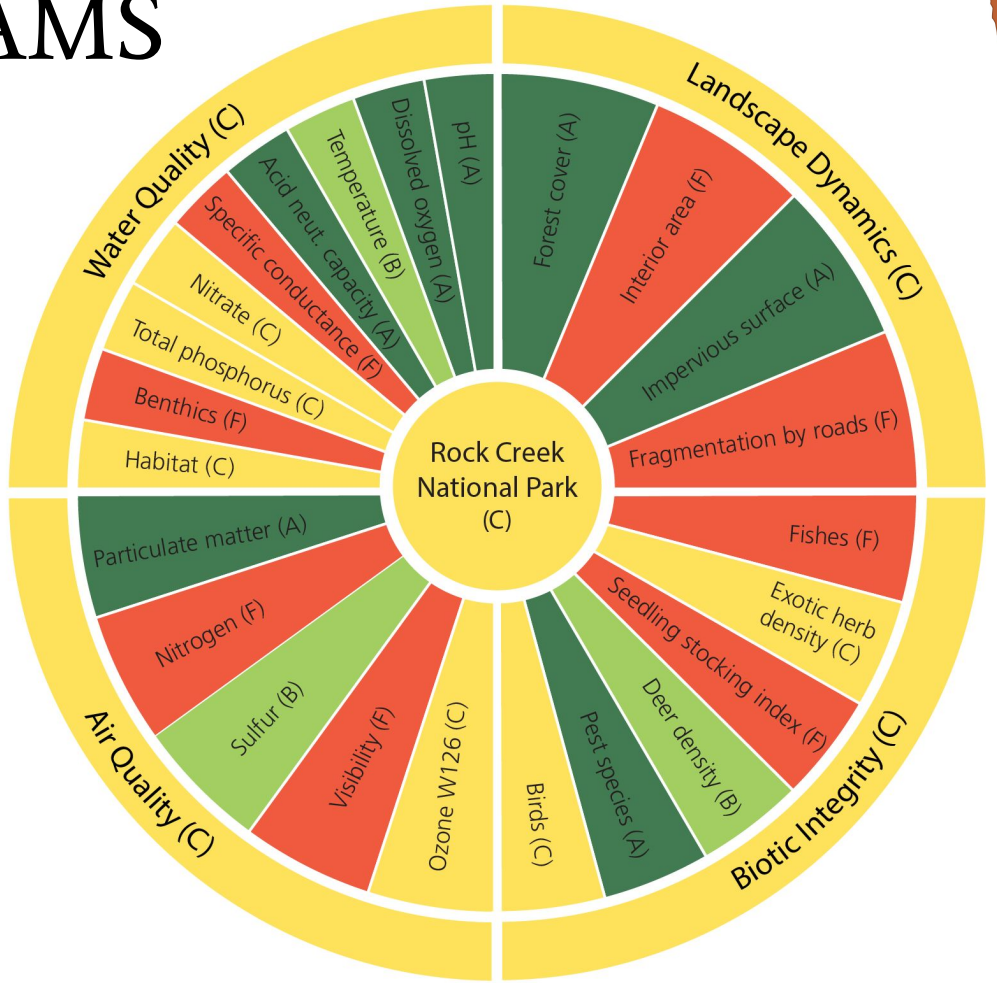
RAMS

—Biological Integrity—
Exotic herbaceous species
Exotic trees & saplings
Forest pest species
Seedling regeneration
Fish
Birds
Deer density

—Water Resources—
pH
Dissolved oxygen
Water temperature
Acid neutralizing capacity
Specific conductance
Total nitrate
Total phosphorus
Macroinvertebrates
Stream physical habitat

—Air Quality—
Wet sulfur deposition
Wet nitrogen deposition
Ozone
Visibility
Particulate matter

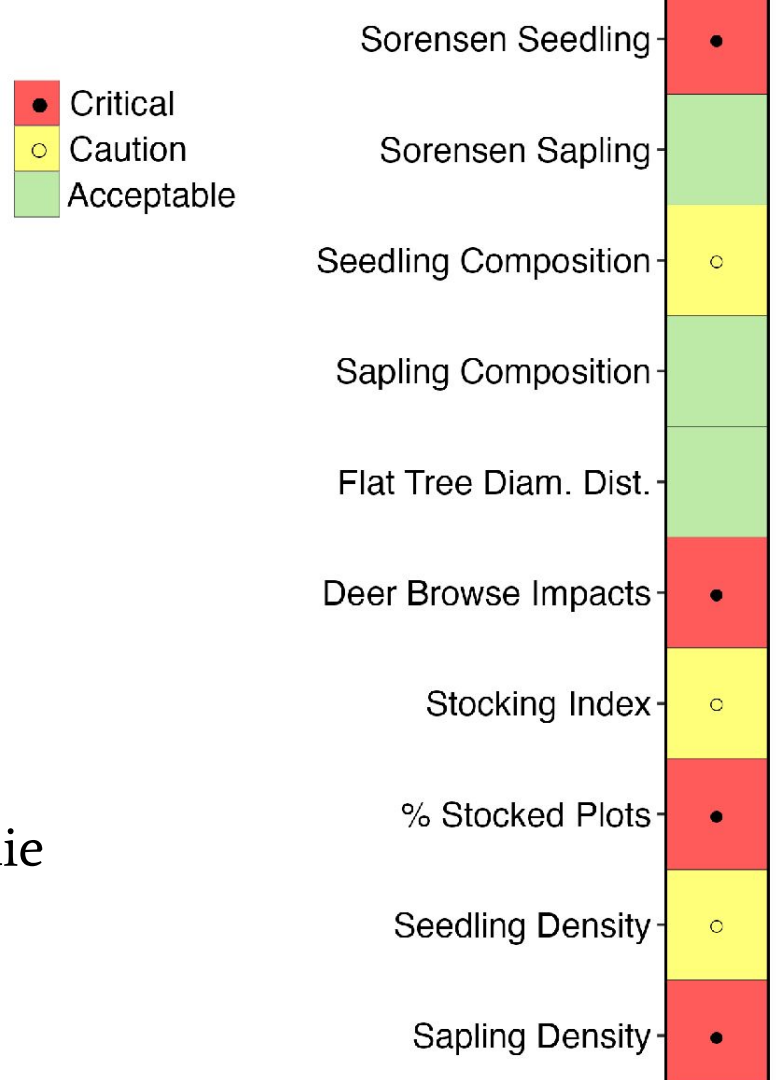
—Landscape Dynamics—
Forest interior area
Forest cover
Impervious surface
Road density



What do the scores mean?

F	0–20% Very degraded
D	21–40% Degraded
C	41–60% Moderately good
B	61–80% Good
A	81–100% Very good
ND	No data

Rock Creek: Probable Failure



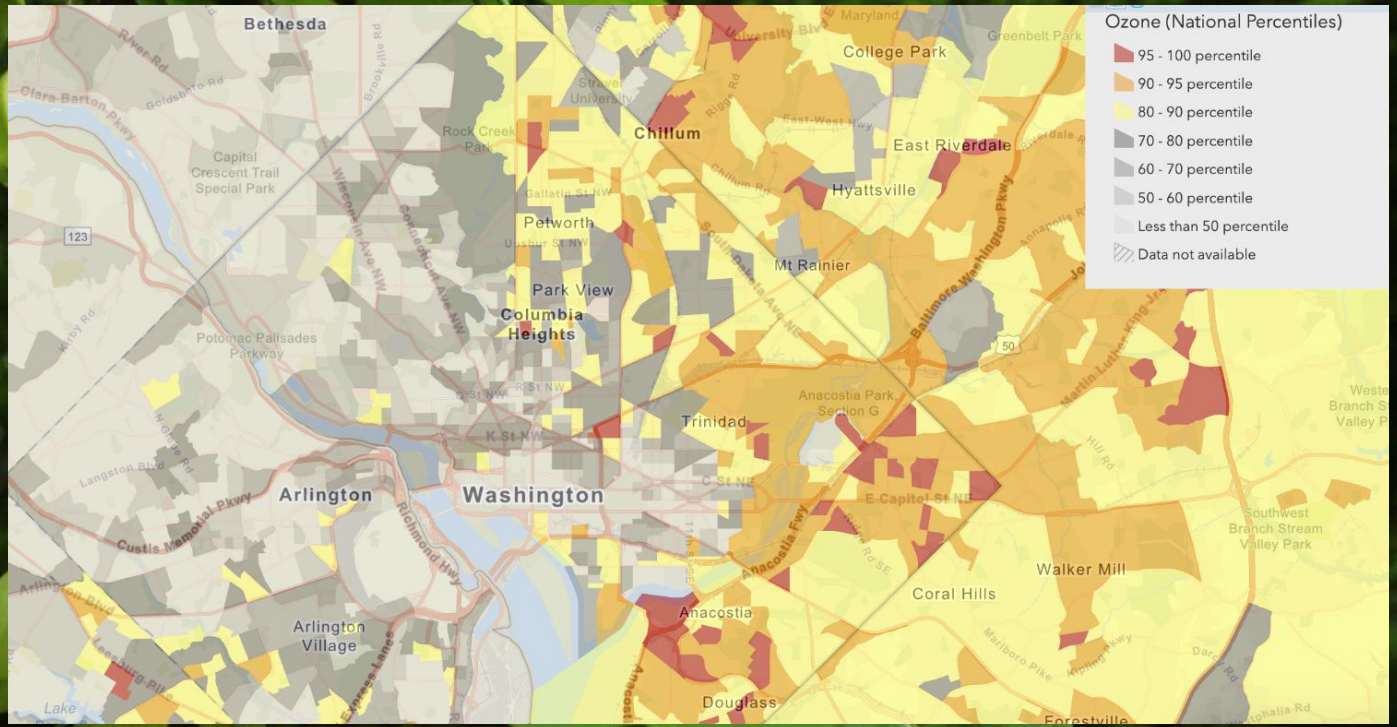
- 10 metrics, data from 2016-2019
- Measures for seedlings, saplings, trees
- Looks at abundance, size, species composition
- Includes impacts of deer

Probable Failure:

- Not a countdown – rather a failed process
- Small losses of forest when individual trees die
- Large losses with major disturbance

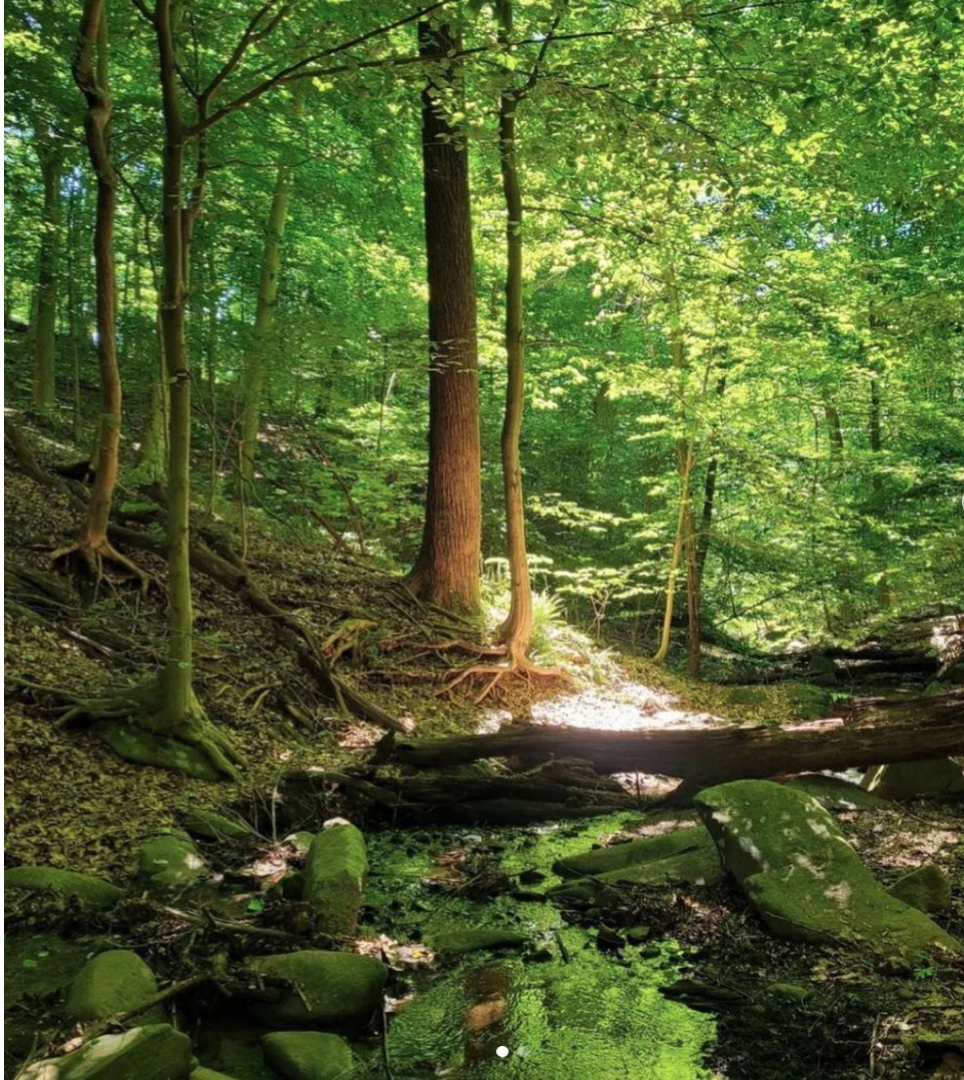
Natural Resource Threats

- Non-native, invasive plant species
- Long-term impacts of high deer densities
- Social, non-authorized trails
- Dumping
- Flash floods
- Erosion
- Surface runoff


Ozone (National Percentiles)
95 - 100 percentile
90 - 95 percentile
80 - 90 percentile
70 - 80 percentile
60 - 70 percentile
50 - 60 percentile
Less than 50 percentile
Data not available
Bethesda
College Park
Chillum
East Riverdale
Hyattsville
Petworth
Mt Rainier
Park View
Columbia Heights
Trinidad
Arlington
Washington
Anacostia
Walker Mill
Coral Hills
Arlington Village
Douglass
Capital Crescent Trail Special Park
Rock Creek Park
Potomac Palisades Parkway
Anacostia Park, Section G
Southwest Branch Stream Valley Park
Custis Memorial Pkwy
Richmond Hwy
Anacostia Fwy
Baltimore-Washington Pkwy
Clara Barton Pkwy
River Rd
Goldsboro Rd
Brookville Rd
Wisconsin Ave NW
Connecticut Ave NW
Ridge Rd
East-West Hwy
Chillum Rd
Kirby Rd
Langston Blvd
Arlington Blvd
Leesburg Pike
Marlboro Pike
Hill Rd
Kipling Pkwy
Forestville
123
50
K St NW
E Capitol St NE

People-powered Restoration

“a roadmap for equitable, adaptive management of the forests„



Forest Resilience Framework

create a park-scale plan

to restore and maintain the forests

to protect the natural resources

and increase equity of access to their ecosystem services

while continuing to engage community members in people-powered restoration to sustain this restoration beyond park borders.

This project will build off of the existing management strategies for Rock Creek Park and provide more current condition assessment, address the status of key stressors in the park, and engage subject matter experts.

A Framework for the Future

Resilience Outcome: Increased wildlife biodiversity

- Adjust planting techniques for wildlife needs
- Consider plant palettes for wildlife

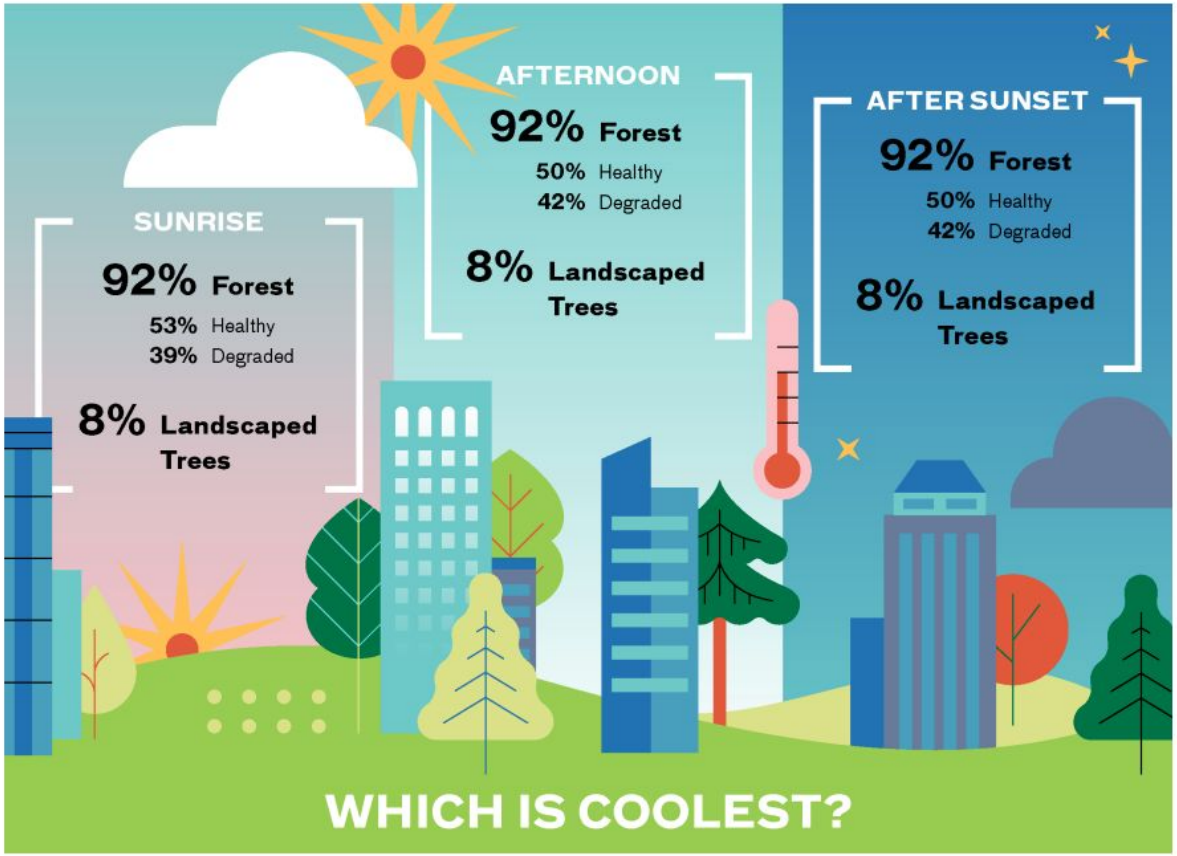
Resilience Outcome:
Improved recovery of species of conservation concern

- Hay's spring amphipod areas
- Snags and trees for northern long-eared bat and roost species
- Meadow habitat for pollinators

Resilience Outcome:
Greater equity of access to ecosystem services

- Urban heat islands
- Well-being
- Quality of life indicators

Air temperature in forested natural areas was cooler than under landscaped tree areas, and healthy forests were the coolest

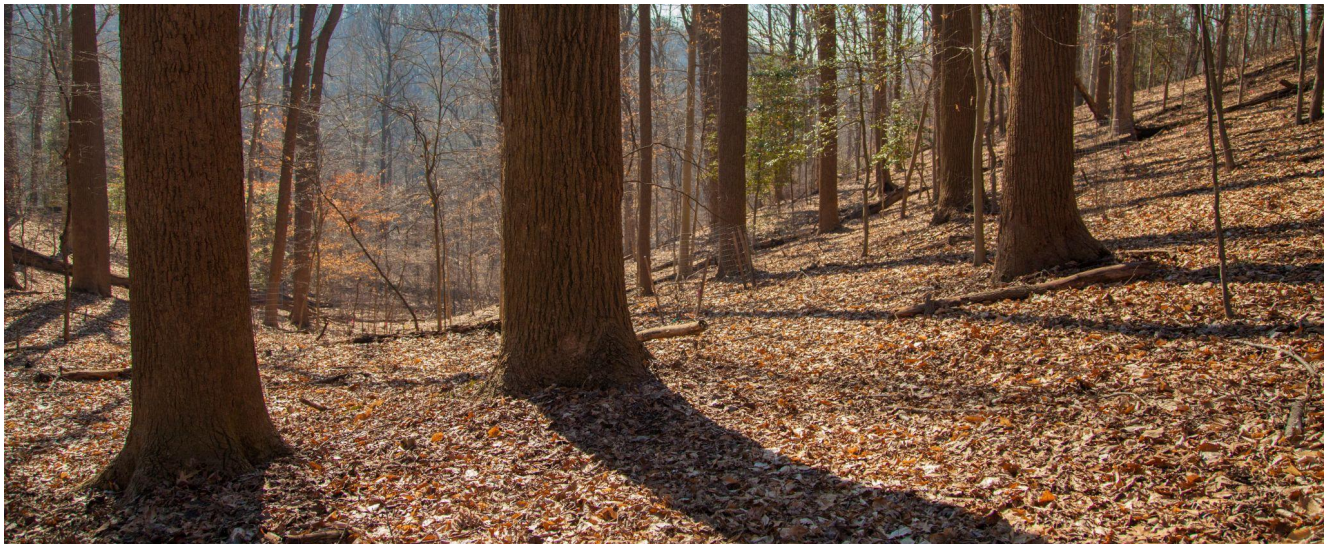


At all points in the day, the forest was cooler than landscaped locations at a large majority of locations. Within forests, the high quality location tended to be cooler than the forested.

Natural Areas Conservancy, 2023
Cooling in Cities Report

Resilience Strategy: Reduce deer browse index

- Consider afforestation
- Think about species composition under future climate scenarios
- Capitalize on light gaps that emerge



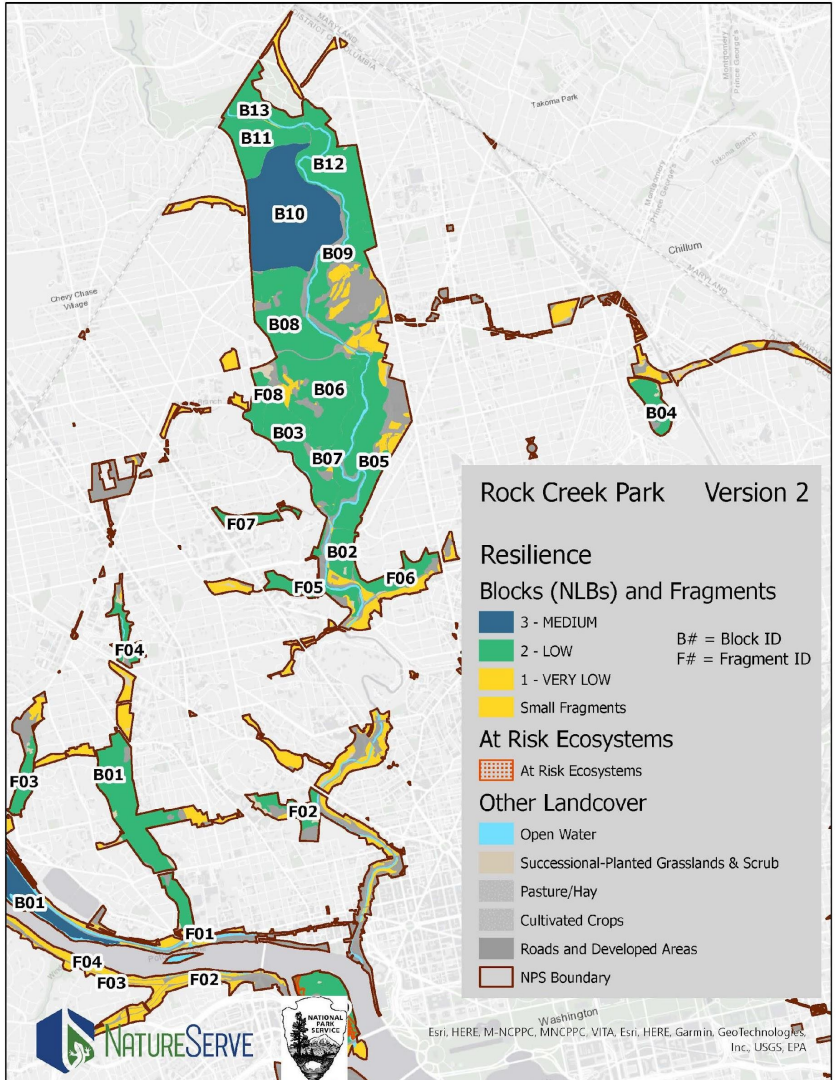
Resilience Strategy: Reduce invasives

Reducing non-native invasive plant coverage to near or less than 5% in the park

Focus on areas of high biodiversity

Resilience Strategy: Maintain canopy

- Consider afforestation
- Think about species composition under future climate scenarios
- Capitalize on light gaps that emerge

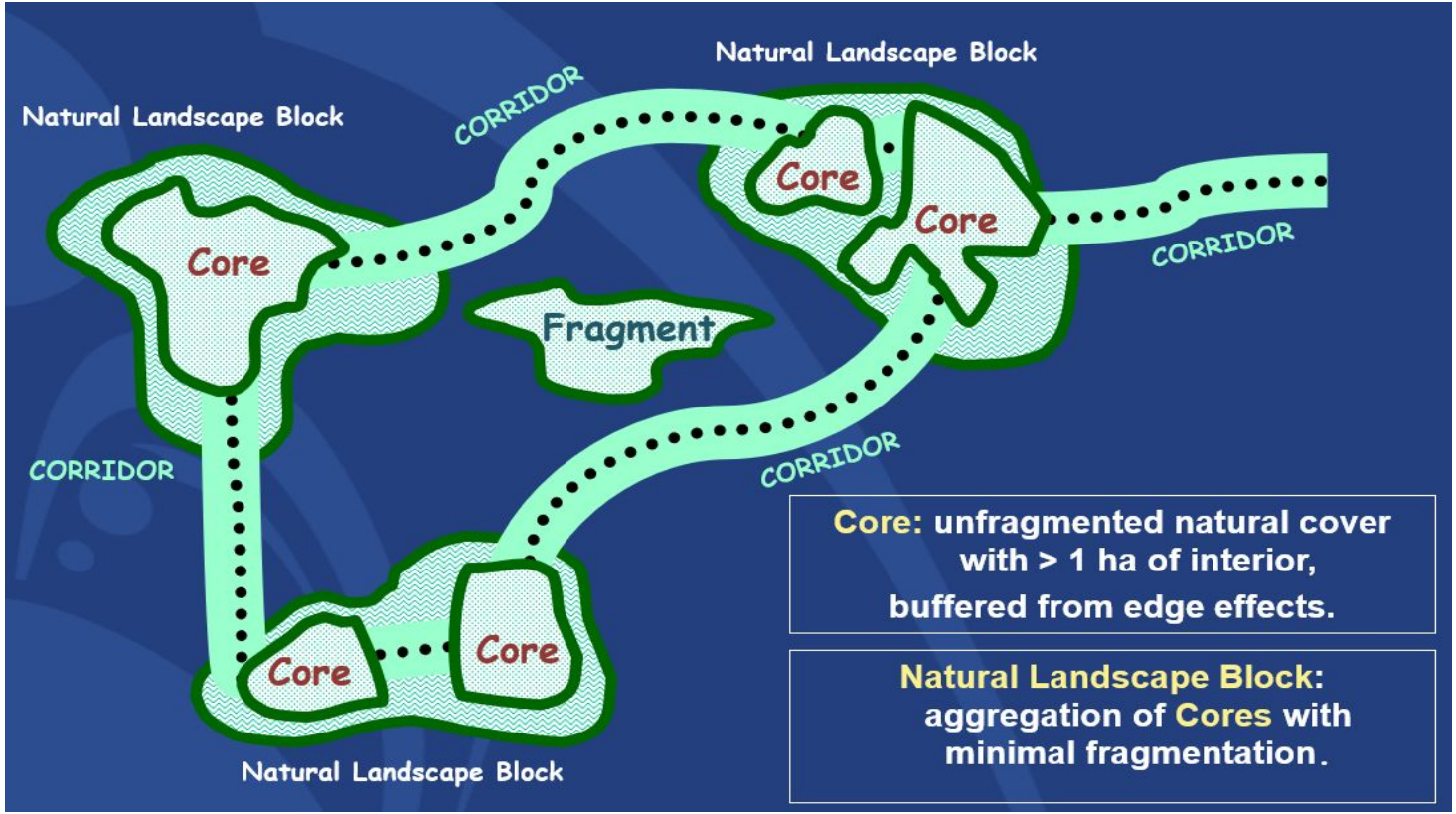


Resilience Strategy: Increase interior area

i.e., reduce fragmentation

- Formalize some social trails to reduce pressures on forest
- Close many social trails
- Improve signage to keep people (and dogs) on trails

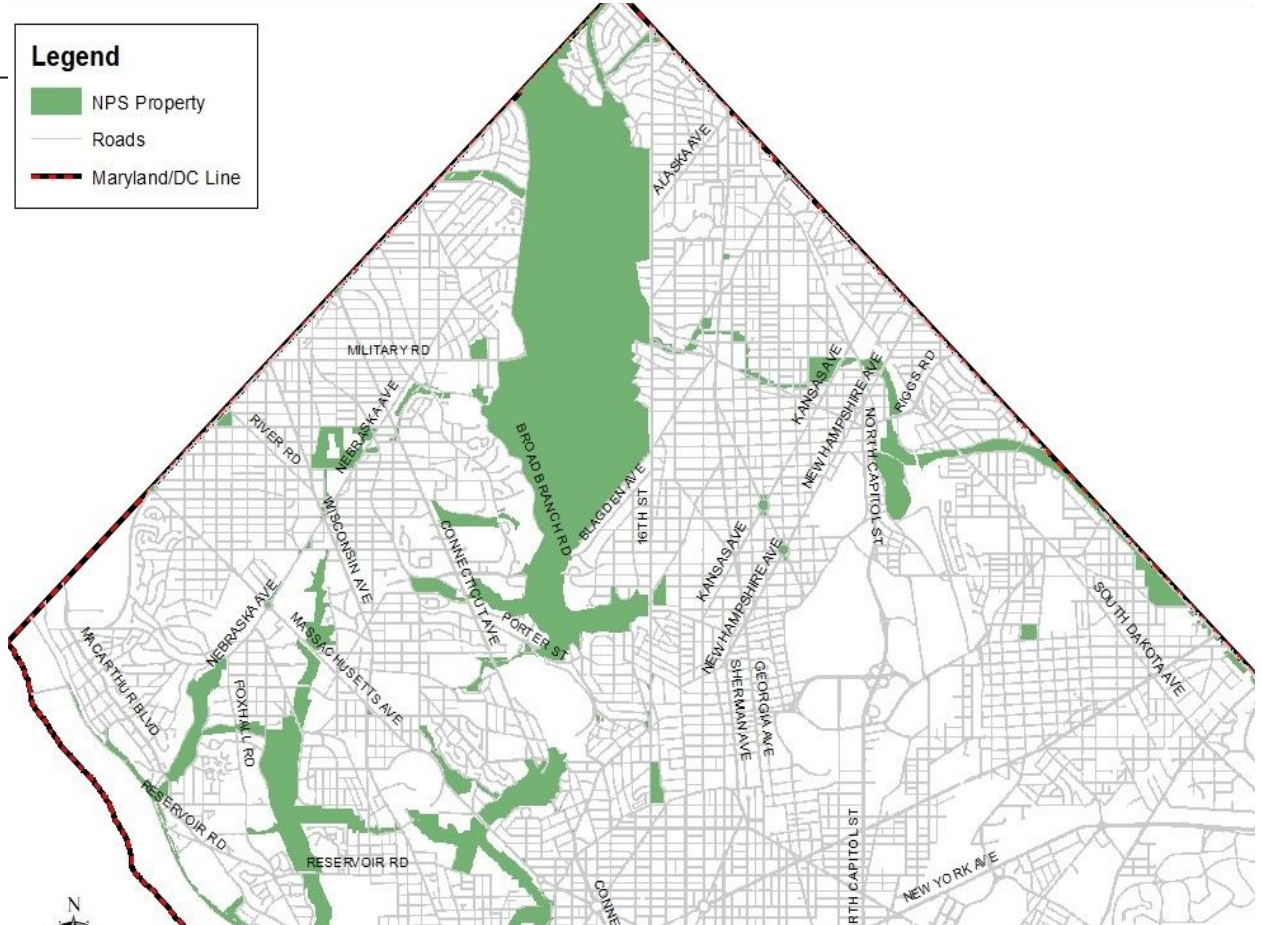
Natural Landscape Blocks and Fragments



What's next?
Project Prioritization

Connectivity

IRA!



Beyond Park Boundaries....

- Transfer knowledge to other national parks
- Connect and spread to adjacent land managers (the whole watershed!)
- Buffering the park through at-home stewardship

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