

Green Growth: Local & State Initiatives

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Brooke Massa, North Carolina Wildlife Resources Commission



AGENDA

Welcome & Introductions (12:00 – 12:15)

Green Growth in Chapel Hill (12:15 – 12:30)

NC Green Growth Toolbox (12:30 – 1:00)

Q & A/Discussion (1:00 – 1:30)

Chapel Hill Team

GIS and Analytics Division

Dave Almond

Office of Sustainability

Brennan Bouma

John Richardson

Planning Department

Judy Johnson

Tas Lagoo

Katherine Shor

Stormwater Management

Allison Weakley

**What does green growth
mean to you?**

Green Growth in Chapel Hill

Future Land
Use Map
(FLUM)

Open Space
Master Plan

Affordable
Housing
Strategy

Complete
Community
Framework

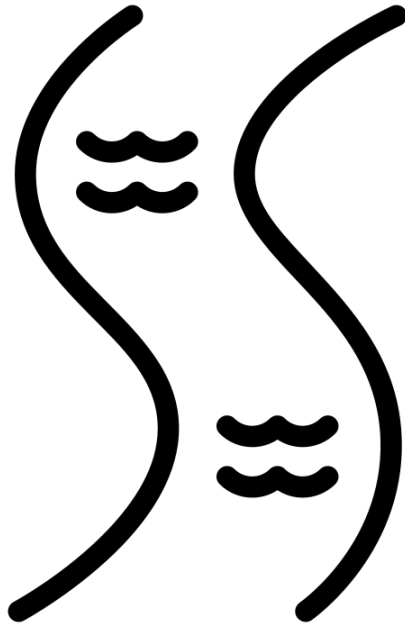
Climate Action
and Resilience
Plan

One Orange
Racial Equity
Scorecard

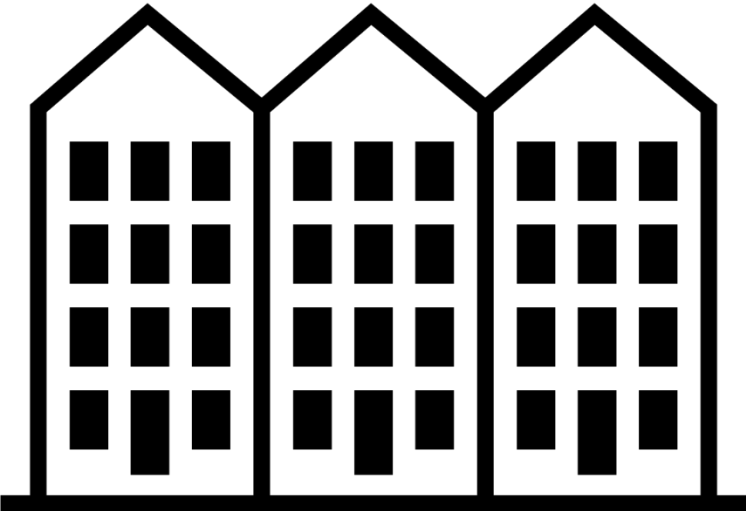
Mobility and
Connectivity
Plan,
Greenways Plan

Downtown
Together

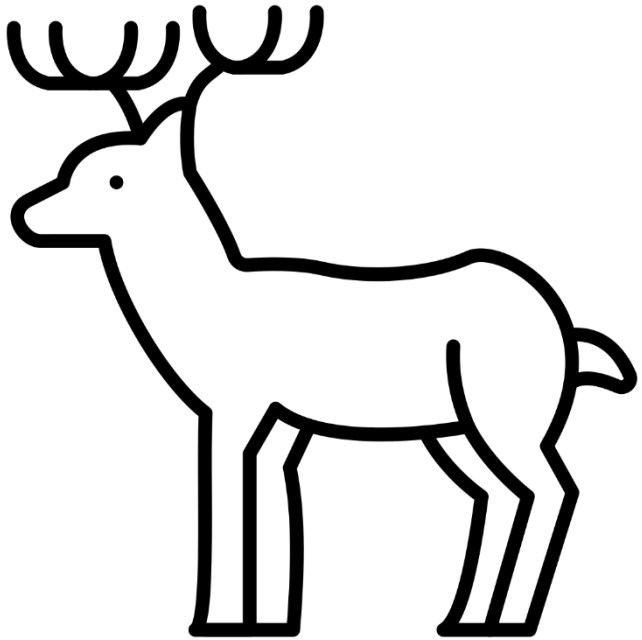
Green Growth in Chapel Hill



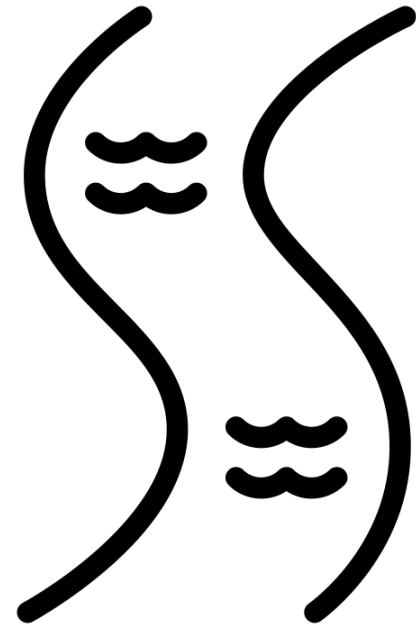
Water
Resources



Land
Use

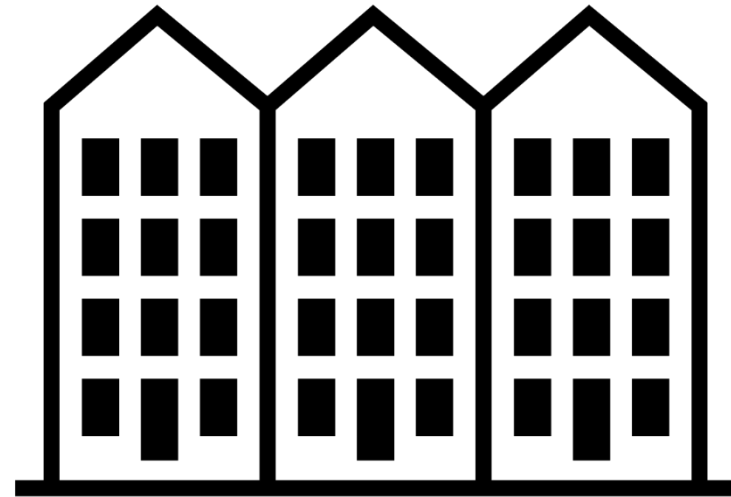


Wildlife
Habitat



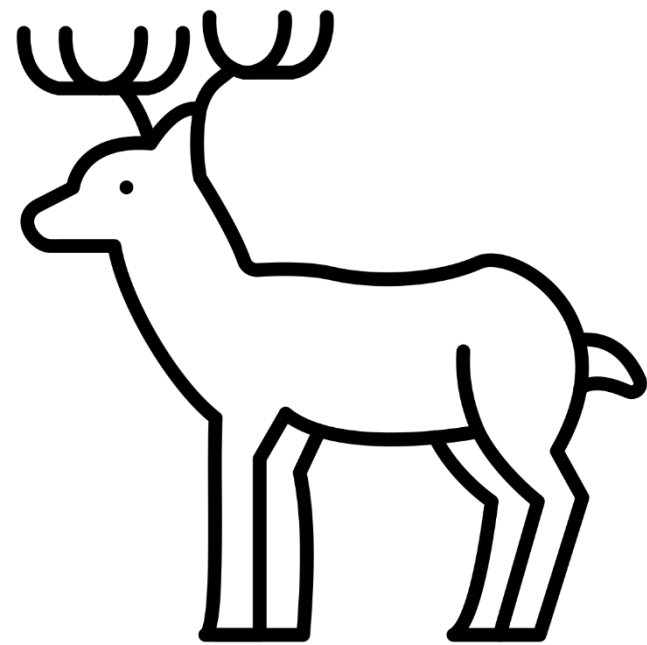
Water Resources

- Resource Conservation Districts
- Stormwater Regulations
- Flood Plain Regulations
- Water Supply Watershed Districts
- Climate Action Plan



Land
Use

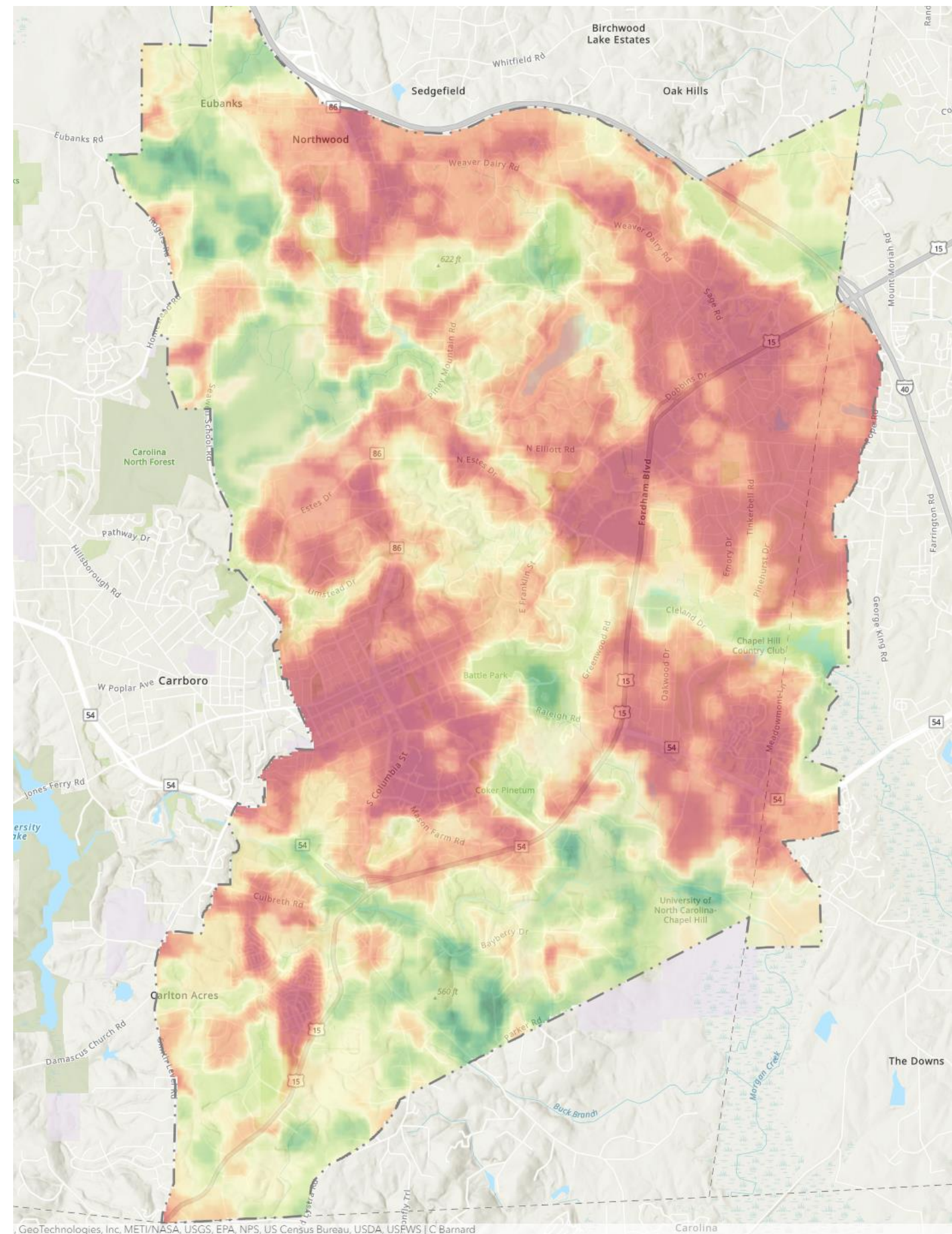
- Future Land Use Map (FLUM)
- Joint Planning Agreement (Rural Buffer)
- Climate Action Plan
- Complete Community Framework
- Rewriting Our Rules: LUMO Update
- Affordable Housing Strategy
- Transit-Oriented Development



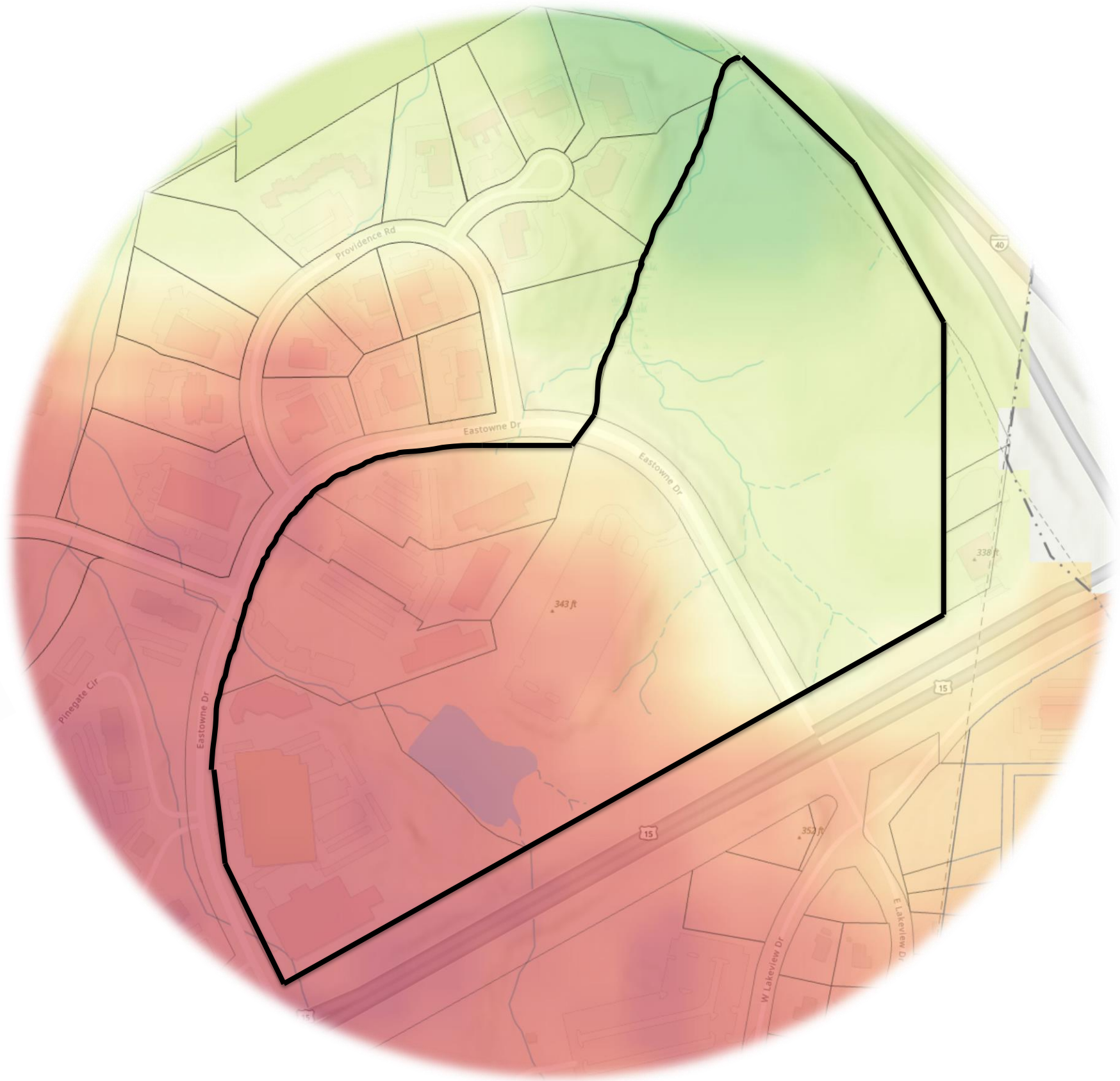
Wildlife
Habitat

- Resource Conversation Districts
- Parks and Open Space
- Partnerships with New Hope Bird Alliance, Triangle Connectivity Collaborative, NC Natural Heritage Program
- Natural Areas Assessment Tool for Staff Review of Development Proposals (BETA)

Assessment Tool



UNC Eastowne Property





GREEN GROWTH TOOLBOX

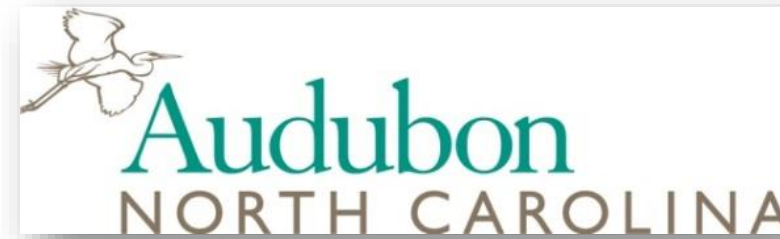
Wildlife and Natural Resource Stewardship in Planning



Brooke Massa
Land Conservation Biologist
NC Wildlife Resources Commission



Contributors and Partners





A **non-regulatory** technical assistance program for integrating priority wildlife habitat and natural resources conservation in land use & transportation planning

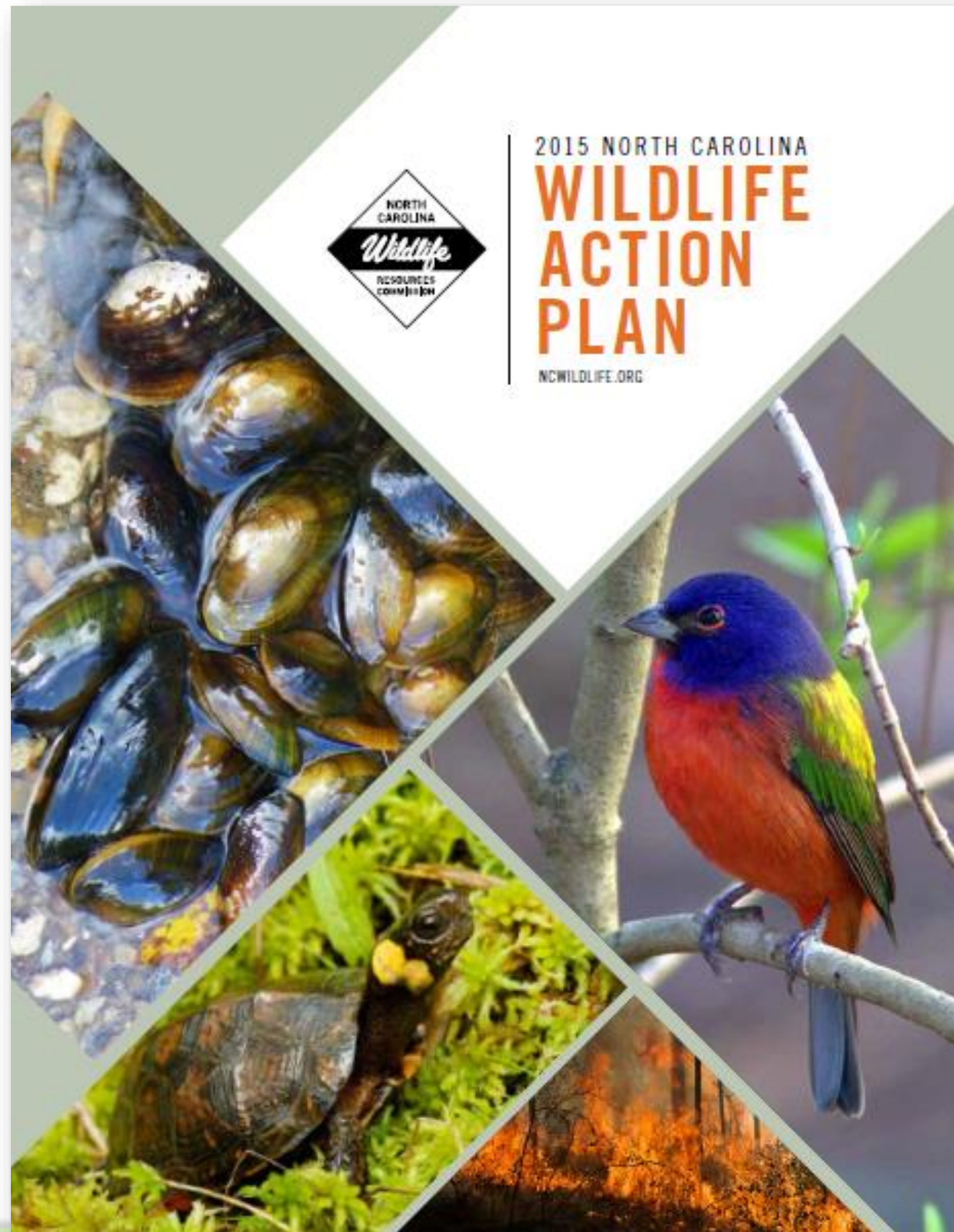


What is Green Growth?

Conserving **priority wildlife habitat** while continuing to grow the economy



The Status of Wildlife in North Carolina



- >450 Species of Greatest Conservation Need
- Development **patterns** are a top threat
- www.ncwildlife.org/plan

HABITAT LOSS AND FRAGMENTATION

Isolation and
degradation

+

Susceptibility to
edge effects



**BIODIVERSITY
DECLINE**



Bridging the Gap Between Wildlife Biologists & Land Use Decision Makers



Photo: Brady Beck



Elected Officials



Biologists

Wildlife conservation measures are a missing piece



Planners & Developers



Top Ten Benefits of Green Growth

1. *Climate Resilience*
2. *Better health all around*
3. *Economic returns*
4. *Environmental safeguards*
5. *Avoid environmental conflicts*
6. *Attract businesses*
7. *Increase prosperity*
8. *Generate tourist income*
9. *Reduce costs to taxpayers and local governments*
10. *Improve quality of life*

From a literature review of over 80 peer-reviewed articles



What is in the Green Growth Toolbox?

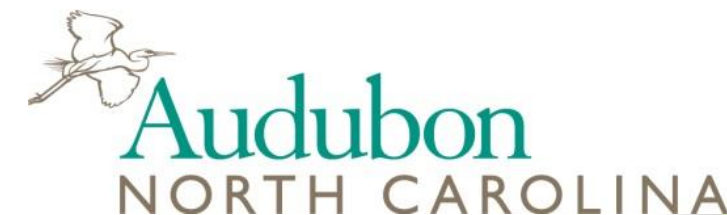


- Handbook
- Conservation Data
- www.ncwildlife.org/greengrowth
- Training workshops
- Technical assistance
- Some funding for local gov't conservation planning



Conservation Data

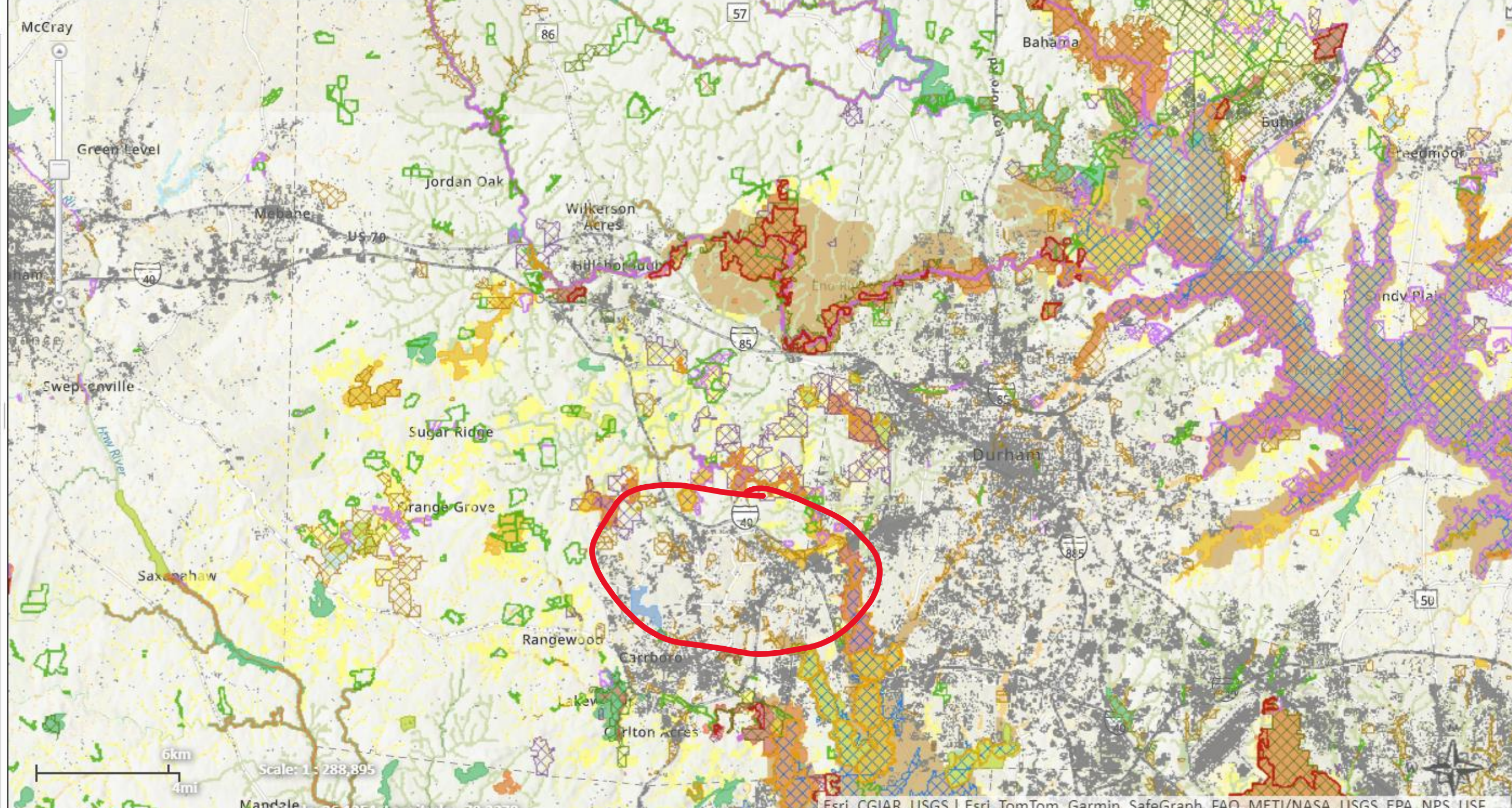
- > Subset of available data
- > Best suited for land use planning
- > Accessible through the NC Natural Heritage Program Data Explorer
- > Provide guidance on data interpretation





Layers | **Make a Map** | **Feature Search**

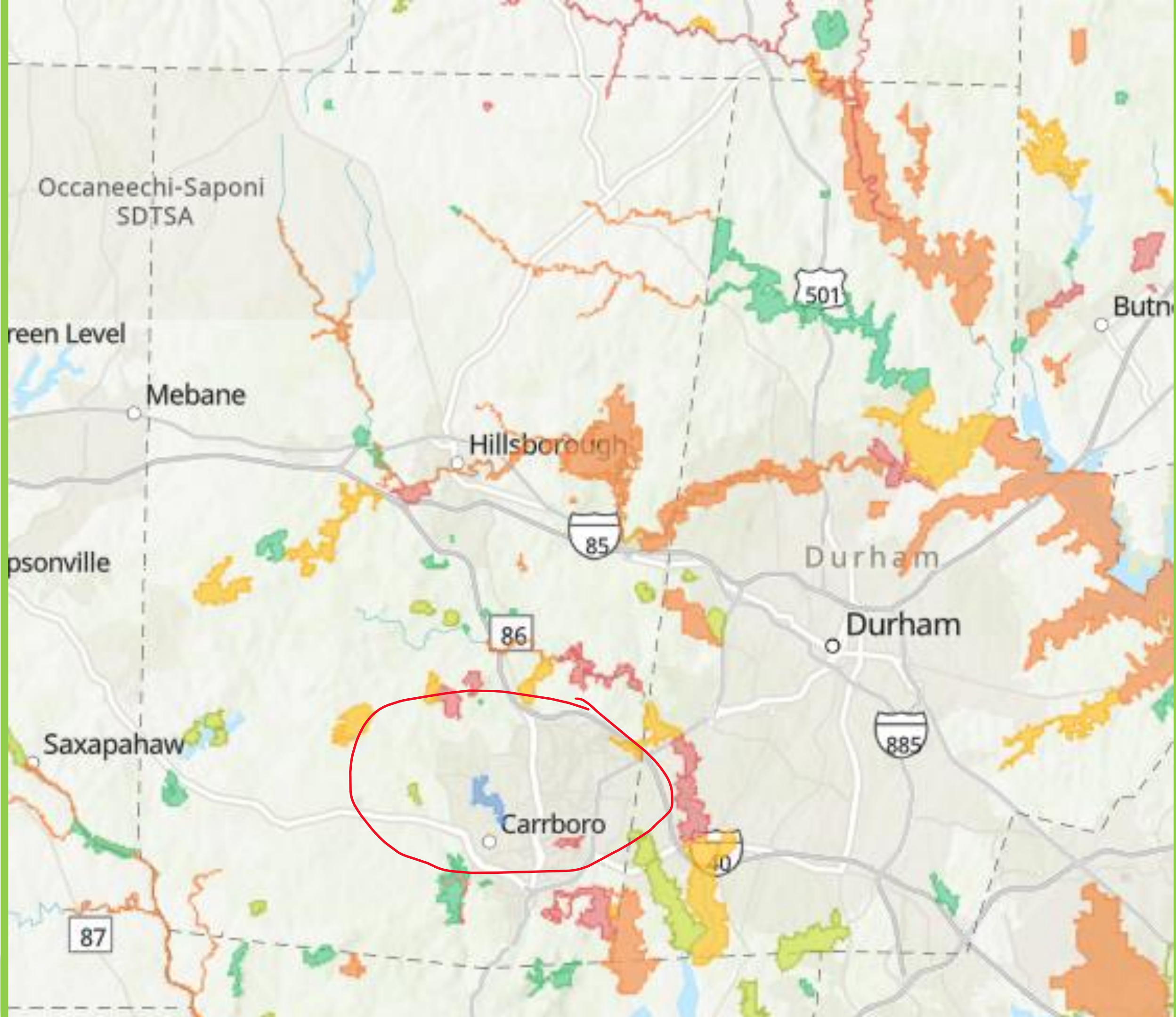
- ▼ Element Occurrences
 - Element Occurrences Tier 2
- ▼ Conservation Areas
 - Managed Areas**
 - Natural Areas**
 - Exceptional
 - Very High
 - High
 - Moderate
 - General
 - Unranked
- ▼ Conservation Planning Tool
 - Biodiversity & Wildlife Habitat Assessment**
 - 2012 Agricultural Lands Assessment (NCDA&C)
 - 2010 Forest Lands Assessment (NCFS)
- ▶ Regional Conservation Planning
- ▼ Land Resources
 - Game Land Hunting Safety Buffers (NCWRC)
 - Smoke Awareness Areas (NCWRC)
 - NRCS Soil Data
- ▼ Water Resources



Natural Heritage Natural Areas

✓ **Natural Areas**

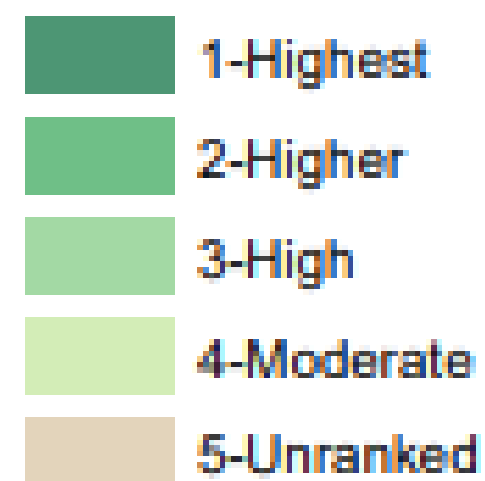
- Exceptional
- Very High
- High
- Moderate
- General
- Unranked



Habitat Connectivity

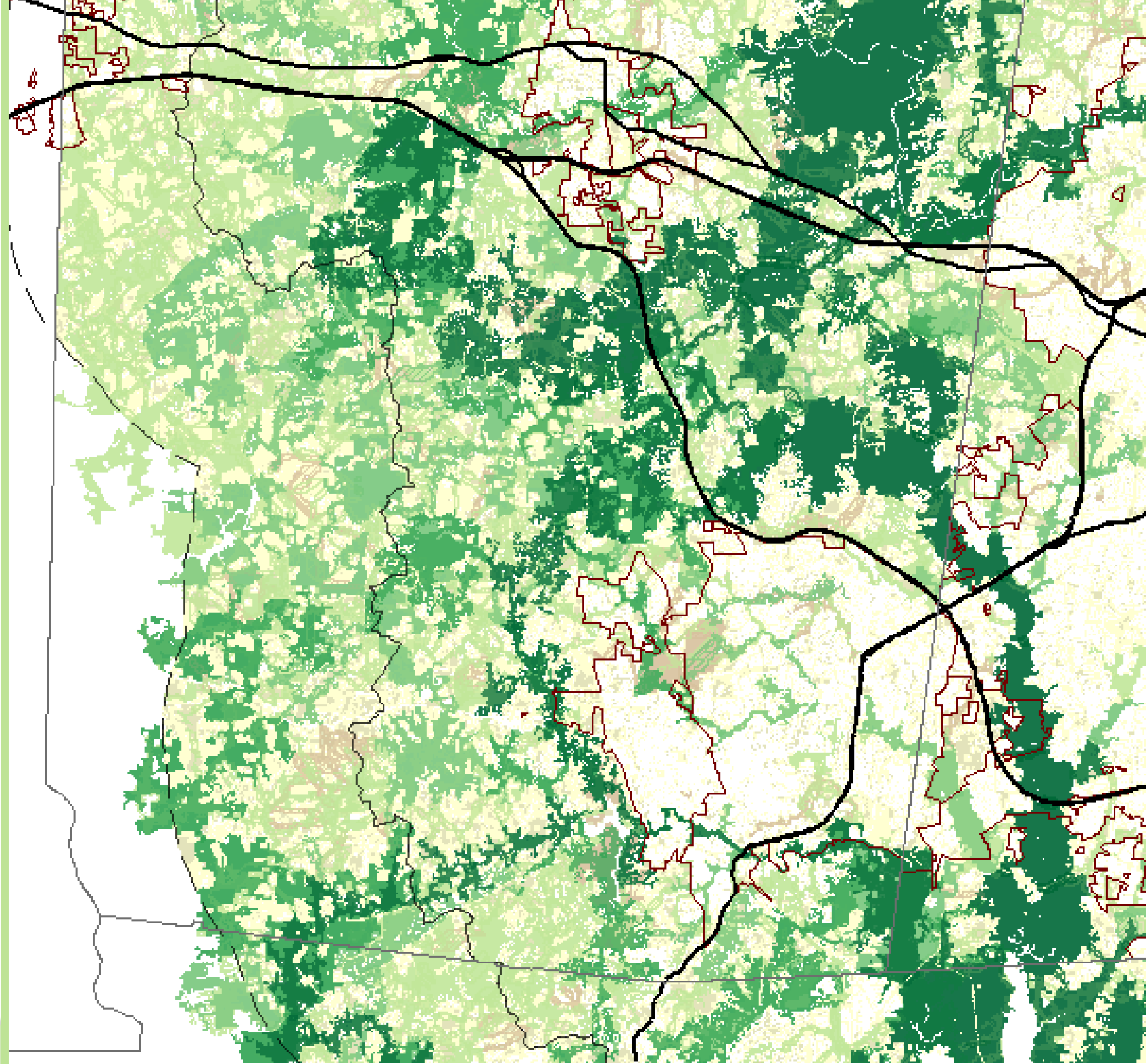
Habitat Patches

Connectivity Priority



Corridors

Connectivity Priority





NC Natural Heritage Species and Communities Search

Total Results: 199

Filter search results:

Taxonomic Group	Scientific Name	Common Name	NC Status	Federal Status	State Rank	Global Rank	County	County Status
Vascular Plant	<i>Agalinis decemloba</i> (syn. <i>Agalinis acuta</i>)	Piedmont Gerardia	W1	none	S3	G3G4	Orange	Current
Vascular Plant	<i>Agastache nepetoides</i>	Yellow Giant-hyssop	SR-P	none	S1	G5	Orange	Current
Freshwater Invertebrate	<i>Alasmidonta undulata</i>	Triangle Floater	T	none	S3	G4	Orange	Current

Isolated Wetlands & Headwater Streams

Four Toed Salamander



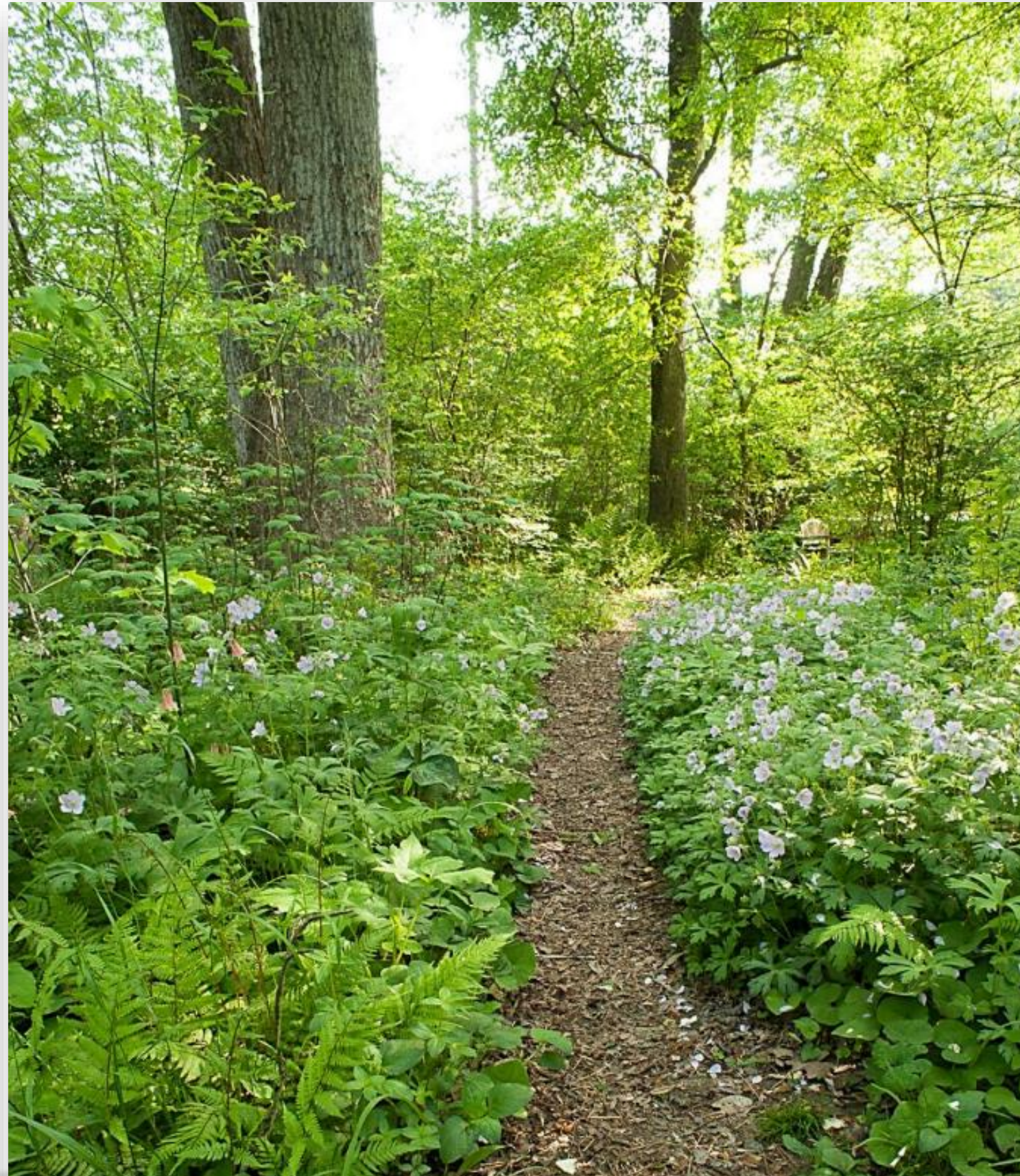
Streams

Carolina Creekshell
Chameleon Lampmussel
Eastern Creekshell
Notched Rainbow

Carolina Ladle Crayfish



Upland Mixed Hardwood Forests



Tricolored bat



Early Successional Habitats



Green Sweat Bee



© Heather Holm

Bumble Bee



© Heather Holm

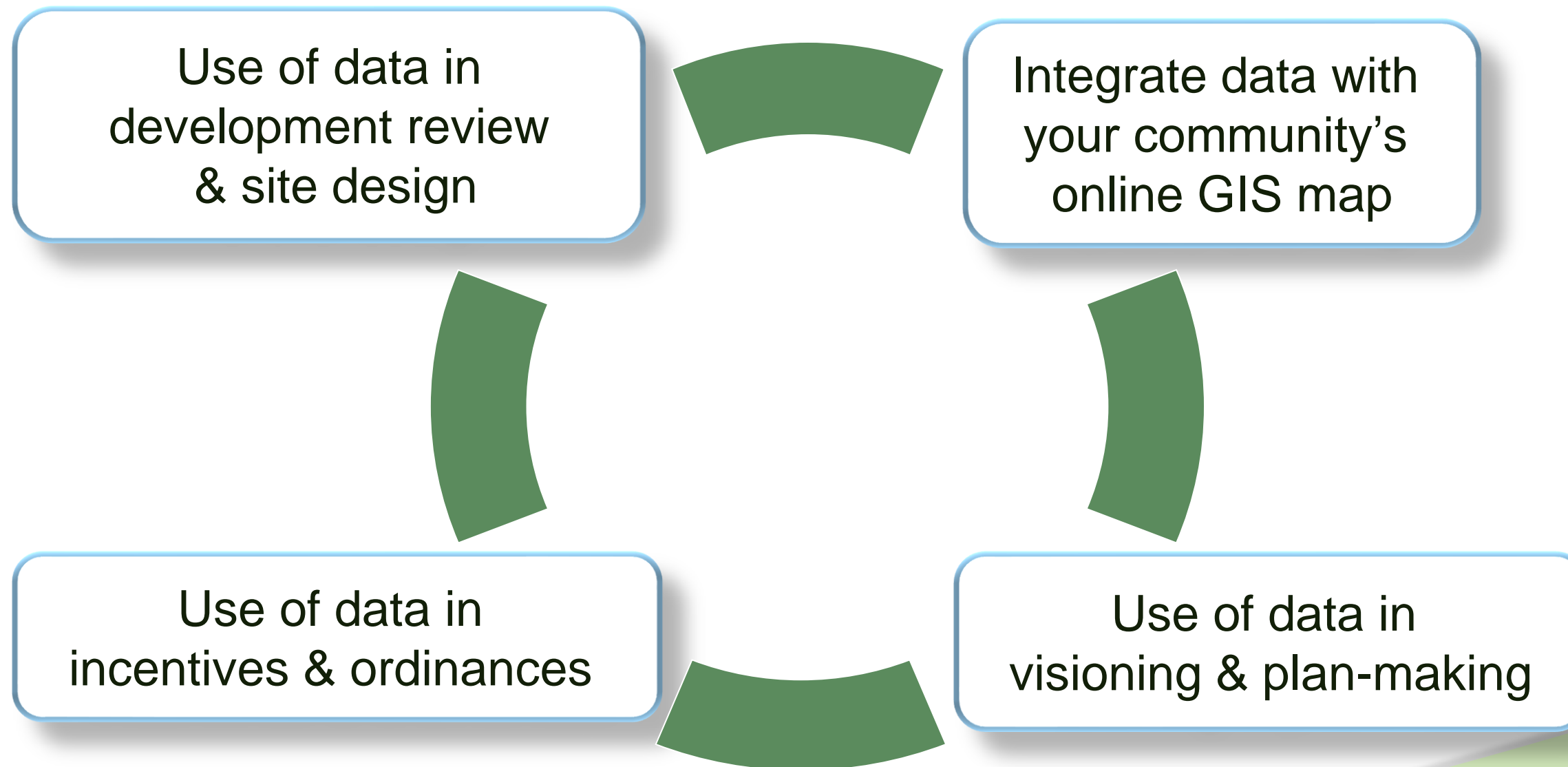
Leaf Cutter Bee





Using Conservation Data in Planning

Four Components





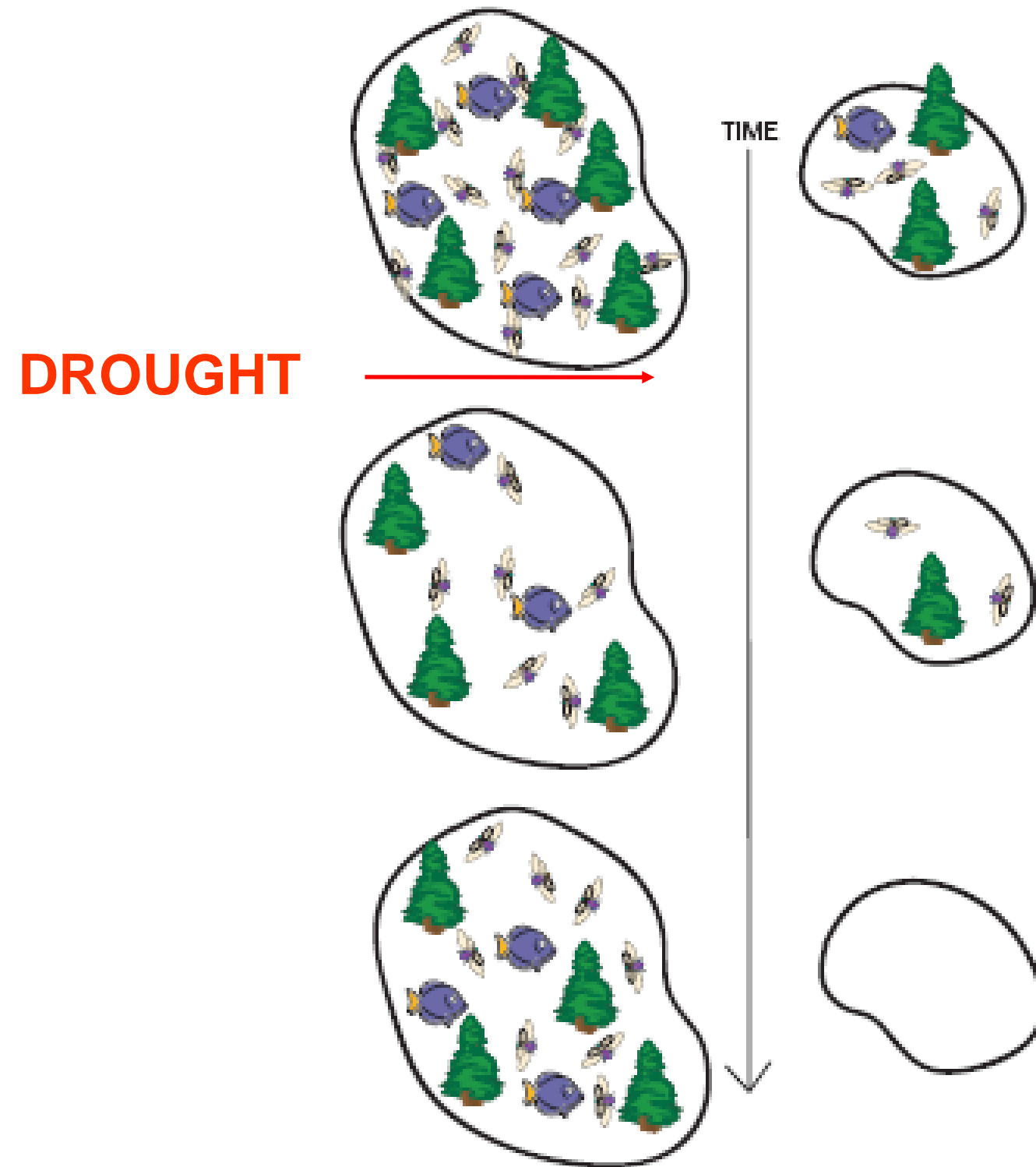
Green Growth Guiding Principles:

Protect, connect, and buffer



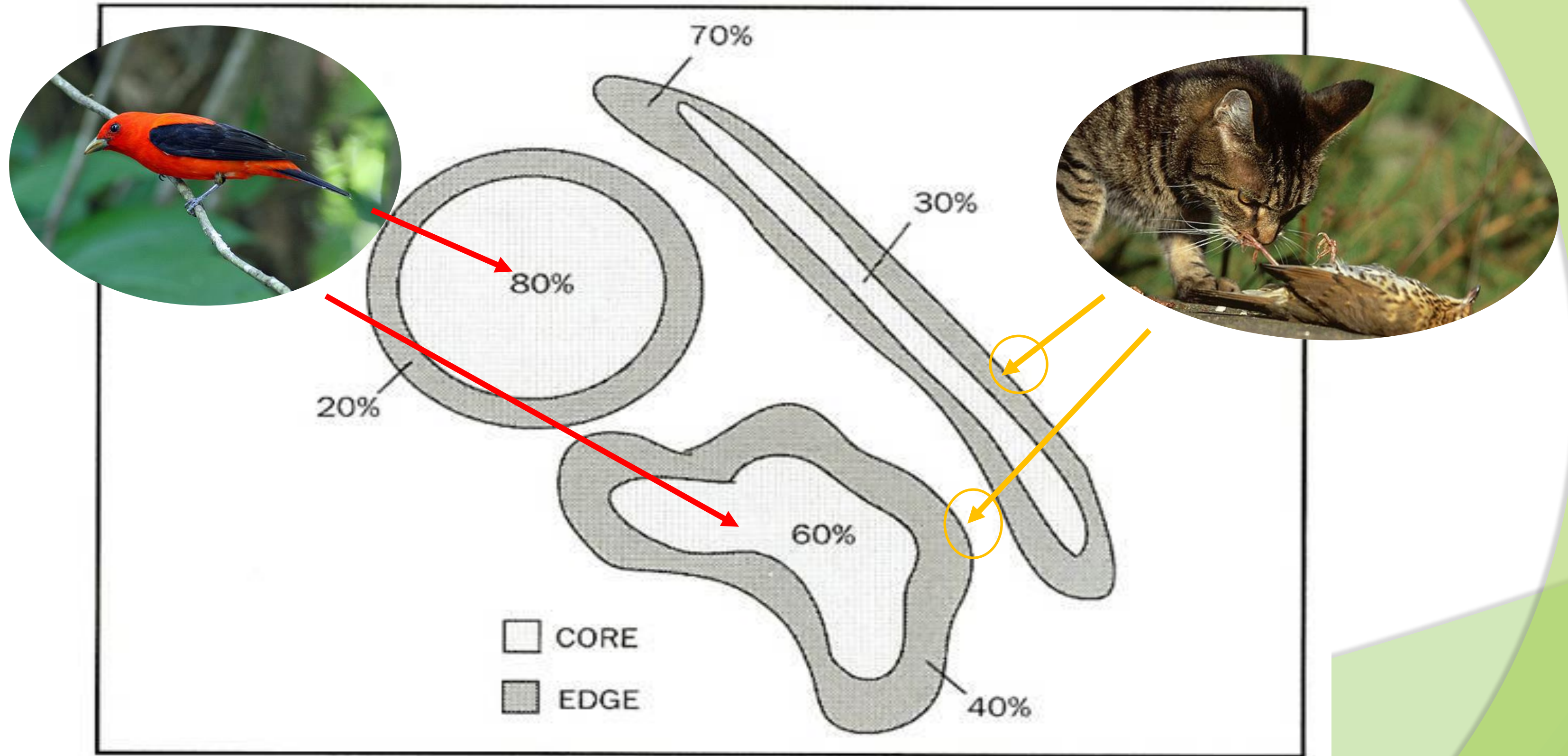
PROTECT: Larger habitat blocks support more species & larger populations

Maintain **Large** Areas

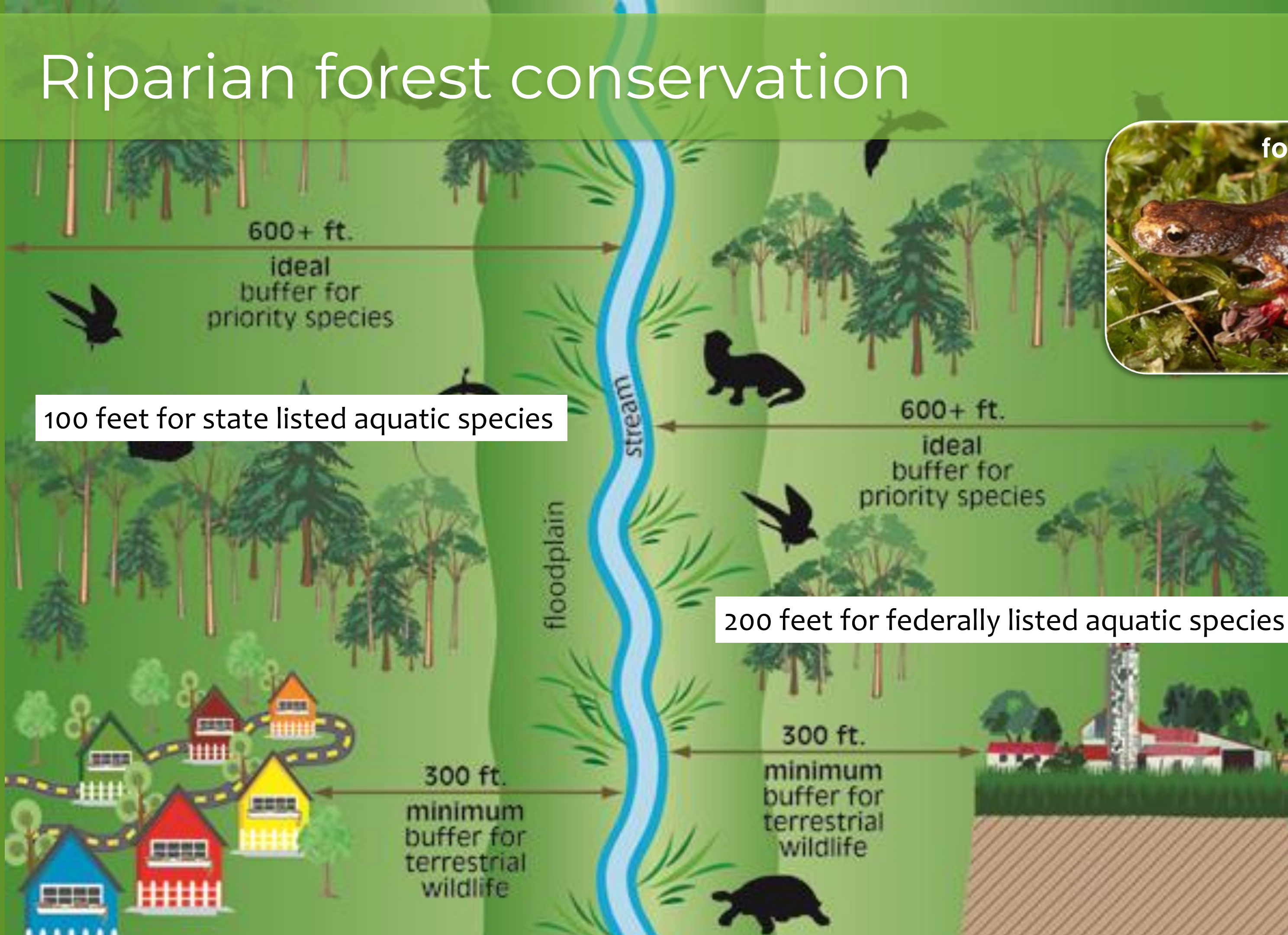


- > Increased diversity
- > Increased resiliency

BUFFER: Minimize edge impacts



Riparian forest conservation



100 feet for state listed aquatic species

200 feet for federally listed aquatic species

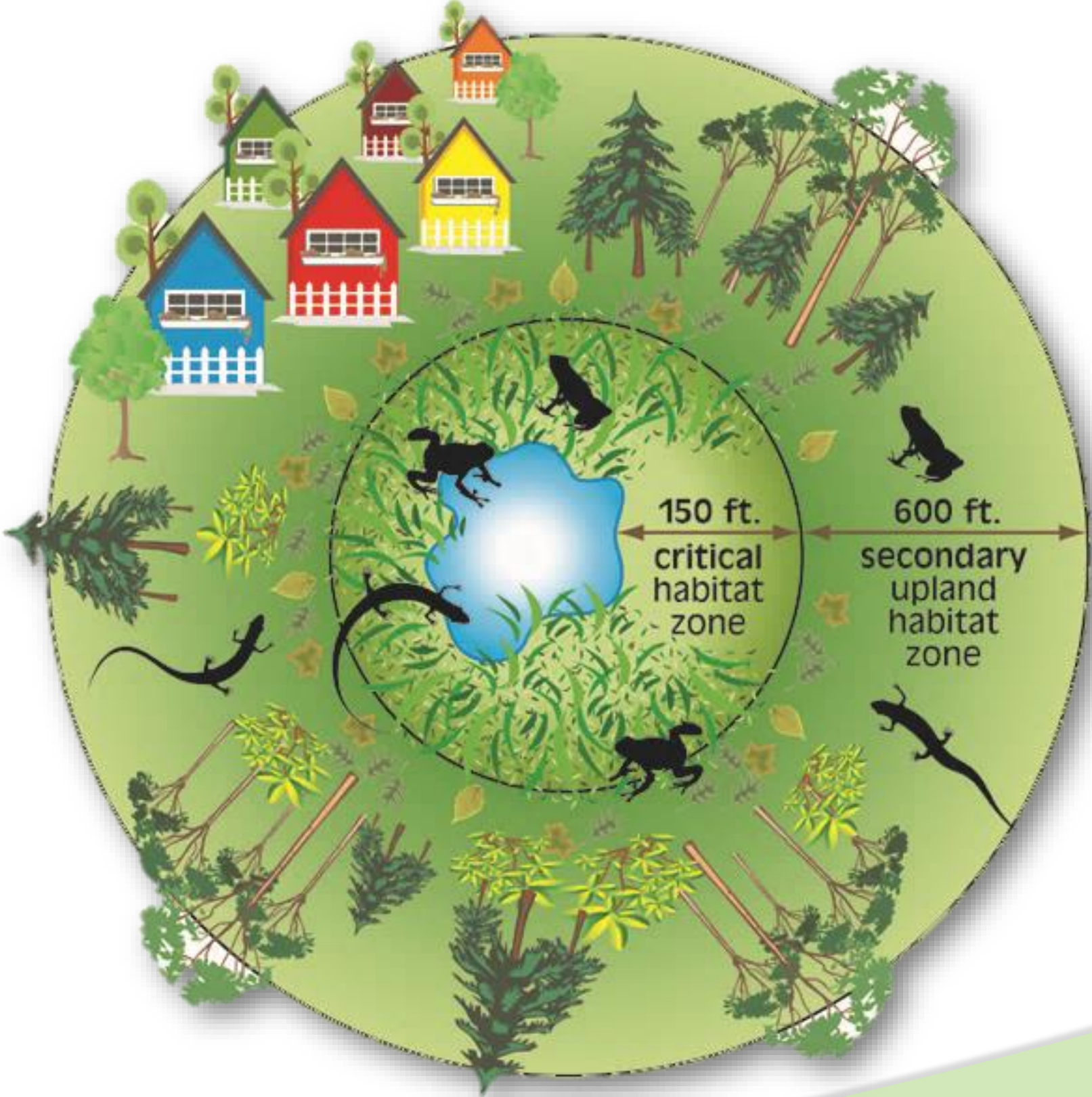


four-toed salamander

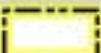







Tricolored bat


Small Wetland Recommendations: Habitat Buffers



Attachment E, Patterson Place Compact Suburban Design District Steep Slopes and TUA Map

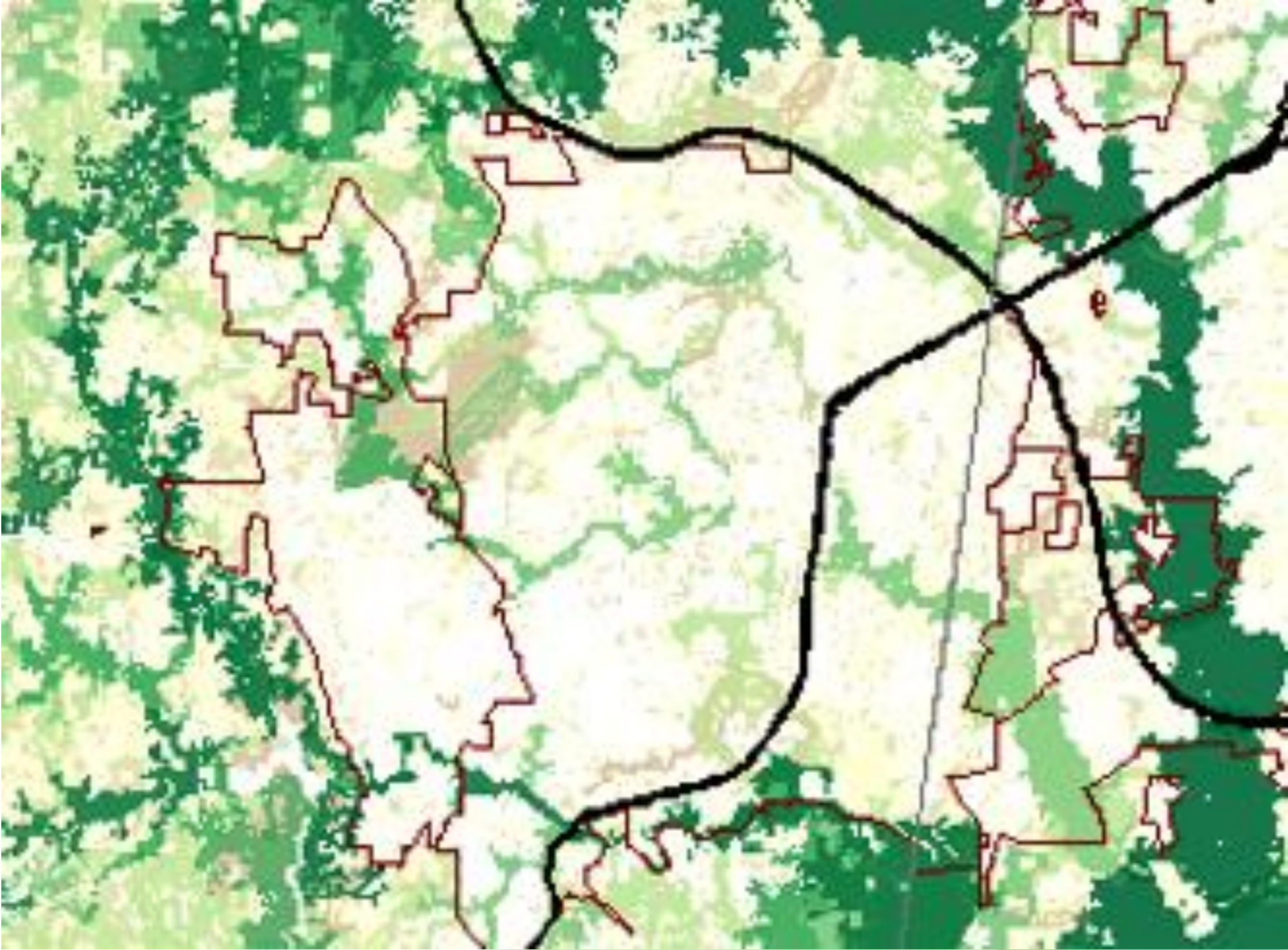
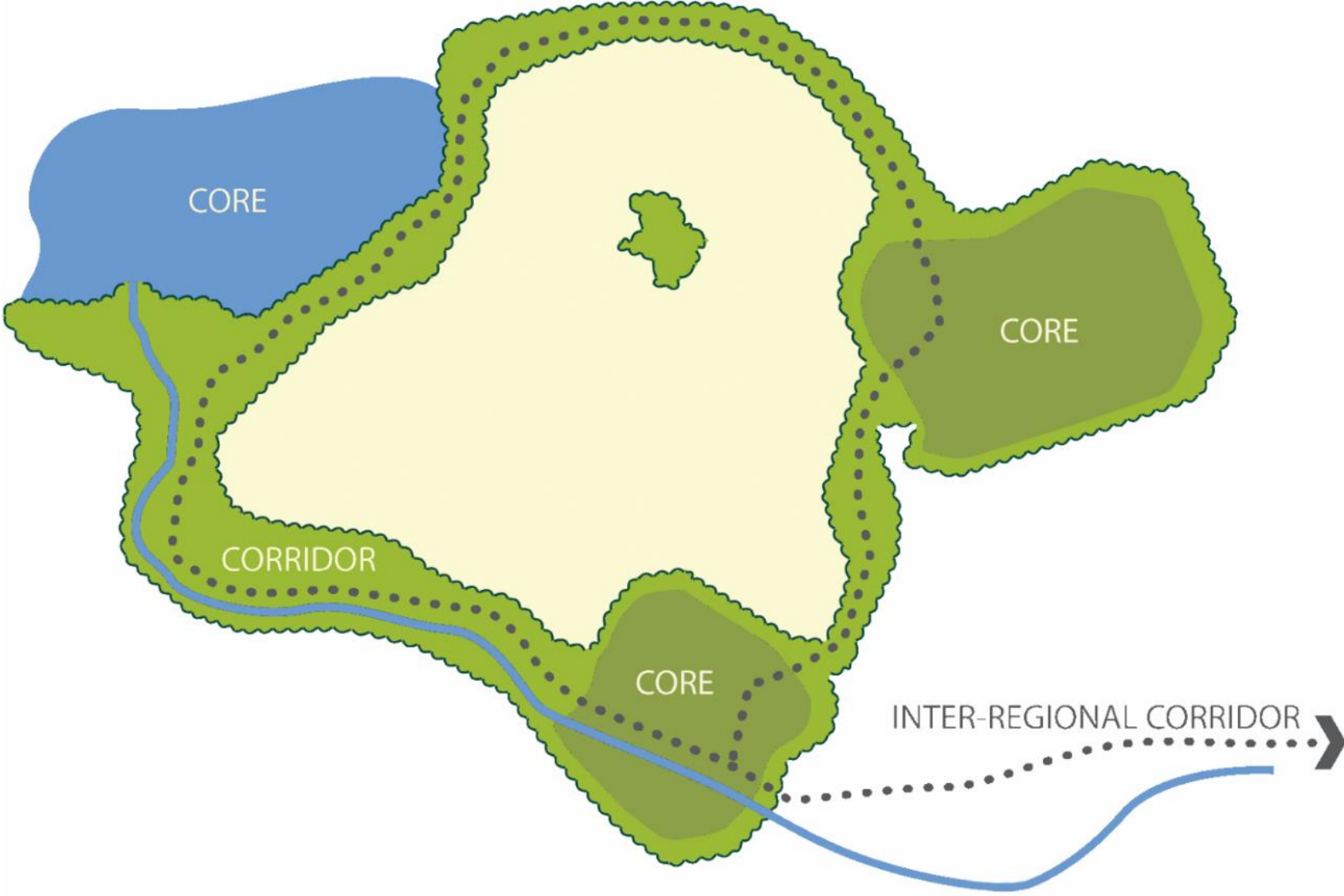
-  Patterson Place Compact Neighborhood
-  Transitional Use Area
-  Slopes at 25% or greater
-  Slopes at 15% or greater
-  Streams
-  Parcel Lines

0 500 1,000 2,000 Feet

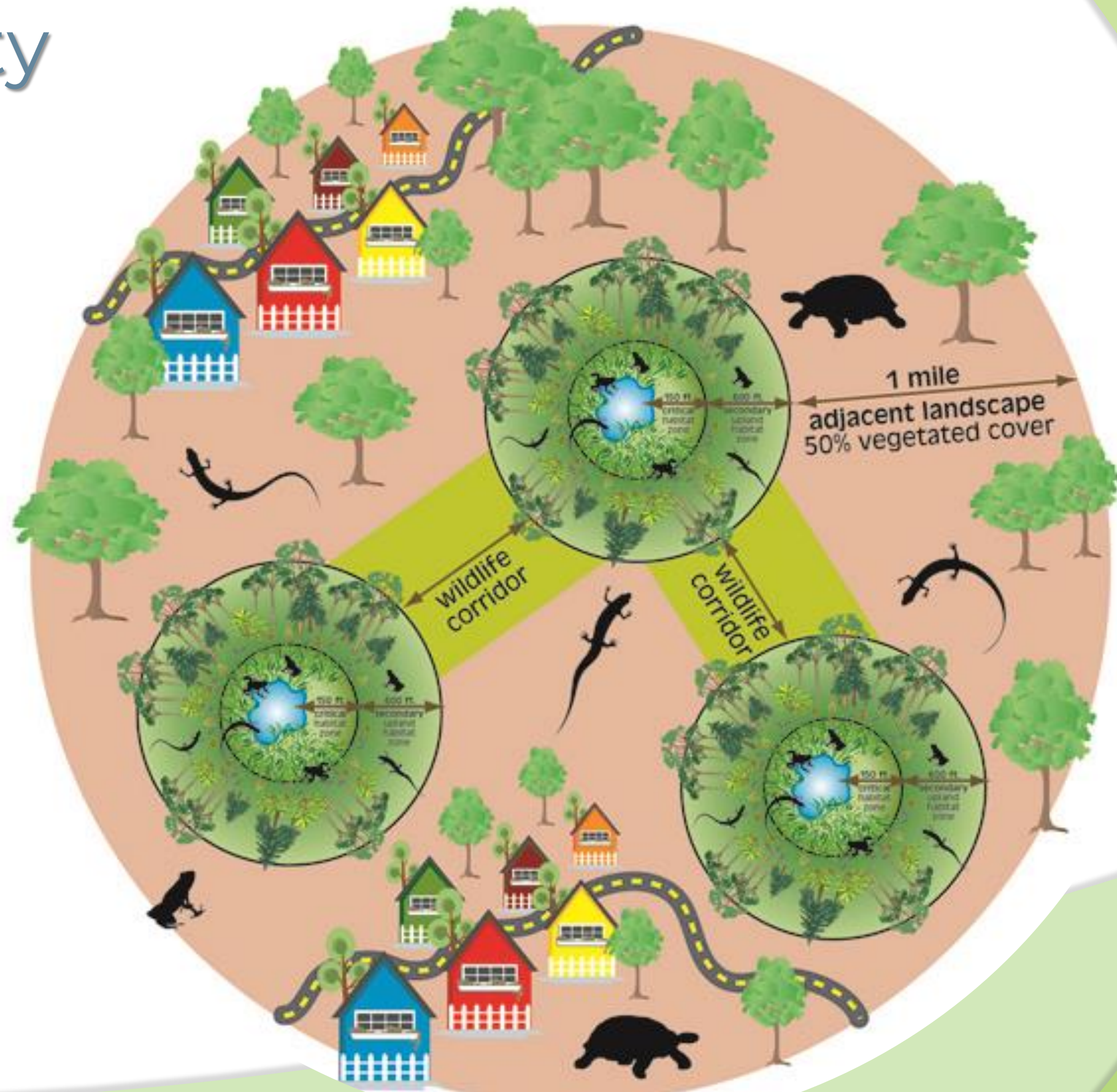


Connecting habitat core areas

Greenway



Small Wetland Recommendations: Wetland Connectivity



Green Incentives & Ordinances

Principles:

- > Use Conservation Data as the first step (e.g. rezoning, development plans)
- > Effective conservation development incentives
- > **Remove barriers** to & **Enable** conservation-based practices.
- > Links to existing example ordinances in Handbook & website



FIGURE 5: CONCEPTUAL CONVENTIONAL SUBDIVISION ILLUSTRATION



FIGURE 6: CONCEPTUAL CONSERVATION SUBDIVISION ILLUSTRATION

LUMO Update

- > Configure open space to be connected throughout Chapel Hill
- > Develop open space design criteria to enhance the protection of natural resources
 - > What is priority to protect?
 - > For natural area open space: aim for connectivity and buffers
- > Zoning? Resources Conservation District (adding connectivity data?)

Thanks! Questions?

Brooke Massa

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919-630-3086

www.ncwildlife.org/greengrowth



American Kestrel

Questions?
Thoughts?
Ideas?

MORE INFO

- Climate Action Plan
- Rewriting Our Rules: LUMO Update
- Complete Community