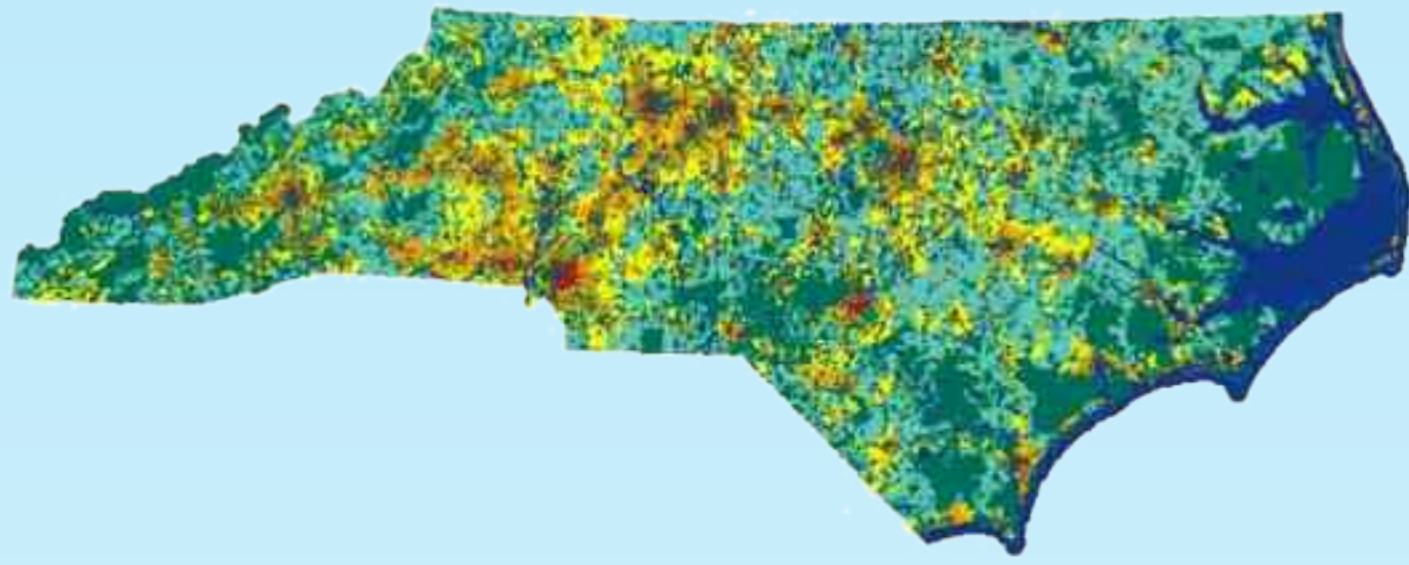


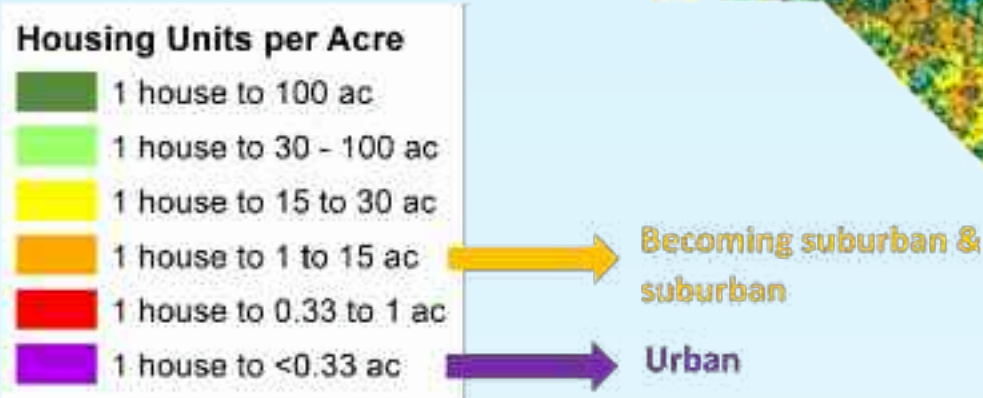
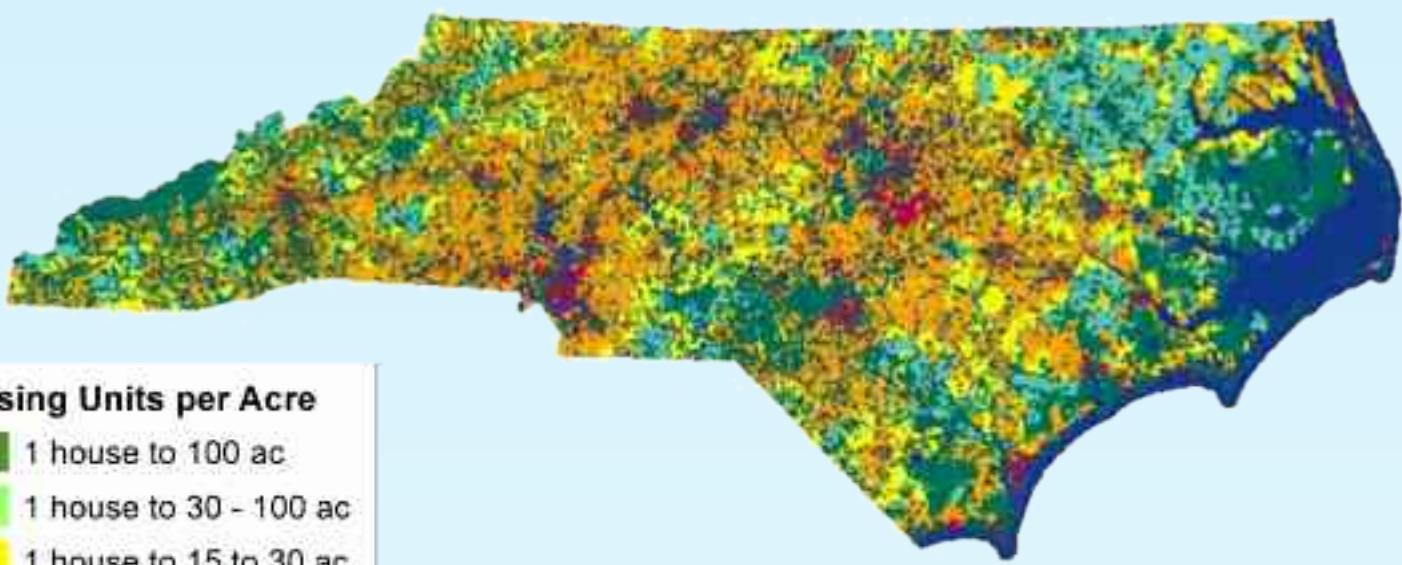
Housing Density 1980



Housing Density 2010



Housing Density 2030



## Development can reduce habitat connectivity and isolate populations of wildlife.

- Many songbird species are steadily declining with the loss of large acreages of forest (75 to 500+ contiguous acres).
- Amphibians and reptiles experience almost 100 percent mortality when crossing roads with over 2,000 cars per day (1.4 cars per minute).
- Bald eagles, herons, and egrets often abandon their nests when development occurs within 330–1,000 feet of their nests.

## Keep ecosystems healthy by maintaining a connected network of healthy habitats.

- Maintain large, wide blocks of contiguous general habitat to avoid habitat fragmentation.
- Within general habitats, protect rare landscape features, riparian corridors, sensitive areas, and associated species.
- Maintain rural landscape around existing protected lands and between protected lands.
- Allow patterns of natural disturbance to continue such as periodic fire and stream flow patterns.
- Landscape with native plants and control the spread of nonnative, invasive species.

## Spread-out development patterns, driven by land use and transportation decisions, are a top threat to biodiversity in NC.

- Five times more land is developed for each person today than in the 1970s.
- Over 100,000 acres of forests, pastures, and farms are developed each year.
- Over 30% of streams sampled for water quality are classified as impaired.
- NC has the most “sprawl centers” in the US.

[ncwildlife.org/greengrowth](http://ncwildlife.org/greengrowth)



Over one third of the 1,000 wildlife species in our state are declining, mostly due to habitat loss and fragmentation.

Box Turtle





## WHAT IS THE GREEN GROWTH TOOLBOX?

A non-regulatory guide & technical assistance program for integrating priority wildlife habitat conservation in local government land use planning.



### PURPOSE:

- To help maintain habitat connectivity across the landscape and the ability to manage habitats
- To reduce development encroachment around existing protected areas
- To minimize impacts

### GREEN PLANNING

Integrating wildlife habitat protection into land use planning is a fundamental step in protecting biodiversity in growing communities.

The Green Growth Toolbox helps communities develop plans that:

- Identify important areas to protect for wildlife
- Design land use districts and policies that prevent spread-out development and encourage centralized growth that avoids priority wildlife habitats



### GREENING INCENTIVES & ORDINANCES

The Green Growth Toolbox provides guidance on conservation-based ordinances that:

- Provide incentives for conservation of unfragmented habitat
- Encourage development in town centers
- Remove barriers to resource conservation
- Ensure that rural areas maintain character and natural resources
- Reduce the need to build costly new roads and utilities
- Achieve a landscape of conserved and connected habitat and natural resources

**GREENING DEVELOPMENT: LOCATION, DESIGN & REVIEW**  
Developers, consultants, and engineers can "green" site design by:

- Selecting sites in town centers and not next to conservation areas
  - Designing developments using maps of priority wildlife habitat
  - Applying for Wildlife Friendly Development Certification ahead of site design
- [ncwildcertify.org](http://ncwildcertify.org)



### WHAT IS IN THE GREEN GROWTH TOOLBOX?

- Handbook
- Conservation data (habitat maps)
- Model Natural Resources Conservation Ordinance
- Free training workshops and technical assistance
- Partners for Green Growth funding for local governments
- [ncwildlife.org/greengrowth](http://ncwildlife.org/greengrowth)



## BENEFITS OF GREEN GROWTH

Section 1 of the Green Growth Toolbox handbook contains links to over 65 scientific articles on the benefits.

### Decreased costs and taxes:

- Taxpayers save thousands of dollars per household when towns build near their centers and reduce the costs associated with extending road, sewer, and water services.
- Green site design for developments, with protected natural areas, can increase property values by 25–33%, even in rural areas. Conserving two-thirds of the site can double the premium.
- In SC, developers of 10 neighborhoods that used conservation design saved an average of \$10,000 per lot compared with conventional design costs.

### Healthier communities:

- Research shows that North Carolina communities with access to natural areas have lower rates of obesity.
- Spending time in nature reduces stress and depression, the leading causes of lower economic productivity.

### Preservation of ecosystem services has significant economic returns.

- Natural ecosystems provide us with more than thirty-three trillion dollars world-wide in free services—flood control, water and air purification, decomposition, crop pollination, groundwater recharge, and climate regulation.
- National Wildlife Refuges in NC provide \$166 million per year in ecosystem services.

### Protection of our communities from natural disasters like flooding, drought, and climate change

- Communities in NC are conserving natural floodplains in order to avoid loss of life and expensive property buybacks.
- For every dollar spent on prescribed fire to improve wildlife habitat and protect against wildfires, \$2.14 was saved in wildfire fighting and property damage reduction.



### OUTCOMES SINCE 2010

- Trained over 450 local planners and decision-makers from over 90 counties, towns, and cities
- Provided technical assistance to 40 communities
- At least 16 land use plans, 6 long-range transportation plans, and 13 ordinances or ordinance reviews have used the Green Growth Toolbox



Two-thirds of our crops are pollinated by non-domestic native insects and birds.



Northern Saw-whet Owl



Black Bear

Mudpuppies and other aquatic life need cool, clean water or they die out from streams.

