

## A Brief History of the Duke Forest

The Duke Forest was established in 1931, when the small abandoned farms and pockets of forested lands that Duke University had purchased in the mid-1920's were put under the direction of Dr. Clarence Korstian. Dr. Korstian, the first Director of the Duke Forest and founding Dean of the School of Forestry, practiced a variety of forest management activities in those early days, with the revenue derived from timber sales and other forest products used to expand the land base. Today the Duke Forest has grown to six divisions in three counties and covers approximately 7,000 acres of land. Operational costs continue to be largely provided by the sale of forest products.

The Forest's primary mission is to provide a natural outdoor laboratory for the advancement of research and teaching activities in the natural sciences. The Duke Forest's original purpose, to promote and advance forestry research and education, has expanded to support activities in a variety of disciplines related to environmental science and policy. Along with fulfilling this primary role, the Duke Forest has become a popular place for recreation and general outdoor enjoyment for the growing Triangle community.

## A Special Thanks . . .

The Civilian Conservation Corps (CCC) completed much of the modern day road and bridge system in Duke Forest during the Great Depression of the 1930's. The recent development of the National Civilian Community Corps (NCCC) as part of the AmeriCorps program has provided the Duke Forest with much needed assistance on various improvement projects. These projects include trail restoration, enhancement of research sites, design of the original Shepherd Nature Trail and construction of the Ross Picnic Shelter.

Many community groups, including Eagle Scouts and the NCCC, have made significant contributions to the development and maintenance of the Shepard Nature Trail.

*(For information on volunteering for the Duke Forest, please call us at 613-8013.)*

## Regulations for Use of the Duke Forest

We appreciate your interest in the Shepherd Nature Trail. In order to maintain the high quality of research that is possible in this area, we ask that you do not stray from the path. The integrity of several long-term studies depends on your adherence to this request and the guidelines below.

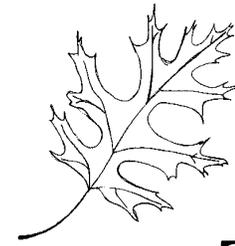
The Duke Forest can continue to provide a place for teaching, research, and recreation only with your help. When visiting the Duke Forest please respect the following rules:

- Access is only permitted on forest roads, trails posted "Designated Access Area," and picnic areas.
- For your safety, enter only during daylight hours.
- Do not block forest gates. These roads are maintained for emergency and management access.
- Please control your pets. Dogs must be leashed at all times.
- No cars or motorcycles are permitted on forest roads, except those at or leading to picnic sites.
- To prevent erosion and compaction, horseback riding or mountain biking are restricted to maintained roads.
- No fires are permitted within the forest, except in fireplaces and grills at designated picnic areas.
- No hunting or carrying of weapons is permitted at any time within the forest.
- Overnight camping is prohibited in all forest divisions.
- Please do not disturb vegetation in any way. Leave only footprints, take only pictures.

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## Precautionary Measures

Soil erosion is one of the largest problems caused by recreational use of the Duke Forest. In designing the trail, we have incorporated features to help reduce erosion caused by foot traffic. To further reduce the risk of erosion we ask that no horses or bikes be used on the trail and that people and pets avoid streambeds. Please take good care of the Forest we all share. Thank you for respecting these rules.



# The Shepherd Nature Trail

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Please visit [www.dukeforest.duke.edu](http://www.dukeforest.duke.edu) for the latest Forest news, volunteer opportunities, and tour schedules.

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**DUKE FOREST**  
Teaching & Research Laboratory  
ESTABLISHED 1931

## The Shepherd Nature Trail

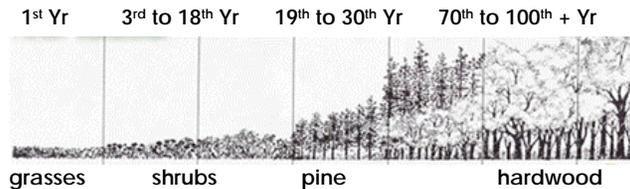
The Shepherd Nature Trail crosses a range of ecosystems, from wet bottomlands to rocky hilltops, typical throughout the Piedmont region. The Piedmont is not unique to this state, but actually represents the hilly region - between the Coastal Plain to the east and the Mountains to the west - that extends from New York City to central Alabama. It reaches its widest point in North Carolina, stretching 125 miles across the state.

Despite the variability in slope and agricultural productivity of Piedmont soils, almost nine-tenths of the entire region has been under cultivation at some point since the first European settlers penetrated the Piedmont frontier. It is therefore not surprising that almost two-thirds of Duke Forest consisted of bare, abandoned farmland at its time of purchase in the 1920's.

This trail is named for the Shepherd family, who farmed this land prior to its purchase by Duke University.

## How a Field Becomes a Forest

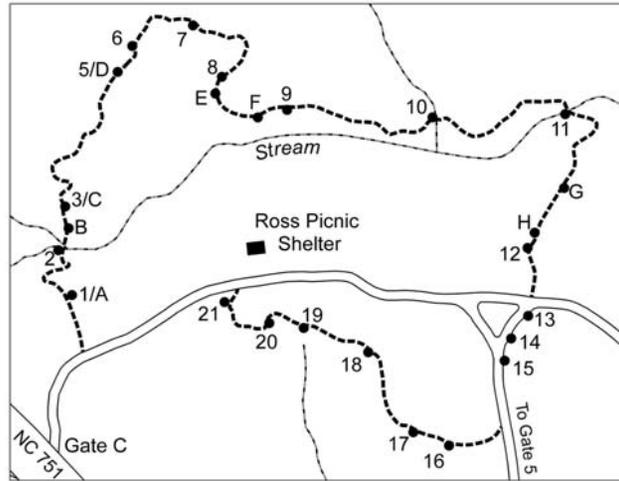
Much of the Duke Forest was abandoned farmland at the time of its purchase. Over-worked and eroded by the effects of wind and rain, the soils had lost many of the life-giving nutrients necessary for the survival of healthy crops. As it became increasingly difficult to eke out an existence, many farmers dropped their plows for good and moved into the growing cities to work. Open expanses of eroded, weather-beaten fields remained.



How is it that barren farmland was able to become the forests of today? The answer lies in a process known as "succession," a natural pattern of ecosystem change that takes place over time. In the case of abandoned farmlands, hardy weeds first colonized nutrient-poor fields and stabilized the soil with their roots. As the soil recovered its fertility, larger shrubs shaded out the lower-growing plants, which in turn gave way to young pines and other sun-loving trees.

Over time, as the pines became taller, other species began to grow underneath. Unless some disturbance event resets the cycle, these shade-tolerant broadleaf species will eventually replace the pines, creating a mostly "hardwood" forest.

## Nature Trail Map & Information Signs



### Nature Notes

1. Shepherd Nature Trail
2. American Beech
3. Eastern Redcedar
4. White Oak
5. Red Maple
6. The Woodlot
7. Fallen White Oak
8. Yellow Poplar
9. Sweetgum
10. Intermittent Streams
11. Water Springs Eternal
12. Forest Measurements
13. Site Index
14. Research Plots 4-9
15. Research Plots 24-26
16. Loblolly Pine
17. Flowering Dogwood
18. Current Forest Research
19. Remnants of the Past
20. Soil Loss
21. Shepherd Nature Trail

### Management Notes

- A. Hurricane Fran
- B. Tree Rings
- C. Canopy Gaps
- D. Stump Sprouting
- E. Tree Snag
- F. Soil Formation
- G. Salvage Logging
- H. Regenerating a Forest

## In the Wake of Hurricane Fran

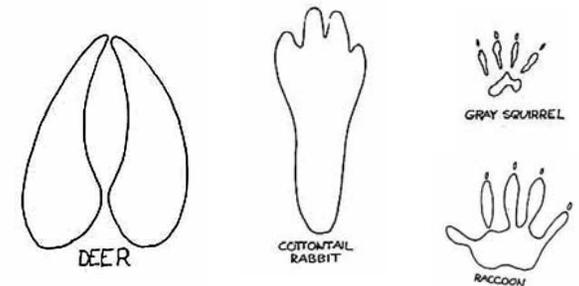
On September 6, 1996, Hurricane Fran blew through the Duke Forest, bringing with it torrential rains and microbursts of 80 miles per hour. The hurricane caused extensive damage throughout the Forest, including large portions of the Shepherd Nature trail. In sections of this nature trail, over 80% of the canopy trees were blown down.

Hurricane Fran has changed the face of the Piedmont forest for decades to come. Many of the ecosystems common to this region depend upon disturbances such as hurricanes to kickstart their reproduction. Many oak acorns, for instance, will lay inactive in the soil for years after falling from their parent tree. It takes the sudden flood of sunlight after a storm opens the canopy for the tiny shoot to begin growing.

Before Hurricane Fran, this nature trail would have wound through majestic oak, hickory and pine groves. Some day soon, as the young trees mature and shade out their crowding neighbors, the trail will return to that state - until the next storm comes along, of course.

## Forest Life

Do you recognize these footprints?



Listen for these birds:

### Bird

- Blue Jay
- Carolina Wren
- American Goldfinch
- Eastern Bluebird
- Eastern Phoebe
- Ovenbird
- Carolina Chickadee
- American Robin

### Sound

- jay-jay-jay*
- tea-kettle tea-kettle*
- per-chick-a-ree*
- chewy-chew-wit*
- fee-beeee (raspy)*
- t-cheer t-cheer t-cheer*
- chick-a-dee-dee-dee*
- cheer-a-lee (whinny)*