

*A COMPREHENSIVE CONSERVATION PLAN  
FOR CHATHAM COUNTY, NORTH CAROLINA*

***SUMMARY REPORT***







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**SUMMARY  
REPORT**

**contents**

p7	Introduction
p9	Forest Lands
p11	Water
p17	Agriculture
p20	Biodiversity and Wildlife Habitat
p22	Nature Based Recreation
p 28	Appendix 1: Mapping Tool

Prepared by Triangle Land Conservancy  
July 2011



This summary report was made possible by the contributions of numerous people who care deeply about the natural resources of Chatham County. The summary is based on the full report, *A Comprehensive Conservation Plan for Chatham County, North Carolina*. The Plan was developed for the Chatham Conservation Partnership by Robert J. Goldstein & Associates, Inc. and Biocenosis, Inc.

The mission of the Chatham Conservation Partnership (CCP) is to develop and implement strategies for a community conservation vision that builds awareness, protection and stewardship of Chatham County's natural resources. The CCP consists of over 50 organizations and participants, including federal, state, and local government agencies, non-profits, developers, and landowners. Funding for this project was received from the Z. Smith Reynolds Foundation, NC Wildlife Action Grant Program, and the NC Urban and Community Forestry Grant Program. The Triangle Land Conservancy (TLC) and the Piedmont Conservation Council (PCC) administered grants on behalf of the CCP.

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### *Plan Dedication*

*This plan is dedicated in memory of Ann Von Gruenigen, a Chatham County farm and forestland owner and great supporter of local conservation efforts. Ann cared deeply about Chatham County and her actions will have a lasting impact on our environment. Ann was a strong supporter of conservation and thoughtful land use in Chatham County. Her personal efforts and influence helped make possible the permanent land conservation of more than one thousand acres besides her own, the formation of the Chatham Conservation Partnership and, ultimately, the production of this plan. Her generosity provided the support to nurture ideas which eventually attracted many other concerned and generous individuals, donors, organizations and agencies. In 2000, she donated a perpetual conservation easement on her 320 acre farm to Triangle Land Conservancy (TLC). The easement protects a typical Chatham County landscape with three distinct environments: pasture, pine forest, and hardwood wildlife habitat. This plan is offered to the public in that same spirit of concern and hope for the future of our county that Ann so gracefully embodied.*

*“Not too many years ago, in a planning session, my group was asked to imagine and describe an ideal future Triangle Region. One of my colleagues asked why the Triangle couldn’t become an outdoor recreation ‘destination?’ Despite having lived most of my life in scenic Chatham County, I was initially stunned by the audacity of the question. We don’t have anything like the Grand Canyon or Yosemite, and how could we ever compete with the nearby North Carolina mountains or coast? Well, in fact, right here in Chatham County, we have three beautiful rivers, each unique in its attributes, with State Park land along their banks.*

*We have one of the largest lakes in North Carolina, with one of the most popular State Parks along its shores. We have an abundance of Natural Heritage Areas and wildlife throughout the county. We have beautiful and productive farms and forests and vital agricultural and forestry enterprises to support them. So, the answer, I slowly realized, is “why not”? Yes, we need access, infrastructure, and publicity. But, first, we need to understand the unique assets we have, and protect them, for they cannot speak for themselves.*

*The Chatham County Comprehensive Conservation Plan is an effort to build the foundation for understanding what we are so fortunate to have, and the hope is that, if we understand this gift, we will appreciate it and protect it.*

*So, please explore the Plan, and let’s start the conversation about how to best steward these wonderful natural resources that surround us!”*

*Tandy Jones  
Chatham citizen and Triangle Land Conservancy staff member*





## INTRODUCTION

**A**s we survey the future and envision what Chatham County will look like and how it will grow, it is our stewardship of this abundant land that will pay the dividends that we all seek. This is the purpose of this extensive document. This Plan has been crafted for developers, planners, policy makers and citizens alike to give us a broad overview of just what a treasure trove Chatham County truly is. The Plan will also serve as a resource to help us realize how the shrewdly balanced management of our treasure can earn Chatham County an unparalleled position within North Carolina and the nation.

This Plan is chock full of maps, technical information, GIS statistics and analysis that will be an aid to anyone fortunate enough to use it. It's a veritable one-stop-shop for citizens who

want to quantify the wealth that is contained within Chatham County's boundaries. The compiled information of this Plan will also serve as a versatile tool to produce a future of practical prosperity and aesthetic value.

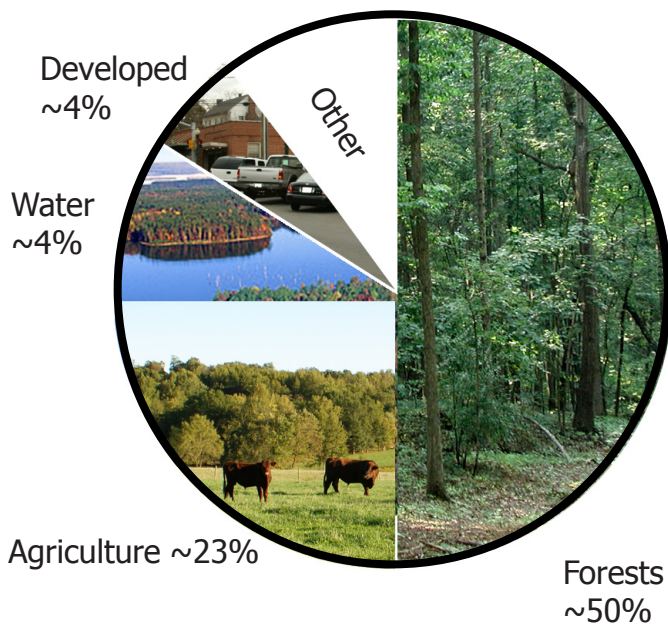
The combination of long range development planning and preservation of high value natural resources is a particularly effective way to ensure the prosperity and health of Chatham County. When this two-pronged strategy is applied, it leads to higher property values, healthy air and water quality, and higher revenues for Chatham in the form of a stronger income base on which the county can depend for many years.

This broadly-based document was assembled with thoughtful contributions from members of the Chatham Conservation

This broadly-based document was assembled with thoughtful contributions from members of the Chatham Conservation Partnership which includes private land owners, municipal and county planners, developers, advisory groups, farmers, foresters, business owners, conservation experts and citizens of many backgrounds. To access the full report please visit

<http://chathamconservation.wikispaces.com/>

**THIS PLAN HAS BEEN CRAFTED FOR DEVELOPERS, PLANNERS, POLICY MAKERS AND CITIZENS ALIKE TO GIVE US A BROAD OVERVIEW OF JUST WHAT A TREASURE TROVE CHATHAM COUNTY TRULY IS.**



Approximate 2001 Land Cover in Chatham County. Over half of the land area in the county is in forest.

Partnership which includes private land owners, municipal and county planners, developers, advisory groups, farmers, foresters, business owners, conservation experts and citizens of many backgrounds. It is the intent of these participants to give voice to our aspirations and vision of a community that will grow in prosperity, health and wealth. By gathering the collected experience of those who gave their time, knowledge and good faith to this process, it is the hope of these citizens that we will have a practical foundation of the best information possible from which to make decisions about the bright future that lies before us. So, it is from this down-to-earth, pragmatic approach that this Plan was born for our examination and use. It is the fervent

desire that this great store of intelligence will supply us with the implements we need to be responsible stewards of Chatham's abundance for

our generation, and for those who follow our footsteps into an equally well-provisioned future.

Chatham County contains a diverse variety of geographical features throughout its 709 square miles. It is typical of its Piedmont location in that its general topography is mostly rolling hills interspersed with river valleys and steep isolated hills.

Throughout this summary, and the Plan itself, the reader will find clearly delineated information about all the distinct aspects of Chatham County's resources. Though categorizing these separate aspects is easy in print, in fact all our vital resources are indivisible and mutually interdependent. The condition of any





**FOREST AND WOOD-PRODUCT INDUSTRIES REPRESENT ABOUT \$30 MILLION IN WAGES ANNUALLY IN THE COUNTY.**

single component of the landscape has measurable effects on its adjacent, correlated elements. Land, water, forest, people, and animals all rely on one another to create a healthy, functional setting for a prosperous community.

## **FOREST LANDS**

About half of Chatham's 453,750 acres is forest land, some 260,341 acres by 2007 estimates. This forested acreage

provides many services for humans and animals alike. U.S. Forest Service data indicates that the annual value of harvested timber for Chatham County is more than \$20 million. Forest and wood-product industries represent about \$30 million in wages annually in the County. Ecological services include natural storm water detention, air pollution removal and drinking water filtration. For a growing county like Chatham these services can add up to tens of millions of dollars in savings over a short time. Specifically, regions that have chosen to use their existing forests and wetlands to clean their watersheds spend less on drinking water treatment. *Preserving our forests will help us keep the cost of future water treatment infrastructure to a minimum.* There is a direct relationship between preserving forest cover and expenses incurred to process clean drinking water. Our expanses of sylvan landscape also protect the amenities that attract businesses who value a high quality of life for their employees, and tourism to our area. Tourist activities include hiking, hunting, wildlife viewing, camping, picnicking, and site seeing.

As the county plans for future development, factoring in protection of selected areas for

**ONE ACRE OF FORESTED  
RIPARIAN BUFFER PREVENTS  
2,273 LBS OF NITROGEN  
AND 146.4 POUNDS OF  
PHOSPHOROUS FROM  
REACHING SURFACE WATERS.  
(SEE APPENDIX G - PAGE 84)**

preservation means the prospect of a high return on investment. In nearby Durham County, the investment of \$1 in Eno State Park yields a \$1.80 return. Depending on the kind of investments made these numbers can increase significantly. [The mean dollar amount earned annually by Chatham County for outdoor recreation on public lands is estimated at nearly \\$19 million.](#) It is easy to see that development planned in conjunction with strategic preservation can substantially increase the value of developed as well as preserved land.

Another way to look at the value of forest cover is its ability to clean water and the estimated savings to taxpayers as a result. Nutrient loading in the form of excess nitrogen and phosphorous, is one of the greatest contributors to water pollution in Chatham County. One acre of forested riparian buffer prevents 2,273 lbs of nitrogen and 146.4 lbs phosphorous from reaching surface waters. The current value set for a pound of nitrogen is \$18.49 and \$142.02 per pound of phosphorous. Therefore, one acre of forested riparian buffer over a period of thirty years has a value of:  
 $\$18.49/\text{lb} \times 2,273 \text{ lbs-N-30 years} = \$42,027.77$   
 $\$142.02/\text{lb} \times 146.4 \text{ lbs-P-30 years} = \$20,793.19$

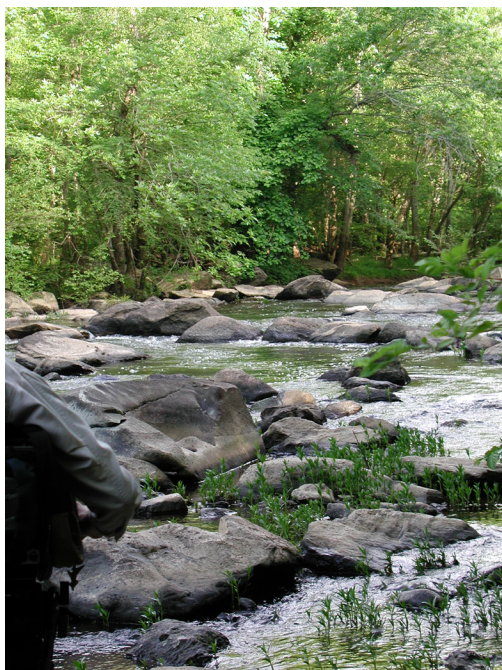
Simply put, water is the elixir of life. The planet and the human body are mostly water. Water grows our food, quenches our thirst and washes the earth clean with each rain; and Chatham County has an abundance of this irreplaceable resource.



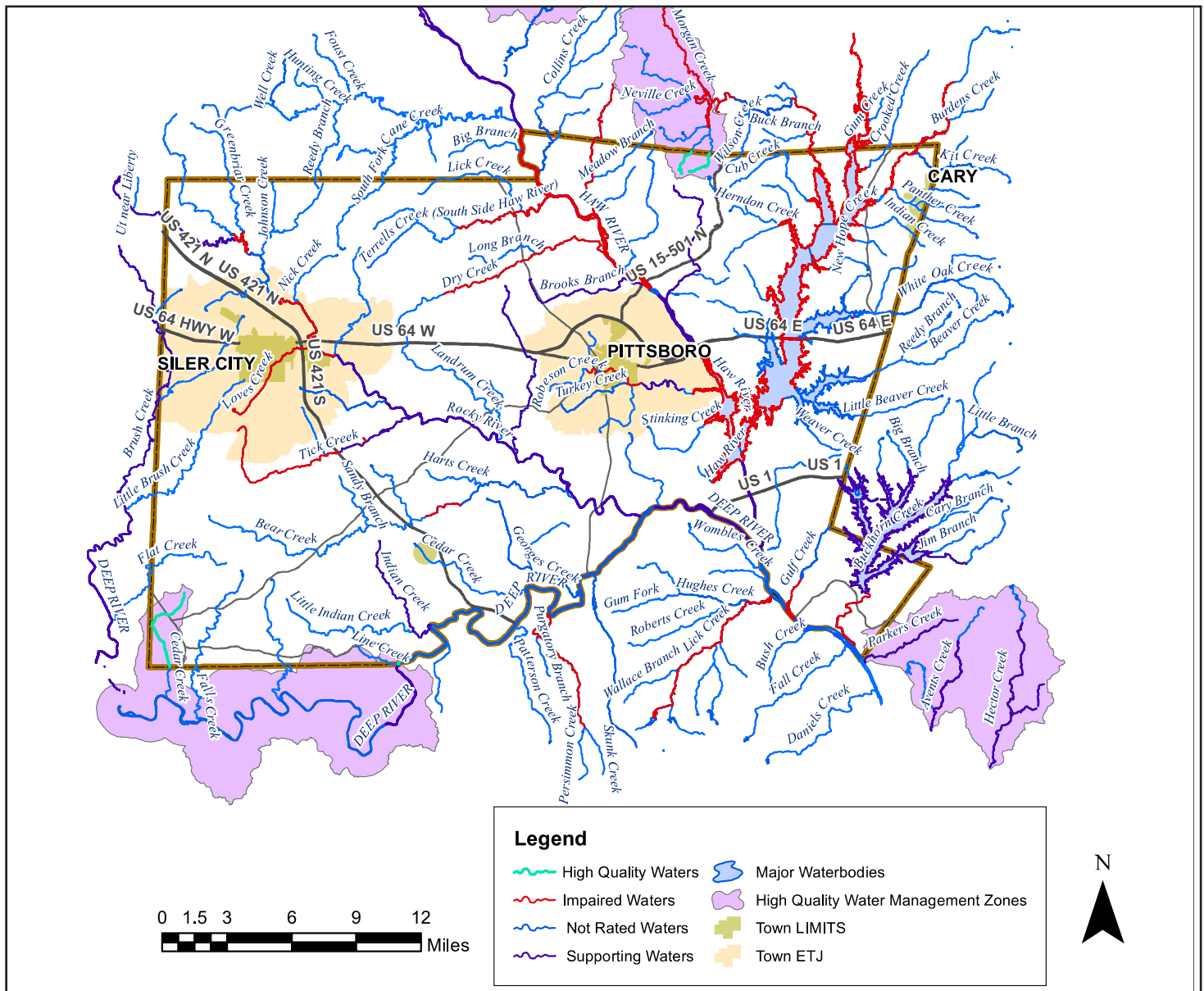
# WATER

Chatham County is home to three beautiful rivers, the Haw, Deep and Rocky, and has yet to utilize the potential economic value of conservation practices applied to our rivers, forests and surrounding working lands. With the resources available, and thoughtful planning, Chatham County is in the enviable position of also having the necessary time to carefully consider the balance of development and conservation that will best preserve our high quality of life and economic growth.

One question when thinking about future land use strategies will be how we may be able to maintain contiguous forest cover near developing areas. Contiguous forests do many jobs in serving humans and animals simultaneously. In addition to cleaning our air and water, unbroken forest lands also serve as wildlife migration corridors, and sites for ground water recharge. Beyond a basic grasp of Piedmont hydrology, little is known about the distribution, depth, volume and



**Chatham County is home to three beautiful rivers, the Rocky (left), the Haw (top right) and the Deep (bottom)**



accessibility of Chatham County's underground water supply. This we do know: preserving contiguous forest land wherever possible is water and money in the bank. Chatham County's population has grown more than 60% (2010 Census) in the last 20 years. Current and future projected growth will demand more of our water resources. Jordan Lake is at 44% of usage allocation, and with the development already planned, conserving contiguous forest and the aquifer recharge sites they provide protects a water supply that will be needed in the future. [Conserving water resources is far less expensive than building new municipal utility projects to transport or impound water for future demands.](#) By using the detailed information in the Plan, county policy makers will be able to more effectively cooperate with their municipal counterparts as future development is planned.

Another matter to contemplate when thinking about forests and water supply sources is what rare species can tell us about future resource use. Rare species and their habitats are places that offer us the opportunity to improve the environmental infrastructure that cleans our air and water.

The North Carolina Natural Heritage Program has identified 40 rare species in Chatham County. Some of these appear on federal and/or state endangered lists. Perhaps the most sensitive of these species are fresh water mussels. Eleven of the mussels occurring in Chatham County are rare or endangered. This is in contrast to North Carolina's historic past when these creatures were abundant throughout the state's waters. These mollusks are filter feeders, and in the process of feeding they clean the drinking water supply we depend on. This is a good example of how the natural world provides a service that is expensive to duplicate. [Protecting the watersheds and forests inhabited by these natural water treatment species also means protecting human health and saving the millions of dollars that would be required to replace their services.](#)

A comprehensive way to view watershed management is to look at the planning of land uses throughout the watershed. Land use practices will determine the health of the watershed for humans and animals as well. Chatham County is part of the Cape Fear River watershed. All of our main water courses, The Haw, Deep and Rocky Rivers, their foundational tributaries and Jordan Lake feed into the Cape Fear at and below the dam at

**ELEVEN OF THE MUSSELS  
OCCURRING IN CHATHAM COUNTY  
ARE RARE OR ENDANGERED.**





**Low impact development is a suite of components that deals effectively with storm water management.**

**What can citizens and developers do to help promote low impact development?**



💧 **Install a Rain Garden:**

Rain gardens impound storm water so that it can slowly percolate into the soil and be filtered as it recharges existing aquifers.

💧 **Install a Green Roof:** Green roofs, which can be irrigated with storm water, help cool buildings, reducing cooling costs significantly.

💧 **Implement Conservation Design:**

Part of this scheme emphasizes the clustering of buildings on a site in order to minimize the amount of impervious surface. Simple strategies like this can go a long way to protect drinking water supplies for very little investment.

Jordan Lake. If one were to look at a map of the creeks and rivers of Chatham County, one would see that this intricate web of water ways looks very similar to the circulatory system of the human body; and it functions in much the same way, carrying nutrients to tissues and flushing wastes out of the body.

Land use decisions may affect the direction of these water courses, the quality and quantity of their water and the ability of the land to receive and hold water for future use referred to as aquifer recharge. As the population of Chatham grows, planning for healthy water courses will be a prime objective so that we will be able to provide wholesome and affordable drinking water. There are many ways to achieve the protection of our vital water resources. A good place to begin is to develop a detailed plan that considers all the possible effects on our water systems as a result of how we plan and design land use strategies.

One recommendation that could be widely applicable is low impact development. Low impact development is a suite of components that deals effectively with storm water management, one of the major challenges to maintaining healthy watersheds and clean, inexpensive drinking water. Storm water, once considered wastewater because of its role in flooding, erosion and non-point source water pollution, is now being viewed as a resource that can be treated and reused.

The North Carolina Division of Water Quality (NCDWQ) has classified 136 stream sections in Chatham County. About 215 miles and 14,916 acres of water bodies in Chatham

County have been classified and rated by the NCDWQ. At present, 45 of those streams have been given a rating that either support the classification to which they have been assigned or are listed as impaired. Twenty of these creeks are viewed as supporting their classification, while 25 have been listed as impaired because of various pollutants, most commonly, damaging concentrations of sediment, nitrogen and phosphorous. Among the waters designated as impaired are Jordan Lake and its major tributaries, New Hope Creek and the Haw River. Four of these classified streams in Chatham County with a total length of fewer than 16 miles have been rated as High Quality Waters. The other 91 streams of



Jordan Lake, an impaired waterbody, is one of the Triangle Area's principal reservoirs. Its 14,000 acres of water serve as drinking water supply for approximately 460,000 people.

the total above have not yet been rated because of lack of data. A complete table and description of these rated streams is included in the Plan.

Another way to restore and preserve our vital water resources is to create conservation areas around these waters to protect them from further degradation. There are many ways to establish and fund conservation areas to help distribute the

cost of such arrangements. A federal data base of resources contained in the Plan explains how local governments and landowners can take advantage of grants to help pay for the purchase of natural areas, open space, parks, water and sewer upgrades and storm water management. Educational programs are also available to help users through the process. Programs such as these may be especially helpful to improve impaired waters like the Rocky and Deep rivers, feeding the Cape Fear, and the Haw River which contributes to Jordan Lake.

There are several examples of successfully established conservation areas in Chatham County. These areas were made possible with the cooperation of several private, public and non-profit groups. They include the White Pines Preserve at the confluence of the Rocky and Deep rivers, McIver Landing on the Deep River, the LaGrange Reserve in Southwest Chatham on the Deep River, Wood's Mill Bend on the Rocky River and the Condoret Nature Preserve southeast of Siler City. All of these purchases and donations were funded and/or facilitated by Triangle Land Conservancy. One the largest and most valuable of these purchases is the White Pines Preserve. Because of this timely purchase, the preserve will be home to part of the Deep River State Trail. All of these sites are excellent examples of how strategic acquisition of lands throughout the county add up to meaningful and effective efforts to protect the land and waters that support us.

Surface water is the main source of drinking water for residents of the Cape Fear River Basin. Jordan Lake, the Haw River, reservoirs on the Rocky River, the Deep River and the Cape Fear River above the Buckhorn Dam are the primary drinking water supplies for tens of thousands of citizens in Chatham County. Development around these waters varies from low to highly developed. The exact locations of each water supply intake is mapped in the Plan for easy reference. With this information we can assess the vulnerability of these intakes to proposed changes in the surrounding landscape.

For hundreds of years Chatham County's plentiful water supply has been applied to its fertile soil. This has made Chatham an important agricultural region in North Carolina.





## AGRICULTURE

Historically, farming has been one of the main engines of jobs and economic development in Chatham County. In 2000, agriculture and agribusiness accounted for 38.8% of the Chatham's total income. In 2008, the agriculture sector accounted for 25.4% of the county's income. Apart from the raw economic numbers, farmlands help preserve the rural character and open space that are attractive to residents and visitors alike. Like forests and other working lands, farms also provide sites for ground water recharge and forage for wildlife like beneficial insects crucial to pollination of food crops. Apples, peaches, strawberries, blueberries, pumpkins, cucumbers and squash, are just a few crops pollinated by insects that depend on these plants for forage and nesting sites.

**In 2000 agriculture and agribusiness accounted for 38.8% of Chatham's total income. In 2008 the agriculture sector accounted for 25.4% of the county's income.**

## What tools are available for farmers to help maintain valuable working lands?

Among the funding incentives to help farmers maintain these valuable working lands are the

- Chatham County Present Use Value Program (PUV)
- Cost share programs
- Conservation easements

Farmers and owners of working lands can also enroll their land in the Voluntary Agriculture District (VAD). Chatham County government designed this program to promote the values of agriculture and as an educational tool for the public at large. The VAD program is a way for farmers to highlight their pride in their identity as people who care for our working lands and wish to use this program to champion the historic contributions of farmers to our region.

Pollinating insects are also important to sustaining many wild plants that stabilize the broader ecosystem surrounding farms and urban areas. These plants in turn, provide cover for wildlife, improve water quality and help prevent erosion by holding soil in place. Farmlands also provide sites for ground water recharge and water filtration, especially in areas where streams, creeks and rivers border farms, which is common in Chatham County.

Farming in Chatham County also provides superior quality local food that has spawned several thriving farmer's markets. The difference between food that has traveled thousands of miles and locally grown fare is deliciously evident when one bites into any of our locally produced meats or vegetables. These markets also serve as social gathering places where people of different backgrounds gather to meet and share the proud heritage of Chatham County's farm goodness.

The continued emphasis of agriculture and agribusiness in Chatham County will provide permanent and positive economic and ecological benefits. As local farmland contributes to our economic strength, health and well-being, it also helps ease the financial costs of urbanization that so many counties are struggling with nowadays.

Within the Plan readers will find maps that identify the locations of Prime Farmland by their unique soil type. Prime Farmland is defined by the U.S. Department of Agriculture as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed



crops and is available for these uses.” The soil quality, growing season, and moisture supply are also measurements used to identify soils that produce sustained high yield crops. These sites are of major importance because of their ability to produce substantial amounts of food and fiber crops in Chatham County. This will help planners and policy makers when they consider the location of future development in relationship to the value of conserving Prime Farmland. Fifty-four sites in Chatham County are considered as Prime Farmland and Farmland of Statewide Importance. Planning with agriculture and farmers in mind will help create a stable investment environment not only for farmers but for the many equipment vendors and other suppliers upon whom they depend.

Several incentives are available for landowners to help maintain working lands (see side bar on pg 16). Landowners can also use voluntary conservation easements to gain tax benefits or financial assistance which help to make their current operations viable. Bill Dow of Ayrshire Farm and Lin Andrew of Chestnut Hill Farm both wanted to preserve their farms for future generations. Skeptical at first, Lin Andrew researched conservation easements for years. After lengthy deliberation about ways to reach his goal of preservation, Lin asked the pivotal question, “[How can I achieve this with the development pressures constantly increasing? I feel this conservation easement will provide equity up front that will allow me to continue in agriculture in the event neighboring lands are developed. An easement will allow my farm to remain a farm into the future.](#)”

**Like forests and other working lands, farms also provide sites for ground water recharge and forage for wildlife like beneficial insects crucial to pollination of food crops.**



Bill Dow, on the cutting edge of organic farming in the Triangle since 1983, is the first small organic farmer to use the conservation easement method to assure that his land will also remain a working farm producing local food for Chatham County’s growing population.

By using similar strategies to those mentioned above, Chatham County also has the opportunity to conserve important habitat areas.



# BIODIVERSITY AND WILDLIFE HABITAT

Significant Natural Heritage Areas are specified as environments of land or water that are important for the conservation of the state's biodiversity. These areas were designated in surveys of the county by the North Carolina Natural Heritage Program (NCNHP) conducted in 1992, 1995 and 1999. They are identified by their unparalleled occurrences of particular topography or soil chemistry, riverine communities or outstanding wildlife areas.

These areas contain the best representations of rare species to be found in the county, state or nation. Some of the outstanding features that make an SNHA worthy of conservation are the size, maturity, and integrity of the sites. These attributes enable them to sustain breeding populations of many wildlife species native to Chatham County. Native animal species provide key ecological services that have maintained the habitat for thousands of years and are capable of doing so into perpetuity.

[Fifty-two such sites occur in the county, 19 of which are currently under public stewardship.](#) These areas are situated county-wide and can be found at Jordan Lake, throughout the Haw, Rocky and Deep Rivers, and tributaries, and other locations throughout the Cape Fear River Basin. They provide Primary Nursery habitat where certain habitat indicator species breed. When considered as intact systems, such lands offer unmatched potential as high-value habitat and potential

tourist visitor sites.

Conservation of these SNHAs for such uses could mean millions of dollars of revenue for the county with very little investment and maintenance. Residents and businesses in surrounding areas would undoubtedly enjoy their proximity to these areas for aesthetic and economic reasons as well. [For example, Jordan Lake itself is considered a Significant Natural Heritage Area. Local residents and businesses get a benefit of \\$1.90 for every dollar invested at Jordan Lake by the state of North Carolina. According to the NC Department of Parks and Recreation, non-local visitors spent \\$2,874,796 during their visits to Jordan Lake in 2008.](#)

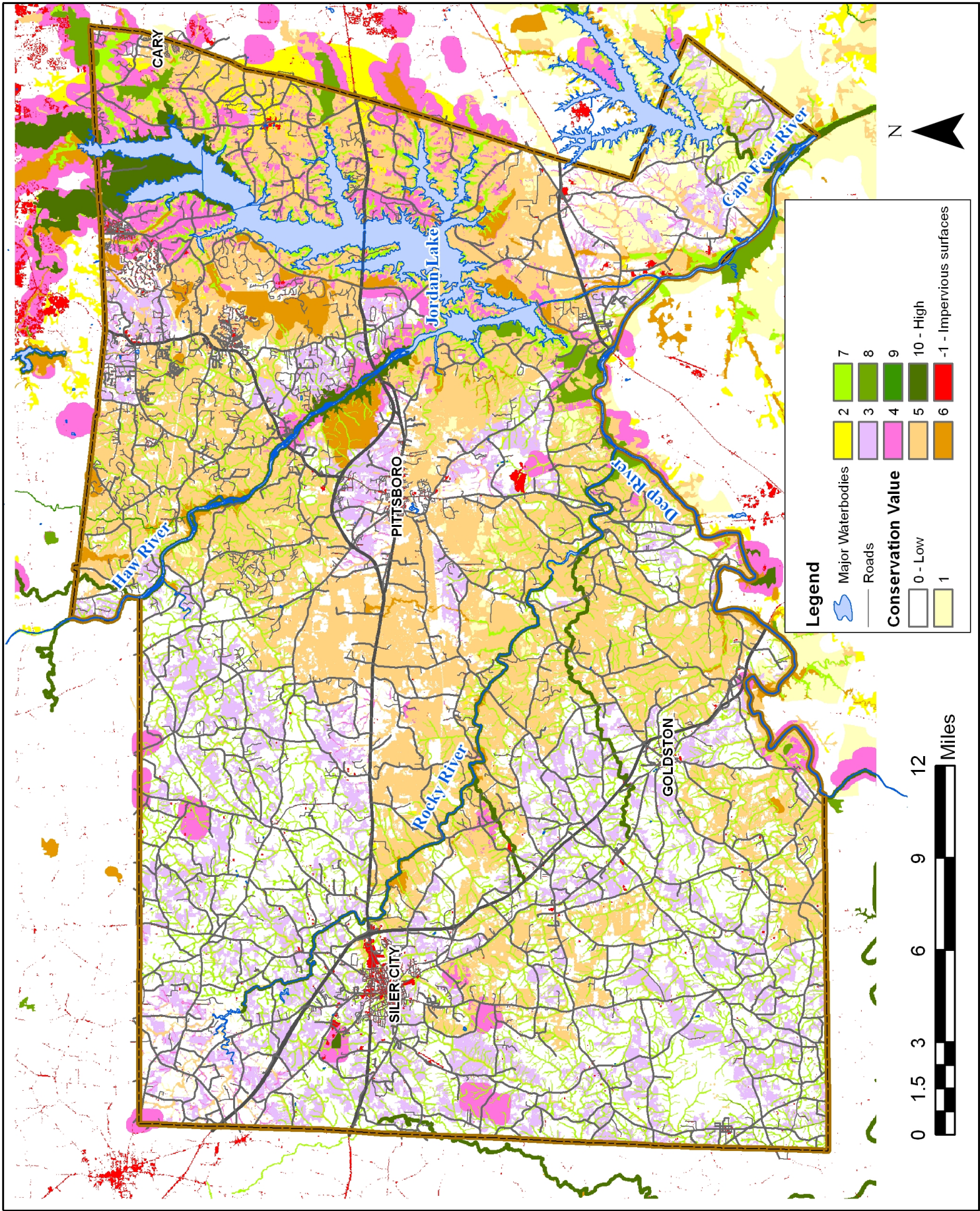
As one begins to delve into the maps that are a part of the Plan, it becomes clear that the Priority Species, Significant Natural Heritage Areas, watersheds that supply drinking water and valuable forest lands are often located in proximity to each other. This is a natural coincidence that makes it convenient for planners and policy makers as they consider where and how Chatham County will grow. This provides a perfect picture of how functional ecosystems serve multiple purposes for the benefit of humans as well as animals.

Watershed cleanliness, air filtration and oxygen production, quality of life for residents and attractiveness to thousands of tourists who will visit these areas for years to come are among the combined benefits shared by all.

The beauty of majestic trees, flowing water ways and healthy wildlife populations are re-creation-al for all of us. Our vibrant natural lands can also support us in more tangible ways.



This map shows the results of the Biodiversity/Wildlife Habitat analysis for Chatham County. The mapping information can be accessed online at the CCP site or through the County GIS mapping site. See appendix 1 for information on how to use this component of the plan





# NATURE BASED RECREATION

One way to use and conserve these life-supporting lands and waters is to think about protecting them by creating parks and recreation areas where appropriate. The Outdoor Industry Association has found that outdoor recreation is worth about \$7.5 billion to the North Carolina economy, and the North Carolina Cooperative Extension reports that consumer expenditures for recreation-based activities exceeds \$500 million a year.

Chatham County has four park sites: Northeast (Big Woods) Northwest, formerly Camp Maranatha, Southwest under development near Chatham Central High School, and Earl Thompson Park in Bynum. These parks have various active and passive amenities and are about 354 acres combined. Proposed county parks now in the planning stages are slated for Briar Chapel, Bells Landing, Bobcat Point, and the North Central District Park on the Strowd Property.

State parks within Chatham County include the The Lower Haw River State Natural Area, Deep River State Trail, and Jordan Lake Recreation Area. Amongst the many purposes of this designation are the protection of drinking water supplies, wildlife populations, and the preservation of their ecological as well as economic value.

Approximately 1,100 acres, the Haw River Natural Area is also a nationally significant aquatic habitat. This is the site for the Town of Pittsboro's drinking water intake and provides habitat for rare native plants and animals.

The Deep River State Trail, established in 2007, has tremendous potential to mature into a site where destination tourism could be a strong part of the regional economy. The Deep River Corridor connects Guilford, Randolph, Chatham, Moore and Lee counties. It is the combined visionary effort of non-profit organizations, land conservancies, private land owners as well as state and local governments. This project has





the capacity to become the basis for an extended network of trails connecting Greensboro, the NC Zoological Park, Jordan Lake, Raven Rock State Park on the Cape Fear River and other locations throughout the Lower Cape River Basin.

The picture that emerges from our information about existing parks and recreation facilities is that Chatham County has a good foundation from which to build a region that can emphasize its natural attributes as powerful business ventures to contribute simultaneously to the conservation of our vital water and forest resources and our greater economic advancement.

Further development of our natural resources is a simple reality that is a part of the human need for water, food, housing and all the necessities that make our lives so richly abundant. As we continue to exploit our natural capital, we recognize the fact that we must balance our needs with the needs of the resources that support us. Part of that recognition is to deal squarely with the threats to our continued use of these resources. Human activity can cause changes to the natural landscapes

upon which we depend. These changes include the physical alteration to delicate terrestrial and aquatic environments around us. Some of these changes may be short-term, taking place during development, or they can be permanent and cumulative depending on how extensive land and aquatic disturbances become.

## CHANGES

During development, altering the direction of water courses through impoundment may be necessary to complete the project. Building stream crossings is another permanent way of changing how natural systems function. Clearing forest cover can cause invasive species to quickly colonize an area where they have no natural limitations to their spread. Unmitigated soil disturbance can also lead to erosion that smothers aquatic nurseries, affecting the breeding cycles of many native species that contribute to high water quality, economic and scenic value. Releases of sediment caused by erosion into water courses is the single most destructive factor in reducing water quality and wildlife habitat degradation.

## WHAT CAN WE DO?

By using successful, time-tested information about threats to our resources we can plan effective development, especially in areas where construction and critical natural areas meet. Prudent planning will help us to assure the conservation and future economic use of our natural resources.

### [Work with our neighbors:](#)

Part of the comprehensive scope of this Plan is to help policy makers with conservation agreements that govern land, water and wildlife. Because resources span territories that are shared by bordering counties, it is vital for local governments to work with neighboring policy makers to coordinate conservation efforts. Many avenues exist to facilitate this kind of cooperation.

### Use existing resources:

The North Carolina Wildlife Resources Commission (NCWRC) has developed the Green Toolbox and the Swimming with the Current processes that educate municipalities and counties about how they can avoid and mitigate the effects of the development process. The recommendations of the NCWRC and related groups also provide technical assistance to planners, developers and landowners.

### Focus County Resources:

Securing funding for a Chatham County Natural Resources Inventory Specialist would also be an superb way for the county to focus its conservation strategies. Such an individual would be responsible for updating the mapping and monitoring of Chatham's natural resources. Additionally, a specialist would help educate policy makers, coordinate with state agencies and work with willing landowners who wish to participate in conservation programs. The County and its municipalities should also fund the update of this plan in five years. If a specialist is not on board this could be completed by existing staff resources. The plan will only be of value if it is keep up-to-date.

### Education:

Of all the ways to ensure that we in Chatham County protect our resources into perpetuity, education is most important. The old adage applies very well in this instance: an ounce of prevention is worth a pound of cure. Education can help in innumerable ways to inform our decisions before we carry them through.

Educational efforts can take many forms. They can begin in primary and secondary schools through community college. This engenders, in all ages of citizens, an appreciation for the natural world that supports us and how we can become better stewards of our lands and water. Hands-on methods like building rain gardens and other landscape features will help children and adults to a greater awareness of the power we have to shape our lands into healthier more livable spaces. Children raised with



this alertness to how the natural world works will create a generation who will invent creative, cost-effective ways for us to manage our resources.

Chatham County could also offer voluntary contractor certification programs. Contractors completing such programs would be better equipped to use building methods that would help preserve the beauty and utility of the sites upon which they build. Training and knowledge of how to achieve balanced development also helps to maximize the profits of carefully designed projects.

Providing information about tax incentives and cost-sharing strategies to landowners would help interested parties gain the assistance they need to implement the conservation of the lands they love.

Staying abreast of the latest information and using it effectively helps to prove the premise that development and conservation are a natural combination for sound growth. Efforts like these will pay untold dividends with the least amount of energy expended as we work to design and guide the development of the county in a direction that will ensure prosperity and preservation.

## CONCLUSION

As Chatham County's plans for development evolve with the help of this conservation information, the defining themes of this work can be summed up in the terms balance, stewardship and partnership. This document, with its myriad resources, empowers all of us to confidently participate in decisions about our future. It provides a broad-based scale for us to measure the probable effects of the actions we will take in this generation and the next. This plan is indeed a reference encyclopedia of time-tested intelligence and counsel that will guide us now and into the future as we shape and create the legacy of the wealth of our resources."

*This Plan is an invitation to all who use it; an invitation to be partners in the building and care of Chatham County. With the information at our disposal and the partnership of business, industry, farmers, foresters, planners, conservationists and policy makers, Chatham County will be on solid footing to grow with the soundness that provides for the present and the future.*



## Appendix 1: Instructions for Viewing Conservation Layers with the Chatham Online Mapping Tool

**Purpose:** Instructions on how to view the analyses results for the biodiversity and forestry resources and the GIS data layers gathered for the Comprehensive Conservation Plan for Chatham County.

**Chatham Online Mapping Tool:** [www.chathamgis.com/mapguide/ChathamGISWeb/](http://www.chathamgis.com/mapguide/ChathamGISWeb/).

Comprehensive Conservation Plan for Chatham County (Conservation Plan): can be downloaded from the Chatham Conservation Partnership wiki: <http://chathamconservation.wikispaces.com>.

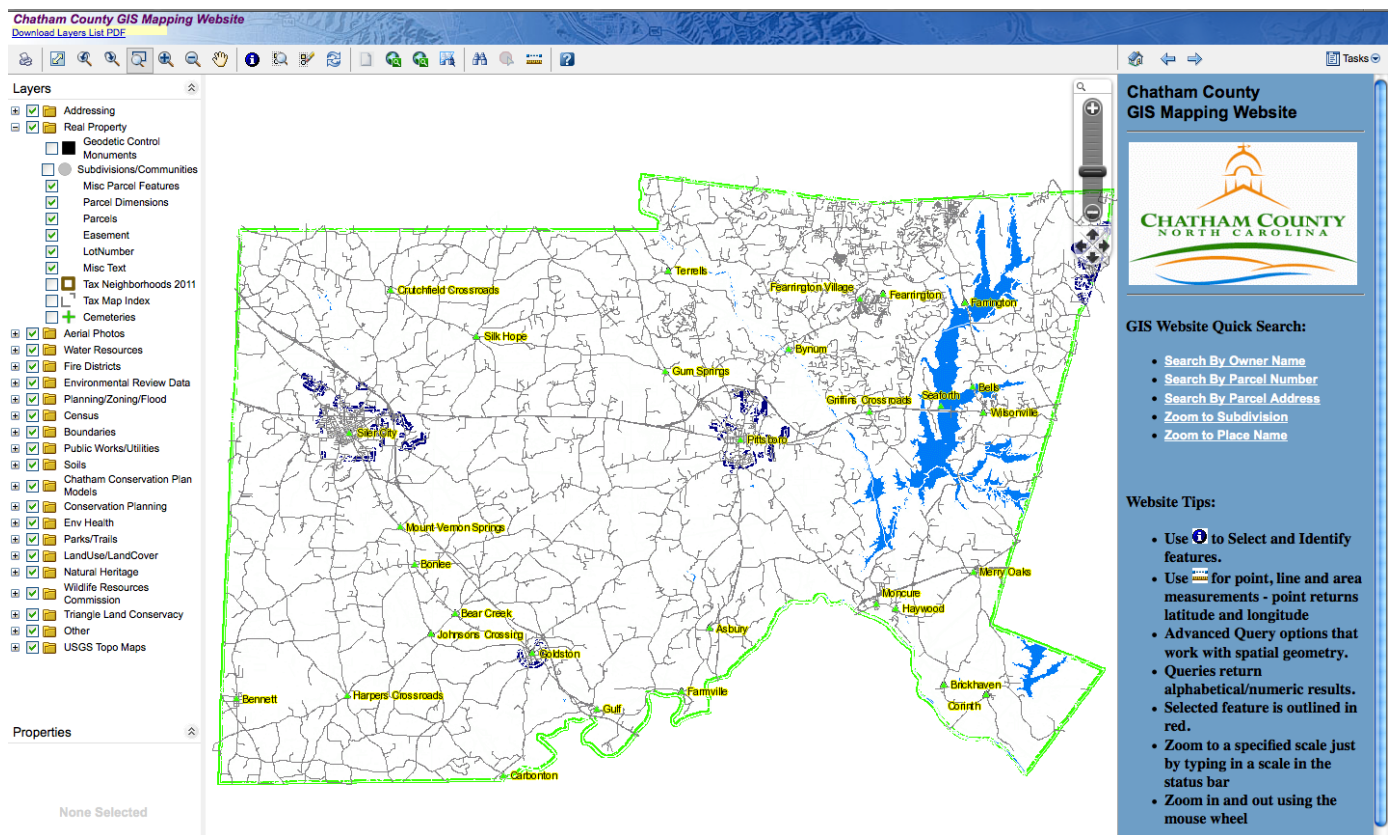
- Descriptions of the analyses of biodiversity and forestry resources are in the section *Methods and Analysis Approach* and in *Appendix E – Methods: Conservation Ranking and Analyses* of Conservation Plan.
- A description of the data layers gathered for the *Conservation Plan* are in *Appendix D: Technical Documentation for Data Created for and used in the Conservation Analyses and GIS Data Catalog*. The data catalog, Table D1, lists all the data layers available for conservation planning in Chatham County. Also it indicates which layers can be viewed with the Chatham Online Mapping Tool.

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### Steps for using the Chatham Online Mapping Tool:

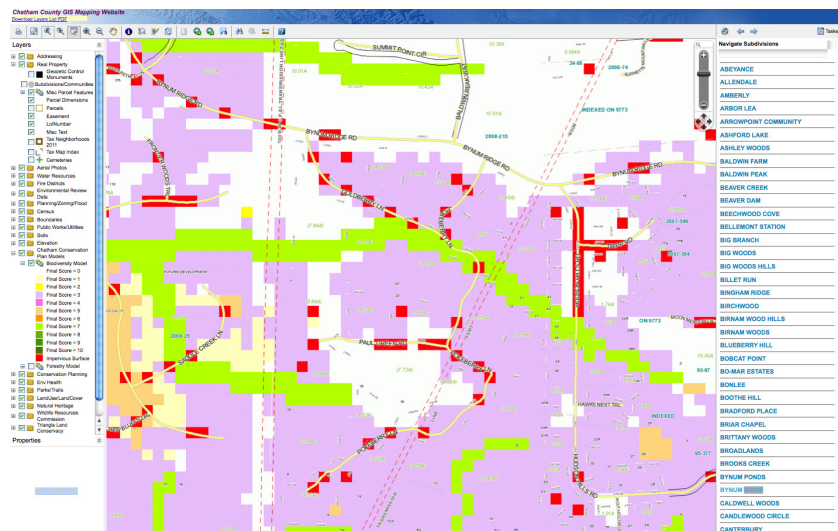
1. Type in the site URL given above into your favorite web browser.
2. The main screen is divided into three panels:
  - **Middle Panel:** Map view with a toolbar located above that gives easy access to tools for zooming, searching, identifying layers, etc.
  - **Right Panel:** The **Tasks Button** in the upper right corner provides access to the **Query Layers** that allow searching parcels by a range of criteria, such as acreage or fair market value. **GIS Website Quick Search** allows searches by owner name, parcel number or address. It provides quick navigation to known subdivisions and places. **Website Tips** gives useful tips on how to navigate using the toolbar above the map view.
  - **Left Panel:** Lists in 21 folders all the data layers available for viewing. Layers can be turned ON and OFF by simply clicking on the box to the left of each layer. The conservation layers are contained in the following 9 folders:
    - i. *Water Resources*
    - ii. *Environmental Review Data*
    - iii. *Soils*
    - iv. *Chatham Conservation Plan Models*
    - v. *Conservation Planning*
    - vi. *Natural Heritage*
    - vii. *Wildlife Resources Commission*
    - viii. *Triangle Land Conservancy*
    - ix. *Other* (includes Audubon Important Bird Areas)





3. To view the conservation layers using the online mapping tool, simply turn ON the layers in any folder needed for locating and defining the area of interest such as *Parcels* located in the folder *Real Property* or *Roads* located in the folder *Addressing*. Once the area of interest is located, turn ON the conservation layer of interest. The identify button in the upper toolbar can be used to show the attributes of the layer of interest. **Note:** before using the identify button on any layer other than the parcel layer, *Parcels* needs to be turned OFF.

**Example:** To determine the quality of biodiversity and wildlife habitat in the Bynum Ridge Subdivision, use the **GIS Website Quite Search: Zoom to Subdivision**. Choose Bynum Ridge Subdivision from the list. Turn ON *Biodiversity/ Wildlife habitat* in the *Chatham Conservation Plan Models* folder and turn OFF the parcel layer. Use the Identify button in the toolbar to view the “VAT” table that shows the various conservation layers that make up the final score.





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