On The Mitchell

A watershed partnership to protect the Mitchell River — No. 3 — Summer/Fall 2000

Rare Species Indicate Natural Richness

The North Carolina Natural Heritage Program maintains the database of all known rare species and community type occurrences in North Carolina. This data is used to compile two periodic publications, one of rare plants and animals. These publications update the number and general location occurrence of the rare species in this state. These listings give Scientific and Common Name(s), the Counties of Occurrence, the NC and US Status and NC and US Rank. The Status is where the species fits in the listings (Extinct, Endangered, Threatened, Candidate...), the Ranking is a code that explains the number and distribution of known populations, history and supporting records. Some species are and always were rare, others are recently rare due to known reasons, and others are only rare at the edges of their range. The combination of status and rank gives a picture of how and why some plant or animal might be considered rare.

In the Mitchell River portion of Surry County there are 15 species listed by the NC NHP: This list includes 6 plants, 2 reptiles, 2 amphibians and 3 insects. Only one of these species (the Bog Turtle) is federally listed.

Regular updates are needed to adjust these lists to changing conditions. For example, there are an additional 6 plants and 3 animals that have historic references from this area, but have not been found in recent surveys and are presumed to be gone, and therefore not listed. Several agencies in North Carolina track populations of plants and animals and can nominate declining species for listing.

The existence of rare species tells us important things about the site where it occurs. Finding rare species indicates a lack of disturbance and more natural conditions, stable continuity through time. Rare species often indicate higher levels of local biodiversity, a richer flora and fauna. The rare and unusual always has been special to the human eye. Like jewels and fine art are symbols of wealth, rare species indicate natural richness.
Streambank Restoration in the South Fork Mitchell River

In late April 1999, a 250-foot reach of the South Fork Mitchell River was restored using natural techniques. Streambank erosion was primarily caused by the removal of streamside vegetation for a utility right-of-way along the outside of a meander bend. The stream is moderately incised with streambank heights between 8 and 9 feet tall. The combination of vegetation removal along the outside of the meander bend where stream energy is high and the tall banks led to unnatural rates of streambank erosion.

The goals of the project included: 1) stabilizing eroding streambanks using native materials, 2) improving fish habitat, and 3) improving the aesthetics of a natural river.

Streambank stabilization consisted of the following procedures.

1. Low growing, woody vegetation and sod mats were removed from the eroding streambank and stockpiled on the adjacent field.
2. The outside meander bend was graded to include a 5-foot bench and 2:1 streambank slopes as shown in Figure 1. The banks were re-vegetated with sod mats and transplants. The area with the power lines was re-vegetated with short shrubs such as silky dogwood, spice bush, and bankers dwarf willow stakes.
3. Rock vanes and J-hook vanes were installed using a Track hoe with a thumb. A photo of a rock vane and J-hook vane are shown in Figures 2 and 3. The rock vanes are designed to divert the stream's power away from the streambank and into the center of the channel. This protects the streambank from erosion and creates a scour hole in the center of the channel that absorbs energy and provides habitat.
4. Root wads were installed at the toe of the bank around the meander bend and other areas vulnerable to erosion. An installed root wad is shown in Figure 4. Root wads absorb stream energy, protect the streambank, and provide aquatic habitat.

Monitoring and Evaluation:

Permanent cross sections were established at several places around the meander bend. Each cross section along with a longitudinal profile is surveyed annually and after large storms. The cross sections shown below in Figure 5 show the results for the past year. The cross sections include graphs of the pre-restoration, as-built, and April 2000 survey. Over the past year, essentially no lateral or vertical adjustment has occurred in the stream channel.

The longitudinal profile in Figure 6 shows the thalweg (deepest part of the channel) and bankfull (elevation of the active floodplain) before and after restoration. The rock vanes have increased the number of deep pools in the reach. Based on the first year's assessment, the project has met all of its goals.
Biodiversity and Natural Heritage

Natural heritage refers to the living things and natural systems that share our neighborhood. Attention has focused on the concept of natural heritage as it has become increasingly apparent that many elements of that heritage are being degraded or lost. Also in time, alternative views on the real value of biological resources have emerged. Data from a multitude of sources indicates that assigning true value, rather than simply short-term economic value, to natural systems and their components will provide long-term, sustainable benefits to humans. Failure to plan development wisely and to conserve an adequate number of significant natural areas in a county or a region will, as development proceeds, result in a less attractive place to live or visit.

Natural heritage is closely tied to the concept of biological diversity, or as it is commonly known, biodiversity.

Biodiversity is simply the variety of all kinds of living organisms. The diversity of life on earth is extremely complex. In an attempt to simplify the complexity, ecologists view biodiversity at different scales. Biodiversity can be studied at genetic, species, population, natural community, ecosystem, and landscape scales. Much of the information of interest to landowners deals with the species and community levels of biodiversity.

A natural community type is "a distinct and recurring assemblage of populations of plants, animals, bacteria, and fungi naturally associated with each other and their physical environment" (Shafale and Weakley 1990). Conserving exemplary natural communities is important because it can result in preservation of the surrounding community, its component species, and the species interactions and physical conditions that maintain the community, in addition to protecting rare species populations.

 Rarity of species and natural communities is inherently complex. Some species are intrinsically rare. Such species may be adapted to specialized habitat types that are themselves rare. A species may have a low reproductive capacity yet be able to persist in a special habitat because it is so well adapted there. Other species are rare at least in part from habitat loss, loss of important pollinators or food sources, competition with non-native species, or a multitude of factors directly or indirectly related to human disturbance of natural systems.

Careful land-use planning and conservation of exemplary communities and rare species populations are important ways that natural heritage can be retained. Biological and natural heritage inventory strives to provide an initial basis upon which to begin the work. Landowners who exhibit good stewardship can qualify for financial benefits, technical assistance and the satisfaction of playing an important role in the preservation of nature's special treasures.

More than 95% of all land in North Carolina is privately owned. Considering that we all rely on the ecological functions of natural systems, we all should become better stewards of the natural assets placed in our care. Just as landowners have rights, they also have responsibilities, which include being caretakers of their small bit of creation.
Biological Survey and Endangered Species Law

Obtaining landowner permission to survey is an integral part of biological inventory in the modern era. Occasionally, permission to survey on private lands is denied due to a mistaken belief that if a rare species is discovered, restrictions and land-use limitations will be imposed. Clearly, when this occurs, the search for scientific information is hindered. A secondary effect of denial to survey is that owners of lands that are biologically significant do not learn more about what they own or about the conservation options, assistance, financial and tax incentives that might be available to them. Those who grant permission and are found to own significant lands are given results from the biological survey and, if they wish, they are put in contact with appropriate conservation organizations and agencies.

In reality, there is practically no reason for landowners to have concerns about the presence of rare species on their land. A summary of federal and state endangered species laws relevant to private landowners has been prepared by the Piedmont Land Conservancy. Some of that information is presented below to help dispel concerns landowners may have about rare species and to provide clarification on potential land-use restrictions.

Federal Law Regarding Landowners:

1. The Endangered Species Act (ESA) applies only to plants and animals that are federally listed as Endangered or Threatened. Since federally listed species are very rare, the likelihood of their occurring on private land is very slim.
2. The ESA does protect species from the potentially harmful actions of private landowners, but it also offers flexible tools for resolving conflicts. Engaging in trade in a federally listed species without a permit is illegal for both plants and animals. "Taking" (i.e., harassing, harming, pursuing, hunting, killing or trapping) or illegally possessing listed animals is illegal. Removing, digging up, cutting damaging, or destroying a listed plant on anyone's land in knowing violation of the law is illegal.
3. Private citizens can lawfully "take" listed species if it is "incidental to and not the purpose of carrying out otherwise lawful activities" as long as the landowner implements a conservation plan for the species.
4. Under the ESA, private developers can obtain permits to legally harm or even kill federally listed species on their property provided that they show that attempts were made to minimize their impact on the species in other ways.
5. The existence of a federally listed species on private property legally has no effect on the landowner unless a project requiring a federal permit is planned, uses federal funds, or will clearly result in the taking of a listed species.
6. Regarding designation of critical habitat, which sometimes occurs for federally listed species, private landowners are not regulated by the ESA, only federal actions that would adversely alter critical habitat for listed species.

The Federal (ESA) listing is administered by the US Fish and Wildlife Service and focuses on populations included in our national boundaries. The state of North Carolina maintains another list of species that occur within its borders. The state listing helps protect and manage species that are otherwise not covered by Federal Law.

North Carolina State Law Regarding Landowners:

1. The plant and animal endangered species laws are modeled after the ESA, so that illegal trafficking or poaching of listed species is illegal.
2. The state endangered animal species law specifically states that "the incidental disturbance of protected plants during agricultural, forestry or development operations is not illegal so long as the plants are not collected for sale or commercial use."

Evaluation of Biological Significance

The determination of biological significance draws on the raw data collected from field surveys and the experience of professional biologists. Site significance is primarily influenced by the quality, condition, and rarity of natural community types and rare species present, the size of the site, and the ecological integrity or long-term viability of the site. Other considerations may include overall floristic diversity, presence of species that are uncommon or that are ecological indicators of special habitats, potential animal habitat, and degree of connectivity with other natural areas. The biological significance rating is meant to be as objective as possible. Ownership or prospects for conservation of a site do not influence significance.

The process by which site biological significance is designated for a site begins with the significance assigned by the field surveyor, but also involves consultation with biologists at the North Carolina Natural Heritage Program (NC NHP). Site survey forms prepared by the surveying biologist are evaluated by biologists at NC NHP and compared with statewide information on similar sites (i.e., those with the same natural community types, rare species, and other attributes). If, in comparison with similar sites, a site does not appear to merit the assigned significance, discussion between the field surveyor and NC NHP staff is held to resolve discrepancies and determine proper significance. This process enables a site significance to be put in a proper statewide perspective.
Q&A: Conservation Easements

Question: What is a conservation easement?
Answer: A conservation easement is a legal agreement between a landowner and a qualified organization such as the Piedmont Land Conservancy. In this agreement the landowner gives specific property rights (e.g., timbering rights, development rights) to a land trust to permanently hold. Land trusts usually only agree to permanent conservation easements; however, some government agencies do provide short-term easements that may range anywhere from 10 to 15 years in length.

Question: Can a conservation easement only be held by a land trust?
Answer: NO - In North Carolina, agencies or departments within local, county, and state governments may also hold conservation easements.

Question: If I sign a conservation easement do I still own the land?
Answer: YES - You will retain title to the land and will retain the right to pass the land to your heirs in your will or sell the property. When conducting yearly visits, the Conservancy must first call or get written permission before stepping onto your land. You own it and pay property taxes on it.

Question: Do I have any say in what property rights are donated to the land trust in the easement?
Answer: YES - Each conservation easement is tailored to the specific objectives of the landowner keeping the protection of the natural resources in mind. Thus, if you wish to build an addition home on the property in the future, your desire can be written into the easement. It is in the best interest of all parties involved to be as specific as possible about the permitted and non-permitted actions stated in the easement.

Question: What are the benefits of a conservation easement?
Answer: Several benefits associated with conservation easements are:
1) The conservation easement allows the property to be protected from future development.
2) The restrictions of the easement are tailored to meet the landowner’s objectives.
3) When signing a conservation easement a landowner becomes eligible for several tax benefits including a federal tax deduction, a state tax credit ($1 for $1 credit for 25% of the donation value up to $250,000 for individuals and $500,000 for corporations), reduction in estate taxes, and possibly a reduction on property taxes.
4) The landowner maintains ownership of the property so that the property may be sold at any time in the future.
5) If the property is sold, the conservation easement will remain in place.

Question: Are there costs associated with placing a conservation easement on my land?
Answer: YES - There are several costs associated with placing an easement on a property including the following items: a biological inventory; an environmental assessment/site screening; a survey, legal fees, a title search and an appraisal fee.

Question: Is the landowner responsible for all of these costs?
Answer: NO - The landowner is responsible for the survey, the appraisal, the environmental assessment, and their own legal fees. The land trust will often cover the biological inventory, title search, and their own legal fees. Sometimes funding is secured from grants to cover the costs associated with conservation easements. However, if the landowner can use an additional tax benefit, they can pay for all services and this will be added to the total potential conservation tax benefits.

Question: If I donate an easement, how is the value of my donation determined?
Answer: The value of the donation is determined by the appraisal of the property. When the appraisal is completed there are essentially two appraisals - one that values the land according to its best use and one that appraises the land with the conservation easement in place. The difference between these two appraisals is equivalent to the amount of your donation. A landowner’s tax benefits are then based on this donation value.

Question: Once the easement is signed what is the role of the landowner and what is the role of the land trust?
Answer: The landowner is responsible for abiding by the permitted actions and restrictions described in the conservation easement and notifying the land trust of any changes in property ownership. The land trust is responsible for making sure that the easement is upheld by whoever owns the land, and will address any violations that may occur in the future. The land trust will always contact the landowners prior to visiting the property to obtain their permission to be on the property. The Conservancy is carrying out the desires of the easement signer forever.

Question: I have heard that land trusts often ask for an additional donation to their Stewardship Endowment Fund... why?
Answer: When a land trust accepts a conservation easement, they accept the permanent responsibility of visiting the land, on at least an annual basis. A staff member will contact the landowner requesting permission to be on the property to conduct a site visit to make sure the landowner is upholding the easement and that the adjacent landowners are not encroaching on the easement boundary. If any violations are found to occur, steps are taken by the land trust to correct the violations - preferably in a friendly manner. However, in some instances the land trust will need to defend the easement in court. Hence, to be able to accomplish this annual visit schedule and legally defend the easement, the land trust needs funding to cover the associated costs. In response to this need, many land trusts have created a Stewardship Endowment fund where the money is conservatively invested to provide them with adequate interest money to perform these duties. The donations made by landowners to this fund are considered charitable donations and often times can be donated to the land trust over time or in their will. Essentially a landowner’s contribution to this fund ensures that the land trust will have the resources available to protect the land forever and to carry out the landowners’ desires.

Question: If I am interested in finding out more about conservation easements, whom should I contact?
Answer: You can either contact the Piedmont Land Conservancy at (336) 691-0888 or Dick Everhart, with the Surry County Natural Resource Conservation Service at (336) 386-8751, ext. 3.
Citizen Water Quality Monitoring

With conviction, Kelly Eanes recalls his motivation towards becoming a volunteer stream monitor...the development and construction of a golf resort, located along the upper watershed of the Mitchell River in Alleghany County. The publicity from this development on the mountain over a decade ago alerted many citizens, including Kelly, about the potential threats to water quality, particularly that of sedimentation. Kelly feels that long term monitoring strategies help citizens gain awareness of the Mitchell River's water quality before and after disturbances occur. "You've got to have data before you can be sure if a problem is present," Kelly says. "I started collecting samples in 1986 and sending them to Raleigh." Shortly after, Kelly and Dick Everhart organized the Mitchell River Stream Watch. Letters were sent to state and local officials regarding concerns of the construction underway and their voice was heard.

Stream Watch is a program organized under the Division of Water Resources of the North Carolina Department of Environment and Natural Resources that works with groups who adopt a waterway, or part of one, and act on its behalf. Many of the larger river conservation groups began gaining attention as Stream Watchers. At the state level, Stream Watch provides education, technical assistance, communication between other groups, and acts as an agency to report and store collected data.

Today, the Mitchell River is "watched" by a core group of ten volunteers. Will Harman, North Carolina Cooperative Extension Associate, North Carolina State University, collaborated with the Education Team of the Mitchell River Steering Committee to hold volunteer training for concerned citizens on monitoring techniques. Each volunteer monitors a specific reach of the Mitchell River once a month. In addition to monthly monitoring, volunteers form teams to perform biological sampling. Four times per year, three teams perform biological sampling by counting critters and identifying the various insects they find within a particular section of the stream. Some species of insects are intolerant of pollutants, which alerts volunteers of changing conditions if their counts begin to change and biodiversity decreases.

More volunteers are needed. John and Vicky Byrd were excited when they found out that there were others like them around the Mitchell River who were concerned about its water quality. John comments, "My first job with the state involved water pollution. Living on the South Fork I noticed the increased situation in comparison to the Upper Mitchell. I jumped at the chance to get involved, and Vicky and I really enjoy doing it." Interested citizens should contact Surry Soil and Water Conservation District by calling 386-8751 ext. 3 or e-mail surrysoil@surry.net.

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