Annual Report: Albemarle County Natural Heritage Committee

FY2006-2007

Creating a Balanced and Sustainable Approach to Biological Conservation in a Growing Community

Mission, Goals and Strategies

Mission

To maintain and restore the County's native biological diversity and provide a healthy environment for the citizens of Albemarle County.

Goal

The Albemarle County Natural Heritage Committee will develop a biodiversity action plan and subsequent implementation measures that provide means for sustaining the landscape states and ecological integrity required for important ecological services and healthy populations of native plants and animals.

Strategies

The Natural Heritage Committee will use the following four strategies to reach its goal:

- Continuous maintenance and improvement of the Biodiversity Assessment, to include all best available data on landscape states and function, as well as important species and community occurrences.
- Development and implementation of a public education program to inform a wide variety of citizens on biodiversity in the County and its protection.
- Development and implementation of a "Rapid Conservation Plan" for prompt protection of important sites under threat—largely working at the scale of individual sites
- Development and implementation of a "Strategic Conservation Plan" to select and implement long-term measures for landscape-scale biodiversity protection.

Progress to Date

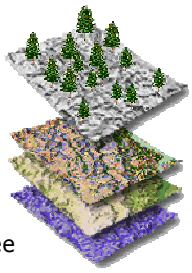
Establishing Direction

The Albemarle County Natural Heritage Committee (NHC) was established by the Board of Supervisors in late 2005 (current Committee membership shown on last page of report) to continue developing biological assessments and conservation strategies initiated by the Biodiversity Working Group (2000-2003). Initial meetings were devoted to a discussion of mission, goals and objectives, and how the Committee's work related to the County's Comprehensive Plan and other conservation-oriented initiatives. In early 2006, the Natural Heritage Committee established its initial direction and a plan of work for the 2006-07 fiscal year.

Accomplishments

The Committee's plan of action was organized around its four Strategies. Subcommittees were formed to provide focus and a more efficient organization for completing assigned tasks under each strategy.

Biological Assessment Subcommittee

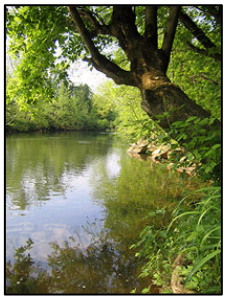


This group worked to develop a comprehensive and rational approach to cataloging and analyzing the County's biological resources. Recognizing that resources for collecting and analyzing information are limited, attention was focused on identifying existing sources of natural resource information, incorporating expertise from individuals and organizations within the County, and developing a Natural Heritage Database to support planning and environmental decisions. (See "Assessing the County's Biological Diversity," page 6.)

Results

- ☑ Developed a list of data needed to support analysis of biological resources.
- ☑ Produced a framework for landscape-level analysis of biological data.
- ☑ Initiated a meeting of conservation organizations, agencies and jurisdictions to discuss information needs and strategies for developing and sharing data. Development of land cover and impervious surface maps for the County is under review.

Rapid Conservation Subcommittee

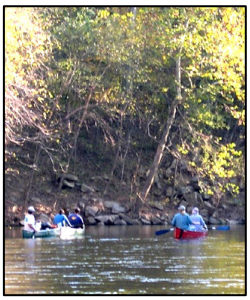


This subcommittee concentrated on identifying and recommending biological resources within the County that are in need of immediate conservation. The Committee realized that several years may pass before a comprehensive strategy could be outlined, all the while rapid development and land conversion was underway. Thus, based on the BWG report (2004), a number of sites were recognized as having special natural resource value that needed immediate identification for protection. The subcommittee assessed the results from the 2004 report, refined information with other naturalists, and developed a short list of key sites to present to the Board. (See "Taking Action for Rapid Conservation," page 8.)

Results

- ☑ Completed analysis of BWG study.
- ☑ Held workshops with local naturalists to refine high-priority sites.
- ☑ Developed additional information on selected sites under consideration.
- ☑ Developed information packets and conservation recommendations for consideration by the Board of Supervisors.

Education Subcommittee



The Education Subcommittee was tasked with determining how natural heritage information and activities should best be communicated with the public, and with developing an initial communications plan. Their focus has been to educate citizens about complex biological concepts and conservation strategies using straightforward language. To this end this subcommittee has begun efforts to develop a Natural Heritage section for the Albemarle County web site (see "Educating and Informing Residents: A Natural Heritage Web Site," on page 16).

Results

- ☑ Organized and held a Natural Heritage Open House at the Ivy Natural Area in the spring of 2006.
- ☑ Developed a dictionary of biological terms and concepts, solicited input from the NHC and others on the relative importance or relevance of various terms, and produced a suggested list of terms to help guide natural-heritage communications with the public.
- ☑ Created an initial structure and development plan for the Natural Heritage section of the Albemarle County web site.

Long Term Conservation Planning Subcommittee

This committee was charged with developing a sustainable approach to long-term biological conservation. Tasks for this group are still evolving, but early work has focused on identifying fiscal resources needed for NHC activities, reviewing scientific and professional information useful in guiding land use planning decisions, reviewing county conservation policies and programs, and consulting with other conservation organizations active in the County. (See "Planning for the Long Term," on page 17.)

Results

- ☑ Formulated budget requests to Community Development Department to support NHC work.
- ☑ Invited a number of conservation groups to NHC meetings to discuss issues of common concern.
- ☑ Reviewed literature in areas such as watershed analysis, landscape ecology and conservation-based land use planning.
- ☑ Initiated a discussion of how various conservation programs and techniques (e.g., Agricultural Conservation Easements, Mountain Overlay District, Transfer of Development Rights concepts) are working in the County.

Next Steps

Key objectives for the coming year include:

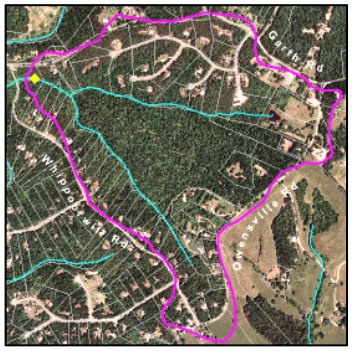
- Develop high-resolution impervious surface and land cover maps for the County, which will provide a current, state-of-the-art baseline for analyzing biological resources, changes in land use over time, and effects of various conservation strategies.
- Complete recommendations for a Natural Heritage Database to support sound decision-making.
- Launch Natural Heritage web site.
- Review current policies and approaches related to biological conservation to create an integrated conservation strategy and reduce potential redundancies.
- Research and formulate recommendations for new sites in need of near-term conservation.

Assessing the County's Biological Resources

Information Available to Support Natural Heritage Analyses

The Biological Assessment Subcommittee solicited input from County staff, other public entities, local conservation groups and state agencies to determine what information resources were available to support analyses of natural heritage issues. As expected, a wealth of information exists to support natural heritage planning, but this information is often not readily available to county planners, is outdated or requires specialized expertise to apply appropriately. The following is an initial list of available and needed information to adequately support conservation planning. The Subcommittee has also had preliminary discussions with County GIS staff to determine how information can best be made available to planners and decision-makers.

1. Local information available
   - 1.1. County GIS data
     - 1.1.1. Parcels
     - 1.1.2. County parks
     - 1.1.3. Transportation
     - 1.1.4. Structures
     - 1.1.5. Conservation easements
     - 1.1.6. Historical aerial photography
   - 1.2. Conservation organizations
     - 1.2.1. TNC Rivanna Watershed Basin Study
     - 1.2.2. StreamWatch "Living in Our Watershed" report and stream database
     - 1.2.3. Field observations from local naturalists
   - 1.3. City of Charlottesville GIS data
   - 1.4. UVA GIS data
2. State information available
   - 2.1. VA DCNR
     - 2.1.1. Natural Heritage database
     - 2.1.2. Conservation Lands Assessment
   - 2.2. VGIN
     - 2.2.1. 2007 aerial photography
   - 2.3. VA DMME
     - 2.3.1. Geologic formations
3. Federal information available
   - 3.1. NRCS SSURGO (county soils) database
   - 3.2. National Wetlands Inventory
   - 3.3. National Hydrologic Database
   - 3.4. FEMA floodplain maps
   - 3.5. Digital topographic data
   - 3.6. Shenandoah NP data



A forested suburban watershed in Ivy.

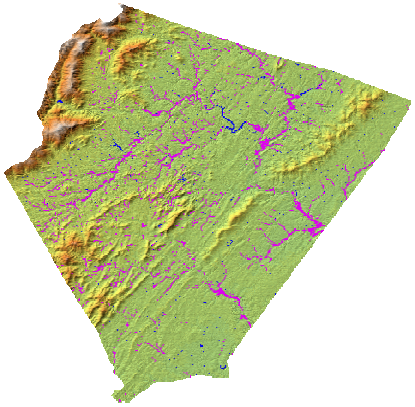
4. Information needed
   - 4.1. Updated, high resolution land cover data (planning stages)
   - 4.2. Updated County GIS data to support impervious surface analyses (in-progress)
   - 4.3. Consolidation of existing biological field data (in-progress)

A Preliminary Framework for Classifying and Prioritizing Conservation Lands in Albemarle County

The purpose of the classification is to organize and map ecological units throughout the County in order to provide a framework for understanding the diversity of ecological resources and how land use decisions might affect different resources in different ways. The classification will integrate physical geography of the County (topography, soils, geology, water resources) with its cultural geography (roads, houses, land use zones) to provide a comprehensive framework for making more informed land use decisions.

Classification Schema

1. Natural context (ecological types)
    - 1.1. Vegetation (land cover)
        - 1.1.1. Hardwood forest
        - 1.1.2. Coniferous forest
        - 1.1.3. Mixed forest
        - 1.1.4. Open field
    - 1.2. Soils and geology
        - 1.2.1. Riparian/hydric soils
        - 1.2.2. Bedrock geology (acidic/basic)
    - 1.3. Topography
        - 1.3.1. High elevation
            - 1.3.1.1. Exposed landforms
            - 1.3.1.2. Slope landforms (slope x aspect)
            - 1.3.1.3. Sheltered landforms
        - 1.3.2. Low elevation
            - 1.3.2.1. Exposed landforms
            - 1.3.2.2. High elevation slopes (slope x aspect)
            - 1.3.2.3. Sheltered landforms
    - 1.4. Landscape metrics
        - 1.4.1. Patch size
        - 1.4.2. Connectivity (repopulation, gene flow, migration)
        - 1.4.3. Proximity to streams
    - 1.5. Time since disturbance
        - 1.5.1. Short
        - 1.5.2. Medium
        - 1.5.3. Long
2. Cultural context
    - 2.1. Current land use
    - 2.2. Historic value
    - 2.3. Biological value (rare or threatened species, uniqueness)
    - 2.4. Existing base for potential conservation lands
        - 2.4.1. County recreation parks
        - 2.4.2. School and other public properties
        - 2.4.3. Conservation easements
        - 2.4.4. Mountain Protection Area
        - 2.4.5. University of Virginia lands
        - 2.4.6. Shenandoah National Park
        - 2.4.7. Watershed/riparian zone protection
    - 2.5. Population density
    - 2.6. Parcel and structure density
    - 2.7. Road density
    - 2.8. Proximity to roads
    - 2.9. Proximity to development clusters
    - 2.10. Impervious surface area
    - 2.11. Point source impact (quarry, effluent outflow)
    - 2.12. Level of disturbance



River bottom soils in Albemarle County.

Taking Action for Rapid Conservation

List of Sites Proposed as High-Priority Conservation Targets with Recommendations for Protection Mechanisms

Introduction

Prompt protection of areas in Albemarle County known to contain exceptional biological resources is vital to accomplishment of County commitments to protection of natural resources. Consistent with this, the Albemarle County Natural Heritage Committee proposes that six sites of exceptional biological value be designated as priority conservation targets. This section of the report contains an explanation of the method employed in site selection, detailed descriptions of proposed sites, recommendations for protection, and acknowledgements of assistance.

Conservation Area Selection

Identifying ecologically valuable areas in Albemarle County for protection and/or restoration is perhaps the most important goal for the Natural Heritage Committee (NHC). The Committee is working toward a Biodiversity Assessment that will comprehensively identify those areas.

That Assessment began with the work of the County's Biodiversity Work Group (BWG), which created a list of 38 sites that experienced local field naturalists consider to be among the most important in the area. Those naturalists, who are longstanding experts on the County's flora and fauna, selected sites that represent a cross-section of the BWG's list of "critical site and landscape-feature types." Protecting that range of site types—everything from large forest blocks to wetlands to individual occurrences of rare species—is critical to effective conservation. The 38 sites represent the collective field knowledge of a few skilled naturalists over a span of more than 40 years, focusing often on rare plants. To date no systematic County biodiversity surveys have been undertaken at a fine scale following any strict criteria for site selection; thus the 38 sites simply represent a starting point, or minimal set, for the NHC.

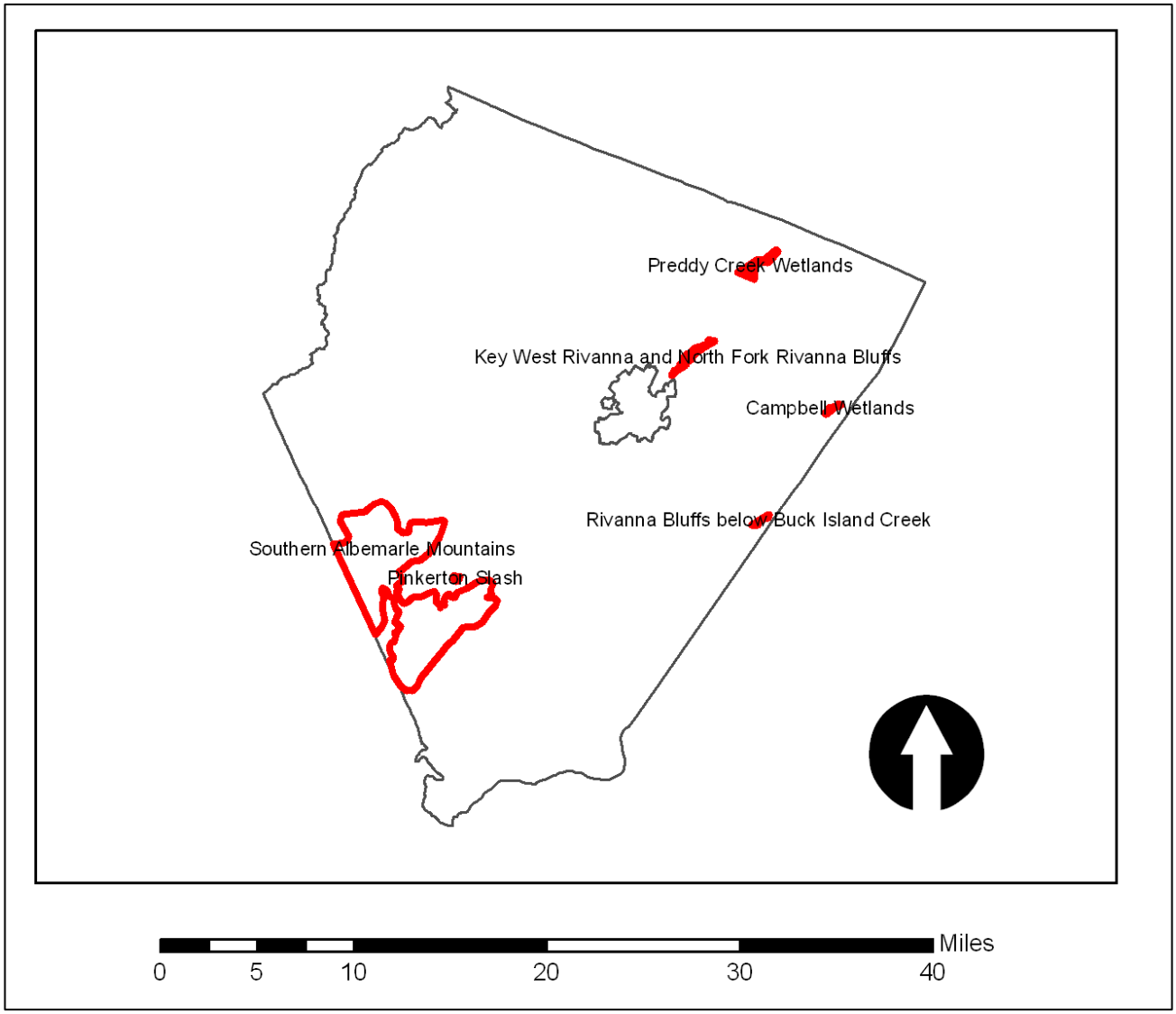
From the list of 38 sites, the naturalists have come to consensus on six sites that they consider to be the highest priorities for conservation. Conservation experience around the world has shown that this approach— the Delphic method, or selection through consensus based on expert knowledge—is a reliable way to quickly and accurately identify important conservation areas. The naturalists based their choices on the high conservation values of the sites and the variety of habitats they represent.

Over time, this expert knowledge will be bolstered by detailed technical assessments that use geographic information systems combined with field evaluations to comprehensively identify important natural areas. The result will be detailed mapping that will help the County to take steps to ensure that these natural areas receive the greatest protection from development or other land conversion possible.

The following section gives more detailed information on the six sites that the NHC is recommending to the Board of Supervisors as priority conservation areas this year. Following the list of sites, we make recommendations on protection mechanisms. The locations specify approximately the locations of important biological resources. The locations do not include buffer areas that would promote persistence of biological resources. We provide some information on easements at proposed conservation sites. Though easements require the parcels to which they apply remain in open space, easements commonly do not require protections for biological resources contained in those open spaces.

As information on the distribution of biological resources increases, more areas of importance will be recognized. The Natural Heritage Committee anticipates presenting additional lists of proposed conservation target sites in the future.

Sites Proposed as Priority Conservation Targets



Campbell Wetlands

Location: Keswick Quadrangle, Campbell Road (northwest side of RR tracks)

Parcels: 6

Area: 68 acres

Ecological Type: Emergent wetland.

Description: A rich wetland adjacent to Mechunk Creek, permanent wetland. Site of a number of unusual plants. Marsh contains marsh marigold, spatterdock, stool sedge.

Unique aspects/elements: In the area is the only known county occurrence of Short's sedge (*Carex shortiana*). Only county occurrence of the beautiful Jacob's Ladder (*Polemonium reptans*), and many spring ephemeral flowers.

Easement status: 1 easement, 6% of area.

Key West Rivanna and North Fork Rivanna River Bluffs

Location: Charlottesville East Quadrangle; Mostly bluffs along east side of Rivanna River near Key West and North Fork Rivanna River south of Proffitt Road bridge to Redbud Creek.

Parcels: 33

Area: 315 acres

Ecological Type: Piedmont/Mountain bottomland forest, Chestnut Oak Forests, Acidic Oak-Hickory Forests, Mesic Mixed Hardwood Forests, Basic Mesic Forests (toe slopes above flood plain).

Description: The high bluffs (500-560 ft), diversity of geology and soils, and rich Basic Mesic Forest type make this a very valuable area. Site is within the Charlottesville and Swift Run geologic formations. Slopes gradual at first, then climb steeply with an average slope of 50%. A strip of alluvial land is located between steep slopes and the river. Floodplain area is dominated now by two hay pastures. Remainder is forest. Rocky ridge and slopes well forested. Some of the larger trees about 100 years old, with a few perhaps in the 150 yr range. Most of the area had been logged at different times.

Unique aspects/elements: On the toe slopes are dwarf larkspur, found in only two places in the County. Only known County occurrence of Toadshade trillium. On the cliffs are three rare tiny ferns, Bradley's spleenwort (only known County site) and Trudell's spleenwort. A survey recorded 35 species of trees, 67 species of wildflowers, and 16 species of ferns among other types of vegetation.

Easement status: 4 easements, 17% of area.

Pinkerton Slash

Location: Covesville Quadrangle. East of Rt. 633, near western base of Fan Mountains

Parcels: 2

Area: 34 acres.

Ecological Type: Emergent wetland. "Piedmont/mountain bottomland forest" (VA Div. Natural Heritage), or second growth maple-poplar-ash forest (on flood plain of Hardware R.)

Description: Part of the flood plain of the Hardware River (about 400 meters from a south edge of property), the site had been ditched and drained (still functioning) probably for grazing years ago, but has now grown up into a canopy of medium-aged (50-80 years old) red maple, yellow poplar, and green ash trees. Hydrology has been altered, thus, represents a possible opportunity for restoration. Seventeen species of wildflowers and 5 species of ferns have been identified as of 2003.

Unique aspects/elements: (1) the good population of purple fringeless orchids within the area (just NE of the Slash), (2) Swamp leucothoe (may be only site in the County), (3) Canada mayflower, a montane species that is rare at piedmont elevations, and (4) rare stand of poison sumac, possibly one of two locations in the County.

Easement Status: 1 easement, 100% of area.

Preddy Creek Wetlands

Location: Barboursville and Earlysville Quadrangles. Stretch of riparian wetland forest about two miles long, near Preddy Creek and railroad tracks, crossed by Route 640. Includes the Turkey Run heronry, independently recognized by Biodiversity Work Group as site of special value.

Parcels: 34

Area: 399 acres

Ecological Type: Emergent wetland. Piedmont/mountain bottomland forests; some semi-permanent impoundments (beaver)

Description: Wetlands lie parallel to railroad tracks; altered hydrology from railroad bed construction and beaver activity. Poorly drained wetland soils (Chewacla and Wehadkee) fairly common. A complex now of active and abandoned beaver impoundments, drained areas, and some small flowing streams. Originally had some purple fringeless orchids, which may still emerge in places. Much of the original floodplain vegetation is scarce now. The sites abandoned by beavers now grown up into more simple plant communities of buttonbush, dense sedges and grasses.

Restoration action probably necessary here to try to restore some of the previous diversity of the herbaceous vegetation.

Unique aspects/elements: great blue heron colony of abut 40 nesting pairs on the uplands east of Preddy Creek (Turkey Run). Possible purple fringeless orchids still located here.

Easement status: 2 easements, 35% of area.

Rivanna River Bluff below Buck Island Creek

Location: Boyd Tavern Quadrangle, bluff near Rt. 53 bridge

Parcels: 3

Area: 58 acres.

Ecological Type: Chestnut Oak forest, mesic mixed hardwoods, mixed oak-heath forest, and eastern hemlock forest (may also be some Coastal Plain/Piedmont Acidic Seepage Swamps)

Description: Bluff faces northwest, runs about 0.5 miles, very narrow strip of floodplain. Soils acidic and poor, mostly Manteo (low fertility). Hemlock stands free of wooly adelgid to date. Some old pine stands, with cored trees aged at about 180 years of age.

Unique aspects/elements: Presence of *Lycopodium tristachyum*, a mountain species. Also, trailing arbutus and turkey beard, rare in County. Also rare are *Arabis lyrata* (only known site in County), and two tiny ferns, *Asplenium pinnatifidum* and *A. extrudellii*. Bluffs along the river here are unusual in having 6 of the 8 Virginia pine species growing.

The only known apparently native loblolly pine, with a DBH of 34 inches (ca. 135 yrs old) is found in an adjacent ravine.

Easement status: 0 easements, 0% of area.

Southern Albemarle Mountains

Location: Covesville, Greenfield and Schuyler Quadrangles. Large block of mostly mountain forests along Albemarle Co.- Nelson Co. boundary, bisected by Route 29. Includes Brush Mountain Rock Face, Bungletown, Chalk Rock and Fan Mountains places of special value recognized by Biodiversity Work Group. Also includes Boaz and Heard Mountains, Castle Rock, Appleberry Mountain.

Parcels: 377.

Area: 21,588 acres.

Ecological Types: Piedmont/montane deciduous forest

Description: A number of low mountains in the southern area of the County that are included in the Mountain Overlay District have had less development than other areas of the County, thus retain a high degree of "wildness" that benefits a broad diversity of flora and fauna. Large tracts of unfragmented lands (> 300 acres) with > 85% canopy cover can still be found here, which is unusual for the County. A variety of upland forest types characteristic of fertile and infertile, acidic soils occur. Outcrop barrens and acidic seepage swamps also are found in the Southern Mountains. The region is significant for its bird life, as over 70 species of breeding birds have been recorded in the past decade. The Heards Mountain vicinity, the best surveyed area, has 15 recorded species of breeding wood warblers, indicating a very high level of biodiversity.

Unique aspects/elements: The Heards area includes a population of cerulean warblers, a State Threatened species (and federal candidate species), as well as possibly the only breeding site of the rose-breasted grosbeak in Albemarle County east of the Blue Ridge. Other rare wildlife include eastern woodrats (rare in region) and the only suspected occurrence in the County of the Cope's tree frogs and southern red-backed voles.

Easement Status: 19 easements, 17% of area.

Conservation Recommendations

The Natural Heritage Committee and naturalists who were consulted in development of this list believe perpetual easements with conservation plans that address protection of biological resources at the target sites are the best means of conserving biological resources at the proposed sites. We recommend the County examine establishing a new purchase-of-development-rights program that actively seeks to purchase development rights on properties in these conservation priority areas and establish on them perpetual easements with biological resource conservation plans. In some cases, easements with terms aimed at protecting biological resources could be sought as overlays to existing open space easements that do not explicitly protect biological values. This program also should seek to acquire conservation easements in buffer zones around identified priority conservation areas. Buffers sought should vary with conservation site resource types and landscape contexts. Transfer of development right programs that target areas rich in natural resources might provide a second mechanism for establishing permanent effective protections in these areas.

The Natural Heritage Committee also recognizes that education of the public is vital to successful conservation. We proposed that an education initiative aimed at residents and owners of properties in proposed conservation sites be developed and implemented. The program should provide information on the biological values of these sites and land management methods that foster these resources.

As a supplement to the education program, we urge the County to develop a program for award of certificates of recognition to landowners who commit to the practice of stewardship of natural resources on their properties. In addition to recognizing good deeds, such certificates could be of financial value to farmers engaged in local direct marketing.

We also urge the County to encourage owners of important wetlands to implement management schemes that preserve the wetland biological values. Wetland sites already are protected against many destructive activities (such as filling) by state and federal laws. However, without management, wetland sites can undergo changes (such as development of forest cover) that reduce their biological distinctness and value. Staff of The Nature Conservancy has offered assistance in finding financial support for management programs at wetland sites recognized as important by the County.

Acknowledgments: The Natural Heritage Committee thanks Dan Bieker, Tom Dierauf, Ken Lawless and Charles 'Mo' Stevens for their critical assistance in developing this list of proposed conservation sites.

GIS Program Development

The Committee is working with Planning Division staff to improve the geographic information available on biological resources in the County. The first step in this ongoing effort is to design a GIS layer that can easily and quickly inform County staff when there are important biological resources in a given area. Student interns in the Planning division are finding the best available data on resources identified as important by the Biodiversity Work Group—from wetlands to large, unfragmented forest blocks. All those mapped resources will be included in a single map layer that can quickly alert staff to the presence of important resources. Where appropriate, staff can then follow up to find out more about the resources in that location.

Educating and Informing Residents:

A Natural Heritage Web Site

Outline of Proposed Content for Natural Heritage Web Page

Home page

THE ALBEMARLE COUNTY NATURAL HERITAGE COMMITTEE

Mission

To maintain and restore the County's native biological diversity and provide a healthy environment for the citizens of Albemarle County.

Goal

The Albemarle County Natural Heritage Committee will develop a biodiversity action plan and subsequent implementation measures that provide for sustaining the landscape states and ecological integrity for important ecological services and healthy populations of native plants and animals.

Links (side bar on main page with main topics in bold as below and the links under the bold headings).

1. Natural Heritage in Albemarle County

(link 1) NHC -goals, mission, strategic plan
(link 2) BWG – very brief summary, summary report, complete report, Appendices
(link 3) Public sites that can be visited in Albemarle County

2. Current status if Natural Heritage in Albemarle County

(link 4) NHC – current work, subcommittee work
(link 5) Assessment data
(link 6) Maps, charts, pictures

3. Why is our NH important

(link 7) specific ecological services
(link 8) vocabulary
(link 9) basic ecological concepts
(link 10) native species
(link 11) invasive species

4. What can I /we do to protect our Natural Heritage

(link 12) environmental organizations
(link 13) As an individual
(link 14) As a neighborhood
(link 15) As a county (ACE)

Contact information (bottom of the page and probably found on numerous other pages)

Planning for the Long Term

In addition to accomplishments outlined above, the Strategic Planning Subcommittee has developed a guide to help Committee members remain on task while also understanding long term goals and interrelationships of subcommittee assignments. Once important first steps are completed by other subcommittees, this group will take on the task of leveraging comprehensive data on the County's biological resources with current conservation strategies to create a long term Natural Heritage Conservation Plan for consideration by the Board.

See the following foldout page for the Committee's long-term workplan.

Natural Heritage Committee - Strategic Conservation Plan Outline

Goal. The Albemarle County Natural Heritage Committee will develop a biodiversity action plan and subsequent implementation measures that provide means for sustaining the landscape states and ecological integrity required for important ecological services and healthy populations of native plants and animals.

Strategies
The Natural Heritage committee will use the following four strategies to reach its Goal:
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Landscape-Scale Plan Objectives
Protects and restores landscapes necessary for the sustainability of important biological resources
Assures that landscape states, functions, and connectivities are sustained such that important ecological services will continue to be provided; tracks quantitative targets
Educates citizens in the County about the significance and benefits of biodiversity and the protection and restoration of natural resources

Rapid/Site-scale Program Objectives
Protect occurrences of important biological resources.
Develop action proposals in response to acute, rapidly arising threats to local biological resources.

Target Setting (whole Committee, coordinated by staff and Strategic Planning subgroup)
Set overall targets - List of features, species, habitats, functions to (1) protect and/or (2) restore
Set conservation targets (quantitative and/or specific areas/systems)

Subcommittee Workplans (note - some subcommittee tasks may depend on completion of other subcommittees' tasks)

Biodiversity Assessment	Long-term Conservation Plan	Biodiversity Education	Rapid Conservation
Create a Natural Heritage Knowledgebase to meet needs of Long-term Conservation Plan, Rapid Conservation program, and County staff. Identify, assess, and map key sites / communities / systems, threats, and existing conservation areas and managed lands	Prioritize needs/scope - Identify key areas under threat and/or key communities (to focus conservation efforts), key personnel needs (eg. GIS), products, and estimate budget by year	Develop "basic literacy" about biodiversity in Albemarle County (basic concepts and vocabulary; basic educational message) [content to be guided by assessment and conservation programs]	Propose sites with important unprotected biological resources as targets for protection, potentially including proposals for conservation plans and mechanisms.
Develop a landscape classification scheme to characterize (conceptually and spatially) landscape traits that can be used as indicators of environmental quality [and provide foundation for landscape-scale conservation plan]	Using identified targets and priorities, articulate scientific foundation of Long-term Conservation Plan, and recommend process for developing the plan	Craft effective messages	Assist in development and public promotion of effective tools for protection of sites with important biological resources
Develop a biological inventory and monitoring plan that will help identify trends in, potential threats to and opportunities for increased conservation of natural resources.	Guide drafting of Long-term Conservation Plan for proposal to Board	Choose an appropriate messenger (vehicle for delivery) -- How will we get message to audience?	Propose actions in response to particularly acute, emerging invasive species threats
		Create an implementation plan	

Committee Recommendation of Landscape-scale Conservation Plan to Board of Supervisors

Committee Recommendation of Rapid Conservation actions to Board

Public input process on Long-term Conservation Plan and refinement of plan for proposed Board adoption - Range of Committee development vs. public process to be determined

Implementation of Rapid Conservation actions (multiple cycles)

Adoption of Landscape-scale Conservation Plan - Requires Board Acceptance/adoption into Comprehensive Plan

Implementation of Landscape-scale Conservation Plan - Committee to oversee in coordination with staff

Monitoring of Biodiversity Status and Implementation Outcomes (note - status monitoring will begin and continue before Action Plan development)

Feedback to Biodiversity Assessment, Rapid Conservation, and Revisions to Landscape-scale Conservation Plan

Natural Heritage Committee Membership

Name	Affiliation
Cole Burrell	Professor of Landscape Architecture University of Virginia
Mike Erwin	Professor of Environmental Science University of Virginia
Diana Foster	Educator, New Venture Directions, Inc.
John Murphy	Director, StreamWatch
Richard Odom	Consulting Ecologist/GIS Specialist
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Leif Riddervold	Audubon International
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Phil Stokes	
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