

**URBAN FOREST CONSERVATION  
ASSESSMENT FOR FAYETTEVILLE  
ARKANSAS**

**FAYETTEVILLE NATURAL HERITAGE ASSOCIATION**

URBAN FOREST CONSERVATION ASSESSMENT  
FOR FAYETTEVILLE, ARKANSAS

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Fayetteville Natural Heritage Association

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## Summary

This report describes development of a Conservation Priority Ranking Model (CPRM) and its application to areas in and around Fayetteville. The area is renowned for its natural beauty and tree-covered hillsides which most certainly have contributed to population growth that inevitably threatens natural areas. Fayetteville Natural Heritage Association (FNHA) began this project in 2005 with a grant from the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service. The project's purpose was to identify the highest priority natural areas for conservation in and around Fayetteville before they disappeared. FNHA's partners in this project are The Nature Conservancy's Ozark Highlands Office and the Landscape Architecture Department at the University of Arkansas.

The idea for a study began when the FNHA Board commissioned a student intern at the U of A to look at conservation strategies. He interviewed local officials, planners, conservationists, scientists and developers, and he visited many nearby natural areas. His report strongly recommended development of a Conservation Priority Ranking as an essential tool to evaluate urgent conservation needs and to advance improvements in land use policy.

Public input was solicited, asking what criteria should be used to rank areas for conservation. This was done through a questionnaire that was made available at five public meetings and also on the City website. Over 120 were returned. Results indicated that natural areas with the potential for trails held the highest priority for the participants. Connecting trails linking large natural areas was the next highest priority. Participants also identified 30 specific areas as conservation candidates. (Ninety percent of these areas were also identified in the CPRM analysis.)

Project guidance was provided by a Science Advisory Committee (SAC) that consisted of FNHA members, U of A faculty, City of Fayetteville staff (a forester and individuals from the planning and parks departments), State Forestry staff, Beaver Water District staff, and TNC staff. Members of the SAC also analyzed 34 of the top sites identified by the CPRM analysis. The site visits identified vegetation types, soil characteristics, a diversity of natural features that allowed a glimpse of the unique qualities of the region, and recreational possibilities of walking and hiking on the site.

The study area goes beyond Fayetteville's planning area and includes the Illinois and White River sub-watersheds and nearby communities. Washington County Assessors Office data allowed analysis of each parcel of property in the study area. About 5,500 parcels were identified that were larger than 5 acres and had less than 50% development. 557 parcels are in the city and 797 are in the planning area. The project methodology insured that top sites in the study area, the City planning area, the City and each ward were identified. A high proportion of the ranked parcels that were visited had locations with features worthy of consideration for conservation.

An interesting result of the GIS analysis was that most of the top ranked parcels were part of

larger clusters of other highly ranked parcels. In one example, there are five ranked parcels are near Lake Wilson (the highest is #3). Stream valleys to the south that feed this lake have major bluffs and old logging roads that could be used as trail corridors. In another example, there are three ranked parcels on Puddin Hill (the highest is #5). The City of Fayetteville master trail plan has suggested a loop trail around the top of this hill and a trail up the southern slope (now a utility easement) that allows access to a truly impressive bluff. A third example is the Washington Mountain/Kessler Mountain cluster with five ranked parcels (highest are #'s 4 and 8). This cluster could be part of a trail corridor linking the Boys and Girls Club to the proposed new soccer fields. Additional clusters are within the watershed, but outside the Fayetteville city planning area.

The highest ranked parcel within the city (#7) is on Markham Hill and it is worth noting that the owner is working to conserve the property by pursuing limited development. A considerable number of the ranked parcels visited were either under development or for sale. One has the infrastructure completed (Happy Hollow area, #60), one has clearing in progress (Township Street east of College Avenue, #11), two were in various stages of planning (DePalma property, #66 and a parcel at the east end of Whillock Street, #72), and the parcel north of Lake Lucille (Rank #10) is up for sale. One of these has been conserved: the developer and the DePalma family have given 30 acres of the DePalma property contiguous to Mt. Sequoyah Woods to the City. Another is on the way to a conservation effort by neighbors with FNHA's help: a parcel north of Lake Lucille.

Overall results of this study have been included in the development of the Fayetteville City Plan 2025, and the Beaver Water District has begun a GIS based survey on the Beaver Lake watershed using criteria specific to their charter based on the success of this study.

History has shown that communities often operate by crisis management, particularly in regard to land use. Recognizing this and observing the rapid pace of development in this area, FNHA has created a Conservation Priority Ranking Model that blends ecology, aesthetics, human use, and threat of development to rank widely diverse land parcels. This "short list" will provide focus to future conservation efforts, e.g., working with specific landowners to develop conservation opportunities, and working with city leaders to guide land use policy.

## INTRODUCTION

Today, our city is on the verge of losing the natural areas that have been a constant partner over the years. Fayetteville's relationship to the landscape is due to the fact that it is on the dividing line between the Boston Mountains to the south and east and the Springfield Plateau to the north and west. These two landscapes provide dramatic contrast and create a community that is known for its outstanding beauty and outdoor living.

The initial founding of the Fayetteville Natural Heritage Association (FNHA) in 2003 was due to the threat of development to Mt. Sequoyah Woods. From the beginning, it was clear that natural areas within the city and its surroundings will increasingly become covered with roadways, parking lots, and development. To promote the conservation of our historic natural landscape, the members of FNHA joined together to educate the public and raise funds. Since 2003, the disappearance of our valuable natural areas has only accelerated. The recent 2025 Fayetteville City Plan has pointed out that our citizens must accelerate public acquisition of open space and parks. The importance of this goal is apparent to all of us who have worked toward preservation of places such as Mt. Sequoyah Woods.

For several years, FNHA has been collecting suggestions for parcels of land that should be conserved. This past year, an unparalleled opportunity arose. The Ozark Highlands office of The Nature Conservancy had recently hired a Conservation Geographic Information System specialist. GIS, a computerized system of mapping, can use available natural resource maps along with aerial photographs and county ownership parcel maps to create a series of layers that identify the most valuable natural areas in and around Fayetteville. The Fayetteville Natural Heritage Association received a \$20,000 grant from the Urban and Community Forestry Assistance Grant Funds as of July 2005 to identify high priority areas before they disappear due to rapid population growth. In his award letter, Governor Mike Huckabee noted that 80% of Arkansans live in urban areas where planning and management of community forests adds to the quality of the state's natural resources. Mayor Dan Coody has said that this project will provide input for city plans. FNHA will use this information to begin a dialogue with individual landowners and community groups about conservation options. We also expect that this project will show other communities across Arkansas how such an analytical tool can help in land use, planning, and conservation efforts.

The GIS mapping study is the beginning of a process that also requires on the ground site analysis and input from citizens on what features are important to them. The beginning of these efforts is included in this report.

## ACKNOWLEDGEMENTS

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## PROJECT PURPOSE

The goal of this project is to develop an inventory of forested natural parcels of land in and around Fayetteville, Arkansas, and prioritize them by using conservation values such as ecological characteristics, parcel size, and development threat. The prioritized list will be used by FNHA and others to assist in working toward protection a number of high quality sites. This parallels FNHA's mission to "conserve natural areas of Fayetteville and its environs for the benefit of present and future generations."

Project objectives are to:

- Maintain Fayetteville's historic natural character and key distinguishing landscape features
- Provide opportunities for current and future residents to use and enjoy natural areas close to their homes
- Use Fayetteville watershed boundaries as study boundaries, thus reducing the impact of development on the watersheds of the White and Illinois rivers
- Create a mapping and site analysis process and product that will direct the efforts of FNHA for the foreseeable future
- Assist and partner with community organizations, the City of Fayetteville, surrounding towns, state and regional commissions, educational institutions, and individuals in developing land use plans that promote conservation of valuable natural areas in the watershed area of Fayetteville.
- Include communities near Fayetteville in the study, enabling them to use the information for their own conservation efforts.

### The effects of urban growth

Fayetteville has experienced a high growth rate over the past fifteen years that has resulted in expansion of its boundaries and designated growth areas with increased suburban sprawl. It is estimated that the current population is now about 70,000. The new City Plan 2025 is recommending that sprawl be discouraged, since the addition of 40,000 more people will continue to impact the natural landscape and increase auto traffic. Support of growth in the city center while limiting growth on the edges will improve the situation. At the same time, a major goal of the Plan is to "assemble an enduring green network" (Draft of City Plan 2025, p. 88). This needs to be accomplished as quickly as possible by identifying diverse new funding sources and partnership methods with regional not-for-profit organizations and individual property owners. The plan gives reality to this suggestion by mapping an extensive outer greenbelt of trail systems that provides access to natural areas around Fayetteville.

At the same time that Fayetteville has been expanding, the ring of towns around the city also have had explosive growth. Each town has developed a designated growth area, including Elkins, Goshen, Springdale, Johnson, Wedington, Farmington, Prairie Grove and West Fork.

## Conservation possibilities for the Fayetteville area

The Fayetteville area land conservation characteristics differ depending on which direction one looks.

South and east of the city are the Boston Mountains. These are formed from sinuous ridge tops, ¼ to ½ miles wide, that look down into long winding valleys centered on creeks and forks of the White River. Steep stony slopes with ‘benches’ and vertical bluffs link the ridges and valleys. In many places, hardwood forests have been cleared away on the ridgetops, benches and valleys. Steep slopes, however, have often remained clothed in forests. Thus, parts of the southern side of Fayetteville are less susceptible to sprawl development. Suitability for building is limited on valley floodplains and steep slopes while ridgetops and gentle slopes present opportunities for construction. Farther to the south, the Ozark National Forest creates a patchwork of public land beyond the immediate growth area of the city, serving as a regional large scale forest within an hour’s drive. This resource, however, does not offer protection to natural areas within and next to Fayetteville.

To the north and east, on the Springfield Plateau, the land levels out into broad areas of sloping hills. Here, many farmland acres have been cleared of forests, while existing prairies have been plowed up for ranching and farming purposes. At the intersection of the Boston Mountains and the Springfield Plateau, to the south east of Fayetteville, a line of mountains stands out from the flatter land that includes Kessler Mountain, Miller Mountain, and Stevenson Mountain.

The Fayetteville area’s natural forested landscape will only be worth conserving if it has been managed well. In many places, poor management practices have negatively affected water quality and quantity, caused erosion of soils, eliminated wildlife habitat, and removed valuable species of trees. Crucial requirements for conservation include sites that have the least disturbed character and a fully functioning ecosystem. The best candidates are likely to be (1) hillsides and hilltops of oak hickory forests interspersed with geologic forms such as rock outcroppings and bluffs and (2) river and stream corridors with rich soil deposits that support bottomland forests and aquatic habitats. Finding relatively large and undisturbed sites with these key characteristics is the goal of the GIS mapping process and on the ground site analysis described in this report.

As each highly ranked parcel deserving of conservation emerged from the mapping process, it became apparent that some sites were already lost to conservation because they are in the planning stages for development or are actually under construction. This discovery has strengthened FNHA’s desire to conserve valuable natural sites that are still available. It has also given FNHA a new goal: working with developers and landowners to find methods to preserve important natural features of soon to be developed sites. Such negotiation may include buffer zones along streams and drainage ways, viewsheds from mountainsides and ridge tops, and conservation of unique habitats. In addition, FNHA needs to look beyond the city boundary to conserve valuable natural sites that are

under threat of sale for development and whose owners may wish to preserve property for future generations.

## STRATEGIES

The study is based on four major strategies.

Strategy 1: to involve the public through meetings, questionnaires, and presentations to city agencies, the City Council members, and the Environmental Concerns committee in order to receive feedback on the goals of the project and support for its final recommendations.

Strategy 2: to direct the project through a Science Advisory Council consisting of knowledgeable individuals in the areas of conservation, planning, education and geographic information systems.

Strategy 3: to develop a GIS model that analyzes parcels of land through a scoring process. Major concerns include the ecological characteristics and values of the land (i.e. forest cover, streams and ponds, wildlife, etc.), parcel size (under the assumption that larger parcels have more potential for natural habitat and functioning ecosystems), and negative impacts of human use (i.e. roads, buildings, and open pasture).

Strategy 4: to test the mapping process through ground analysis of at least 25 sites and assess how the project information can be used most effectively in the future.

## INVOLVEMENT OF THE COMMUNITY

An initial presentation and discussion was made with the City Council at their Agenda Session in September 2005. At this meeting, it was suggested that the Environmental Concerns Committee be asked for their input. The Environmental Concerns Committee suggested that a questionnaire be developed to gather public input about priorities for land conservation.

A public meeting was held on November 2, 2005 that described the need for the conservation effort and listed the granting agency, the project partners, project boundaries, the analysis process and the potential use of project results.

Next, a questionnaire was prepared based on the priority ranking model from the GIS study (see the GIS Methodology section below). This contained 29 questions divided into four sections: natural land based characteristics, natural water based characteristics, potential for recreational use, and landscape settings. The respondents were asked to rank priority characteristics on a scale of 5 (most important) to 0 (least important). The questionnaire was made available on the Fayetteville web site, by e-mail to the FNHA member list, at the public meeting, and during public workshops for the Fayetteville 2025 Plan. A total of 120 questionnaires were filled out. It is important to recognize that the results are from interested individuals, not from a random sampling process.

Each questionnaire had space for additional comments and e-mail addresses. Forty-one respondents had comments. Response categories were:

- Specific conservation sites.
  - a. Many suggestions of specific sites were offered. These were compared to the GIS study. Only three suggested sites were not listed on the GIS map. They were added to the list.
  - b. Several questionnaires had comments from individuals that had an interest in conserving their land. These individuals were contacted by phone. Their comments were:
    1. “Things have been happening here at a dizzying pace. I really fear we are bordering on too late. Developments are going up both west and north of my borders at 4 houses to the acre minimum. This land has been farmed off and on for 160 years, so it would be a chore beyond my means to really restore it. I will, however, continue to preserve it for dwindling populations of birds and other wildlife. I have a National Wildlife Federation certification as a Backyard Habitat which I hope will save our little wildlife refuge when, not if, we are annexed by Fayetteville. My most devout hope is that we are, in fact, annexed by Fayetteville rather than Farmington. Their philosophies regarding development are at considerable variance. I also intend to tie it up in a conservation easement in perpetuity, but I haven’t worked out the details yet. Didn’t think I had to so soon. I was wrong, obviously.

Again, thanks for your interest, and if you have any helpful suggestions, I need all the help I can get.”

2. Another individual lives along County Road 69 south of the Fayetteville airport. She says many people already use that road for jogging, walking and wildflower viewing. She would like to cooperate with neighbors to see if they could among them preserve a strip of land along the road as a conservation area. She said she plans to meet with other landowners.
  3. A third individual wants to see her family land (more than 100 acres) preserved, but doesn't want to spend the upfront expenses involved with leaving it to the Ozark Regional Land Trust. She mentioned a couple of other public entities that she wouldn't mind leaving it to.
- Generalized site types suggested for conservation. Many respondents had concepts about which site types would be worth saving.
    - a. In town sites: “forested hillsides”, “small parcels in the urban area”, and “pockets of nature in residential areas”.
    - b. Tracts outside town: “large undeveloped tracts close to town to prevent sprawl”, “land outside Fayetteville before sprawl engulfs NWA”, “Stop urban sprawl that lowers property values by destroying green space”.
    - c. Riparian sites: “springs and headwater streams”, “watershed protection”, “no wetland development”, “natural seeps and wetlands”
    - d. Public use: “non-motorized access trails to undeveloped areas”, “more areas for unpaved walking and running trails”, “bike friendly”, “connect neighborhoods”, “save linked areas for recreation such as long runs or bike rides”, “create a ‘Green Necklace’ of linear parks with walking/bikeways, easy access from many points, and connection to larger parks”.
    - e. Wildlife: “songbird habitat”, “quail or pileated woodpecker”, “make sure parcels are large enough and connected enough to support wildlife”, “high species diversity”.
    - f. Viewsheds entering Fayetteville
    - g. Sites with education: “identification plates on trees”
  - Disagreement with the goals of the project
    - a. “I oppose the Heritage Foundation philosophy because it takes property out of private ownership---forever”
    - b. “I disagree with the perspective that something only has value if it is used by humans”

The 29 questions identified which characteristics had the highest priority. The top two were:

1. Potential for walking trails
2. Potential for links to existing or planned walking trails

The next 9 highest priorities were related to natural aquatic and terrestrial characteristics such as

3. A high number of animals that might live in the aquatic habitat
4. Habitat corridors that connect larger habitat areas
5. A high number of native plant types
6. Riparian area in the parcel
7. A lot of forest cover in aquatic areas
8. A large amount of forest cover in terrestrial areas
9. A high number of native plant types in aquatic areas
10. Stream frontage on parcels
11. A high number of animals that might live in the terrestrial habitat

The mid-range of priorities included recreational concerns such as “proximity to urban areas, links to biking trails and potential for biking trails”. In addition, a variety of natural site characteristics were added such as “seeps, springs and wetlands, a variety of topographic features, and rare animals and plants”.

Lowest on the list were “adjacency and proximity to existing preserves, parks or schools”. Other low priorities were “water related recreation and visibility”.

The category “caves” had, surprisingly, the lowest ranking. A test was made in the last few questionnaires, changing the category to “caves with unique animal species”. This gave the attribute higher rankings. This question was judged invalid.

The results of the questionnaires were used by the Science Advisory Council as input in their decision making concerning rankings of site attributes.

## **GIS METHODOLOGY AND RESULTS**

### **Science Advisory Committee**

A Science Advisory Committee (SAC) was assembled at the beginning of the project to provide technical and scientific guidance to the staff and volunteers working on the project. The SAC consisted of some FNHA Board members, University of Arkansas faculty, City of Fayetteville planners and parks staff, Beaver Water District staff, and other local people with various expertise. Approximately five SAC meetings were held throughout the project life. Meetings were generally held at points when project staff needed specific input or advice to move forward with the project.

### **Proposed Methodology**

A proposed GIS methodology was drafted by TNC staff based on previous experience with similar projects. The proposed methodology would use available GIS data to generate a variety of indices that would indicate the ecological health and condition of individual assessment areas. Individual indices were proposed based on available GIS data. A nested hierarchy for indices was also proposed, where all ecological indices would be combined into a single score for assessment areas.

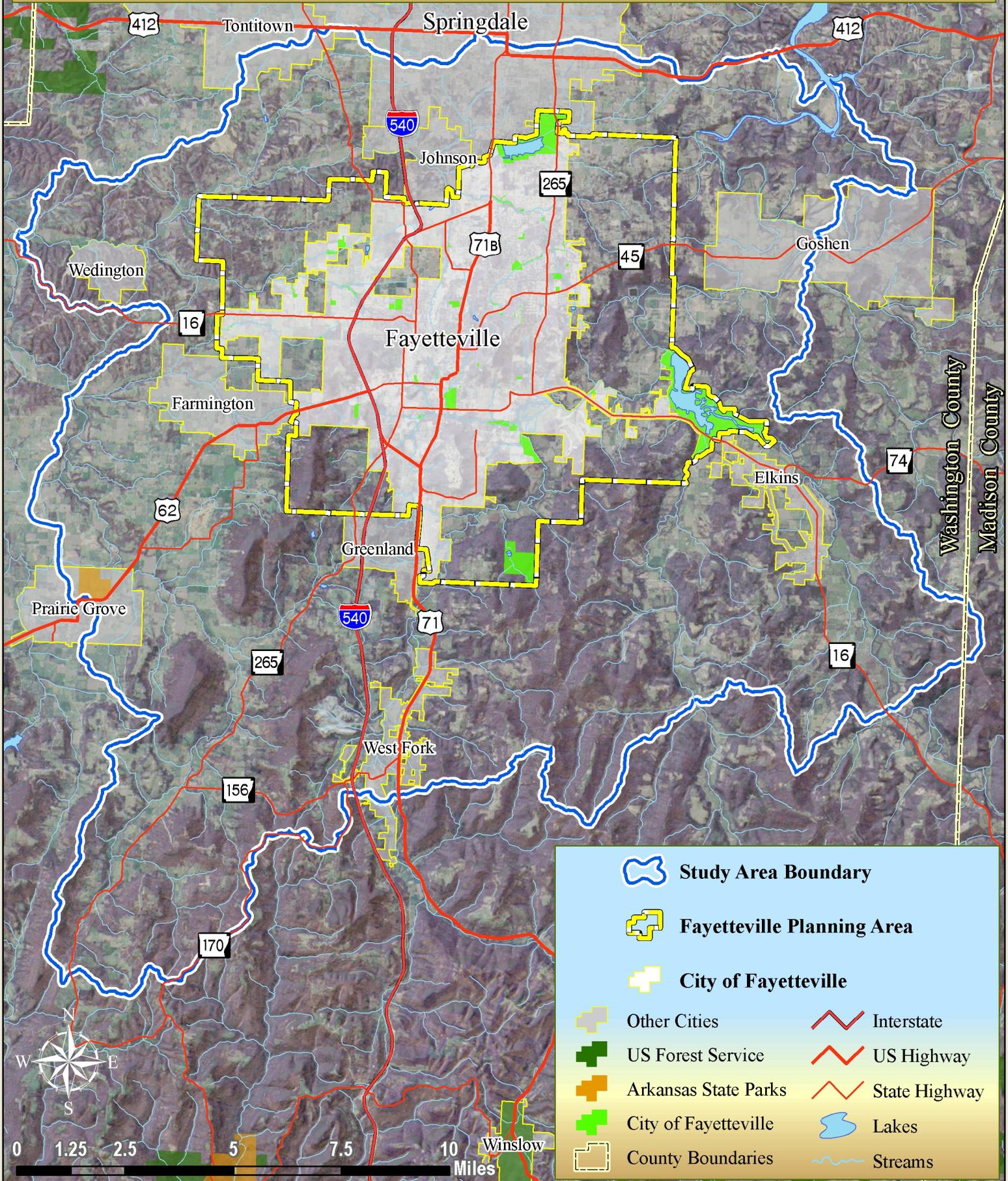
This proposed methodology was presented and discussed at a SAC meeting. From the discussion, the methodology was modified and the set of indices to be calculated was finalized. Some proposed indices were excluded from analysis due to lack of available data. As described below, the project study area and the land units for analysis were also discussed and settled.

### **Project Study Area**

Members of the SAC indicated that the project study area (SA) should include the entire planning area for the City of Fayetteville, but that the boundary should be watershed-based. The US Geological Survey (USGS), and other federal agencies use a system of nested basins, watersheds, and sub-watersheds, known as hydrologic units or HUCs, to uniquely describe locations within the US. The US Natural Resources Conservation Service (NRCS) recently developed a GIS layer of sixth-level hydrologic units for Arkansas, which are generally 10,000 to 40,000 acres in size. Each of these HUCs is defined by a 12-digit code, and these areas are commonly called "12-digit HUCs". The SA was defined as the 12-digit HUCs that intersect the Fayetteville Planning Area (FPA). The following figure shows the study area boundary.

# Urban Forest Conservation Assessment for Fayetteville, Arkansas

Project Study Area: Sub-Watersheds Surrounding the Fayetteville Planning Area



### **Assessment Areas: Parcel**

Members of the SAC discussed the appropriate land areas to assess. Options included small sub-watersheds, cells in a regular grid, or parcels. Members agreed that parcels would be the most practical units for the study. A parcel GIS layer was acquired from the Washington County Assessors office, which was versioned for September of 2005. The layer included parcel boundaries and attributes including a unique parcel ID and owner information. There were 83,922 parcels in the county layer. Parcels partly or wholly within the SA were selected from the county layer, and totaled 50,471 individual parcels.

All adjacent parcels with identical owner names were dissolved into larger aggregated parcels. This step was necessary because an individual owner's property may be held within two or more distinct, but adjacent, parcels. The aggregated parcels more accurately represent ownership. However, the GIS dissolve tool would only merge adjacent parcels if the owner name was exactly the same in each parcel. After the dissolve process, 33,498 parcels remained in the SA.

Once parcels were dissolved based on owner name, all parcels less than five acres were removed from further analysis. This left 5,934 parcels remaining. Finally, remaining parcels with more than 50% of their area in urban/industrial land use were removed from analysis. This resulted in 5,525 remaining parcels, which were used for the conservation analysis. Land use was determined from the summer 2004 Land Use / Land Cover dataset developed the Center for Advanced Spatial Technologies (CAST) at the University of Arkansas. This dataset was derived primarily from Landsat Thematic Mapper (TM) satellite imagery.

## **IMPLEMENTATION OF GIS METHODOLOGY**

### **Ecological Indices**

Each parcel was assigned a score for each ecological index. The ecological model is split out into terrestrial and aquatic indices, which are shown in figures and described with more detail below. The figures show the nested hierarchy of the indices. The first figure shows the proposed methodology. The portions of the methodology *not* implemented are shown in red, and are their exclusion is explained below. The second figure shows the Ecological Model as implemented. Each index was scaled to have a value ranging from 0 to 1.

### **Index Weights**

The SAC used their scientific background and expertise, as well as feedback from the public questionnaires, to assign weights of significance to each index. The weights would assign relative significance or impact of some indices over others. Weights ranged from 1 to 3. For Biodiversity indices, a weight of 3 had the most ecological value. For Condition indices, weights of 3 had the most ecological impact. The assigned weights are shown in the third figure.

### **Scoring the Model**

Once each index was determined through GIS analysis, the appropriate weight was applied to that index. Then, the appropriate indices were combined up the hierarchy and rescored from 0 to 1. This step was repeated until scores for ET and EA remained.



# Ecological Model (E)

## IMPLEMENTED METHODOLOGY

Terrestrial (ET)

Aquatic (EA)

Biodiversity (ETB)

Condition (ETC)

Condition (EAC)

Biodiversity (EAB)

Landscape (ETBL)

Agriculture (ETCA)

Development (ETCD)

Landscape (EABL)

Agriculture (EACA)

Development (EACD)

Watershed (EACW)

Vegetation (ETBV)

Animals (ETBA)

Vegetation (EABV)

ETBL\_01: Parcel Size

ETBL\_03: Habitat Connectivity

ETBL\_04: Topographic Diversity

ETBL\_05: Topographic Rarity

ETBL\_06: Soil Diversity

ETBL\_07: Soil Rarity

ETBV\_01: Forest Cover

ETBV\_02: Forest Patch Number

ETBV\_03: Forest Patch Size

ETBV\_04: Diversity of Forest Types

ETBV\_05: Rarity of Vegetation Types

ETBV\_06: Representation

ETBA\_01: Predicted Species Diversity

ETCA\_02: Grazing Extent

ETCA\_03: Confined Feeding Operations

ETCD\_01: Urban and Industrial Extent

ETCD\_02: Building Density

ETCD\_03: Road Density

EABL\_01: Stream Length

EABL\_02: Riparian Zone

EABL\_03: Water Bodies

EABV\_01: % of Riparian Zone Forested

EABV\_02: Forest Extent in Riparian Zone

EABV\_03: Diversity of Vegetation Types

EABV\_04: Length of Forested Streams

EACA\_01: % of Riparian Zone Grazed

EACA\_02: Grazing Extent in Riparian Zone

EACA\_03: Confined Feeding in Riparian Zone

EACD\_01: % of Riparian Zone Developed

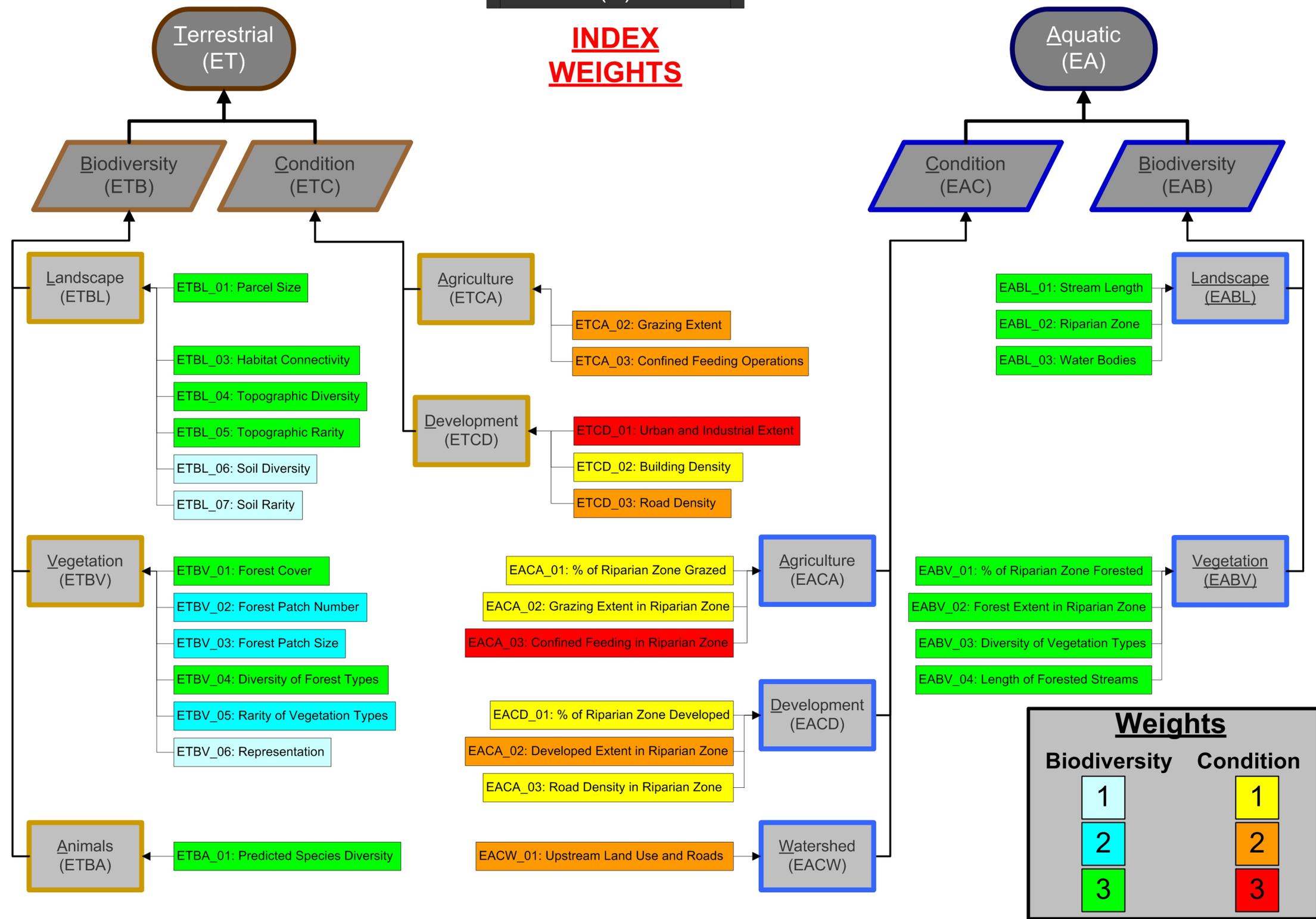
EACA\_02: Developed Extent in Riparian Zone

EACA\_03: Road Density in Riparian Zone

EACW\_01: Upstream Land Use and Roads

# Ecological Model (E)

## INDEX WEIGHTS



## OUTLINE OF THE ECOLOGICAL MODEL:

### TERRESTRIAL (ET)

#### BIODIVERSITY (ETB)

##### Landscape (ETBL)

###### Index: ETBL 01

**Name:** Parcel Size

**Description:** Parcel area. A larger parcel was considered to have greater conservation value than a smaller parcel, all other factors being equal.

**Best Parcel:** The largest parcel in the SA.

**Data Sources:** Washington County Parcel geodatabase, September 2005.

**Weight:** 3

###### Index: ETBL 02 (NOT IMPLEMENTED)

**Name:** Adjacency to Existing Preserves

**Description:** A parcel adjacent to an existing preserve was considered to have greater conservation value because its conservation would effectively expand the existing preserve.

**Best Parcel:** The parcel with the longest perimeter shared with existing preserves.

**Data Sources:** A parks GIS layer for Fayetteville was available through FayGIS, but no suitable dataset was available to identify existing parks and preserves outside of Fayetteville.

**Weight:** na

###### Index: ETBL 03

**Name:** Habitat Connectivity

**Description:** A parcel with forested habitat that was part of a larger forest patch connected beyond the property boundary was given conservation value based on the total size of the forest patch. The regional forested patches were determined beyond the SA boundary to account for their true size.

**Best Parcel:** Parcels with connectivity to the region's largest contiguous forest patch.

**Data Sources:** Land Use Land Cover, Summer 2004, University of Arkansas Center for Advanced Spatial Technologies (CAST).

**Weight:** 3

###### Index: ETBL 04

**Name:** Topographic Diversity

**Description:** The topography of the SA was classified into seven classes based on aspect and slope position. The classification utilized a US Forest

Service methodology that was modified by TNC. It characterized low and middle slopes with north and south aspects, ridges, and valleys.

**Best Parcel:** Parcels that had all seven topographic classes.

**Data Sources:** LiDAR Digital Elevation Model, 2004, Northwest Arkansas Regional Planning Commission.

**Weight:** 3

**Index: ETBL 05**

**Name:** Topographic Rarity

**Description:** The percent of the SA occupied by each topographic class was determined to identify the rarity of each class. Each parcel was scored based on the amount of rare topographic types present.

**Best Parcel:** The parcel with the greatest portion of its area covered by the rarest topographic classes.

**Data Sources:** LiDAR Digital Elevation Model, 2004, Northwest Arkansas Regional Planning Commission.

**Weight:** 3

**Index: ETBL 06**

**Name:** Soil Diversity

**Description:** A total of 88 soil types occurred in the SA. A count of the number of soil types within each parcel was completed.

**Best Parcel:** The parcel with the most soil types present.

**Data Sources:** Soil Survey Geographic (SSURGO), Washington County, NRCS

**Weight:** 1

**Index: ETBL 07**

**Name:** Soil Rarity

**Description:** The percent of the SA occupied by each soil type was determined to identify the rarity of each type. Each parcel was scored based on the amount of rare soil types present.

**Best Parcel:** The parcel with the greatest portion of its area covered by the rarest soil types.

**Data Sources:** Soil Survey Geographic (SSURGO), Washington County, NRCS

**Weight:** 1

**Vegetation (ETBV)**

**Index: ETBV 01**

**Name:** Forest Cover

**Description:** Parcels with the greatest percentage of their areas in forest cover, were considered to have the greatest ecological value.

**Best Parcel:** Parcels with 100% forest cover.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.

**Weight:** 3

**Index:** ETBV\_02

**Name:** Forest Patch Number

**Description:** Forest patches were defined as forested areas that are surrounded by non-forested land cover types (urban, pasture, etc). Areas with many forest patches were considered to have dissected or discontinuous habitat and were considered less ecologically intact.

**Best Parcel:** The parcel with only one forest patch.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.

**Weight:** 2

**Index:** ETBV\_03

**Name:** Forest Patch Size

**Description:** The average forest patch size was calculated for each parcel.

**Best Parcel:** The parcel with the largest average forest patch size.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.

**Weight:** 2

**Index:** ETBV\_04

**Name:** Diversity of Forest Types

**Description:** The number of forest plant communities within each parcel was calculated.

**Best Parcel:** The parcel with the greatest diversity of forest types.

**Data Sources:** Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 3

**Index:** ETBV\_05

**Name:** Rarity of Vegetation Types

**Description:** Each forested vegetation type was assigned a rarity by identifying the percent of the SA that type occupied.

**Best Parcel:** The parcel with the greatest portion of its area covered by the rarest vegetation types.

**Data Sources:** Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 2

**Index:** ETBV\_06

**Name:** Representation

**Description:** Vegetation types were assigned values based on how well they are protected in current preserves state-wide. Vegetation types that are not currently well protected were given higher ecological values.

**Best Parcel:** The parcel with the greatest extent of vegetation types that are not well-protected.

**Data Sources:** Arkansas Gap Analysis Report, 1998, CAST. Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.  
**Weight:** 1

**Index: ETBV\_07 (NOT IMPLEMENTED)**

**Name:** Rare Species Elements

**Description:** Known rare plant species occurrences.

**Best Parcel:** Parcels with the most rare plant species element occurrences.

**Data Sources:** Entries in the Arkansas Natural Heritage Database were too sparse to use in this analysis.

**Weight:** na

**Animals (ETBA)**

**Index: ETBA\_01**

**Name:** Predicted Species Diversity

**Description:** The distributions of terrestrial vertebrate species (mammals, amphibians, reptiles, and birds) predicted by Arkansas GAP based on the vegetation types the species utilize as habitat. The number of species predicted per parcel was calculated based on the present vegetation types.

**Best Parcel:** The parcel with the greatest number of predicted species.

**Data Sources:** Arkansas Gap Analysis Report, 1998, CAST. Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 1

**Index: ETBA\_02 (NOT IMPLEMENTED)**

**Name:** Known Rare Species

**Description:** Known occurrences of terrestrial vertebrate species.

**Best Parcel:** Parcels with the most rare animal species element occurrences.

**Data Sources:** Entries in the Arkansas Natural Heritage Database were too sparse to use in this analysis.

**Weight:** na

**CONDITION (ETC)**

**Agriculture (ETCA)**

**Index: ETCA\_01 (NOT IMPLEMENTED)**

**Name:** Irrigated Agriculture

**Description:** The amount of irrigated agriculture in the parcel. This index was not implemented because there was no significant irrigated agriculture in the SA.

**Best Parcel:** Parcels with no irrigated agriculture present.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.  
**Weight:** na

**Index: ETCA\_02**

**Name:** Grazing Extent

**Description:** The percent of the parcel in grazing land use.

**Best Parcel:** Parcels with no grazing present.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.

**Weight:** 2

**Index: ETCA\_03**

**Name:** Confined Feeding Operations

**Description:** The number of confined animal feeding operations within the parcel. Note: the data source was for chicken houses, and did not distinguish between active and inactive houses.

**Best Parcel:** Parcels with no confined feeding operations.

**Data Sources:** Chicken Houses GIS layer, 2002, Arkansas State Highway and Transportation Department (AHTD).

**Weight:** 2

**Development (ETCD)**

**Index: ETCD\_01**

**Name:** Urban and Industrial Extent

**Description:** The percent of the parcel area that is covered by urban or industrial land uses.

**Best Parcel:** Parcels with no urban or industrial land use

**Data Sources:** Land Use Land Cover, Summer 2004, CAST.

**Weight:** 3

**Index: ETCD\_02**

**Name:** Building Density

**Description:** The percent of the parcel area that is covered within mapped building footprints.

**Best Parcel:** Parcels with no building footprint.

**Data Sources:** Building footprints, 2005, Washington County Assessor's office.

**Weight:** 1

**Index: ETCD\_03**

**Name:** Road Density

**Description:** The density of roads within the parcel. Large roads were weighted to represent the greater traffic and ecological impact they may have. Unpaved roads were given a weight of 1, paved striate were given a weight of 5, state highways were given a weight of 10, US highways were given an weight of 25, and Interstate 540 was given a weight of 50. Each

road length was multiplied by its weight, and then summed for each parcel.

**Best Parcel:** Parcels with no roads.

**Data Sources:** All Roads, 2002, AHTD. Washington County Centerline File, 2005, Washington County Assessor's office.

**Weight:** 2

## AQUATIC (EA)

### **BIODIVERSITY (EAB)**

#### Landscape (EABL)

##### Index: EABL\_01

**Name:** Stream Length

**Description:** The total stream length on the parcel. Streams were primarily defined from the DEM (see below), but were rectified with the NHD "blue-line" streams.

**Best Parcel:** Parcel with the greatest stream length

**Data Sources:** National Hydrologic Dataset (NHD) 1:24,000 Flowline, USGS. National Elevation Dataset (NED) Digital Elevation Model (DEM) 30-meter resolution, USGS.

**Weight:** 3

##### Index: EABL\_02

**Name:** Riparian Zone

**Description:** The riparian zone within the parcel. The riparian width was defined based on the Strahler stream order for each stream arc. Buffer distances were as follows for each stream order: 1<sup>st</sup>: 5ft., 2<sup>nd</sup>: 15ft., 3<sup>rd</sup>: 25ft., 4<sup>th</sup>: 50ft., 5<sup>th</sup>: 100ft., 6<sup>th</sup>: 300ft.

**Best Parcel:** The parcel with the largest riparian area

**Data Sources:** Streams from EABL\_01.

**Weight:** 3

##### Index: EABL\_03

**Name:** Water bodies

**Description:** The area of the parcel that is occupied by ponds or lakes

**Best Parcel:** The parcel with the greatest extent of water bodies

**Data Sources:** NHD 1:24,000 Water Bodies.

**Weight:** 3

#### Vegetation (EABV)

##### Index: EABV\_01

**Name:** % of Riparian Zone Forested

**Description:** The percent of the riparian zone that as forested land cover.

**Best Parcel:** Parcels with 100% of their riparian zone forested  
**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.  
**Weight:** 3

**Index: EABV\_02**

**Name:** Forest Extent in Riparian Zone  
**Description:** The total forested area within the riparian area.  
**Best Parcel:** The parcel with the most forested riparian area.  
**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.  
**Weight:** 3

**Index: EABV\_03**

**Name:** Diversity of Vegetation Types  
**Description:** The number of forest plant community types within the riparian zone of each parcel.  
**Best Parcel:** The parcel with the greatest number of plant community types.  
**Data Sources:** Riparian zone from EABL\_02. Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.  
**Weight:** 3

**Index: ETBV\_04**

**Name:** Length of Forested Streams  
**Description:** The average length of forested stream reaches within each parcel.  
**Best Parcel:** The parcel with the longest average forested stream length.  
**Data Sources:** Streams from EABL\_01. Land Cover GAP 30m, 1993, CAST. Land Use Land Cover, Summer 2004, CAST.  
**Weight:** 3

**Animals (EABA) (NOT IMPLEMENTED)**

**Index: EABA\_01 (NOT IMPLEMENTED)**

**Name:** Predicted Species Diversity  
**Description:** The distributions of aquatic vertebrate species (mammals, amphibians, reptiles, and birds) predicted by Arkansas GAP based on the vegetation types the species utilize as habitat. The number of species predicted per parcel would be calculated based on the present vegetation types.  
**Best Parcel:** The parcel with the greatest number of predicted species.  
**Data Sources:** Arkansas Gap Analysis Report, 1998, CAST. Land Cover GAP 30m, 1993, CAST. Predicted species distributions for aquatic portions of urban areas was not complete in the GAP analysis.

**Weight:** na

**Index:** EABA\_02 (*NOT IMPLEMENTED*)

**Name:** Known Rare Species

**Description:** Known occurrences of aquatic vertebrate species.

**Best Parcel:** Parcels with the most rare animal species element occurrences.

**Data Sources:** Entries in the Arkansas Natural Heritage Database were too sparse to use in this analysis.

**Weight:** na

## CONDITION (EAC)

### Agriculture (EACA)

**Index:** EACA\_01

**Name:** % of Riparian Zone Grazed

**Description:** The percent of the riparian zone of each parcel with grazing land use.

**Best Parcel:** Parcels with no grazing within the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 1

**Index:** EACA\_02

**Name:** Grazing Extent in Riparian Zone

**Description:** The total area of grazing land use within the riparian zone of each parcel.

**Best Parcel:** Parcels with no grazing within the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 1

**Index:** EACA\_03

**Name:** Confined Feeding in Riparian Zone

**Description:** The number of confined animal feeding operations within the riparian zone of each parcel.

**Best Parcel:** Parcels with no confined feeding operations in the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Chicken Houses GIS layer, 2002, AHTD.

**Weight:** 3

### Development (EACD)

**Index: EACD\_01**

**Name:** % of Riparian Zone Developed

**Description:** The percent of the riparian area within each parcel that is covered by urban or industrial land uses.

**Best Parcel:** Parcels with no urban or industrial land use in the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 1

**Index: EACD\_02**

**Name:** Developed Extent in Riparian Zone

**Description:** The total area of urban or industrial land use within the riparian zone of each parcel.

**Best Parcel:** Parcels with no urban or industrial land use in the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Land Use Land Cover, Summer 2004, CAST.

**Weight:** 2

**Index: EACD\_03**

**Name:** Road Density in Riparian Zone

**Description:** The density of roads within the riparian zone of each parcel. Roads were weighted for their impacted in the same way as they were for ETCD\_03.

**Best Parcel:** Parcels with no roads in the riparian zone.

**Data Sources:** Riparian zone from EABL\_02. Weighted Roads from ETCD\_03.

**Weight:** 1

**Watershed (EACW)**

**Index: EACW\_01**

**Name:** Upstream Land Use and Roads

**Description:** The cumulative land use and roads impacts in the upstream contributing watershed of the parcel. Pasture, urban, industrial, and road impacts were accumulated through the stream drainage network through to each parcel.

**Best Parcel:** Parcels with no land use or road impacts in their contributing watershed areas.

**Data Sources:** Land Use Land Cover, Summer 2004, CAST. All Roads, 2002, AHTD. Washington County Centerline File, 2005, Washington County Assessor's office. National Elevation Dataset (NED) Digital Elevation Model (DEM) 30-meter resolution, USGS.

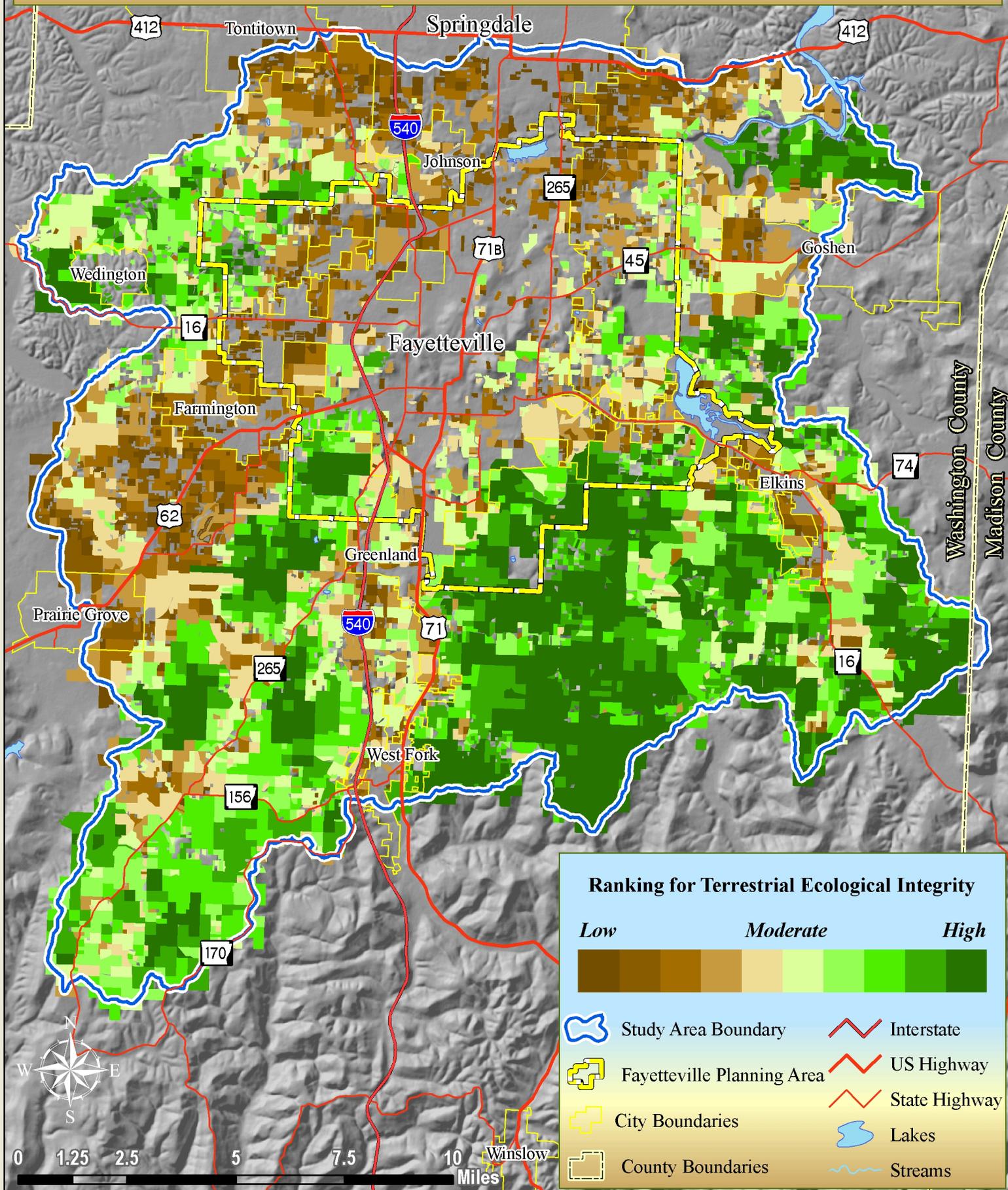
**Weight:** 2

## **RESULTS**

The primary results of the GIS methodology were parcel rankings based on the Terrestrial and Aquatic components of the Ecological model. The ET and EA scores from the ecological model were evaluated at various scales. The highest ranking parcels for ET and EA were evaluated for the project study area, the Fayetteville Planning Area, the City of Fayetteville, and within each Ward in Fayetteville. High-ranking parcels, or blocks of parcels within each of these tiers, were prioritized for site assessments. The following two figures show the ET and EA scores for the Study Area. The third figure shows locations of site assessments which are documented in this report.

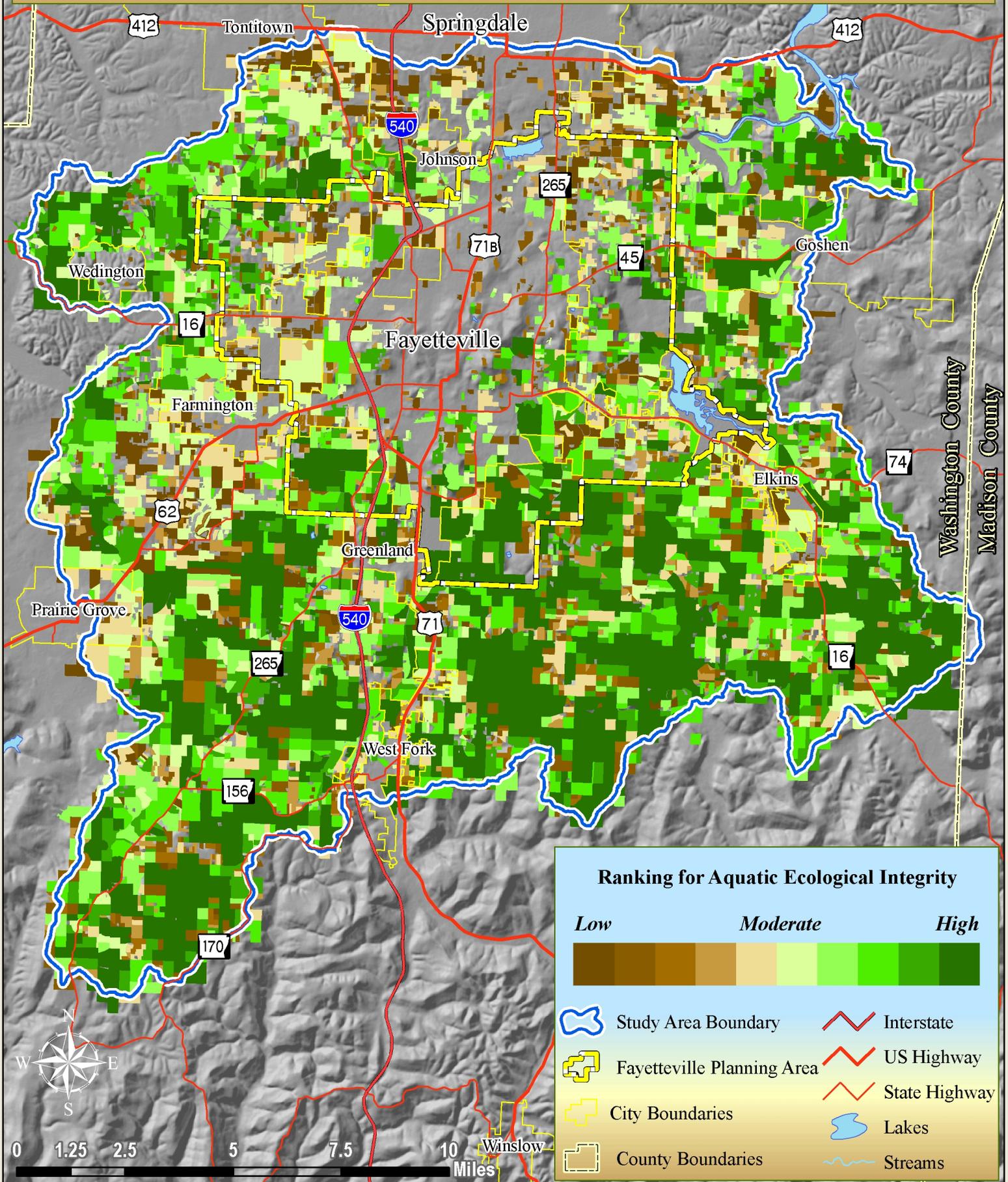
# Urban Forest Conservation Assessment for Fayetteville, Arkansas

## Project Study Area: Parcel Ranking for Terrestrial Ecological Integrity



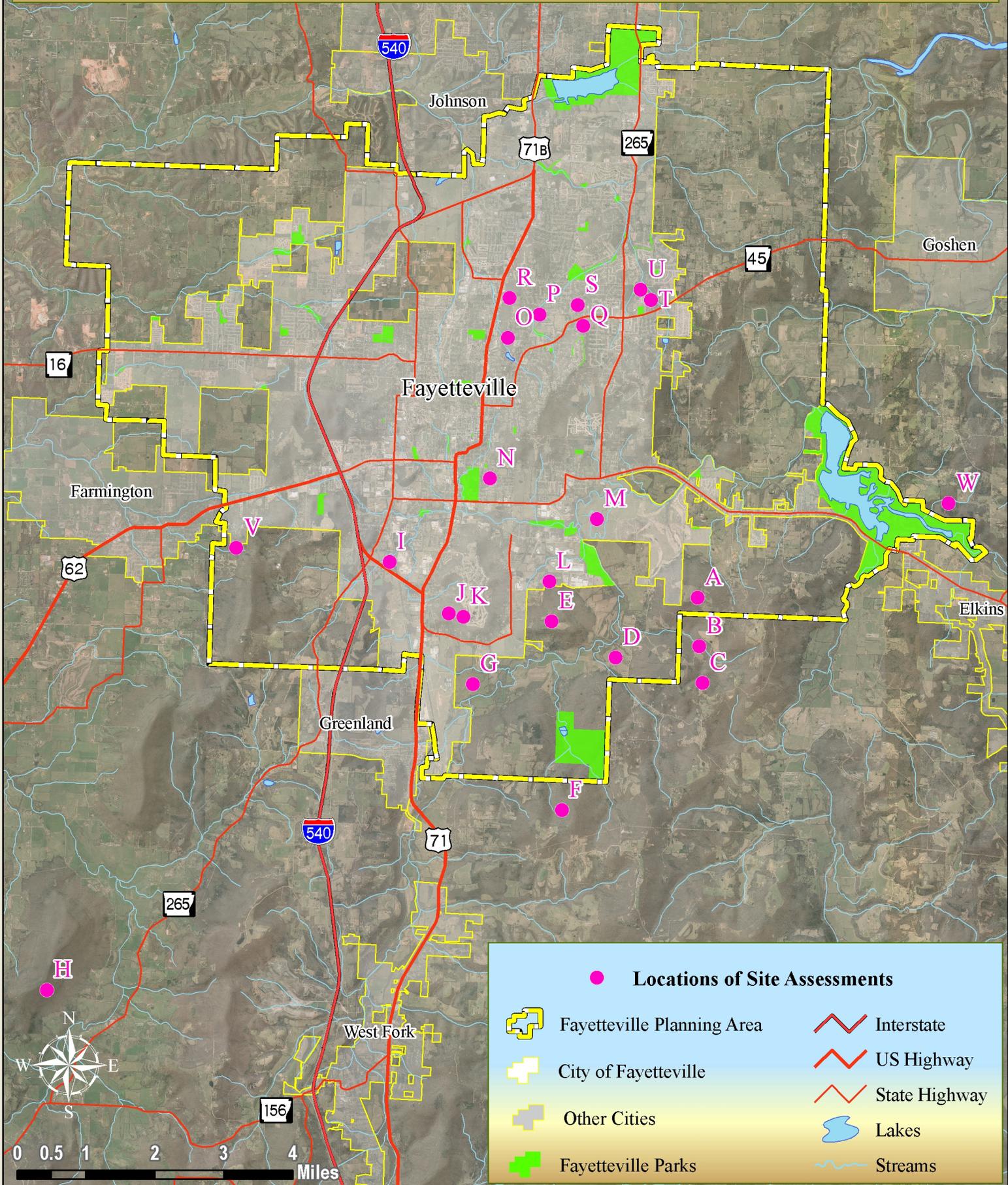
# Urban Forest Conservation Assessment for Fayetteville, Arkansas

## Project Study Area: Parcel Ranking for Aquatic Ecological Integrity



# Urban Forest Conservation Assessment for Fayetteville, Arkansas

## Locations of Site Assessments for GIS-Ranked Parcels



## RESULTS OF ON THE GROUND ASSESSMENT OF GIS RANKINGS

GIS parcel rankings offered the opportunity to identify and assess which properties were the most valuable for conservation purposes. In the final ranking system, highly ranked parcels were in different locations, ( i.e. the City of Fayetteville, the Fayetteville Planning Area, or the larger watershed study area). Depending on the site location, the findings were dramatically different due to parcel size and type of habitat.

Typically, each highly ranked parcel was assessed individually. Often, there were important natural characteristics that stood out on part of the site, and these were identified in the site conservation worksheet report. In some cases, there was assessment of clusters of parcels which were linked but may have had different rankings. Findings included sets of highly ranked parcels in river valleys that often had valuable corridors of streamside ecosystems or sets of highly ranked parcels on mountains that often included bluffs and rock outcroppings with unusual views. In addition, clusters of highly ranked parcels often were part of a complete watershed or total ecosystem.

The results are described in three general categories: urban parcels within the Fayetteville city limits, parcels within the Fayetteville Planning Area, and parcels beyond the Fayetteville Planning Area in the total project area that consisted of surrounding sub-watersheds.

### Urban parcels within Fayetteville city limits

This section describes the overall results of the assessment of urban parcels. Typically, Fayetteville city sites had low rankings compared to rural ones due to the smaller size of the parcels. However, FNHA and the Science Advisory Council felt it was important to hunt for natural areas within the city boundaries. Some mapped parcels were not previously known to FNHA. In several cases, it is planned to work with neighborhood organizations and the city to try to conserve them.

Capital letters at the end of each paragraph refer to the appendix map of site visits.

1. Parcels east of Business Highway 71 between North Street and Township Avenue. These sites have remained undeveloped due to their proximity to commercial areas and the fact that owners valued the fields, streams and woods in contrast to the urban development nearby. Unfortunately, these properties have become so valuable that they are being quickly developed. One forested area with 100 year old trees is already being cleared for housing. Another parcel north of Lake Lucille is for sale, and neighbors are trying to conserve this highly ranked open space. In cases where these sites do become developed, it is important that the community require the construction of walking and biking trails linking each site with urban parks and the new city trail system. (O, R)
2. Ruskin Heights. A new opportunity for public input about urban forest conservation has occurred with the 25 acre Ruskin Heights project on Mission

- Boulevard (Highway 45). The nationally known firm of Duany Plater-Zyberg has held public meetings, which have resulted in plans to preserve the woods on part of the site, adding trails that link nearby neighborhoods. (Q)
3. Vandergriff School and nearby forests and streams. Public use of land owned by the Fayetteville School District near Vandergriff School, combined with conservation of nearby private land, would create one of the few remaining public major streams through a natural forest in the city of Fayetteville. This could also serve as an educational site for the elementary and middle schools. (T, U)
  4. Interiors of residential blocks forested sites. A few interiors of residential blocks have been identified through the ranking maps and also through the questionnaires. These are forested remnants of old fields, and are typically poorly managed. Our analysis visits found that they had trash, homeless camps and an overgrowth of invasive shrubs. Involvement of the neighbors and owners in maintaining these sites may improve the natural habitat. (N, S)
  5. “Leftover” sites. These are natural sites that are unused when development takes place, but have potential for natural areas with trails. One is a strip of land just below the Fayetteville Country Club which surrounds the mountain top. Another is a lowland floodway forest on the West Fork of the White River across from the Babe Ruth Park on Armstrong Avenue. Each of these sites could be a link in a cluster of parcels that could become public trails. (K, M)

#### Parcels within the Fayetteville Planning Area

The planning or ‘growth’ area outside the city limits has not yet been extensively divided into small development tracts for commercial, industrial, or residential use. This means that the natural land can be saved if the owner is willing to conserve it or funds can be raised to buy the site. Because of the high level of growth in the region, owners may be considering development in the near future. If the economy continues to expand and population continues to move into the city, efforts to conserve these natural areas may need to be made quickly. Clusters of parcels that have been assessed include:

1. Kessler Mountain. This cluster is partially in the Fayetteville City limits and partially in the Planning Area. Plans are underway to link the north end of the mountain through conservation easements to the new park in the “South Pass” development. This would help create part of the ‘green corridor’ recommended by the 2025 City Plan. It may be possible to extend the trail around to Finger Park as well. (V)
2. Parcels east of the Fayetteville Airport in the West Fork floodplain. River corridor land in the floodplain of the West Fork of the White River consists of lowland forests of river birch, sycamore, and red maples that grow only in this kind of habitat. Limited public access to this unique habitat could be part of the ‘green corridor’ experience. (G)

3. Puddin Hill. Puddin Hill is an undeveloped small mountain close to the city boundary. It has large forests of red oaks along with large bluffs overlooking the south valley of the West Fork and Lake Wilson in the distance. Discussions with the parcel owners should take place to see if they are interested in conservation. (E)
4. Robinson Mountain. This is an extensive cluster on three upland hills divided by major drainage areas with ephemeral streams. Almost completely wooded, its north and west slopes provide gentle walking. In the past, cattle grazed under the trees, which has limited the understory growth. Old roads may offer future trail corridors. (A, B, C, D)

Parcels beyond the Fayetteville Planning Area in the Watershed Project Area. This area extends beyond the Fayetteville Planning Area into other community growth areas and parts of Washington County. Only a few parcels have been assessed here. FNHA plans to analyze these parcels more extensively in the next year or so.

1. Parcels surrounding Lake Wilson Park. Expanding this park to include the watershed for two streams, then the lake, and then out into the West Fork River would add to the protection of water resources of the region. Expansion will add hiking trails that follow the streams and rocky slopes up the hills. (F)
2. Stevenson Mountain. The most highly ranked terrestrial site in the study area is Stevenson Mountain. FNHA analyzed this site because it is in the boundaries of the Legacy Forest funding area. It is in the growth area of Prairie Grove. This 400 acre site is a large undisturbed natural area which will soon become a prime target for large scale residential development. (H)
3. Lake Sequoyah environs. An exceptionally scenic area, integrated with wooded City of Fayetteville adjacent land, and covered in mature forest. Extensive low stone bluffs are big eared bat habitat. Sandstone canyon with bluffs and seasonal waterfall. Parcel is about 80% woodland. (W)

## PROPOSED ACTIONS

FNHA is dedicated to conserving natural areas of Fayetteville and its environs for the benefit of present and future generations. FNHA progress in conserving natural areas requires support of area citizens, mutually beneficial relationships with many public and private groups, and sources of funding. The results of this report can impact all of these areas.

### Specific Recommended Actions

- Publicize and discuss the goals and results of this study with as many citizens as possible, e.g., at town meetings, clubs, student groups, and through brochure distribution.
- Work with City staff to insure that the results of this study are reflected in the 2025 Plan and guide future land use policy.
- Present a summary of the study to the City Council and offer more detailed discussions to those who are interested.
- Develop specific conservation plans for several highly ranked parcels as a way to define conservation tools and methods.
- Work with the City in expanding and implementing ideas suggested by the 2025 Plan such as transfer of development rights, open space bond issues, and conservation easements.
- Keep the priority list of potential conservation parcels updated.

Appendix I  
Grant Announcement

## Heritage association receives \$20,000 grant to identify conservation areas

BY KATE WARD Northwest Arkansas Times

Posted on Thursday, August 4, 2005

URL: <http://www.nwanews.com/story/nwat/30817>

The Fayetteville National Heritage Association received a \$20,000 grant from the Urban and Community Forestry Assistance Grant Funds to identify priority areas in and around Fayetteville for conservation. "We need to identify these areas now as Fayetteville continues to grow," said Karen Rollet-Crocker, associate professor of landscape architecture at the University of Arkansas and member of the Fayetteville Natural Heritage Association.

The study will be conducted using Geographic Information System mapping analysis developed by the Nature Conservatory under the direction of a broad-based Science Advisory Council.

According to Conservation GIS specialist Ethan Inlander, GIS is computerbased mapping that uses overlay topography. "We had our first meeting of the scenic advisory council today," he said. "The group is steering and defining the criteria for the characteristics of important preservation areas."

Public meetings will be held to discuss proposed qualities that will lead to identification of areas in and around the city, following the identification of important forest and landscape characteristics that would be desirable for conservation. Students from the Landscape Architecture Department will then assess areas for beauty and "passive recreational" public uses such as trails. "We'll identify the important areas and talk to landowners about the importance of the land," Rollet-Crocker said. "Then we'll see if they'd be interested in preserving it."

In his award letter, Gov. Mike Huckabee noted that 80 percent of Arkansans live in urban areas where planning and management of community forests adds to the quality of the state's natural resources. In addition, Mayor Dan Coody said the project will provide input for the new Fayetteville 2005 plan.

The heritage association will use the information to help landowners identify and preserve valuable natural areas for the future. The association also expects the project to show other communities across Arkansas how such an analytical tool can identify areas of conservation.

Partners in the project are the Nature Conservatory Ozark Highlands Office and the Landscape Architecture Department at the UA.

According to Inlander, human aspects are important when it comes to the mapping process. "We'll be able to look at an area and ask, 'What percent is forested, what is the length of this river or what's the density of the road?'" Inlander said. "We'll also be able to determine how far it is from the city and if it's viable for recreation. We'll ask GIS questions about each property and find the ones that rank the highest."

The results of the study, he said, will have a different meanings to different land users.

A beginning point for this project has been a preliminary study completed by Jamie Fuggit, a student at the UA, titled "Conservation Strategy at a Local Level: A Guide to Increasing the Effectiveness of FNHA." His interviews with local officials, planners, conservationists and scientists documented their opinions about the need for protection of natural areas in Fayetteville.

The project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service. "The study will identify areas that can be managed to maintain integrity," said Patti Erwin of the Arkansas Forestry Commission. "This is a 50/50 matching grant, meaning that the Nature Conservatory will either pay the other half or use volunteer hours."

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Contact: [webmaster@nwanews.com](mailto:webmaster@nwanews.com)



The Fayetteville Natural Heritage Association, Inc. is dedicated to conserving natural areas of Fayetteville and its environs for the benefit of present and future generations.

### Fayetteville Natural Heritage Association Receives \$20,000 Grant

The Fayetteville Natural Heritage Association (FNHA) has received a \$20,000 grant from the Urban and Community Forestry Assistance Grant Funds as of July, 2005 to identify the highest priority areas in and around Fayetteville for conservation before they disappear due to rapid population growth. In his award letter, Governor Mike Huckabee noted that 80% of Arkansans live in urban areas where planning and management of community forests adds to the quality of the state's natural resources. Mayor Dan Coody said that this project will provide input for the new Fayetteville 2025 Plan. FNHA will use the information to help landowners identify and preserve valuable natural areas for the future. The FNHA also expects that this project will show other communities across Arkansas how such an analytical tool can identify areas for conservation.

Partners in the project are The Nature Conservancy Ozark Highlands Office and the Landscape Architecture Department at the University of Arkansas. The study will be done with GIS analysis developed by The Nature Conservancy under the direction of a broad based Science Advisory Council. Following the identification of important forest and landscape characteristics that would be desirable for conservation, public meetings will be held to discuss proposed qualities which will lead to identification of areas in and around the city. Students from the Landscape Architecture Department will then assess areas for beauty and 'passive recreational' public uses such as trails.

A beginning point for this project has been a preliminary study completed by Jamie Fugitt, a student at the University of Arkansas, entitled "Conservation Strategy at a Local Level: A Guide to Increasing the Effectiveness of FNHA". His interviews with local officials, planners, conservationists and scientists documented their opinions about the need for protection of natural areas in Fayetteville.

The project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

For more information, contact:

- Pete Heinzlemann: 521-8973
- Karen Rollet-Crocker 442-9360
- Bob Caulk: 973-2968
- Ethan Inlander 973-9110



STATE OF ARKANSAS  
OFFICE OF THE GOVERNOR

Mike Huckabee  
Governor

June 21, 2005

Karen Rollet-Crocker  
Fayetteville Natural Heritage Assoc.  
PO Box 3635  
Fayetteville, AR 72702

Dear Karen Rollet-Crocker:

I am very pleased to award a grant for \$20,000 to the Fayetteville Natural Heritage Association after a detailed review of the Urban & Community Forestry Assistance Grant applications. The Arkansas Forestry Commission has assigned this project the number UCF05-05-11.

Your vision will help to encourage forest stewardship within our communities and promote the many benefits our trees provide. With eighty percent of our citizens living in urban areas it is important that we keep our communities healthy through proper planning and management of our community forest.

Thank you for your dedication in furthering the importance of Arkansas' natural resources.

Sincerely yours,

A handwritten signature in black ink that reads "Mike Huckabee".

Mike Huckabee

MH:ss:sh

Appendix II  
Science Advisory Council

Community/GIS Urban Forest Conservation Assessment Grant  
Science Advisory Council

Fayetteville Natural Heritage Association  
June 13, 2006

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## Community/GIS Urban Forest Conservation Assessment Grant

Meeting report July 8, 2005

Please note: this is from my notes, not from the tape. Please add anything you think is important—I wanted to get this out to everyone right away. Karen

### I. **Model.Discussion of model of study, presentation of GIS project by Ethan.**

Score Every area has a score. Score is human impact score, ecological score, parcel scale, etc.

Limits One big decision is the limits of the project. Will it be 'growth area' for Fayetteville? Or a broader area bounded by a rectangle? Issue of growth areas and planning areas for nearby towns may affect the decision.

Parcels County is nearing complete public access to parcel maps. Ask LeAnne Kizzer. This is crucial information for the study, since it will be a practical way to work with owners. If parcels are owned by family members, GIS will use a 'dissolve' technique to cover joint parcels.

Criteria for scores Criteria depends on the real goals, i.e. what kind of recreational use is envisioned for natural areas? 'Passive' hiking, etc? What is the importance of large spaces versus smaller spaces which provide linkages and connections to residential areas, schools, parks? Issue of wildlife. Issue of visual quality and aesthetic value. Issue of educational value.

### II. **Public visibility**

Not acquisition, and not regulatory Make sure public knows FNHA is looking for natural areas that owners wish to preserve for the long term.

Need for public involvement

- a. Start with announcement of grant with Patti Irwin, Karen, Pete, possibly others.
- b. Present project to Agenda setting meeting for City Council. Max 20 minutes. Get on Agenda meeting ahead of time (Adam Walworth is contact).

### III. **Science Advisory Council**

FNHA: Doug James ([djames@uark.edu](mailto:djames@uark.edu)), Bob Caulk, Karen Rollet-Crocker, Duane Woltjen.

TNC: Ethan Inlander, Tim Snell

•

Developer: John Nock

University: John Crone, Malcolm Cleaveland?, Student: Jamie Fuggitt

Forestry: Patti Irwin, other?

City of Fayetteville: Sara Patterson-Urban Forester, Steve Hatfield- Trails, Leif Olson- planner, Alison Jumper-Parks and Recreation.

### IV. **Contract between FNHA and TNC, Documentation of hours paid and hours matched.**

Agreement written up between Nature Conservancy and Fayetteville Natural Heritage Association and signed.

Production of forms for hours, and decision for hourly voluntary values.

Minutes of meeting of science advisory group for the GIS study of high priority conservation areas, November 10, 2005

Duane Woltjen, Alison Jumper, Sarah Patterson, Bob Caulk, Ethan Inlander, John Crone, Karen Rollet-Crocker, Patti Erwin

Discussion of model.

Question of difference between small parcel with connections to city trails and access versus large parcels which are better for habitat space. Question of difference in size of corridor width, minimum width which allows cover and concealment. Importance of connectivity of habitat, the wider the better.

Question of land, not necessarily city owned. Maintenance issues, ownership questions, preservation and conservation issues.

Land which is priority should be devoted to natural heritage, due to the goals of our organization. Primarily ecological. Question of a component being for other active recreation besides trails. Alison mentioned that active recreation is primarily on flat land, but not on flood plain.

The surveys are listing specific places. Will be interesting to see if the GIS model brings any of these places up.

Dwayne wished to know the age and variety as well as the health of the forest. "Big old trees". Wanted to know if the height could be determined. Also, heritage forests that are special places. Cross timber, oak savannah, prairies. Ask Cleveland and Stahley. Ethan said we need map or GIS data set on these areas.

Dwayne also mentioned a call he had received about Clear Creek in Johnson, which has major development pressures.

John mentioned the idea of legibility of the landscape.

A study of the Lake Fayetteville watershed was mentioned: by the Watershed Conservation Resource Center.

The group looked at the definition of the study area boundary based on watersheds. The study area boundary was accepted by the group.

Suggestions were made that the study report should include a glossary of terms. Also, a rationale for each category.

The study would have application beyond Fayetteville, and the next step could be a possible survey of the local region.

The next meeting proposed date is Thursday, January 19<sup>th</sup> in the late afternoon.

At this meeting there will be the initial results of unweighted or raw model. Each criteria has a maximum of 1. Also, there will be the results and analysis of the questionnaires and the weighting they suggest.

Karen Rollet-Crocker  
575-5679, 442-9360

Minutes of meeting of science advisory group for the GIS study of high priority conservation areas, January 19, 2006

Robin Buff, Alison Jumper, Sarah Patterson, Bob Caulk, Ethan Inlander, John Crone, Karen Rollet-Crocker, Patti Erwin, Malcolm Cleaveland, Pete Heinzelman, Doug James, Kyle Cook, Colene Gaston

Introductions: Malcolm Cleaveland, Kyle Cook, and Colene Gaston were new to the group. John Nock was unable to come, but would like to be involved.

The results of the questionnaire were discussed. The ranked answers were listed on an analysis sheet which was handed out by Ethan. The top five were:

- Potential for walking trails
- Potential for links to existing or planned walking trails
- A high number of animals that might live in the habitat
- Habitat corridors that connect larger habitat areas
- A high number of native plant types

The lowest categories were proximity to parks and schools and visibility. It was suggested that there be a glossary of terms

Also, a handout of Questionnaire Comments was passed around. There are some specific parcels suggested, along with comments about overdevelopment, sprawl, transportation, farmland, natural water areas without motorboats, etc. Also, suggestions were made about the need for understanding of technical terms in the questionnaire.

It was reported that the FNHA has asked to be able to hand out questionnaires at the Fayetteville Planning community hands on design workshops. (note: the decision has been that we can do this, on Feb. 11<sup>th</sup>, 13<sup>th</sup>, and 15<sup>th</sup>). Also, there would be a request for a discussion of the GIS study with the Fayetteville Planning consultants (this has been set up for Ethan Inlander, Pete Heinzleman, and Karen Rollet-Crocker—date not yet known)

Ethan then presented his work on the raw data study. Additional meeting notes from Ethan:

- We reviewed the timeline. We are mostly on track, though the GIS model development and analysis are behind schedule
- We will be meeting with John Crone's class in early February to brief them on the project and discuss field property assessment.
- We presented the results of the questionnaire to date. With 60 participants tabulated, the top five attributes people would like to see protected are 1) potential for walking trails 2) potential links to existing or planned walking trails 3) a high number of animals that might live in the habitat 4) habitat

corridors that connect larger habitat areas 5) A high number of native plant types.

- We presented how we narrowed down the number of parcels being analyzed down to 5,524. 1) We selected all parcels in our watershed-based study area, 50,471 parcels 2) We dissolved adjacent parcels if the owner name was an exact match, 33,498 parcels 3) We dropped out all parcels less than 5 acres, 5,938 parcels 4) We dropped out all parcels that were greater than 50% developed based on CAST 2004 Land Use data, 5,524 parcels.
- We presented the indices from the model that had been calculated as of the meeting date, including: urban development, building footprint density, road density, terrestrial development condition (aggregation), pasture, chicken houses, terrestrial agricultural condition (aggregation), terrestrial condition (aggregation), parcel size, soil diversity, soil rarity, and terrestrial forest cover.
- We discussed the use of high-resolution soils data (SURGE, County soils maps) as a surrogate for detailed vegetation map data.

**Ethan Inlander**

*Conservation GIS Specialist*

The Nature Conservancy of Arkansas

As a double check of the GIS study, specific parcels will be suggested by members of the Science Advisory Committee, possibly adding parcels suggested from the questionnaires. These would be located and visited to create a list from those who know the natural areas around Fayetteville (Doug James, Malcolm Cleaveland, Dwayne Woltjen, Robin Buff, etc.) .

Minutes of meeting of science advisory group for the GIS study of high priority conservation areas, March 2, 2006

(Notes from Bob Caulk)

In attendance were Bob Morgan, John Crone, Doug James, Allison Jumper, Pete Heinzlemann, Duane Woltjen, Ethan Inlander, Karen Minkel, Steve Hatfield, Patti Irwin, Mike Slade, Bob Caulk and Colleen Gaston

The goal of the meeting was to make any decisions necessary to allow Ethan to generate a list of land parcels for John's students to begin on the ground assessments. Ethan recommended that only the ecological analysis be used to get the list and that the human use/ threat analysis be done only on the list the students look at. The SAC agreed.

Weighting of the line items in the ecological analysis section was discussed and citizen questionnaire input reviewed. Using SAC member and citizen questionnaire input, consensus was developed for line item priorities for running the model.

Karen passed out a draft of the 2025 plan. As expected, green space made the list.

Colleen urged us all to attend a Water Quality meeting on 3/23 at 6pm the Clarion Inn.

The meeting ran for 1hr and 40min.

The Science Advisory Committee meeting of March 2nd was a working meeting, and much was accomplished.

(Notes from Ethan Inlander)

- Ethan Inlander presented preliminary results of the ecological parcel ranking model. The results were examined visually by SAC members, and questions were explored and answered pertaining to why individual parcels or areas received higher scores.
- The results of the public questionnaire were presented, with about 60 additional surveys added since the last meeting, bringing the total to about 120 surveys. The trends did not change much with the new surveys, showing that walking trails are still the most important characteristic.
- Several of Ethan's critical questions were resolved by the SAC. 1) We agreed that the 'short list' of properties would be derived from ecological characteristics alone, not accounting for recreational potential or threat of conversion. The later characteristics will be determined, but will not influence the 'short list'. 2) The 'short list' would be comprised of properties that rank high in terrestrial ecology, aquatic ecology, and both combined.
- Finally, the SAC determined weights to apply to each ecological index in determining the final priority properties. For example, parcel size was considered very important and given a weight of '3', white soil diversity was not considered and was given a weight of '1'. A total of 36 indices were weighted

Our next meeting will be held after FNHA, TNC, and UArk students have had ample opportunities to visit and assess many of the 'short list' properties on the ground.

## MINUTES

### Science Advisory Council

June 13, 2006

Bob Morgan, Doug James, Alison Jumper, Pete Heinzlemann, Duane Woltjen, Ethan Inlander, Leif Olson, Sara Patterson, Tim Snell, Bob Caulk, Malcolm Cleaveland and Colleen Gaston

A revised Science Advisory Council list was handed out.

Bob Caulk, John Crone and Karen Rollet-Crocker visited with Patti Erwin on June 5, and requested an extension. The grant has been extended to September 30 due to the need to assess parcels on the ground. Also, extra time is needed to prepare a Legacy Forest proposal and document the study in a final report.

Questions were asked and comments made about GIS study results. Several members of the Science Advisory Council (John Crone, Karen Rollet-Crocker and Duane Woltjen) had visited 10 sites listed on the maps. They were able to access small sites in Fayetteville, but had difficulty accessing larger parcels in the watershed area in order to assess them due to the larger acreage. Other questions were asked about what criteria were used, especially related to aquatic parcels. Duane requested that all parcels with springs that are listed on USGS maps be in the study, because these resources are worthy of conservation.

Ethan described the study system and its use of rankings in:  
the overall study area,  
the Fayetteville planning area,  
the Fayetteville city area,  
the 4 wards  
additional sites from the overall study area

It was decided that the process of choosing parcels to visit would be:

1. Members of the Science Advisory Council would meet with Ethan on Thursday June 15 and Friday June 16 at 9 am to go through the list of sites and look at aerial photographs. Based on this analysis, parcels would be chosen to explore on the ground.
2. Tim Snell would call the owners of the chosen sites. Based on their response, a final list will be made. All chosen parcels, including the ones in Fayetteville and on the periphery, will be contacted.
3. The ideal way to analyze the chosen parcels would be with the owner, or someone who knows special features of the site. Summer is not the perfect time for a site visit, because vegetation can block long views. However, we will do the best we can.
4. The Site Conservation Worksheet should have blanks for GPS coordinates, road access directions, contact person(s), and the parcel number from the GIS study.

A number of Science Advisory members volunteered to go through the parcels with Ethan. This will be a 'drop in' session, since not everyone can come at the same time.

Forest Legacy Program. (look at the website for Arkansas Forestry Commission, Forest Legacy Program) This is an opportunity to apply for a major grant for buying conservation easements or fee simple ownership. Final property ownership must be by a public organization such as a city, state, etc. This is a separate issue from the GIS study, but uses study results for choosing sites. Karen read off the major requirements, which are:

- a. 'Importance', i.e. public benefits from high quality attributes such as scenic, fish and wildlife habitat, threatened or endangered species habitat, watershed protection, forestry, recreation, and cultural/historical.
- b. 'Threatened', i.e. conversion to non-forest uses or conditions is imminent or likely.
- c. 'Strategic', i.e. the project fits within a larger conservation plan, strategy, or initiative.
- d. 'Project Readiness', i.e. level of commitment and likelihood the project will be completed in a predictable time frame.

There are more detailed examples and requirements on the website.

Coleen Gaston asked if the group knew of sites that could be quickly readied, since the first stage of the application must be in by July 30. There were several suggestions. One suggestion was outside the boundaries of the 'Forest Legacy Areas' designation. Karen agreed to call Jim Jolley to see if an amendment could be made to the boundary in time to apply. It was decided to pursue this grant. Karen will call Jim Jolley, the representative, to see when he can visit possible sites. (Note, this is planned for the 6, 7 or 8 of July—please get back to me about these dates if you plan to look at the sites with us).

Karen Rollet-Crocker

Appendix III

Questionnaire

## **IDENTIFYING CHARACTERISTICS FOR HIGH PRIORITY CONSERVATION AREAS IN AND AROUND FAYETTEVILLE**

**THIS QUESTIONNAIRE WILL TAKE 15 MINUTES. WE APPRECIATE YOUR ASSISTANCE!**

The Fayetteville Natural Heritage Association (FNHA) has received a grant from the Urban and Community Forestry Assistance Grant Funds to identify the highest priority areas in and around Fayetteville for conservation before they disappear due to population growth. Benefits of land conservation will include cleaner water, saving natural areas, and increased opportunities for recreational use of trails. FNHA will also use the information to help landowners identify and preserve valuable natural areas for the future. We expect that this project will show other communities across Arkansas how such an analytical tool can identify areas for conservation.

Partners in the project are The Nature Conservancy Ozark Highlands Office and the Landscape Architecture Department at the University of Arkansas. The study is to be done with Geographic Information Systems analysis developed by The Nature Conservancy under the direction of a broad based science advisory council.

We have begun to identify important forest and land characteristics that would be desirable for conservation. This questionnaire is designed to get your feedback on how important you think these characteristics are. We will apply rankings to each parcel of land within the study area surrounding the city of Fayetteville.

Time: This questionnaire will take approximately 15 minutes to complete.

Return address: Fayetteville Natural Heritage Association, P.O. Box 3635, Fayetteville, AR 72702-3635.

Directions: Please rank each characteristic on a scale of 5 (most important) to 0 (least important) by circling the appropriate number. Thank you for your assistance in this important project!

**Section 1: Natural terrestrial (land based) characteristics**

**a. Adjacent to existing preserves or parks.**

Least important 0-----1-----2-----3-----4-----5 most important

**b. Habitat corridors that connect larger habitat areas**

Least important 0-----1-----2-----3-----4-----5 most important

**c. A variety of topographic features on one parcel such as bluffs, slopes, ridges and valleys**

Least important 0-----1-----2-----3-----4-----5 most important

**d. Caves**

Least important 0-----1-----2-----3-----4-----5 most important

**e. A large amount of forest cover**

Least important 0-----1-----2-----3-----4-----5 most important

**f. A high number of native plant types**

Least important 0-----1-----2-----3-----4-----5 most important

**g. A high number of rare species of plants present**

Least important 0-----1-----2-----3-----4-----5 most important

**h. A high number of rare species of animals present**

Least important 0-----1-----2-----3-----4-----5 most important

**i. A high number of animals which might live in the habitat**

Least important 0-----1-----2-----3-----4-----5 most important

## **Section 2: Natural aquatic (water based) characteristics**

### **a. Stream frontage on parcel**

Least important 0-----1-----2-----3-----4-----5 most important

### **b. Riparian area in parcel (area within 100 feet of stream)**

Least important 0-----1-----2-----3-----4-----5 most important

### **c. Flood plain area (area that floods every 30 years on average)**

Least important 0-----1-----2-----3-----4-----5 most important

### **d. Wetland area (area that is frequently inundated with water or is swampy)**

Least important 0-----1-----2-----3-----4-----5 most important

### **e. Seeps (oozing or dripping water) or springs**

Least important 0-----1-----2-----3-----4-----5 most important

### **f. A lot of forest cover**

Least important 0-----1-----2-----3-----4-----5 most important

### **g. A high number of native plant types**

Least important 0-----1-----2-----3-----4-----5 most important

### **h. A high number of rare species of plants present**

Least important 0-----1-----2-----3-----4-----5 most important

**i. A high number of rare species of animals present**

Least important 0-----1-----2-----3-----4-----5 most important

**j. A high number of animals that might live in the habitat**

Least important 0-----1-----2-----3-----4-----5 most important

**Section 3: Potential for recreational use**

**a. Potential for walking trails**

Least important 0-----1-----2-----3-----4-----5 most important

**b. Potential for links to existing or planned walking trails**

Least important 0-----1-----2-----3-----4-----5 most important

**c. Potential for biking trails**

Least important 0-----1-----2-----3-----4-----5 most important

**d. Potential for links to existing or planned biking trails**

Least important 0-----1-----2-----3-----4-----5 most important

**e. Potential water related recreation (i.e. fishing, sitting, wading)**

Least important 0-----1-----2-----3-----4-----5 most important

**f. Close to urban areas**

Least important 0-----1-----2-----3-----4-----5 most important



		Average Score	Rank
<b>Section 1: <u>Natural terrestrial (land based) characteristics</u></b>			
	a. Adjacent to existing preserves or parks.	3.14	18
	b. Habitat corridors that connect larger habitat areas	3.85	3
	c. A variety of topographic features on one parcel such as bluffs, slopes, ridges and valleys	3.48	15
	d. Caves	2.76	26
	e. A large amount of forest cover	3.66	6
	f. A high number of native plant types	3.65	7
	g. A high number of rare species of plants present	3.09	21
	h. A high number of rare species of animals present	2.96	22
	i. A high number of animals which might live in the habitat	3.61	9
<b>Section Average</b>		<b>3.36</b>	<b>14.1</b>

<b>Section 2: <u>Natural aquatic (water based) characteristics</u></b>			
	a. Stream frontage on parcel	3.75	4
	b. Riparian area in parcel (area within 100 feet of stream)	3.62	8
	c. Flood plain area (area that floods every 30 years on average)	2.74	27
	d. Wetland area (area that is frequently inundated with water or is swampy)	3.40	16
	e. Seeps (oozing or dripping water) or springs	3.35	17
	f. A lot of forest cover	3.67	5
	g. A high number of native plant types	3.58	10
	h. A high number of rare species of plants present	3.12	19
	i. A high number of rare species of animals present	3.10	20
	j. A high number of animals that might live in the habitat	3.56	12
<b>Section Average</b>		<b>3.39</b>	<b>13.8</b>

<b>Section 3: <u>Potential for recreational use</u></b>			
	a. Potential for walking trails	4.21	1
	b. Potential for links to existing or planned walking trails	4.13	2
	c. Potential for biking trails	3.54	14
	d. Potential for links to existing or planned biking trails	3.56	13
	e. Potential water related recreation (i.e. fishing, sitting, wading)	2.90	24
	f. Close to urban areas	3.57	11
<b>Section Average</b>		<b>3.65</b>	<b>10.8</b>

<b>Section 4: <u>Landscape setting</u></b>			
	a. Proximity to an existing park	2.95	23
	b. Proximity to an existing school	2.88	25
	c. The parcel can be seen from surrounding areas	2.57	29
	d. The parcel has a view of surrounding areas.	2.71	28
<b>Section Average</b>		<b>2.78</b>	<b>26.3</b>

## **Suggested Sites from Questionnaires**

### Questionnaire 03

Prairie west of Fayetteville. Wants to place his land in conservation easement

### Questionnaire 04

Skull Creek, protection of riparian zones and from sewage  
Site where designated grand champion Arkansas mulberry is growing (UHNA 2002)  
Woods on Halsell Road  
Woods behind Leverett Elementary School  
Town Creek  
Middle Fork of the White Riparian zone  
West Fork of the White River in the Industrial Park Area  
Area surrounding Tilly Willy Bridge, and the land between there and Lake Wilson

### Questionnaire 07

Markham Hill area  
Middle Fork of the White Riparian zone  
West Fork of the White River in the Industrial Park Area  
Area surrounding Tilly Willy Bridge, and land between there and Lake Wilson

### Questionnaire 08

Vacant parcel in 900 North Block from Arkansas Avenue to Woolsey Avenue  
(Washington County?)

### Questionnaire 10

Ghost Hollow—south slope of Mt. Sequoyah

### Questionnaire 11

Markham Hill  
Marinoni farm  
Lake Wedington watershed

### Questionnaire 17

Hillsides south of 15<sup>th</sup> Street

### Questionnaire 19

Goat Hill. South of Fayetteville, east of I540, north of Razorback  
West side of Markham Hill

### Questionnaire 20

Small farm landscape west of I-540

### Questionnaire 22

Illinois flood plain around HWY 62 just east of Prairie Grove (currently large  
development underway)  
Northwest of the Illinois flood plain—remain agricultural  
Riparian zone along Illinois river

### Questionnaire 23

Washington Mountain

Kessler Mountain  
Lake Wilson area  
Lake Sequoyah area  
Markham Hill (develop contacts with property areas)

Questionnaire 24

Forest between Crossover and Happy Hollow  
Forested areas to south and west of the Mt. Sequoyah park on Happy Hollow  
Wooded at corner of College and Sycamore  
All wooded area to east of college for most of the length of college  
Small parcels in urban area

Questionnaire 26

Lives in Farmington—has some good attempts

Questionnaire 28

Lot fronting 900 block of N. Park Ave. and N. Woolsey Ave. Donated to WRMC.  
Attractive small park front N. Park Ave.

Questionnaire 29

Vacant lot to south of 1035 Park Ave.

Questionnaire 35

Green spaces adjacent to major highways

Questionnaire 48

Markham Hill

Questionnaire 51

Mt. Sequoia woods  
Mud Creek Trail  
Happy Hollow park/ creek that runs through it  
Riparian corridors, wetlands  
Large enough areas to support wildlife

Questionnaire 59

West of town at Mt. Comfort Road

Seasonally wet wooded area, five blocks behind residential lots on S. Washington Ave.  
Largest unprotected woodlot in South Fayetteville (see map)

Questionnaire ##

Kessler Mtn  
Prichard Pear Farm

**Identifying Characteristics for High Priority Conservation Areas  
In and Around Fayetteville**

**Questionnaire Comments**

Questionnaire #	Comments
02	<ul style="list-style-type: none"> <li>▪ Referring to question 4.c. (vague question) The parcel can be seen from surrounding areas and should be preserved to maintain visual quality.</li> <li>▪ Add glossary of terms</li> <li>▪ Define ecology for public proximity, etc.</li> </ul>
03	<ul style="list-style-type: none"> <li>▪ The prairie west of Fayetteville is developing far too rapidly. Prairie wildlife and plants are disappearing.</li> <li>▪ My place is part of the original prairie farm settled by Peter Van Winkle in the 1840s. I would like to place it in a conservation easement and do some restoration work before it disappears. These small prairie strips on the Springfield plain are too easy to build on and too expensive to farm anymore. Most people don't even know the Ozarks has what were once tall grass prairies. If county road 639 is in your planning area, although it's not in the city limits, please give some thought to a prairie patch for the quail, scissor tailed flycatchers, dickcissels, etc.</li> </ul>
04	<ul style="list-style-type: none"> <li>▪ I'd like to clarify my reasons for selecting certain characteristics over others. High species diversity, be it in forest, prairie, or waterway, is indicative of a healthy environment, and I consider it to be very important. I think that naturally-occurring topographical features are important to preserve, but should not be artificially created unless extensive studies have ruled out the possibility of harm to wildlife. (For example, creating slopes and forest on a prairie landscape is irresponsible.) Frontage and riparian zones help filter out runoff and prevent stream erosion, and after what happened in the wake of Hurricane Katrina, can there be any doubt as to the need for floodplains? Natural seeps and wetlands should be preserved; lots of forest cover inhibits the growth of destructive algae.</li> <li>▪ I believe that Fayetteville should be more bike-friendly, and the city needs more walking trails. I am discouraged by the "auto-centric" development here and across the country. To go to the store or to work, many people are forced to drive their cars. Our current public transit system could be a lot better, and in addition to seeing it improve, I would like to see the city redevelop itself by placing goods and services within walking distance of communities.</li> <li>▪ One thing that must stop in order for any of these things to occur is urban sprawl. Suburbs are springing up everywhere, straining local utilities, paving over arable land and wildlife habitat, and lowering property values by destroying green space. Most of my farmer</li> </ul>

	<p>stomping grounds are gone, and I never see quail or pileated woodpecker in my neighborhood anymore. The economic boost that comes from construction won't last, but here are the ones I am most familiar with:</p> <ul style="list-style-type: none"> <li>▪ Skull Creek – although some parts of this creek may be protected, more needs to be done to stop raw sewage from entering the creek. After heavy rains, storm sewers near the creek pop their tops and expel sewage directly into the water. Its riparian zones are weakened in places, and dumping is still a problem.</li> <li>▪ The place where the new Sam's Club is to be built – this new building will encourage more sprawl in that area.</li> <li>▪ The farmland around Fayetteville – housing developments must not be allowed to pave over all of this good land. Conservation easements would allow property owners to preserve the land, and get tax breaks by doing so. (Farmland may not be natural, perge, but it is necessary.)</li> <li>▪ The site of the designated grand champion Arkansas mulberry (UHNA 2002) – I have heard that Chancellor White of the University of Arkansas is planning to build a house on the acreage where the tree is located, and I don't know if any measures are in place to preserve it. (Personally, I don't think any house should be built there at all; it's a lovely little patch of woods.)</li> <li>▪ The woods on Halsell Road – luxury homes being built here will fragment wildlife habitat. Research has shown that larger habitats are better than small ones, and that straight-edge boundaries are less suitable than overlapping, "finger-like" edges.</li> <li>▪ The woods behind Leverett Elementary School – in the past, many proposed uses have been made for these woods, including a restaurant and a park. Because of its proximity to the school, I think it should remain natural.</li> <li>▪ Town Creek – this creek is just across the street from where I live, and I would like to see some creek cleanups to get rid of the garbage in it.</li> </ul>
06	<ul style="list-style-type: none"> <li>▪ The forest hillside in town should be preserved along with any tree areas. I think dense urban development with lots of green space surrounding is a great model for Fayetteville. Large undeveloped tracts close to town should also be considered to prevent sprawl eating up the countryside.</li> </ul>
07	<ul style="list-style-type: none"> <li>▪ There are no natural swimming areas or water areas that do not allow motorized boats. Too much emphasis is on fishing in motorized boats. Which tends to depreciate the water quality for swimming and kayaking.</li> <li>▪ Specific locations: Markham Hill area <ul style="list-style-type: none"> <li>▪ Middle Fork of the White Riparian zone</li> <li>▪ West Fork of the White in the Industrial Park area</li> <li>▪ Area surrounding Tilly Willy Bridge, and land between there and Lake Wilson</li> </ul> </li> </ul>

08	<ul style="list-style-type: none"> <li>▪ The vacant parcel in the 900 North block extending from Arkansas Avenue to Woolsey Avenue should be preserved as an oasis in an increasingly busy area of Fayetteville. There are some magnificent maples as well as other large trees on this property. Wildflowers could be encouraged to grow there. A few picnic tables and benches would offer a quiet place to enjoy lunch or just sit close to a well-traveled thoroughfare.</li> <li>▪ I believe this parcel belongs to Washington County.</li> </ul>
09	<ul style="list-style-type: none"> <li>▪ To these values add size and money. I value quantity, so cost is crucial. This perspective leads to looking farther outside Fayetteville, to acquire the most land possible before development/sprawl engulfs NWA.</li> </ul>
10	<ul style="list-style-type: none"> <li>▪ Ghost Hollow – south slope of Mt. Sequoyah</li> </ul>
11	<ul style="list-style-type: none"> <li>▪ Markham Hill and the Marinoni farm need to be preserved. We need to find incentives for private land owners to give up millions of dollars they could make from developers in exchange for creating parks or other types of preserves. Can we identify the owners of large tracts of land in Fayetteville and suggest that we might name a park after them if they make arrangements for preservation of the land? How can we possibly compete with the millions of dollars developers can offer for land? I don't have any easy answers.</li> <li>▪ We need to protect Lake Wedington and it's watershed to prevent it from becoming polluted like Bella Vista lakes.</li> </ul>
12	<ul style="list-style-type: none"> <li>▪ There are many areas in close proximity to urban areas but not in the city limits. Are these areas to be considered?</li> <li>▪ I am very excited and pleased that there is opportunity to preserve these very special areas which, when damaged or removed by "development" can never, NEVER be replaced or repaired.</li> <li>▪ Someone, somewhere, finally has to say "stop". Let's proceed in a responsible manner.</li> </ul>
17	<ul style="list-style-type: none"> <li>▪ View sheds are very important! Preserving the hillsides that are seen from major highways/transportation routes</li> <li>▪ The land up Markham Hill – just west of the University over to I-540</li> <li>▪ The Hillsides – south of 15<sup>th</sup> street</li> </ul>
19	<ul style="list-style-type: none"> <li>▪ West side of Markham Hill (see from I-540)</li> <li>▪ South of Fayetteville – Goat Hill (?) – east of I-540, north of Razorback</li> <li>▪ They're view shed as you enter Fayetteville and keep appearance of "college town"</li> </ul>
20	<ul style="list-style-type: none"> <li>▪ A somewhat confusing questionnaire in that "desirable characteristics" prompt the respondent to automatically favor a "most important" response when in actuality, by doing so, you eliminate more potential areas for conservation. Any area holds potential for conservation – you allow natural restoration through rest; a wild columbine volunteered in my wild backyard garden on Lafayette Street because I leave it undisturbed/uncultivated.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Small farm landscape west of I-540 @ Razorback should be conserved at all costs.</li> </ul>
22	<ul style="list-style-type: none"> <li>▪ Illinois flood plain around HWY 62 just east of Prairie Grove – view from both highway and from the battlefield park – currently very large development underway.</li> <li>▪ Northwest of the floodplain – would be very wonderful if the plain itself could remain agricultural as at present</li> <li>▪ Also maintaining riparian zone along the river – or expanding the riparian zone.</li> </ul>
23	<ul style="list-style-type: none"> <li>▪ Priority Areas:</li> <li>▪ Washington Mountain</li> <li>▪ Kessler Mountain</li> <li>▪ Lake Wilson area</li> <li>▪ Lake Sequoyah area</li> <li>▪ Markham Hill (develop contacts w/ property owners)</li> </ul>
24	<ul style="list-style-type: none"> <li>▪ Forest between Crossover and Happy Hollow</li> <li>▪ Forested areas to south and west of the Mount Sequoyah park on Happy Hollow</li> <li>▪ Wooded area at corner of College &amp; Sycamore</li> <li>▪ All wooded area to east of college for most of the length of college</li> <li>▪ I feel preserving small parcels in the urban area is as important as saving large parcels. I'm particularly concerned about songbird habitat as forests are cleared for development</li> </ul>
26	<ul style="list-style-type: none"> <li>▪ This survey was rather confusing and some of the terms were very technical. I was a bit stumped in those questions that addressed rare animals or plants. I think it is important to preserve rare species that are native to the region but does this question also cover rare species introduced to the region? Maybe next time there could be a brief introduction to each section explaining some of the terms. I also think it would be important to figure out some demographic characteristics of the respondents including the place where they reside in NWA. I think it is important to preserve pockets of nature within residential areas. Fayetteville does that really well but Farmington, where I reside, is not as successful but I do see some good attempts.</li> </ul>
28	<ul style="list-style-type: none"> <li>▪ Lot which fronts 900 block of N. park Ave. &amp; N. Woolsey Ave. (previously owned by Judge Jamison and donated to WRMC in 1980s.) Would make attractive small park fronting busy segment of N. Park Ave.</li> <li>▪ Protect area from commercial development and even heavier traffic.</li> </ul>
29	<ul style="list-style-type: none"> <li>▪ We would like to see the vacant lot to the south of 1035 Park Ave. preserved.</li> </ul>
31	<ul style="list-style-type: none"> <li>▪ I would like to see identification plates on some of the trees that line the paved trails that exist, and would be glad to help someone who could identify the trees.</li> </ul>
34	<ul style="list-style-type: none"> <li>▪ We need to preserve undeveloped areas of all kinds, and provide non-motorized access (trails) to them.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ I did not find this questionnaire useful.</li> </ul>
35	<ul style="list-style-type: none"> <li>▪ I would like to see all green spaces adjacent to major highways current existing remain as they are.</li> </ul>
48	<ul style="list-style-type: none"> <li>▪ Markham Hill would be a great choice – the area really ought to be preserved. I also think the area needs linked network of bike/walking trails.</li> </ul>
51	<ul style="list-style-type: none"> <li>▪ Permanently protect Mount Sequoia woods</li> <li>▪ Extend Mud Creek Trail</li> <li>▪ Extend Happy Hollow park to protect more of the creek that runs through it</li> <li>▪ More areas for unpaved running/walking trails</li> <li>▪ No more wetland development</li> <li>▪ Riparian corridors</li> <li>▪ Top priority: locally or regionally areas of threatened plants, animal populations (habitat areas), ecosystems, plant communities. This includes making sure parcels are large enough and connected enough to support wildlife.</li> <li>▪ Next priority: wetlands, stream frontage, riparian areas</li> <li>▪ Third priority: areas with lots of scenic beauty or recreation potential, especially in or near cities</li> </ul>
55	<ul style="list-style-type: none"> <li>▪ Walking trails along major streets such as Old Wire Road, Rockwood Trail and Mission Blvd. heading east to HWY 265.</li> </ul>
56	<ul style="list-style-type: none"> <li>▪ Neighborhoods connected by wide sidewalks or trails that have bridges.</li> <li>▪ Also, having burms between the sidewalks/trails and the street.</li> </ul>
57	<ul style="list-style-type: none"> <li>▪ I like the idea of saving urban areas that can be used for recreational activities. Citizens will use them more if the areas are easily accessible.</li> <li>▪ Linking areas will provide more options for extended recreational activities, i.e. long runs or bike rides.</li> <li>▪ A trail that links parks together that can be accessed from many points in town would be a great way to connect the city and encourage more biking and walking/running.</li> </ul>
58	<ul style="list-style-type: none"> <li>▪ Boston has a “Green Necklace” of linear parks designed by Alfred Law Olmstead. They give you a lot for your money: 1. Walking and bike trail transportation; 2. easy access from many points; and 3. preservation of natural areas. They can also connect to other larger park areas.</li> </ul>
59	<ul style="list-style-type: none"> <li>▪ West of town at Mt. Comfort road – there is a lot of building out there and I think it would be good to survey that area. There are some streams and a nice bluff with lots of trees. Something to consider before all the farmland is sold and houses are built.</li> </ul>
61	<ul style="list-style-type: none"> <li>▪ The attached map shows a low, seasonally wet wooded area that runs for five blocks behind residential lots on S. Washington Ave. This is the largest unprotected woodlot in south Fayetteville. It is habitat for hawks, owls, woodpeckers, and many other birds, as well as raccoons,</li> </ul>

	<p>opossums, etc. Children play there and use it as an “adventure” corridor. It could connect up with the city trail system and serve as greenspace for the surrounding neighborhood. If this acreage were developed for housing, I think it would be a significant loss to S. Fayetteville residents.</p> <ul style="list-style-type: none"> <li>▪ I live at 930 S. Washington. My property abuts the area at a city-owned buffer (~15 ft?) where a street parallel to Washington was platted but never built. This is a wet area. I know another property owner with at least 3 residences abutting these woods who, like me, is interested in its conservation. I don’t know the ownership pattern of the woods. Please send me any info on this conservation project and The Natural Heritage Assoc.</li> </ul>
62	<ul style="list-style-type: none"> <li>▪ My greatest concern is preservation of unnamed springs and headwater streams.</li> </ul>
67	<ul style="list-style-type: none"> <li>▪ Kessler Mountain</li> <li>▪ Prichard Pear Farm</li> </ul>
69	<ul style="list-style-type: none"> <li>▪ Natural areas between country club and Lake Wilson</li> </ul>
73	<ul style="list-style-type: none"> <li>▪ I will send you a letter with my interest in preservation of mountains and woods and linkage with trails. I have been talking with Tim Snell.</li> </ul>
76	<ul style="list-style-type: none"> <li>▪ I oppose the Heritage Foundation philosophy because it takes property out of private ownership – forever.</li> </ul>
78	<ul style="list-style-type: none"> <li>▪ Sequoyah Woods</li> <li>▪ Lake Fayetteville</li> <li>▪ Wilson Park</li> <li>▪ Markham Hill</li> </ul>
83	<ul style="list-style-type: none"> <li>▪ Mt. Sequoyah Woods</li> <li>▪ Field with horses off Mission, near Sequoyah Church</li> </ul>
94	<ul style="list-style-type: none"> <li>▪ Need 4-10 more rail road bridges</li> <li>▪ 5 Lane east/west and north/south connector at least every mile</li> <li>▪ Make NW Ark light rail work (Greenland, Fayetteville, Springdale, Lowell, Rogers, Bentonville, XNA, Siloam Springs, Tontitown to Fayetteville) (I540/AR MO Railroad and state HWY rightaways)</li> </ul>
95	<ul style="list-style-type: none"> <li>▪ I strongly disagree with the philosophy/perspective that something only has value (natural/area or item) it is used by or will be used by humans. Thus, the 0 rating for all of Sections 3 &amp; 4. I view the responsibility of stewardship of the natural environment to include the fact that a place has value to the natural wildlife (non-humans) and stewardship must consider that. If it only considers value that we humans place, then I question the integrity of that kind of stewardship.</li> </ul>
99	<ul style="list-style-type: none"> <li>▪ Live on “Tilly Willy” Rd. 2 miles south from Lake Wilson turn off. I am very interested in preserving this as a green corridor – both So. Shaeffer Rd and the West Fork of the White River through our 12+- acre “farm”.</li> <li>▪ The county road from our house to Lake Wilson is a treasure to keep in as a rural, “unimproved,” gravel road. Lots of native flowers and trees; lots of squirrels, snakes, birds; occasional views of the West</li> </ul>

	<p>Fork of the White River; a favorite “runners” road used by UA track team and many other runners.</p> <ul style="list-style-type: none"><li>▪ I would like to help to have it protected as a green corridor.</li></ul>
100	<ul style="list-style-type: none"><li>▪ I think riparian zones are the highest priority for preservation – all the way down to small intermittent streams.</li></ul>

Appendix IV  
Public Meeting

# Group tries to identify, prioritize conservation areas

BY DREW TERRY

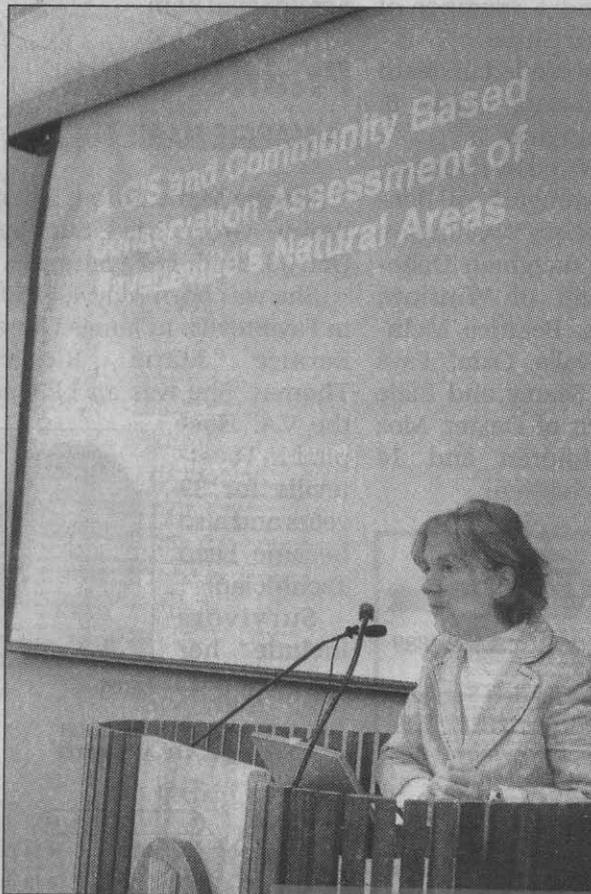
Northwest Arkansas Times

Future conservation efforts in and around Fayetteville could be the result of a meeting Tuesday of local residents interested in the subject.

The Fayetteville Natural Heritage Association presented to a crowd of nearly 30 a study being conducted to identify and rank areas for conservation.

"Fayetteville is a special place," said Karen Rollet-Crocker, the association board member leading the effort. "I have lived here for 20 years, and it's meant so much to me personally. We just don't want to lose our natural characteristics."

The Arkansas Forestry Commission earmarked \$20,000 from the Urban and Community Forestry Assistance Grant Funds toward



Karen Rollet-Crocker of the Fayetteville Natural Heritage Association speaks at the Fayetteville Public Library on Tuesday about the preservation of natural resources.

ANN HERMES  
Northwest  
Arkansas  
Times

the project, which will incorporate Geographic Information System mapping analysis developed by the Nature Conservancy under the direction of a broad-based Science Advisory Council.

The natural heritage association partnered on the project with The Nature Conservancy Ozark Highlands Office and the Landscape Architecture Department at the University of Arkansas.

Ethan Inlander, conservation geographic information system specialist with the nature conservancy, reviewed the process at the public meeting.

The group setting the study area's borders incorporated Fayetteville's current city limits and planning area, in addition to water-

See **HERITAGE**, page A6

## Heritage

Continued from A1

shed boundaries and all sub-watersheds that intersect the city's planning area.

The result was a preliminary boundary that at its largest could encompass the Wedington community and part of Prairie Grove to the west, Elkins and part of Goshen to the east, parts of Springdale and Tontitown to the north, and Greenland and most of West Fork to the south.

Group members now are

requesting people fill out questionnaires to gauge the public's priorities when conserving land.

Each survey contains 29 questions in four sections — natural land-based characteristics, natural water-based characteristics, potential for recreational use and landscape setting.

Among the considerations are potential for human use, inclusion of ecological properties, and likelihood for development.

Results of the surveys will give more weight to certain aspects when applied to the

analysis.

The natural heritage association has until the spring to complete the study.

Once finished, it could be distributed to owners of concerned lands along with suggestions on how to preserve the natural qualities, or the association could attempt to purchase some tracts outright.

The study also has the potential for cleaner water, more natural areas, saved plant and animal species and additional outdoor activities around Fayetteville, Rollet-Crocker said.



The Fayetteville Natural Heritage Association, Inc. is dedicated to conserving natural areas of Fayetteville and its environs for the benefit of present and future generations.

October 14, 2005

Help conserve natural areas in and around Fayetteville for our grandchildren!

Fayetteville Natural Heritage Association will be asking for public opinion about identifying characteristics for high priority conservation areas in and around Fayetteville

Date: Tuesday, November 1, 2005

Meeting: 6:30, Fayetteville Public Library

Following a short presentation by Ethan Inlander, Conservation Geographic Information System Specialist from the Nature Conservancy Ozark Highlands Office, we will discuss proposed natural qualities which will lead to the identification of areas in and around the city. Benefits of land conservation will include cleaner water, saving natural areas, and increased opportunities for recreational use of trails.

Input will be important in developing criteria for a GIS study to be completed in the spring of 2006. We expect that the study will help direct conservation efforts for the Fayetteville area. FNHA plans to use the information to help landowners identify and preserve valuable natural areas. This project will show other communities across Arkansas how this analytical tool can identify areas for conservation.

For those unable to be at the meeting, a questionnaire is on the Fayetteville city web site, [www.accessfayetteville.org](http://www.accessfayetteville.org).

The project is partially funded by an Urban and Community Forestry Assistance Grant.

For more information contact:

Karen Rollet-Crocker, 442-9360

Ethan Inlander, 973-9110

Pete Heinzlemann, 521-8973

Appendix V

Site Conservation Worksheets

Site conservation worksheet \_\_\_\_\_ Site A near Robinson Mountain

Overall Rank: Terrestrial #99    Approx. 235 Acres

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 28 2006                      Crew hours and minutes 1 hr, 2 people for 2 total hours

Property names on site : Site A

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is primarily terrestrial dry old field succession on top of mountain

Assessor(s) John Crone, Karen Rollet-Crocker

Forest type Mountaintop: Mixed cedar, persimmon, blackjack oak    north slope:  
hickory-oak, maple

Forest stage: Old growth \_\_\_\_, Secondary Growth \_\_x\_\_  
Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 \_\_x\_\_ Large  
12" and above \_\_\_\_\_  
Size and species of specimen trees \_\_15" maples

Stratification (Primary, secondary, herb/shrub layers)  
Well defined \_\_\_\_\_ Somewhat defined \_\_x\_\_ Poorly defined \_\_\_\_

Primary canopy density: somewhat open \_\_\_\_ somewhat closed \_\_x\_\_ closed \_\_\_\_

Major primary canopy species: \_\_north slope: oak, maple

Major secondary canopy species: north slope: hickory

Major herb/shrub species: north slope has ferns, lindera benzoin small paw paw groves.  
Blackhaw.

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_x\_\_ No \_\_\_\_\_ or has some other notable attributes

Unique site features: Good visual penetration through 12-15" maples

Ease of access for walking and hiking: easy

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_x\_\_ high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Visibility through forest is good.

Additional notes and pictures:



Mountaintop dry site

North slope maples



Old road

Iris in woods indicating homestead

Site conservation worksheet      Site B near Robinson Mountain

Overall Rank: Terrestrial #10 Aquatic #32    Approx. 400 Acres Partially in Fayetteville Planning Area

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 28 2006      Crew hours and minutes 1 hr, 2 people for 2 total hours

Property names on site : Site B

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is primarily terrestrial with deep drainage swales. Aspect is north and south slopes with large drainage swales through the center.

Assessor(s) John Crone, Karen Rollet-Crocker

Forest type Oak, maple and hickory

Forest stage: Old growth    , Secondary Growth   x  

Relative size of majority of canopy trees: up to 6"     medium 6-12   x   Large 12" and above    

Size and species of specimen trees 12" shagbark hickory

Stratification (Primary, secondary, herb/shrub layers)

Well defined     x     Somewhat defined     Poorly defined    

Primary canopy density: somewhat open     somewhat closed   x   closed    

Major primary canopy species: Hickory-oak

Major secondary canopy species: limited

Major herb/shrub species: limited, small paw paw groves on south slope

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes     No   x   or has some other notable attributes

Unique site features: Rock outcroppings of Atoka sandstone, open forest

Ease of access for walking and hiking: easy

Visual quality of vegetation setting : low     medium   x   high    

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Visibility through forest is good, due to lack of secondary canopy and shrub species.

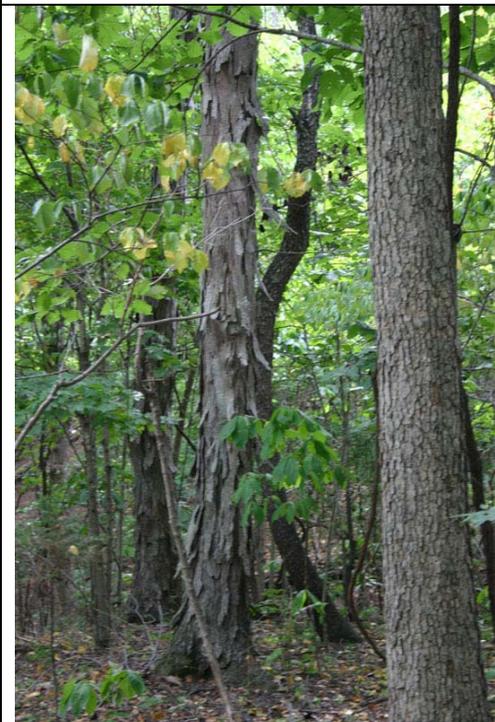
Additional notes and pictures:



Ephemeral stream drainage



Atoka sandstone outcropping on slope



Shagbark hickory and chinkapin oak



Collapsed stone field edge

Site conservation worksheet Site C near Ed Edwards Road off of East Black Oak Road

Overall Rank: Terrestrial #29 Aquatic #75 Approx. 164 Acres

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 28 2006 Crew hours and minutes ½ hr, 2 people for 1 total hour

Property names on site : Site C

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is primarily terrestrial with deep drainage swales. Aspect is north, cool slope

Assessor(s) John Crone, Karen Rollet-Crocker

Forest type: Typically locust, hackberry and walnut. On ephemeral creek changes to oak-hickory and maple. Cattle grazed woods

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_

Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_\_\_\_

Size and species of specimen trees\_\_15" elm

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_Somewhat defined\_\_x\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_x\_\_ closed\_\_\_\_\_

Major primary canopy species: \_\_North upper slope: hackberry, walnut, locust. Lower drainage area: hickory, oak, and maple

Major secondary canopy species: very few species: mulberry, ailianthus. Some large groves of paw paw.

Major herb/shrub species: Indian currant, grape

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_x\_\_ \_\_\_\_\_ or has some other notable attributes

Unique site features Rock outcroppings of Atoka sandstone.

Ease of access for walking and hiking: excellent

Visual quality of vegetation setting : low \_\_\_\_\_ medium x high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

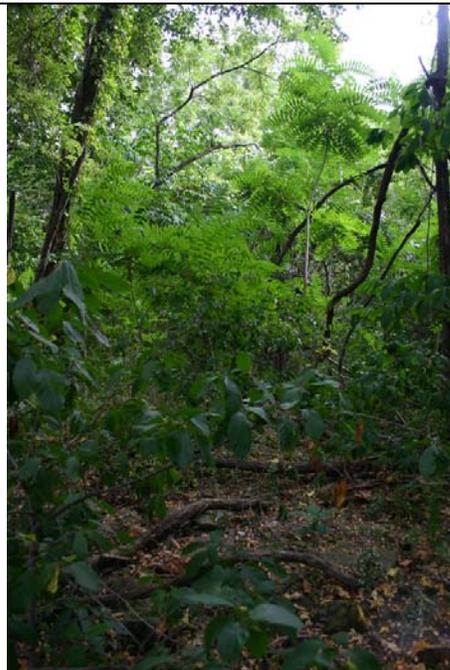
Visibility through forest is good, due to lack of secondary canopy and shrub species.  
Paw paw groves are visually outstanding.

Additional notes and pictures:



Paw paw grove on north slope

Typical hackberry, walnut, locust forest



Invasive ailanthus tree

Vine formed tree

Site conservation worksheet Site D along E Wilcox Road, east of Black Oak Road

Fayetteville Planning Area Rank: #3 168 Acres

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 28 2006 Crew hours and minutes 1/2 hrs, 2 people for 1 total hour

Property names on site : Site D

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is aquatic. Sample site area was investigated at the east end of the bridge from Armstrong Road.

Assessor(s) John Crone, Karen Rollet-Crocker

Forest type: River bottoms, floodplain forest between fields. Winding stream areas that feed the West Fork of the White River

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_  
Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 \_\_x\_\_ Large 12" and above \_\_\_\_\_  
Size and species of specimen trees\_\_20-24" red oaks

Stratification (Primary, secondary, herb/shrub layers)  
Well defined \_\_\_\_\_ Somewhat defined\_\_x\_\_ Poorly defined \_\_\_\_

Primary canopy density: somewhat open\_x\_\_ somewhat closed \_\_x\_\_ closed\_\_\_\_

Major primary canopy species: \_\_River bottom: Sycamore, willow, river birch, Higher banks: red oak, a few shortleaf pine, ash, hickory

Major secondary canopy species: elms, redbud, cedar

Major herb/shrub species: Indian currant, blackberry

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_x\_\_ \_\_\_\_\_ or has some other notable attributes

Unique site features Flat farmland interspersed with remnant forest patches along drainage corridors. River bottom forest at bridge.

Ease of access for walking and hiking: ok

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_x\_ high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

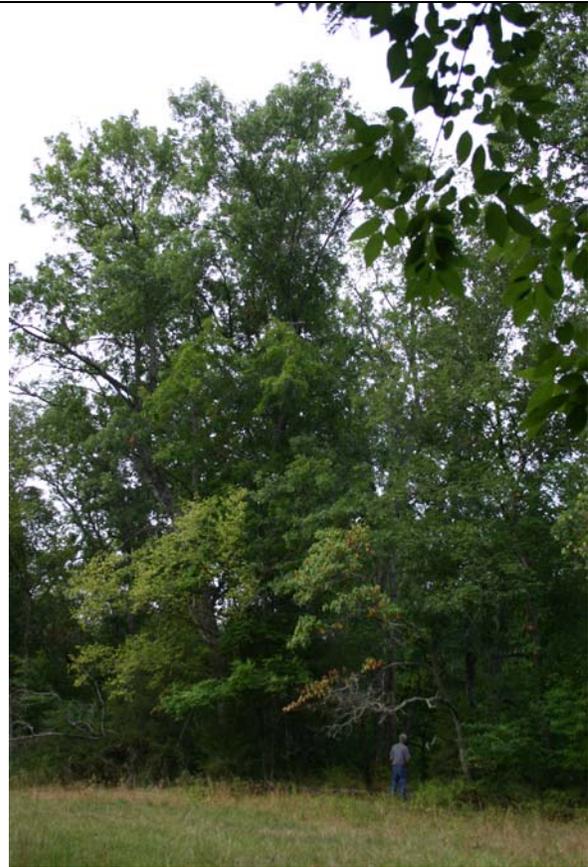
Additional notes and pictures: The size of this site and its inaccessibility limited the analysis.



River corridor from bridge



Willows in floodplain



River corridor forest at edge of field

Rank: Fayetteville—Terrestrial #3, Fayetteville Planning Area—Terrestrial #7, Overall Rank 71, 113

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Date: July 11 2006 Crew hours and minutes 1 ½ hours 2 people for 3 total hours

Property names on site : Site E

Site type (terrestrial or aquatic) location and/or name and aspect

Terrestrial, within the top 2% of ranked parcels. This parcel of 150 acres is on a small hill to the east of the Fayetteville Golf Club. The parcel is accessible from City Lake Road (Arkansas 156) and Wilson Hollow Road. It is adjacent to the Fayetteville City boundary, and is ranked 7<sup>th</sup> in the Fayetteville planning area. The hill overlooks the Fayetteville Industrial Park to the north and the valley of the West Fork of the White River to the south.

The south facing aspect is a steep ridge of outcroppings viewable from the valley below. The south property line borders the West Fork of the White River.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type Oak-hickory

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_x\_\_\_\_\_  
Size and species of specimen trees\_\_18"-24" Chinkapin oaks

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_x\_\_\_\_\_Somewhat defined\_\_\_\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_x\_\_ closed\_\_\_\_\_

Major primary canopy species\_\_\_\_Southwest slope: red oak, shagbark hickory, hackberry, chinkapin oak. West slope: post oak, black jack oak, shagbark hickory. Top area: cleared and bulldozed. North slope: white and red oak.

Major secondary canopy species: Persimmon, redbud

Major herb/shrub species: Southwest slope: fragrant sumac, false sea oats, Indian currant, blackhaw

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes   x   No \_\_\_\_\_ or has some other notable attributes  
Exposed sandstone benches and outcroppings are up to 30 feet high.

Ease of access for walking and hiking are described as: south side of the parcel is steep with major rock outcroppings. West access is a bulldozed road.

Visual quality of vegetation setting : low \_\_\_\_\_ medium   x   high \_\_\_\_\_  
Typically, there is an open understory.

Visual quality is enhanced by rock formations which are viewable from the valley to the south in the winter.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: This hill is the closest undeveloped hill to south Fayetteville. Parts of the parcel have been prepared for development, however. It would be important to contact the owners to discuss possibilities for conservation, especially near the outstanding south slope and the area along the South Fork of the White River. Some other parts of the parcel may have equal value, but the assessors were not able to explore the complete site due to its size.



View of Puddin Hill from the south valley of the West Fork of the White River



Southwest lower slope of Puddin Hill



Outcroppings below the south ridge



Outcroppings at the top of the south ridge



View from top ridge looking south across the West Fork of the White River



Top open field



Road from the west to the top open field



30' outcropping at southfacing ridge with Chinkapin oaks

Fayetteville Planning Area Rank: Terrestrial-- 1, 4 Aquatic-- 7

Overall Rank: Terrestrial-- 12, 20 42, 46 Aquatic—27, 38, 80

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Date: July 6 2006

Crew hours and minutes ½ hrs, 4 people for 2 total hours

Property names on site : Site F

Site type (terrestrial or aquatic) location and/or name and aspect

These parcels, located to the south of Fayetteville in the Boston Mountains, rank in the top 2% of terrestrial sites in the total study area. They surround Lake Wilson, a 320 acre city park. A dam and 55 acre reservoir across a major stream from the north end of the mountains once formed part of the city's water supply. The area is part of the watershed of the West Fork of the White River.

Assessor(s) Bob Caulk, Duane Woltjen, Frank Sharp, Karen Rollet-Crocker

Forest type Oak-hickory

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_x\_\_\_\_\_  
Size and species of specimen trees\_\_30 to 36" oak, hickory

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_x\_\_\_\_\_ Somewhat defined\_\_\_\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_\_\_\_ closed\_\_x\_\_

Major primary canopy species\_\_\_\_Oak hickory: Southern red oak, post oak, white ash, shagbark hickory, northern red oak, chinkapin oak

Major secondary canopy species Oak hickory: flowering dogwood, sugar maple, winged elm, redbud

Major herb/shrub species \_\_\_\_Oak hickory: blackhaw, Indian currant

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_x\_\_\_\_ No \_\_\_\_\_ or has some other notable attributes

The Atoka outcroppings in this area are outstanding. Several major streams feed the lake from the south.

Ease of access for walking and hiking are described as: \_\_\_\_\_ access is good from the public property around Lake Wilson. Trails are steep in some locations

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_\_\_\_ high \_\_\_\_\_ x \_\_\_\_\_  
Typically, there is an open understory. Visual quality is enhanced by views of the lake below and unusual rock formations.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Several parcel owners around Lake Wilson have expressed interest in conservation. In order to qualify for major Forest Legacy funding, FNHA plans to ask the Arkansas Forestry Commission to expand Legacy boundaries to the east side of I540 and south to the Ozark National Forest. This section of the study area has the highest number of parcels with outstanding natural forest terrestrial and aquatic rankings.



View to the east of surrounding Boston Mountains from Lake Wilson dam.



View to the west from Lake Wilson dam



Existing Lake Wilson park shelter



1 ¼ mile Clark Trail constructed by the Ozark Society. This could be expanded into the parcels in a proposed watershed conservation area.

Site Conservation Worksheet \_\_\_\_\_ Site F

This worksheet is used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date 08/08/06

Crew hour and minutes Two people, 4 hours each

Assessors: D. Woltjen, Bob Caulk

Site type (terrestrial or aquatic) location and/or name and aspect

This terrestrial site was identified as #75 ranking

Forest stage : Old growth \_\_\_\_\_, Secondary growth X Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 \_\_\_\_\_ Large 12" and above \_\_\_\_\_

Size and species of specimen trees 18" white oak, a lone tree

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_ Somewhat defined X Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open \_\_\_\_\_ somewhat closed \_\_\_\_\_ closed \_\_\_\_\_

Major primary canopy species Oak/Hickory/Ash

Major secondary canopy Cedar

Major herb/shrub species \_\_\_\_\_

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes X No \_\_\_\_\_ or has some other notable attributes

Woods, meadows, bluffs, of sandstone and shale. All season water supply spring.

Unique site features few buildings, about 80% woodlands. Drains to adjacent Lk Wilson

Ease of access for walking and hiking are described as: Excellent. The general perimeter has a seldom used ATV trail, and there is an interior jeep road network.

Visual quality of vegetation setting : low \_\_\_\_\_ medium X high \_\_\_\_\_

(mature primary canopy of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: The extensive low stone bluffs are big eared bat habitat. West Fork White River drainage, Lake Wilson property is contiguous. The 10 acre tract is an in-holding. Virtually all of the property was probably clear-cut about 50 years ago. There are extensive areas regenerating to woods from old fields. There are old road fills, rock walls, and foundations of former agriculture buildings, possibly small hog sheds or feeders.



View of sandstone bluff outcrop with long eared bat habitat. Age, type, and distribution of trees in this area are generally typical of the tract where it is wooded. All observed drainages were dry expect for a small seep puddle dug out at the foot of a low bluff. Riparian indicator species were not observed, but a dug pond at the terminus of Bugtussle Road remains full and is said to be spring fed.

Ward 1 Rank, Aquatic 4 Fayetteville Rank, Aquatic 1 and 4 Terrestrial 8 Overall, Aquatic 36

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Date: July 12 2006 Crew hours and minutes 1 hrs, 2 people for 2 total hours

Property names on site : Site G

Site type (terrestrial or aquatic) location and/or name and aspect  
Aquatic and terrestrial sites, located between Shaeffer Road and Willoughby Road with a total of approximately 350 acres. In the floodplain of the West Fork of the White River east of Drake Field Municipal Airport.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type: Lowland forest type along rivers and streams. Sycamore-maple.

Forest stage: Old growth , Secondary Growth  Relative size of majority of canopy trees: up to 6"  medium 6-12  Large 12" and above   
Size and species of specimen trees  maples and sycamores 18"-24"

Stratification (Primary, secondary, herb/shrub layers)

Well defined   Somewhat defined  Poorly defined

Primary canopy density: somewhat open  somewhat closed  closed

Major primary canopy species:  In floodplain: hackberry, ash, sycamore, river birch, silver maple Above floodplain: Sugar maple, red oak, shagbark hickory, hackberry

Major secondary canopy species: box elder, elm, locust, cherry

Major herb/shrub species In floodplain: greenbrier, Indian currant, grape, jewel weed, cane. Above floodplain: elderberry, chokecherry

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes  No  or has some other notable attributes  
The lowland forest along the river has large trees which have never been cleared. The forest becomes typical upland oak and hickory as it rises above the floodplain next to the fields.

Unique site features \_\_\_\_\_ broad river floodway with gravel bars and alternating banks of stable vegetation and eroding soil. Ecosystems along the rivers and streams that are relatively rare.

Ease of access for walking and hiking are described as fair, due to wet soils. Need for boardwalks.

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_\_\_ high \_\_x\_\_\_\_

Views of river corridor through large trees. Contrast of dark shadows and cool woods with reflection of water in sunlight.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Natural river corridors on these parcels are separated by open fields. Conservation corridors along the streams and rivers combined with access through fields and lowland forests would be necessary for public use.



River corridor lowland forest edge



River corridor lowland forest edge with elderberry and chokecherry



West Fork of White River framed by silver maple and eroding banks



Large river birch in floodplain

Site conservation worksheet  
Rank 1 Terrestrial, 34 Aquatic

Site H Stevenson Mountain

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 6 2006

Crew hours and minutes 2 hrs, 4 people for 8 total hours

Property names on site : Site H Stevenson Mountain

Site type (terrestrial or aquatic) location and/or name and aspect

Terrestrial site, rank #1 in study area. Size is 468 acres. South east of Prairie Grove, encircles small valley, view from Prairie Grove. Aspect NW and SE. Slope on NW side is gentle, but from SE side is steep. Part of site has a saddle from one side of the mountain to the other.

Assessor(s) Bob Caulk, Duane Woltjen, Frank Sharp, Karen Rollet-Crocker

Forest type Oak-hickory, old field

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_x\_\_\_\_\_  
Size and species of specimen trees\_\_30 to 36" oak, hickory and ash

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_x\_\_\_\_\_Somewhat defined\_\_\_\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_\_\_\_ closed\_\_x\_\_

Major primary canopy species\_\_\_\_Oak hickory: Southern red oak, post oak, white ash, hickory, northern red oak, chinkapin oak \_\_Old field: locust, black jack oak, post oak, cedar

Major secondary canopy species Oak hickory: flowering dogwood, sugar maple, winged elm, redbud Old field: serviceberry

Major herb/shrub species \_\_\_\_Oak hickory: blackhaw, Indian currant Old field: sumac, huckleberry

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_\_\_\_ No\_\_\_\_\_ or has some other notable attributes

The forest is varied, and although it is second growth, is probably 75 to 100 years old.

Unique site features\_\_\_\_There are sandstone outcroppings from the Atoka horizon

Ease of access for walking and hiking are described as: \_\_\_\_\_ access is very good from road CO3215 which leads from CO22 and 20 and AR265. Walking is excellent and not too steep from the northwest side.

Visual quality of vegetation setting : low \_\_\_\_\_ medium x high  
 \_\_\_\_\_ x \_\_\_\_\_ Typically, there is an open understory.  
 (Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: This 400+ acre site is a large undisturbed natural area. It is currently used for hunting and horseback riding. Development is occurring in the valleys to the west near Prairie Grove. This site will soon be a prime target for large scale residential development with spectacular views.



View from County Rd. 22 of the north side of Stevenson Mt., one of 3 major mountains to the west side of I540 in the Illinois River watershed. Surrounding farmland near the town of Prairie Grove is now becoming suburban housing.



Blackjack oak and post oak with cedar reforestation on the northwest facing old field at the foot of the mountain



Path on upper section of northwest slope with typical oak hickory forest, 6"-12" diameter trees



Path on upper section of northwest slope



Atoka sandstone outcropping on northwest slope



White oak and American ash specimen trees

Site conservation worksheet Site I Treat/Razorback/Cato Springs Road/Fulbright Expressway

Ward 4: Rank #2, 4, 5

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Date: July 26 2006 Crew hours and minutes 1 hrs, 2 people for 2 total hours

Property names on site : Site I Access to the east side of the property is the Missouri/Arkansas RR line. This property, or part of it, is for sale. Accessibility to the Fulbright Expressway, I 540 and Razorback Road is very good.

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is terrestrial, with the dry Spring branch of Town Branch Creek running through the northern part of the parcel. It is eroded down to bedrock with an 8' bank.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type: old field

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_  
Relative size of majority of canopy trees: up to 6" \_\_x\_\_ medium 6-12 \_\_x\_\_  
Large 12" and above \_\_\_\_  
Size and species of specimen trees\_\_one or two 36-40" post oaks, short leaf pine

Stratification (Primary, secondary, herb/shrub layers)  
Well defined \_\_\_\_\_ Somewhat defined \_\_\_\_\_ Poorly defined \_\_x\_\_

Primary canopy density: somewhat open\_\_x\_\_ somewhat closed \_\_\_\_\_ closed\_\_\_\_\_

Major primary canopy species: \_\_cedar, blackjack oak, post oak, cherry

Major secondary canopy species: sassafras, winged elm, shortleaf pine

Major herb/shrub species: blackhaw, greenbriar, Japanese honeysuckle, Indian currant, poison oak

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No\_\_x\_\_ or has some other notable attributes

Unique site features Surroundings include the Fulbright expressway, the railroad, and the county jail. There is major traffic sound.

Ease of access for walking and hiking is difficult due to undergrowth, however, the site is flat.

Visual quality of vegetation setting : low\_\_x\_\_\_\_ medium \_\_\_\_ high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: The access to this site from the east, and south side is difficult due to the railroad and Fulbright Expressway, but has access from Razorback Road via Treat Road. The east side is forested while the west side is cleared. The site is for sale, and is highly desirable for development due to its location near major access roads.



Spring Branch of Town Branch Creek



Post oak surrounded by undergrowth



Shortleaf pine



Arkansas Missouri RR on east side of parcel

Fayetteville rank #10 (Note: this site has been planned for 100 residences and had already been planned and passed for large scale development by the time this report was written. This is a good example of how quickly the limited number of natural sites in Fayetteville are lost.)

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Date: July 11 2006 Crew hours and minutes 1 ½ hours 2 people for 3 total hours

Property names on site : Site J For sale.

Site type (terrestrial or aquatic) location and/or name and aspect

This property was marked for sale, and we found later that it has been accepted by the planning commission for large scale development of 100 houses. This was not known when assessors visited the site or when the map was prepared. The parcel was ranked #10 within the boundaries of the City of Fayetteville.

It is our experience that more than half of the ranked parcels inside the city designated by our GIS study are under development or for sale. This indicates that the last valuable natural sites within the City will soon disappear unless quick efforts for conservation are successful.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type Oak-hickory, pond, glade

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_\_\_\_  
Size and species of specimen trees\_\_\_\_\_

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_x\_\_\_\_Somewhat defined\_\_\_\_ Poorly defined \_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_x\_\_ closed\_\_\_\_

Major primary canopy species\_\_\_\_Northwest slope: red oak, shagbark hickory, chinkapin oak, post oak, cedar, American ash. ½ acre pond: willow, elm, cedar  
Major secondary canopy species: redbud, serviceberry, dogwood, paw paw.  
Major herb/shrub species: ½ acre pond: button bush

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes   x   No \_\_\_\_\_ or has some other notable attributes  
 The parcel has a large pond. It also has a glade (defined as a dry rocky area with stunted trees on the ridge) and rock outcrops.

Ease of access for walking and hiking are described as: south side of the parcel is steep with major rock outcroppings. West access is a bulldozed road.

Visual quality of vegetation setting : low \_\_\_\_\_ medium   x   high  
 \_\_\_\_\_ Typically, there is an open understory.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: The plan for this 40 acre parcel will conserve the pond and part of the ridge.

Note: between this parcel and the Fayetteville Golf Club property is a linear parcel that is not slated for development. The assessment of that parcel is listed on another report.



For sale sign indicating large scale development plan for 100 residences on 40 acre parcel



½ acre pond.



Outcroppings.



Glade.

Site conservation worksheet Site K surrounding Fayetteville Country Club

Fayetteville: Rank #10

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 05, 2006 Crew hours and minutes 1 hrs, 2 people for 2 total hours

Property names on site : Site K

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is terrestrial, a bench on a bluff circling the mountain top where the Fayetteville Golf Club is located. There is an old road bed on the bench. Connection to a new development on the west slope below is possible, to create a trail encircling the mountain.

Assessor(s) John Crone, Karen Rollet-Crocker

Forest type: oak-hickory

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_

Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 \_\_x\_\_ Large 12" and above \_\_\_\_\_

Size and species of specimen trees\_\_24" post oaks, a few good shagbark hickories

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_ Somewhat defined\_\_x\_\_\_\_ Poorly defined \_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_x\_\_ closed\_\_\_\_

Major primary canopy species: \_\_Chinkapin oak, red oak, hickory

Major secondary canopy species: redbud, dogwood

Major herb/shrub species: blackhaw, shrub honeysuckle, Indian currant, blackhaw, false sea oats, fragrant sumac, blackberry

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_x\_\_\_\_ No \_\_\_\_\_ or has some other notable attributes

Thin, rocky soil, good for trail.

Unique site features Undergrowth is 12-15" and there is a good potential view from the linear property as one moves along the high bench. Views into golf course are screened by trees. Some golf balls on ground.

Ease of access for walking and hiking is rough from below the bluff, but easier across the bench road. Access would be required.

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_x\_\_ high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: There may be other properties on the south and east side of the mountain that might be conserved along with this bluff ridge.



Old roadbed on bench above bluff



Edge of golf course



View from roadbed trail towards west



Chinkapin oak on bluff below roadbed trail

Fayetteville Rank: Terrestrial #1 and 6, Overall Rank #57

This worksheet is to be used for ‘on the ground’ assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission’s Urban Forestry Program and the U.S. Forest Service.

Date\_7/14/06\_\_\_ Crew hours and minutes 2 hr. Assessor(s)\_Crone, Rollet, Jumper, Patterson

Site type (terrestrial or aquatic) location and/or name and aspect \_\_\_No running water, relatively dry site

Forest type \_\_\_\_\_cedar, red oak\_\_\_

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6” \_x\_\_\_medium 6-12 \_\_x\_\_\_ Large 12” and above \_\_\_\_\_ Size and species of specimen trees\_\_24” red oaks—only 2 or 3

Stratification (Primary, secondary, herb/shrub layers) Well defined \_\_\_\_\_Somewhat defined\_\_\_x\_\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_x\_\_ somewhat closed \_\_\_\_\_ closed\_\_\_\_\_

Major primary canopy species\_\_Cedar, red oak, only up to 8” elm and hickory, grades into post oaks toward the west

Major secondary canopy species \_\_\_\_\_

Major herb/shrub species Indian currant, false sea oats

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_\_\_\_ No\_\_\_\_\_ or has some other notable attributes \_\_\_has very dry open fields with prickly pear cactus and hawthorn trees

Unique site features\_\_This site does not have any discernable unique site features, as far as the assessors could determine in their visit

Ease of access for walking and hiking are described as:\_\_\_easy, open woods

Visual quality of vegetation setting : low\_\_\_x\_\_\_ medium \_\_x\_\_ high

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Note young woods, open fields, very few old oaks



Red oak young forest with Indian currant undergrowth



Hickory grove



Young canopy forest



30 inch red oak



Open field with hawthorn trees



Dry field with prickly pear cactus and ironweed



36 inch red oaks



South view of Puddin' Hill

Ward 1 rank: Aquatic #2, Fayetteville rank: Aquatic #2, overall rank: Aquatic #50

This worksheet is to be used for 'on the ground' assessment of ranked parcels in the GIS study produced by The Nature Conservancy Highlands Office and the Fayetteville Natural Heritage Association. This project is supported in part by the Arkansas Forestry Commission's Urban Forestry Program and the U.S. Forest Service.

Date: July 26 2006 Crew hours and minutes 1 1/2 hrs, 2 people for 3 total hours

Property names on site : access to the west side of the property is at Armstrong Ave., Babe Ruth Park, across the West Fork of the White River. This total 174 acre parcel is bounded by the West Fork on the west side.

Site type (terrestrial or aquatic) location and/or name and aspect

The most important natural area on this parcel is the river corridor on the west side of the Combs parcel. There are several floodway lowland woodlands. One woodland is easily accessible from gravel and rock crossing points near the Babe Ruth Park. To the east, the parcel is under development. The parcel is ranked #2 aquatic within the boundaries of the City of Fayetteville.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type: Sycamore/silver maple/river birch

Forest stage: Old growth x, Secondary Growth      Relative size of majority of canopy trees: up to 6"      medium 6-12      Large 12" and above x  
Size and species of specimen trees River birch, 24" in groups, silver maple 18"

Stratification (Primary, secondary, herb/shrub layers)

Well defined      Somewhat defined x Poorly defined     

Primary canopy density: somewhat open x somewhat closed      closed     

Major primary canopy species: Ash, river birch, silver maple, sycamore, red maple

Major secondary canopy species: box elder, mulberry, locust, bois d'arc

Major herb/shrub species fragrant sumac, trumpet vine, phlox, false sea oats, elderberry, can, poison ivy, violet, grape

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes      No      or has some other notable attributes

Unique site features The bank and floodway show typical evidence of river habitat. Blue heron, kingfisher, and green heron were in evidence.

Ease of access for walking and hiking would be possible with a crossing from the city park over the dam or rock stepping stones.

Visual quality of vegetation setting : low \_\_\_\_\_ medium x high \_\_\_\_\_  
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Although the baseball park at this location is a highly manicured landscape, it would be possible to add to its recreational use by providing access on the east side to the West Fork of the White River corridor. Unfortunately, the river on the park side has concrete slabs piled on the bank, presumably for stabilization or fill. With public access and cleanup, the river and its associated lowland forest on the opposite side could be a positive natural conservation site and trail.



West Fork of White River and lowland forest



Bank on park side with concrete slabs



Lowland forest, river birches



Silver maple overhanging river bank

Site conservation worksheet Site N South Fayetteville Woods between Wood, Washington, 11<sup>th</sup> and 9<sup>th</sup> St. near Walker Park, S. Fayetteville

Not ranked—suggested by adjacent owner on questionnaire

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Date: July 26 2006 Crew hours and minutes 1 1/2 hrs, 2 people for 3 total hours

Property names on site : access at parking lot of Head Start building

Site type (terrestrial or aquatic) location and/or name and aspect  
Terrestrial, old field, approximately 5-8 acres.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type: Old field, invasive plants

Forest stage: Old growth \_\_\_\_\_, Secondary Growth \_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_\_ Large 12" and above \_\_x\_\_  
Size and species of specimen trees \_\_maples and sycamores 18"-24"

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_ Somewhat defined \_\_\_\_\_ Poorly defined \_\_x\_\_

Primary canopy density: somewhat open \_\_x\_\_ somewhat closed \_\_\_\_\_ closed \_\_\_\_\_

Major primary canopy species: \_\_Mulberry, bois d'arc, locust, hackberry

Major secondary canopy species: red cedar

Major herb/shrub species invasive bush honeysuckle, multiflora rose, ligustrum, poison ivy, Japanese honeysuckle, greenbriar. Parthenocissus and grape.

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_\_\_\_ or has some other notable attributes

Unique site features This site is impossible to walk through due to the greenbriar vines, and other vines such as Japanese honeysuckle. Cedar branches, ligustrum, and a ground cover of poison ivy limit movement as well.

Ease of access for walking and hiking are described as not possible

Visual quality of vegetation setting : low   x   medium    high     
 (Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: This site was recommended to the study by an individual who lives nearby. Our assessment was at the south end, since it was the only place we found access. The ground and tree branches were covered with thorny vines and twigs making movement very difficult. The site has been used by homeless people, although there was no evidence of recent camping. Trash, refrigerators, and other garbage was in evidence. This woods has not been maintained, and it cannot be restored to a reasonable natural habitat. Moreover, it is unsafe due to lack of visibility and poison ivy ground cover. Note comments below, which show a different picture.

Comments by adjacent owner: “A low, seasonally wet wooded area that runs for five blocks behind residential lots on S. Washington Ave. This is the largest unprotected woodlot in south Fayetteville. It is habitat for hawks, owls, woodpeckers, and many other birds, as well as raccoons, opossums, etc. Children play there and use it as an “adventure” corridor. It could connect up with the city trail system and serve as greenspace for the surrounding neighborhood.”



South Fayetteville woods camp



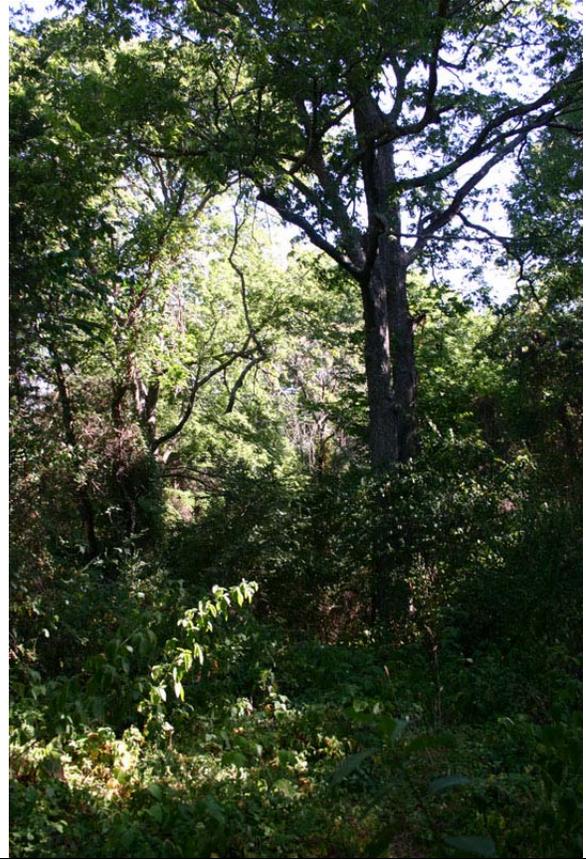
South Fayetteville woods trash-- refrigerator



South Fayetteville woods typical with invasive ground cover and vines



Large white oak



South Fayetteville woods with invasive ground cover and hackberry tree

Ward 2 Rank: Terrestrial 2 and 4, Aquatic 1 and 2

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Date June 2, 2006 Crew hours and minutes 11AM-1PM

Site type (terrestrial or aquatic) location and/or name and aspect

Two properties are shown as aquatic and one adjoining property is terrestrial. Creek corridor and side sloping sites

Assessor(s) Crone/Rollett

Forest type    This site is made up of several major forest types which are a pine grove and property adjacent to an ephemeral stream with hickory and hackberry. The other properties contain the major stream corridor and adjacent forest vegetation which is broken by annually mowed grassy areas along the length of the stream.

Forest stage: Old growth   , Secondary Growth   x   Relative size of majority of canopy trees: up to 6"    medium 6-12   x   Large 12" and above     
Size and species of specimen trees 40" white oak and 24" ash

Stratification (Primary, secondary, herb/shrub layers)

Well defined      x   Somewhat defined      x   Poorly defined      x  

Primary canopy density: somewhat open    somewhat closed   x   closed      x  

*Major primary canopy species*    One property has a Pine grove, hickory, hackberry grove. Other properties have sycamore and hackberry in creek bottom with ash species on the side-slopes that changes to a mixture of ash, hickory, and oak further up-slope

*Major secondary canopy species*    pine grove has little understory except for pine saplings. The hickory/hackberry parts of the site exhibit blackberry and grasses where open to the sun, but otherwise saplings primarily the same as the primary species.

The other properties exhibit lush flood plane vegetation that is impenetrable immediately adjacent to the creek with understory similar to canopy species

*Major herb/shrub species*    One site exhibits vinca near disturbed sites such as the cemetery near the Wheeler Road access point. Where light is bright blackberry and lonicera species flourish. Wild rose and wild grape are also evident indicating site disturbance. The other properties exhibit thick undergrowth adjacent the creek but the grassy meadows parallel the creek and make the site totally accessible. Indian current, mayapple, and lonicera shrub were major herb/shrub species.

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes   x   No \_\_\_\_\_ or has some other notable attributes  
Notable variety of species and a number of good specimen hackberries and sycamores. A number of hickory and ash species were noted

Unique site features-In addition to a number of good specimen trees such as a 6' dbh sycamore, the sites exhibit a number of vegetation types in a relatively small area. Paths appear to have been created by the public in several places.

Ease of access for walking and hiking are described as:   good   in most instances though the major creek corridor is not accessible due to heavy undergrowth in places

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_\_\_\_ high   x    
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: One site is for sale, and a major effort is underway to conserve it, because it is highly ranked in the city and ward 2. The stream bed is the outflow from Lake Lucille dam. This is an urban natural resource with a variety of site types. Parcels have good access through Lake Lucille, Sycamore Road and Wheeler Road. A major stream corridor is bordered by open mowed grassy areas and wooded slopes. There are both lowland and upland woods. Walking and hiking is good, and there are a variety of views.



Large oaks on improved part of property



Ephemeral stream on top of property



Large hickory and hackberry on site



Grassy understory and path on parts of site



Pine grove on top of property



Flood plain on property



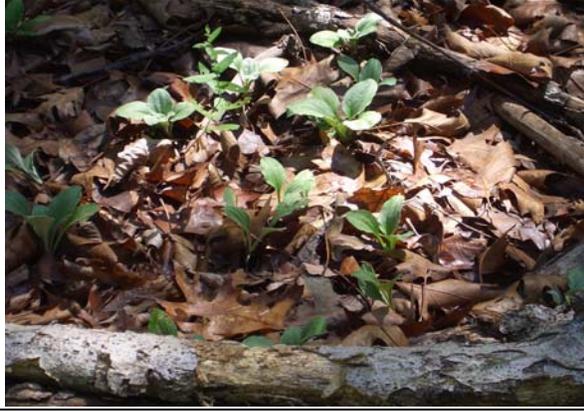
Creek corridor on property



Ash grove on property



Grassy meadow paralleling creek corridor



Pussey toes on drier upland part of site

Site conservation worksheet      Site P on Ash near Old Wire Road

Ward 2, Rank Aquatic #3, 5

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Date June 2, 2006      Crew hours and minutes 10AM-11AM

Site type (terrestrial or aquatic) location and/or name and aspect  
Aquatic site – flat linear stream corridor slated for development with recent road grading activities. Consists of site P.

Assessor(s) Crone/Rollet

Forest type unrecognized type - walnut, locust, hackberry indicating site disturbance

Forest stage: Old growth       , Secondary Growth x      Relative size of majority of canopy trees: up to 6"        medium 6-12 x      Large 12" and above x  
Size and species of specimen trees 24" hackberry and sycamores

Stratification (Primary, secondary, herb/shrub layers)  
Well defined        Somewhat defined x      Poorly defined x

Primary canopy density: somewhat open        somewhat closed x      closed       

Major primary canopy species walnut, locust, hackberry and a few ash  
Major secondary canopy species cherry, box elder, cedar, elm and primary species  
Major herb/shrub species honey suckle vine and shrub, trumpet vine

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes        No x      or has some other notable attributes

Unique site features Some of the trees of this corridor site are quite large but the creek is the site's primary asset.

Ease of access for walking and hiking are described as: easy where the road is graded through the site. Otherwise the site is overgrown except where development has opened up views to the creek.

Visual quality of vegetation setting : low        medium x high

        
(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: This site could form a part of linkage to Clarence Craft Park if adjacent owners would cooperate.

Unranked site: woods on Ruskin Heights development by DPZ firm, public input meetings

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Date: July 31 2006 Crew hours and minutes 1/2 hrs, 2 people for 1 total hour

Property names on site : Site Q Ruskin Heights

Site type (terrestrial or aquatic) location and/or name and aspect

Terrestrial site. Mature woods on west side of site

Assessor(s) Karen Rollet-Crocker

Forest type Oak-hickory

Forest stage: Old growth , Secondary Growth  Relative size of majority of canopy trees: up to 6"  medium 6-12  Large 12" and above   
Size and species of specimen trees  12"-18" oak, hickory and ash

Stratification (Primary, secondary, herb/shrub layers)

Well defined  Somewhat defined  Poorly defined

Primary canopy density: somewhat open  somewhat closed  closed

Major primary canopy species: shagbark hickory, Southern red oak, walnut, hackberry.  
East facing deep woods on major drainage area and slope.

Major secondary canopy species: mulberry, redbud, cedar. These are limited to edges due to deep shade over most of the woods.

Major herb/shrub species Indian currant, fragrant sumac, blackhaw. These are typical of oak-hickory native woods. There are very few invasive species which are usually in this type of woods near residences. In comparison, invasive species are found on the site to the east of the property which has been cleared and is now regrowing in ailanthus, locust and invasive honeysuckle.

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes  No  or has some other notable attributes  
Unique site features: There are major drainage areas which stabilize the erosion on this site. Red oaks and shagbark hickory grow on fairly rich soils.

Ease of access for walking and hiking: access will be good. Trails would need to skirt the upper edge of drainage areas.

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_\_\_\_ high \_\_\_\_\_ x \_\_\_\_\_ Typically, there is an open understory.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: The hilltops and west facing drainage slopes have large trees that stabilize the soil. This environment will stay intact if undisturbed. Trails can be planned in this mature canopy with open views through the woods. Research shows that the visual quality of this type of woods is considered very attractive by the general public. A comparison should be made with the slope to the east which is beyond the property line. Severe erosion, lack of regrowth and invasive species can be seen on the cleared area.

This report was completed for the DPZ workshops in August 2006 to give an example of how this type of analysis could recommend conservation on development sites.

	
<p>Typical slope in wooded area showing 8-18" dbh red oak and shagbark hickory trees.</p>	<p>Drainage slope with stable soil growing red oaks and hickories.</p>
	
<p>Surveyed trees next to unsurveyed trees</p>	<p>Eroded and regrown slope to east of site with locust and invasive ailanthus trees.</p>

Ward 2, Rank Terrestrial #1, #3

Note: One of these sites is currently under construction, and the woods is being cleared. The large oaks on this site are over 100 years old. This is an example of a valuable site that might have been conserved, but is now lost.

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Date: June 2, 2006 Crew hours and minutes 9AM-10AM

Site type (terrestrial or aquatic) location and/or name and aspect

Terrestrial site R – Western sloping sites

Assessor(s) Crone/Rollett

Forest type Primarily post oak/hickory with some white and black oak

Forest stage: Old growth x, Secondary Growth x Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 x Large 12" and above x  
Size and species of specimen trees 24" oak and hickory

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_ Somewhat defined x Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open \_\_\_\_\_ somewhat closed x closed x

Major primary canopy species Oak/Hickory

Major secondary canopy species same as primary with additional hackberry in moister areas and cedars in dryer areas

Major herb/shrub species Indian Current and Honeysuckle species with Sumac

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_\_\_\_ or has some other notable attributes

The most unusual attribute of these sites are the post oaks which may well be over a hundred years old in places.

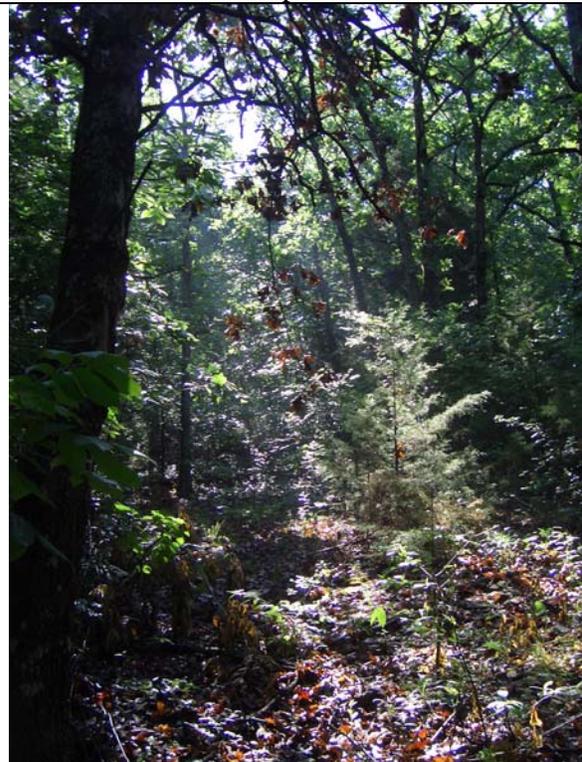
Unique site features old post oaks

Ease of access for walking and hiking are described as: \_\_\_\_\_ the sites are easily accessible from several points on the west and north and the understory is open enough in several places to study the vegetation.

Visual quality of vegetation setting : low \_\_\_\_\_x\_\_\_\_\_ medium \_\_\_\_\_ high

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Road noise was quite noticeable during the site survey

	
Post oak with cedar understory in drier areas	Large post oak with hickory species
	
Large specimen White oak on western edge of site	Oak with hickory on site near Highway 71



Dozing of north end of sites



Post oaks from graded area showing relative size

Site conservation worksheet    Site S Brent and Winwood site, near Mission Blvd.

Ward 3, Rank Terrestrial #1

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Date: July 10 2006            Crew hours and minutes 1 hrs, 2 people for 2 total hours

Property names on site : Site S Owned by one of the surrounding property owners.

Site type (terrestrial or aquatic) location and/or name and aspect  
Site type is terrestrial.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type: old field

Forest stage: Old growth \_\_\_, Secondary Growth \_\_x\_\_

Relative size of majority of canopy trees: up to 6" \_\_\_\_\_ medium 6-12 \_\_x\_\_ Large 12" and above \_\_\_\_\_

Size and species of specimen trees \_\_walnut, white oak

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_ Somewhat defined \_\_\_\_\_ Poorly defined \_\_x\_\_

Primary canopy density: somewhat open \_\_\_\_\_ somewhat closed \_\_x\_\_ closed \_\_\_\_\_

Major primary canopy species: \_\_hackberry, locust, walnut, hickory, bois d'arc, mulberry

Major secondary canopy species: sassafras, cedar, redbud

Major herb/shrub species: greenbriar, bush honeysuckle, blackeyed Susan, parthenocissus, grape vine

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_x\_\_ \_\_\_\_\_ or has some other notable attributes

Unique site features : a trail is marked and cut through the undergrowth. The site has a city utility easement for water lines and sewer which has recently been bulldozed and has not been restored.

Ease of access for walking and hiking is good, except there is no public access other than utility easements

Visual quality of vegetation setting : low\_\_x\_\_\_\_ medium \_\_\_\_ high \_\_\_\_\_  
 (Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Invasive honeysuckle blocks the view in most areas. In one corner of the site there is a grove of invasive bamboo. Some homeowners use the woods as a dumping site for construction materials and cuttings.

Additional notes and pictures: This is the largest of a typical pattern in this neighborhood of interior blocks of woodlots. The neighborhood could use these sites for walking and bike trails. Maintenance should be a consideration.



Old locusts in center of site



Large multi-trunk bois d'arc



Invasive bamboo in corner of site



24"-30" single white oak, note bush honeysuckle surrounding trunk

Ward 3: Ranked Terrestrial #4

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Date: July 10 2006 Crew hours and minutes 2 hrs, 2 people for 4 hours

Property names on site : Site T, Flynn Creek

Site type (terrestrial or aquatic) location and/or name and aspect  
Aquatic and terrestrial site.

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type Oak-hickory, stream side forest

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_ ( 35-50 years) Large 12" and above \_\_x\_\_\_\_\_

Size and species of specimen trees\_\_24" white oak, 20" red oak

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_x\_\_\_\_\_Somewhat defined\_\_\_\_\_ Poorly defined \_\_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_\_\_\_ closed\_\_x\_

Major primary canopy species\_\_\_\_Oak hickory: post oak, red oak, walnut, hickory, black oak Streamside forest: sycamore, hackberry, ailianthus, cherry, red oak

Major secondary canopy species Oak hickory: mulberry, cedar, dogwood, redbud  
Streamside forest: pawpaw

Major herb/shrub species \_\_\_\_Oak hickory: blackhaw, Indian currant, Japanese honeysuckle

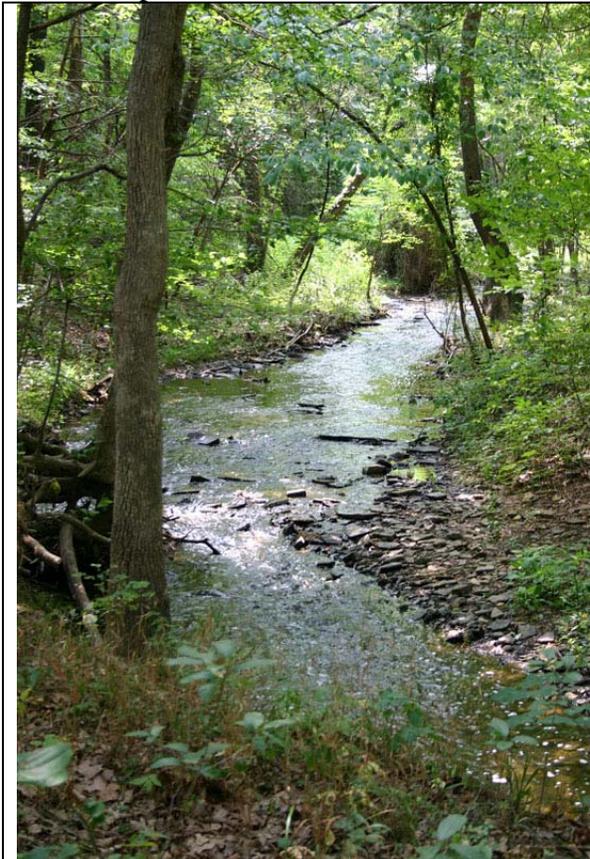
The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_\_\_\_ No\_\_\_\_\_ or has some other notable attributes  
The forest has good soils with potential for a good variety of woodland trees. Forest growth is fairly recent. Flynn Creek is very large and swift, a major attraction of the site.  
Unique site features\_\_\_\_creek and associated streamside woods

Ease of access for walking and hiking are described as: \_\_\_\_\_ access is available from Township and Mission, site is flat. There is a trail and well built bridge which provides a crossing point and walk along the creek.

Visual quality of vegetation setting : low \_\_\_\_\_ medium \_x\_ high  
\_\_\_\_\_ Typically, there is an open understory.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: Several trails have been built, and a new pedestrian bridge crosses the stream, which otherwise would be difficult to cross. The woods will improve as the various species of oaks, hickories and other trees become larger. This site has excellent potential for natural conservation. Connect this site to school district site.



Flynn Creek runs through the site, a year round free flowing creek that harbors hackberry, sycamore and paw paw trees



The primary canopy has fairly young trees such as black, red, and post oaks along with walnuts and hickories



Bridge across Flynn Creek



Easement access between site and housing

Site conservation worksheet Site U behind Vandergriff School near Township  
(unranked: owned by Fayetteville School District #1)

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Date: July 10 2006 Crew hours and minutes 1 hrs, 2 people for 2 hours

Property names on site : named as a city 'park' on maps

Site type (terrestrial or aquatic) location and/or name and aspect  
Aquatic and terrestrial site in Fayetteville. Directly behind school

Assessor(s) Bob Caulk, Karen Rollet-Crocker

Forest type Oak-hickory, 'old field' cleared easement access

Forest stage: Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of canopy trees: up to 6" \_\_\_\_\_medium 6-12 \_\_x\_ (6-8" ) Large 12" and above  
\_\_x\_\_\_\_\_

Size and species of specimen trees\_\_red oak 18"-24"

Stratification (Primary, secondary, herb/shrub layers)

Well defined \_\_\_\_\_Somewhat defined\_\_x\_\_\_\_ Poorly defined \_\_\_\_

Primary canopy density: somewhat open\_\_\_\_ somewhat closed \_\_x\_\_ closed\_\_\_\_

Major primary canopy species\_\_\_\_(oak hickory) black jack oak, red oak, black oak, post oak, chestnut oak, hickories \_\_(old field) winged elm, cedar

Major secondary canopy species (oak hickory) winged elm, redbud

Major herb/shrub species \_\_\_\_ (oak hickory) Indian currant (old field) sumac, poison ivy

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes \_\_\_\_\_ No \_\_\_\_\_ or has some other notable attributes

Flynn Creek crosses corners of the site.

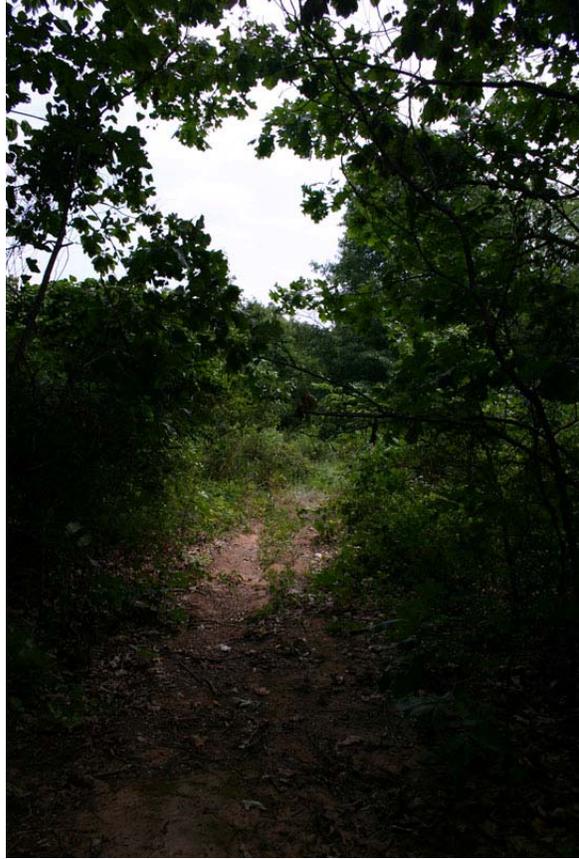
Unique site features\_\_\_\_Partially built stone pathway

Ease of access for walking and hiking are described as:\_\_\_\_access is good from school. Edge of woods is blocked by cut trees. Access is good from Vandegriff road and Township. Land is level. Stream requires bridges to cross.

Visual quality of vegetation setting : low \_\_\_\_\_ medium x high  
\_\_\_\_\_x\_\_\_\_\_ Typically, there is an open understory.

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures: This site belongs to the school district, and has been noted on older maps as a city park. However, the Fayetteville Parks and Recreation Department no longer designates property for park use belonging to the school district due to lack of maintenance. Its current status will be researched. There are several parcels around this site which would connect the woods and Flynn Creek together as a major wooded natural conservation site for recreational and educational purposes.



Access to field and woods behind Vandergriff School



Woods edge behind Vandergriff School with bulldozed trees and limited access to recreational and education site

**Site conservation worksheet**

Site V Kessler Mountain

Ward 4 Rank: Aquatic #1, 3 Terrestrial #2, 3 Fayetteville Rank #1 (Cummings Property), and #5 (Site V)

Note: assessment was on Site V

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**Date** 07/04/06 \_\_\_\_\_ **Crew hours** and minutes 7 adults 4 students 1-5 pm

**Site type** (terrestrial or **aquatic**) location and/or name and aspect

Two vegetation types dominate this site .Subsite A Part of the site is rather dry mixed Cedar and Oak vegetation in transition from agriculture over 50 years ago. Subsite B The othe part is primarily more mesic oak hickory primarily below large bluffs with a few ephemeral streams

**Assessor(s)**John Crone, Billy Kribbs, Lissa Bell, Channon Toland and Shawn Shrum

**Forest types** Cedar Oak grading into Oak Hickory and Oak Hickory/Shagbark Hickory

**Forest stage:** Old growth \_\_\_\_, Secondary Growth\_\_x\_\_ Relative size of majority of Sub-site A canopy trees Stunted and stressed oaks up to 10 inches Sub-site B canopy trees up to 24 inch oaks and hickory Size and species of specimen trees – mainly on site B Oaks and Shagbark Hickory to 24”

**Stratification** (Primary, secondary, herb/shrub layers)

Subsite A Well defined \_\_\_\_\_ Somewhat defined \_\_x\_\_\_\_\_ Poorly defined  
Subsite B Well defined

**Primary canopy density:** somewhat open\_\_\_\_ somewhat closed \_\_\_\_\_ closed\_\_\_\_  
Subsite A somewhat open Subsite B closed

**Major primary canopy species** Subsite A White Oak Cedar Subsite B Oak-Hickory

**Major secondary canopy species** Subsite A Cedar and many 1-2” mixed saplings

Subsite B. Rather open with a few redbuds and saplings from primary species

**Major herb/shrub species** Subsite A Primarily a few grasses Subsite B – A number of forbs and wildflowers with a dominance of mayapple over much of the site.

The **diversity of natural features** on the parcel allows a glimpse of the varied ecosystems of the region. Yes\_\_x\_\_ No\_\_\_\_\_ or has some other notable attributes

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**Unique site features** - High site diversity from xeric site in transitional stunted cedar-hardwood phase with a rather sharp ecotone leading to a rich mesic oak/hickory/shagbark hickory habitat with a rich understory of wildflowers and mayapple with specimen trees up to 24" especially along the base of a visually pleasing bluff.

Ease of **access for walking** and hiking are described as: good \_\_\_\_\_

**Visual quality** of vegetation setting : low \_\_\_\_\_ medium x high

x \_\_\_\_\_

(Mature primary canopy trees of one or two major species with open under-story providing strong visual penetration or savannah type)

Additional notes and pictures:



Subsite A Dry Oak Hickory/Cedar Forest



Subsite A – view to pond



Subsite A Pond with Sycamore and Willow



Subsite B View to bluffs



Subsite B Ephemeral Streams with Mayapple



Subsite B Herb layer

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Date 08/22/06Crew hour and minutes Two people, 4 hours eachAssessors: D. Woltjen, Bob Caulk

Site type (terrestrial or aquatic) location and/or name and aspect

This approximately 132 acre site #101 and initially identified as terrestrial, is actually aquatic and terrestrial. Wooded gentle slopes face mostly south, some face northwest

Forest stage : Old growth     , Secondary growth X Relative size of majority of canopy trees: up to 6"      medium 6-12 X Large 12" and above     

Size and species of specimen trees: oak/hickory /sycamore

Stratification (Primary, secondary, herb/shrub layers)

Well defined X Somewhat defined      Poorly defined     

Primary canopy density: somewhat open      somewhat closed      closed X

Major primary canopy species Oak/Hickory/Ash

Major secondary canopy Cedar in old fields

Major herb/shrub species     

The diversity of natural features on the parcel allows a glimpse of the varied ecosystems of the region. Yes X No      or has some other notable attributes

Woods, cedar invaded meadows, sandstone bluffs & canyon w/seasonal waterfall

Unique site features No buildings, about 80% woodlands. Very scenic sandstone canyon

Ease of access for walking and hiking are described as: Excellent. Transecting old road appears to enter from nw corner of north section and exit in se section to adjacent Fay City land.

Visual quality of vegetation setting : low      medium      high X

(mature primary canopy of one or two major species with open under-story providing strong visual penetration or savannah type)

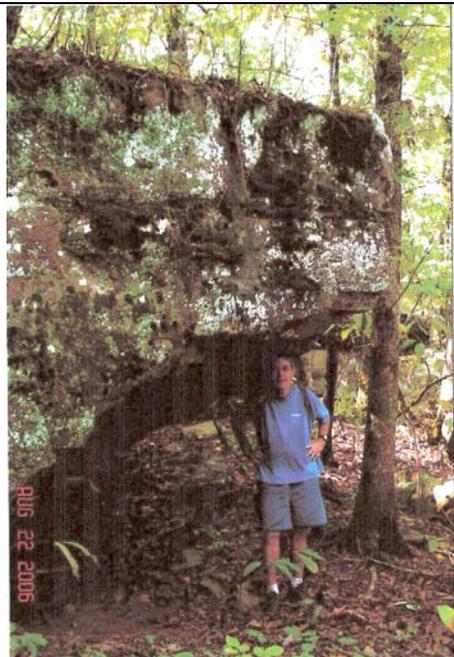
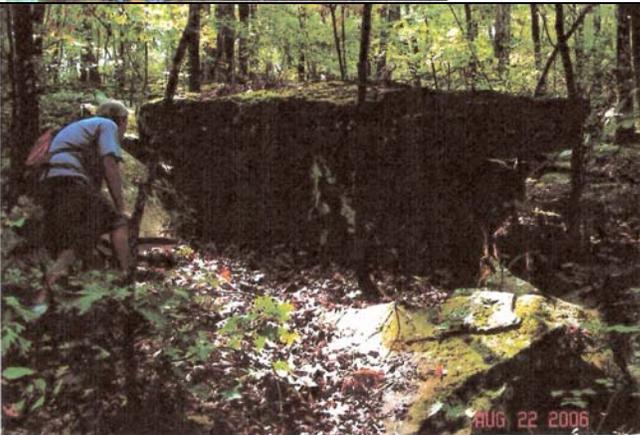
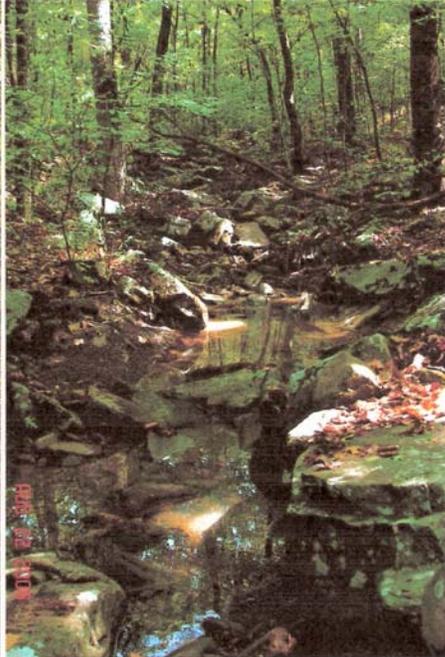
Additional notes and pictures: . The extensive low stone bluffs are big eared bat habitat. Canyon transects the tract for 2,300 feet and drains to Lk. Sequoyah property, which is contiguous all along south boundary and combines to present continuous woods. About 200 yards of the canyon center line lies on an adjacent property. Cattle are fenced off from the wooded canyon on this adjacent tract. The central forty acres is primarily an upland field of grass and cedar deserving more investigation structure sites. This tract is very exceptionally scenic, integrated with wooded City adjacent land, and covered in more mature forest.

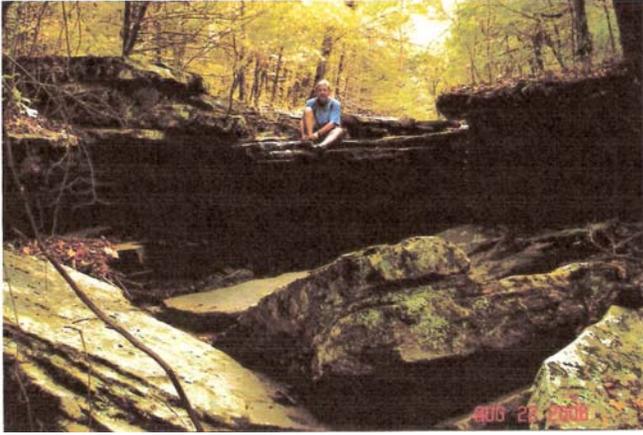
SITE #101

NAD 83 UTM/UPS GRID COORDINATES ZONE 15

1 (NW)	406460	3990290	
2 (NE)	406870	3990280	
3	406849	3989876	Fence corner, field reading.
4	407250	3989860	
5	407230	3989460	
6	406530	3989470	
7	406030	3989700	
8	406040	3989900	
9	406440	3989890	
CTR	406700	3989700	







Appendix VI

News Articles

1-3-2006

# Natural heritage group continues work to identify areas for conservation

BY DREW TERRY  
Northwest Arkansas Times

The Fayetteville Natural

Heritage Association is seeking more input before continuing its study of potential conservation areas in and

around Fayetteville. Association members have partnered on the project with The Nature Con-

servancy Ozark Highlands Office and the Landscape Architecture Department at the University of Arkansas.

Input from residents will be used to identify and rank areas the public most wants to see preserved.

Initial feedback came from a meeting Nov. 1, and See HERITAGE, page A2

## Heritage

Continued from A1

Karen Rollet-Crocker, who is leading the association project, has sought additional opinions since then.

"We put some more questionnaires out to the heritage association mailing list, and Karen was possibly going to check into sending them out with the city water bills," said Ethan Inlander, the conservation geographic information system specialist with the Nature Conservancy who is working on

the project.

The Arkansas Forestry Commission earmarked \$20,000 from the Urban and Community Forestry Assistance Grant Funds toward the project, which will incorporate Geographic Information System mapping analysis developed by the Nature Conservatory under the direction of a broad-based Science Advisory Council.

Guidelines used to set preliminary borders incorporated Fayetteville's current city limits and planning area, in addition to watershed boundaries and all the city's planning area.

The result was a preliminary boundary that at its largest could encompass the Wednesday community and part of Prairie Grove to the west, Elkins and part of Goshen to the east, parts of Springdale and Tompkins to the north, and Greenland and most of West Fork to the south.

Each survey contains 29 questions in four sections — natural land-based characteristics, natural water-based characteristics, potential recreational use and landscape setting.

Among the considerations are the parcels' potential for

human use, inclusion of ecological properties, and likelihood for development.

Results of the surveys will give more weight to certain aspects when applied to the analysis.

While waiting for more surveys, Inlander is taking parcel data received from Washington County and preparing to analyze it for forests, stream frontage, species diversity and other ecological aspects. He also will identify land use, topography, existing trails and similar trails.

Excluded from the study are parcels smaller than five acres or that are more than 50 percent developed.

Once completed, the study could be distributed to owners of concerned lands along with suggestions on how to preserve the natural qualities, or the association could attempt to purchase some tracts outright.

The natural heritage association has until the spring to complete the study.

Inlander said he hoped the public comments and his initial analysis would be ready in time to be presented Jan. 19 during the next science advisory committee meeting.

"We're really just waiting on the questionnaires to see what will happen next," he said.

# Planners look to cooperate with local natural heritage group

BY DREW TERRY

Northwest Arkansas Times

The city of Fayetteville hopes to use research from another organization in its update of City Plan 2025.

Since November the Fayetteville Natural Heritage Association has been distributing a survey to identify and rank areas in and around Fayetteville the public most wants to see preserved. The city could help the organization's questionnaires reach more people, while the results could help the city in its planning.

"It happens that the projects' timings work out well,"

*Jun. 17, 2006 NWAT*

**We're addressing organizations that are civic-minded, so many of their members are already involved in city issues and indirectly in planning issues.**

— Karen Minkel,  
long-range planner and project manager for City Plan 2025

long-range planner Leif Olson said. "The city, we're going to work with them to distribute surveys ... to citizens who otherwise may not have had an opportunity to see them, and hopefully the

timing will work out where we will be able to use some of the research."

Olson addressed the heritage association last week at its annual meeting in part of the city planning division's

encouragement of public participation.

He and Karen Minkel, a long-range planner and project manager for City Plan 2025, spent January approaching organizations about the importance of public input in the process. In the past weeks, they have reached out to Leadership Fayetteville, the Fayetteville Rotary Club, the Lions Club, League of Women Voters, Sierra Club, and the Fayetteville Council of Neighborhoods, to list a few.

"We're hoping, for one, for their personal involve-

See FHNA, page A3

## FHNA

Continued from A1

ment," Minkel said. "We're addressing organizations that are civic-minded, so many of their members are already involved in city issues and indirectly in planning issues."

The staff will give additional presentations on the subject to organizations that submit a request, she said.

Representatives of Dover, Kohl & Partners officially will spend today and Wednesday in Fayetteville to visit with stakeholders and tour the city as part of the updating process, which will include public participation opportunities like the ones applied during the Downtown Master Plan development.

Past efforts to involve citizens included cityplan2025.accessfayetteville.org, an interactive addition to the city's Web site where peo-

ple can obtain information about the 2025 plan, provide comments on issues and other related topics, and submit photos of their favorite locations or places they think need attention.

The plan was last updated in 2000.



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2006

# Heritage group needs more time to study potential conservation areas

BY DREW TERRY  
Northwest Arkansas Times

Additional time has been granted to the Fayetteville Natural Heritage Association for its study of potential conservation areas in and around the city.

Association members have teamed with The Nature Conservancy Ozark Highlands

Office and the Landscape Architecture Department at the University of Arkansas in seeking input from residents to identify and rank the type of greenspace community members most would like to see preserved.

The project initially was to conclude

See **GROUP**, page A6

## Group

Continued from A1

in the spring, but mapping specific properties has taken

longer than expected and an extension to September has been granted, said Karen Rollet-Crocker, who is leading the association project.

"We have reached the point where we have the

maps out, and what we're doing now is ground proofing the different parts of Fayetteville that show up on our maps as well as property in the planning area and along the watersheds," Rollet-Crocker said.

The study has involved questionnaires since November to ascertain what land features most appeal to residents when considering a tract for conservation. The top two answers were the potential for walking trails and potential links to existing or planned walking trails. Some organizers think those answers reveal people's

desire to have access to natural areas.

Other high-ranking issues were the high number of animals that might live in the habitat, corridors that connect larger habitat areas, a high number of native plant species, riparian areas in the parcel, and dense forest cover.

The information gathered will be incorporated into the report, which will include maps and accompanying forms listing individual sites, their locations and their contents that might be make them worth preserving.

A final report will be writ-

ten once maps and lists are completed. The association then may give presentations to groups interested in learning about the study, which also will be available to people who might want to preserve some of the identified properties.

"We sometimes find that we've got a high-ranking property and then someone will say, 'Oh, that's already been sold for development,'" Rollet-Crocker said. "That's been a rising problem because of all the construction taking place in the area these days."

The Arkansas Forestry Commission earmarked \$20,000 from the Urban and Community Forestry Assistance Grant Funds toward the project, which incorporates Geographic Information System mapping analysis developed by the Nature Conservancy under the direction of a

broad-based Science Advisory Council.

Guidelines used to set preliminary borders incorporated Fayetteville's current city limits and planning area, in addition to watershed boundaries and all sub-watersheds that intersect the city's planning area.

The result was a preliminary boundary that at its largest could encompass the Wedington community and part of Prairie Grove to the west, Elkins and part of Goshen to the east, parts of Springdale and Tontitown to the north, and Greenland and most of West Fork to the south.

Among the considerations are the parcels' potential for human use, inclusion of ecological properties, and likelihood for development.

Excluded from the study are parcels smaller than 5 acres or that are more than 50 percent developed.