'Night Life'
Class Project
Texas Master Naturalist,
Cradle of Texas Chapter

November 2005

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I. Introduction

The report that follows describes observations made within a Columbia bottom land hardwood forest (project area) on October 24, 2005. Although the focus of this project was to observe night life within a riparian forest, a day-time survey of the project area was also conducted for orientation purposes and to develop a description of the features and habitat attributes which comprise the Colombia bottom land hardwood forest habitat type.

Objectives of the project were as follows:

- Practice skills of observation, recording, identification, and reporting.
- Learn one ecological niche in some depth.
- Become more acquainted with team members.

Observations were made by the Master Naturalist Intern "Night Life" Team, which consisted of Bill Brown, Ruby Lewis, Al Kinback, and Georgia Monnerat. In addition, Carolyn May-Monie, Master Naturalist, served as the Project Advisor, Brian Adams, U.S. Fish and Wildlife Service, served as the Technical Advisor, and Maurice Monie served as a guide and all-around woodsman.

II. Project Area Location and Description

The project area is located in the County of Brazoria approximately five miles northwest of the city of West Columbia. See general vicinity map, Figure 1.

The project area encompasses a tract of Columbia bottom land hardwood forest approximately 40 acres in size and is under the ownership of Maurice Monie and Carolyn May-Monie. Figure 2 displays an aerial view of the project area overlaid with an approximate land ownership boundary.

The project area is part of a much larger hardwood forest ecosystem complex that occurs along the Brazos, San Bernard and Colorado Rivers and their associated tributaries in southeast Texas. The bottomland hardwood forests adjacent to these major river systems are known regionally as the Columbia Bottomlands and historically comprised over 283,000 ha (700,000 acres) at the beginning of the last century (U.S. Fish and Wildlife Service 1997).The Columbia Bottomlands extend from the Texas Gulf coast, approximately 150 km (93 miles) inland, and includes parts of seven counties. See Figure 3 for a map showing historical of coastal bottomland hardwood areas.

Today, this forest type covers about 71,632 ha (177,000 acres), and the remaining stands are highly fragmented. Columbia Bottomlands continue to be lost or degraded through residential and commercial development, overgrazing, timber harvesting, and infestation of non native plants (U.S. Fish and Wildlife Service 1997).

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Figure 1. Project area vicinity map.

Columbia Bottomlands show a high degree of richness in plant and animal species composition. Previous studies conducted within Columbia Bottomlands have resulted in the identification of 356 species of vascular plants representing 83 families and 237 genera. In addition, an estimated 29 million Nearctic and Neotropical migrant landbirds represented by 65-70 species migrate through the Columbia Bottomlands annually (U.S. Fish and Wildlife Service 1997, Rosen D.J. and W.L. Miller 2005). These areas also provide valuable habitat for numerous resident wildlife species including the white-tailed deer, bobcat, coyote, cottontail rabbit, raccoon, armadillo, fox squirrel, opossum, barred owl, and pileated woodpecker to name a few.

The forests of the Columbia Bottomlands formed on Holocene fluviatile deposits laid down by the major tributaries that traverse the region.

Columbia bottom land hardwood forest within the project area can be characterized as a low elevation (20-40 ft) multi-layered climax, or near climax,

riparian forest dominated by an overstory of live oak, water oak, yaupon, pecan, and eastern red cedar. The understory in undisturbed areas is dense with shrubs, vines, and young trees. Common understory tree and shrub species include black willow, rough-leaf dogwood, baccharis specie, cedar elm, green ash, coralberry, sugarberry, honey locust, palmetto, blackhaw viburnum, and *b*umelia gum (Monie et al. 2003). See Appendix 1 for a comprehensive list of flora species that were observed within the project area during a survey conducted on January 6, 2003.

Figure 2. Infrared photograph showing an aerial view of the project area (Monie property).

Mound Creek, which is a tributary to the San Bernard River, traverses through the project area for a distance of approximately 2,000 feet. The creek is perennial and approximately 30-40 feet wide and 15-20 feet deep at full bank on
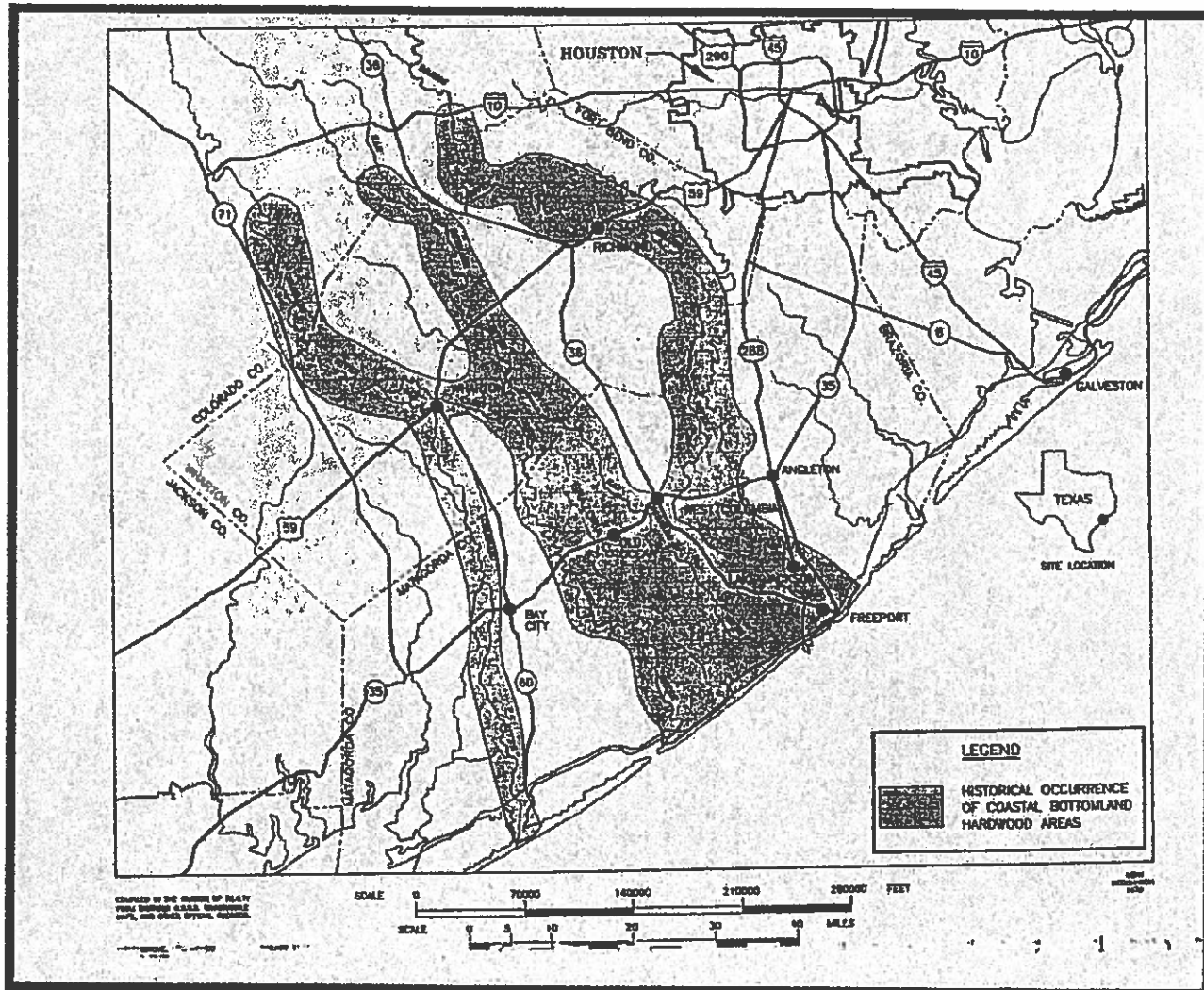

Figure 3. Historical occurrences of Columbia Bottomland hardwood forest areas.

an average (rough guess) throughout the project area. It provides for a high degree of flood control within and adjacent to the project area, but occasionally overtops its banks during intensive rainfall events. Although the creek doesn't appear to support a fisheries (M. Monie, personal com. 2005), it does provide a valuable water source for wildlife inhabiting the area and breeding and rearing habitat for amphibians such as the southern leopard frog and green tree frog. There is also a small spring-fed pond that occurs within the project area that

provides a year-round water supply for wildlife and breeding/rearing habitat for amphibians.

III. Past Land Use

Little is known about past land use within the project area. However, vegetative conditions within the project area are characteristic of those found within an old growth Columbia bottomland forest. This indicates that the area has been relatively undisturbed for many years.

IV. Existing and Future Land Use

There are no planned developments within the project area. Except for a well planned trail system throughout the area, the Monies have kept the property in excellent condition. Future plans are to place the property under a wildlife conservation easement. This designation will prevent future development of the land and maintain it pristine nature.

V. Night Life Survey Results

Prior to conducting the night life survey of the project area, team members developed a list of preconceptions of what might be observed as influenced by accessibility of the project area and environmental conditions present during the survey. These preconceptions are as follows:

1. Accessibility could influence our ability to effectively conduct a night-time survey of the project area, and this in turn would influence survey results.

2. Lower temperatures from a cold front moving into the area will affect our ability to observe animal species, especially amphibian and reptiles.

3. A drop in temperature can be anticipated as the survey progressed.

4. We can expect to see or hear mammals and birds such as the cottontail rabbit, raccoon, opossum and owls, and perhaps deer, bats, bobcat, coyote and skunk.

As stated earlier, our investigation of the project area consisted of day-time and night-time surveys. The primary purpose of the day-time survey was to orient the team to the project area, observe the habitat and describe it, make other observations that may provide indicators of the presence of wildlife such as tracks and scat, and select a route for the nightlife survey.

The team assembled at the Monie residence at approximately 4:00 pm on the afternoon of October 24, 2005 and established a base station in the garage. We discussed our objectives for both the day and night-time surveys,

discussed safety issues, and headed for the woods around 4:45 pm. Maurice Monie and Carolyn May-Monie served as our tour guides and provided valuable information about the property and potential future uses. Brian Adams, U.S. Fish and Wildlife Service provided technical expertise to the team regarding the fauna and flora of the area.

As it turned out, the area was very accessible due to the extensive trail network that had been established by the Monies. The team was able to navigate through the project area with ease. Approximately one and one-half miles of trail was walked and many observations were made and recorded. Team members got to know one another, and everyone seemed to have had a great time.

Observations that provided an indication of what wildlife species inhabit the area included deer tracks on a segment of the trail and coyote scat. No observations of wildlife species, other that one unidentified song bird and three orb spiders were made during the day-time survey, which was completed in approximately 1.5 hours. Floristic observations made during the day-time survey, along with those recorded during a detailed floristic survey of the project area in January 2003, were used to develop a habitat description as provided earlier under "Description of Project Area".

After taking a diner break in West Columbia at a fine hamburger establishment, the team reconvened at the Monie residence to conduct the night life survey.

The survey began at 8:35 pm. The sky was overcast and air temperature cool at 59°F. Environmental conditions provided for a very cool and dark evening. The survey was conducted by walking a short distance on a designated trail with the aid of flashlights and stopping to listen for night life sounds. Lights were also shined into the forest and tree canopies in an effort to detect wildlife. One team member also attempted to record sounds on a tap recorder. One lesson learned is that the potential to detect wildlife at night to directly proportional to the amount of noise made by the surveyors. The more noise you make, the less likely you are to see or hear anything.

The technique that seemed to work the best was to have the team stop, turn off all lights, and remain very quiet for five to ten minutes. Except for the noise interference from barking dogs, this technique provided the best opportunity to hear night life in the Columbia Bottomland. This technique was continued throughout the remainder of the survey, which lasted approximately two hours, ending at around 10:30 pm. Air temperature at the end of the survey reached 48°F, an 11° drop with a two-hour period.

Observations included frogs (possibly the southern leopard frog) in the small spring-fed pond, calls from the barred owl and sounds made by sandhill cranes migrating overhead. The sandhill crane observations were completely unexpected, but very exciting and welcomed. Although unexpected at the time of the survey, primarily due to lack of knowledge, the presence of the southern leopard frog would not be uncommon this time of

year since it breeds year-round in southern areas. The lack of vocalization by males, however, may have been influenced by air temperature. The green tree frog, another winter breeder, is likely to occupy bottomland habitat. Cool air temperatures probably also affected the activity patterns of this and other species inhabiting the area as well.

VI. References

Monie et al. 2003. Biological survey of Maurice Monie and Carolyn May-Monie property. Unpublished report on file at the Monie residence.

Monie M. 2005. Personal communication regards the presence of fish within that reach of Mound Creek that traverses through the Monie property.

Rosen, D.J. and M.L. Miller. 2005. The vascular flora of an old-growth Columbia Bottomland forest remnant, Brazoria County, Texas. Texas J. Sci. 57(3):223-250.

U.S. Fish and Wildlife Service. 1997. Final Proposed Austin's Woods conservation plan land protection compliance document and conceptual management plan Austin's Woods units of the Brazoria National Wildlife Refuge Complex. Albuquerque, New Mexico, 40 pp.

VII. **Appendix 1**

Biological Survey of
Maurice Monie and Carolyn May-Monie Property
January 6, 2003

Birds

Red-bellied Woodpecker	Sandhill Crane	Carolina Wren
Northern Cardinal	American Crow	Tufted Titmouse
Carolina Chickadee	White-throated Sparrow	American Goldfinch
American Robin	Eastern Phoebe	Ruby-crowned Kinglet
Blue Jay	Whip-poor-will	Pileated Woodpecker
Red-shouldered Hawk	Turkey Vulture	Hermit Thrush
Inca Dove	Downy Woodpecker	Blue-gray Gnatcatcher

Other Critters

Cottontail Rabbit	Southern Leopard Frog	Salamander
Wolf Spider	Deer (tracks)	Bobcat (tracks)
Ground Skink	Raccoon (tracks)	Cloudless Sulphur Butterfly
Centipede		

Wildflowers

Mistletoe *(Phoradendron tomentosum)* *	Ragweed, Western *(Ambrosia Psilostachya)*
Spanish moss *(Tillandsia usneoides)*	Wood-sorrel (Genus Oxalis)**
Buttercup, Carolina *(Ranunculus carolinianus)***	Purple Passion-flower *(Passifloria incarnata)***
Turk's Cap *(Malvaviscus drummondii)* **	Violet specie *(Genus Violia)*
Frostweed *(Verbesina virginica)* **	Tall Goldenrod *(Solidago canadensis)*
Wolfweed *(Leucosyris spinosa)* **	St. Andrew's-cross *(Hypericum hypericoides)*
Dicliptera *(Dicliptera brachiata)*	Smartweed, Swamp *(Polygonum hydropiperoides)*

Trees & Shrubs

Yaupon *(Ilex vomitoria)*	Water Oak *(Quercus nigra)*
Live Oak *(Quercus virginiana)*	Rattlebox *(Sesbania drummondii)*
Baccharis specie *(genus Baccharis)*	Pecan *(Carya illinoensis)*
Ash, Green *(Fraxinus pennsylvanica)*	Deciduous Holly *(Ilex decidua)*
Eastern Red Cedar *(Juniperus virginiana)*	Ash, Prickly *(Zanthoxylum clava-herculis)*
Coralberry *(Symphoricarpos orbiculatus)*	Cedar Elm *(Ulmus craassifolia)*
Sugarberry *(Celtis laevigata)*	Hawthorn, Green *(Crataegus viridis)*
Honey Locust *(Gleditisa tricanthus)*	Hawthorn specie *(genus Crataegus)*
Palmetto *(Sabal minor)*	Shumard Oak *(Quercus shummardi)*
Rough-leaf Dogwood *(Cornus drummondii)*	Elderberry *(Sambucus Canadensis)*
Privet, Chinese *(Ligustrum sinense)*	Viburnum, Arrow-wood *(Viburnum dentatum)*
Blackhaw Viburnum, Rusty *(Viburnum rufidulum)*	Black Willow *(Salix nigra)*

Bumelia, Gum *(Sideroxylon lanuginosum)*

Woody Vines

Japanese Honeysuckle *(Lonicera japonica)*
Dewberry specie *(Rubus specie)*
Snailseed Vine *(Cocculus Carolinus)*
Poison ivy *(Toxicodendron radicans)*
lanceolatai)

Rattan *(Berchemia scandens)*
Greenbrier, Saw *(Smilax bona-nox)*
Pepper-vine *(Ampelopsis arborea)*
Mustang Grape *(Vitis mustangensis)*

Grasses

Switchgrass *(Panicum virgatum)*
secundatum)
Bushy Bluestem *(Andropogon glomerotus)*
(Arundinaria gigantea) Basketgrass *(Oplismenus hirtellus)*
Longleaf Chasmanthium *(Chasmanthium latifolium)* *

St. Augustinegrass *(Stenotaphrum*

Giant Cane

Other Plants

Turkey tail *fungus (Trametes versicolor)*
polypodiodes Destroying Angles fungus specie *(Genus Amanita)* *

Resurrection fern *(Polypodium*

* new plant
** not blooming

Maurice Monie, Carolyn May-Monie, Kirby Rapstein, Ray Flake, Chuck Hill, Denis James, Warren Pruess, Gardner Campbell