

Suggested Volunteer Projects for Natural Areas near Shelby County

Volunteers wishing to participate in any of these projects should contact:

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Big Cypress Tree State Natural Area Volunteer Plan

Groups that are reliable volunteers include: University of Tennessee at Martin Ecology Club, and the Friends of Big Cypress State Natural Area/Park.

Red Turtlehead Searches

The state listed special concern plant red turtlehead was first found in the natural area in 2015. Since then, additional locations for the plant have been found. Volunteers would search appropriate habitat for the plant in September. For any plants located, notes on location, number of plants, possible threats, and stage (vegetative, flowering or in seed) of the plant should be taken.

Marsh Ladies'-Tresses Searches

A 2008 record for marsh ladies'-tresses occurs in the J. Clark Akers Wildlife Complex about 8.5 km from Big Cypress Tree State Park. The orchid prefers wet environments including swamps, marshes, bogs, and moist meadows and is known to grow in standing water.. It is known to flower in the fall. Habitat occurs within the state park / state natural area. For any plants located, notes on location, number of plants, possible threats, and stage (vegetative, flowering or in seed) of the plant should be taken.

Swainson's Warbler Surveys

Though Swainson's warblers have been reported in the park, there are no recent records for this species. Volunteers should learn the song and habitat of this warbler prior to searches. Their song is similar to the Louisiana Waterthrush. Searches should be conducted in spring to early summer. Since habitat includes thick woody growth, nests are seldom found for this species.

Chinese Privet Pulls

Chinese privet is unfortunately a very common invasive exotic plant occurring in the park. Small privet shrubs can be pulled any time of the year. The park has been broken up into management units. Volunteers should concentrate on eradicating small privet shrubs from units.

Japanese Chaffweed Pulls

Japanese chaffweed was located along the Middle Fork of the Obion River in 2017. This invasive exotic plant can be pulled from the ground when it is not in seed. It should not be pulled if it is in seed. The best time to pull may be in August and September. The goal is to eradicate it from the park/natural area.

Ghost River State Natural Area Volunteer Plan

The Wolf River Conservancy provides volunteer time for the Ghost River canoe trail maintenance and for maintenance of the Bateman Road boat ramp parking lot. They are a valuable source for additional volunteer opportunities. The Conservancy has worked with AmeriCorps volunteers in the past which has included work at the natural area.

The Tennessee Ornithological Society is typically willing to provide help with bird-related projects. They conduct the annual Fayette County Christmas Bird Count each December which includes counting birds in the natural area.

Proposed Projects:

Willow-leaf Aster Surveys:

Willow-leaf aster (*Symphyotrichum praealtum*) is a Tennessee Endangered plant that is known from only three west Tennessee counties. The plant was first located at Ghost River State Natural Area, Fayette County on October 9, 2013. A population of 100s of plants was located along the edge of a managed field and bottomland hardwood forest near Mineral Slough. The *Guide to Vascular Plants of Tennessee* lists wet meadows, barrens, and prairie remnants as habitat. The immediate question I have is, "is the aster in other locations in and around the Ghost River State Natural Area and the Wolf River Wildlife Management Area?" The bigger ecological question is, "does the occurrence of this plant represent the past occurrence of natural grasslands in the area?"

For this project, volunteers would search managed fields especially edges for the occurrence of the aster. This would occur in October when the plant is typically in flower. The aster is easy to identify. If plants are found they will be mapped, photographed, and their stems counted (or estimated). One issue that volunteers must be aware of is hunting. The TWRA should be contacted before searches. Orange clothing should be worn during surveys.

The following actions are needed to complete this project:

1. Using Google Maps or some other resource containing aerial imagery, fields within the Wolf River Wildlife Management Area should be identified. This can also be accomplished by simply driving the roads within the WMA. Most fields are seen from the roads.
2. Volunteers should learn how to identify the plant. Besides field guides a trip to the known location can be made in order to study the plant.
3. Fields should be walked in October. For convenience field edges which are typically mowed could be walked. Binoculars can be used to scan fields. If in flower, the plant should be easily seen. Willow-leaf aster is a tall plant. It is hoped that any plants in the fields will grow taller than most of the surrounding vegetation and thus easily seen.
4. Fields where plants were not found should be documented. The path of the survey should be noted (ex. Walked the entire edge of the field).
5. Any plants found should be photographed, mapped, and a count or estimate of stems should be made. For large populations, a stem of a plant should be collected and pressed.
6. A field report should be written and presented to the West Tennessee Stewardship Ecologist with the Division of Natural Areas.
7. The West Tennessee Stewardship Ecologist will create a Biotics record of each site record.

Willow-leaf Aster Management

The known location for the willow-leaf aster population at Ghost River is partially within a managed field. The edge of this field, including a portion of the willow-leaf aster population is mowed every fall. Mowing occurs before the aster sets seed. Though the impact of mowing is not known, since it is completed before seed set, it is possible that mowing is limiting population size. Since this is a state endangered plant, it is in our best interests to maintain or expand populations.

This project entails coming up with a plan to expand willow-leaf asters in and around the Ghost River State Natural Area and the Wolf River Wildlife Management Area. Two possible ways to do this includes expanding the known location further into the field where it will not be mowed, and/or establishing new populations in proper habitat in different locations. The first plan may include cutting small woody plants in the field and possibly some trimming of herbaceous plants to allow the aster more room to expand. The second plan may include collecting seed (or possibly plants) and depositing seed in selected areas. Volunteers would research possibly methods for population expansion, write a plan, and conduct the needed measures to accomplish the goal.

Trash Removal from Bateman Road

The section of Bateman Road that is adjacent to the natural area boundary is typically strewn with litter. Periodic clean-ups are needed. This includes the area within the parking lot for the Bateman Road canoe launch. The litter in this section is typically too much for one person to clean up and therefore removing all the litter is best accomplished with a group. It is not known at this time, if the County will provide trash bag pick-up. If not, trash bags may be driven to the nearest trash station. The removal of trash is also needed on a periodic basis at Mineral Slough, particularly the parking lot.

King Rail Surveys

The King Rail is listed as In Need of Management in Tennessee. Allan Trently heard what sounded like a King Rail along Bateman Road. In this location is an extensive shallow-water marsh which is considered optimal habitat. According to the Atlas of the Breeding Birds of Tennessee, there are no nesting records for King Rail in Fayette County and very scant evidence of its nesting anywhere in the state.

King Rail surveys are needed to document presence in an area. At Ghost River, surveys should be conducted along the length of Bateman Road where habitat is found, at Mineral Slough (along the end of the boardwalk and along the forest/marsh interface), and most likely other locations not yet considered.

King Rail surveys typically follow the protocol as outlined in the *Standardized North American Marsh Bird Monitoring Protocols* (Conway 2009). These protocols were set up in order to determine abundance and density. The goal at the natural area is to determine if King Rails are present. If present, than future surveys can be conducted to determine abundance and density. For the purpose of this project we will use the following protocol:

1. Routes will be established along Bateman Road and at Mineral Slough
2. Surveys can either be conducted in the morning or evening. Morning surveys begin 30 minutes before sunrise and should be completed prior to the time when marsh birds cease calling (for

our region, we will continue surveys up to 2 hours after sunrise). Evening surveys should begin 2 hours before sunset and must be completed by 30 minutes after sunset.

3. Surveys will be conducted somewhere within the following survey windows: April 15 to April 30, May 1 to May 14, and May 15 to May 31. Volunteers can survey during any of the survey windows but it is preferred that surveys are conducted at least once during all survey windows.
4. During surveys broadcast calls will be used (taped rail calls played from a phone or other device) at different locations along the survey routes. The number of calls and distance between playing the calls will vary. Since the purpose is to determine presence and not abundance and density, we will not use a set distance between tape plays.
5. King Rail calls can be found at the Cornell Lab or Ornithology's All about Birds King Rail webpage. Marsh bird calls can also be obtained at <http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/>.
6. Calls should be played for 30 seconds followed by 30 seconds of silence before moving onto the next point.
7. Documentation: photographs of birds and recordings of calls should be obtained if possible.

King Rails calls and Clapper Rail calls are very similar. Since Clapper Rails breed in saltwater marshes they will not be present at the natural area. Volunteers should be familiar with Virginia Rail calls since they are similar to King Rails.

Conway, C. J. 2009. Standardized North American Marsh Bird Monitoring Protocols, version 2009-2. Wildlife Research Report #2009-02. U.S. Geological Survey, Arizona Cooperative Fish and Wildlife Research Unit, Tucson, AZ.

Least Bittern Surveys

The Least Bittern is listed as In Need of Management in Tennessee. Allan Trently heard what sounded like a Least Bittern along Bateman Road. According to the Atlas of the Breeding Birds of Tennessee, the Least Bittern is a rare to locally common summer resident. It usually arrives in late April. In the fall, most birds probably depart by late September. It inhabits marshes with tall, emergent vegetation, such as rushes and cattails, bordering open water up to a meter or more deep.

Least Bittern surveys are needed to document presence in an area. At Ghost River, surveys should be conducted along the length of Bateman Road where habitat is found, at Mineral Slough (along the end of the boardwalk and along the forest/marsh interface), and most likely other locations not yet considered.

Least Bittern surveys typically follow the protocol as outlined in the *Standardized North American Marsh Bird Monitoring Protocols* (Conway 2009). These protocols were set up in order to determine abundance and density. The goal at the natural area is to determine if Least Bitterns are present. If present, than future surveys can be conducted to determine abundance and density. For the purpose of this project we will use the following protocol:

1. Routes will be established along Bateman Road and at Mineral Slough
2. Surveys can either be conducted in the morning or evening. Morning surveys begin 30 minutes before sunrise and should be completed prior to the time when marsh birds cease calling (for our region, we will continue surveys up to 2 hours after sunrise). Evening surveys should begin 2 hours before sunset and must be completed by 30 minutes after sunset.

3. Surveys will be conducted somewhere within the following survey windows: April 15 to April 30, May 1 to May 14, and May 15 to May 31. Volunteers can survey during any of the survey windows but it is preferred that surveys are conducted at least once during all survey windows.
4. During surveys broadcast calls will be used (taped bittern calls played from a phone or other device) at different locations along the survey routes. The number of calls and distance between playing the calls will vary. Since the purpose is to determine presence and not abundance and density, we will not use a set distance between tape plays.
5. Least Bittern calls can be found at the Cornell Lab or Ornithology's All about Birds Least Bittern webpage. Marsh bird calls can also be obtained at <http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/>.
6. For Least Bittern surveys, only Least Bittern calls will be broadcast (so this survey should not occur while conducting King Rail surveys). After broadcasting calls, the survey route should be walked in silence in order to listen for bittern calls.
7. Documentation: photographs of birds and recordings of calls should be obtained if possible.

Invasive Exotic Plant Control

There are 49 species of documented exotic plants known to exist in the natural area. Of these, six are considered to have or have the potential to accrue negative impacts to native plants and their communities. Currently there is no volunteer program set up for the control of invasive exotic plants. Willing volunteers should discuss possible projects with the West Tennessee Stewardship Ecologist.

Adopt a Rare Plant

There are five listed plant species known to occur at Ghost River. One of these, willow-leaf aster, has already been discussed. The remaining plants include prickly hornwort, blue mud-plantain, multiflowered mud-plantain, and southern twayblade. Volunteer programs have not yet been established for these plants. Potential volunteer work may include annual assessments of populations, management, and surveys for new populations. Willing volunteers should discuss possible projects with the West Tennessee Stewardship Ecologist.

Boardwalk and Trail Maintenance

The natural area contains an approximately 3,000-ft trail (including a portion of boardwalk) at Mineral Slough. Periodic maintenance including fallen tree or limb removal, trash removal, cutting back of vegetation, and board replacement are needed. The West Tennessee Stewardship Ecologist maintains the trail/boardwalk throughout the year but due to a large work load is not always available to check on and make immediate repairs to the trail/boardwalk. Volunteers would periodically walk the trail and conduct needed maintenance while on site or would report needed repairs to the Stewardship Ecologist. One maintenance issue that needs attending to on nearly a weekly basis is the trimming of overhanging vegetation at the end of the boardwalk. Volunteers could visit the site regularly during the growing season to cut back vegetation. Volunteers with carpentry experience may be called upon to help with boardwalk repair.

Heron Nesting Colony Surveys

Great Blue Herons have been nesting at Bateman Road for a number of years. Volunteers would visit the site during the spring in order to count nests (both active and non-active), and to report on nesting

activity (ex. Number of young in the nest, nest building, adults sitting on nest). There used to be a large heron colony at Mineral Slough. Unfortunately, this colony was abandoned a few years ago. The Stewardship Ecologist checks this area each year for the possibility of renewed nesting. Volunteers should take note of the possible nesting of Bald Eagles, Anhinga, and other rare to uncommon nesting birds while on site.

Projects Abridged:

Willow-leaf Aster Surveys:

- Search for additional willow-leaf aster populations in fields around the natural area and wildlife management area
- Come up with a plan to increase willow-leaf aster populations and initiate plan

Trash Removal from Bateman Road

Monthly road clean-ups along the portion of Bateman Road adjacent to the natural area; Adopt-a-Route

King Rail and Least Bittern Surveys

King Rail and Least Bittern surveys along Bateman Road and Mineral Slough

Invasive Exotic Plant Control

To be determined

Adopt-a-Rare-Plant

To be determined

Boardwalk and Trail Maintenance

- Cut back overhanging vegetation from the trail and boardwalk at least biweekly during the growing season
- Help with boardwalk repairs

Heron Nesting Colony Survey

Survey Great Blue Heron nesting colony along Bateman Road

Lucius E. Burch, Jr. State Natural Area Volunteer Plan

The Shelby Farms Park Conservancy is the main managers of this natural area. They also manage the Shelby Farms Park which takes up a considerable amount of their time. Potential volunteers include the Conservancy, the Tennessee Native Plant Society, Tennessee Naturalist Program, and the Tennessee Ornithological Society.

Copper Iris Monitoring

The state threatened copper iris is known to occur in the natural area south of Walnut Grove Road. To date, plants have been located in seven areas of the bottomland hardwood forest. The iris comes into flowering in early to mid-May. This is the best time to monitor the seven locations but also to search for additional locations. Volunteers would take notes on existence, number of flowering plants and stems, possible threats, and size of each known location and may search for additional locations throughout the bottomlands. To date, no copper irises have been found in the natural area north of Walnut Grove. Since the appropriate habitat occurs here, it is possible that the iris does also.

Spring searches for Swainson's Warblers

Does the state-listed Swainson's warbler occur and nest in the natural area? Though Swainson's warblers have been reported in the park, there are no recent records for this species. Volunteers should learn the song and habitat of this warbler prior to searches. Their song is similar to the Louisiana Waterthrush. Searches should be conducted in spring to early summer. Since habitat includes thick woody growth, nests are seldom found for this species.

Meeman-Shelby Forest State Natural Area Volunteer Plan

Since Meeman-Shelby Forest State Natural Area is within the state park, park staff are the main managers of the area. Volunteers wishing to volunteer with the park should contact the park for most opportunities. Below is a list of volunteer projects suggested by the Division of Natural Areas.

Little Brown Jug Searches

Back in 2015, Allan J. Trently located a small population of little brown jug along the Woodland Trail. This was significant since the nearest population of this plant known in the state is over 220 km east of the park. The population at Meeman-Shelby is considered a disjunct population and is of interest to ecologists. Volunteers would search appropriate habitat within the park for additional occurrences. Notes on location, and number of plants (or an estimate) should be taken and reported to the West Tennessee Stewardship Ecologist.

State-Listed Plant Monitoring

There have been nine state-listed plants recorded for the state park/state natural area. Most of these records are old and need to be updated. Volunteers would select a plant or plants from the list and visit their known (in some cases approximate) locations. Notes on existence, number of plants (or estimate), area of coverage, and possible threats should be recorded and reported to the West Tennessee Stewardship Ecologist. New locations should also be recorded.

Riverwoods State Natural Area Volunteer Plan

The Memphis Garden Club has provided volunteers in the past and is a willing partner in the management of Riverwoods. The boardwalk was built by Boy Scouts. Other potential volunteers may come from the TN Naturalist Program, the Weed Wrangle, TN Promise, and the Wolf River Conservancy.

Proposed Projects:

Privet Pull Eradication! Adopt a Unit!

The natural area has recently been broken up into small management units. Each unit has Chinese privet. Some of these units have few small privet shrubs and zero to few large privet shrubs. In these units a single volunteer day with enough people could completely eradicate privet from the unit. These would make excellent volunteer projects since pulling would result in the attainment of a management goal. Though privet may never be eradicated from the entire natural area, volunteers could feel the satisfaction of reaching a goal. Individuals or small groups may wish to “adopt a unit” in which they would be responsible for pulling all the privet. Other invasive exotics that can be pulled should also be part of the goal for eradication. Sacred bamboo, Oregon grape and other woody exotics may be easily pulled from the ground.

Adopt an Exotic

For this project, volunteers choose an exotic (or more than one) to focus treatment on. Treatment will include pulling or digging up of plants (making sure all or most of the root is retrieved) and possibly cutting of plants. The following exotics contain the list of plants that volunteers can work on:

Beale’s Barberry, sacred-bamboo (Nandina), bristly lady’s-thumb, Chinese privet, and trifoliolate orange

This project can work in conjunction with the Adopt a Unit project.

Trail Maintenance

One of the major problems with the trail is the collection of fallen leaves on the trail in the fall and winter. These leaves may completely obscure the trail. Volunteers are needed to rake or blow the leaves off the trail. This should be done a number of times during the fall/winter season since additional leaves will fall or be blown onto the trail. This is a much needed volunteer project since the West Tennessee Stewardship Ecologist cannot visit the site often enough.

In 2017, a trail assessment was completed. This assessment contains 18 items that need attention. Many of these items would be ideal for volunteers. Interested volunteers should consult with the Stewardship Ecologist about potential projects.

Litter Removal

Litter has never been a major problem at Riverwoods but it is enough to cause problems. Much of the trash is deposited by floodwaters that wash litter from the surrounding urban areas. Litter removals can be done twice a month. The lower floodplain has a small amount of trash strewn throughout the area.

Since this area does not get much new trash, a day or two of volunteer trash pick-ups would go a long way at keeping the area clean.

William B. Clark State Natural Area Volunteer Plan

The Nature Conservancy owns and co-manages the site with the state. Possible volunteers may come from the Wolf River Conservancy, the TN Naturalist Program, and the TN Native Plant Society.

Southern Twayblade Searches

The TN endangered plant Southern Twayblade has been located at the nearby Ghost River State Natural Area but has not been found at WB Clark. Habitat for the plant exists in the natural area. This project entails searches for this plant in the proper habitat. The plant is best searched for when it is in flower which is late March and early April. To date, no state or federally listed plants have been located in the natural area. You might be the first to find and document a listed plant!

Trail Maintenance and Boardwalk Reporting

During the growing season both woody and herbaceous plants tend to grow into the trail. Volunteers will periodically cut back herbaceous and woody vegetation. While on site, volunteers should walk to the end of the boardwalk in order to assess its condition. Any damage should be reported to the West TN Stewardship Ecologist.

Adopt an Exotic!

For this project, volunteers choose an exotic (or more than one) to focus treatment on. Treatment will include pulling or digging up of plants (making sure all or most of the root is retrieved) and possibly cutting of plants. The following exotics contain the list of plants that volunteers can work on:

Monkey Grass (*Liriope spicata*)

Mimosa (*Albizia julibrissin*)

Chinese Privet (*Ligustrum sinense*)