

2/20/25

# **SITE MANAGEMENT SCHEDULE FOR ILLINOIS LAND AND WATER RESERVE**

## **Management Goals**

**RESERVE NUMBER:** 138

**PREPARED BY:** Debbie S. Newman

**SITE NAME:** Angela's Prairie Land & Water Reserve

**LANDOWNERS:** Linda Craig, Sherry Mayer

**MANAGERS:** INPC/Debbie S. Newman

### **OBJECTIVES FOR ESTABLISHING THE RESERVE:**

This reserve is part of the Renault Herpetological Area (RHA), and protects several endangered, threatened and rare herpetofauna, plants and an invertebrate. The reserve also protects extensive Grade C loess hill prairie, Grade A limestone cliff, and Grade C dry, dry-mesic and mesic upland forest, including talus slope forest.

### **STATUS OF CONDITIONS OF NATURAL FEATURES PRESENT:**

The Renault Herpetological Area is included on the Illinois Natural Areas Inventory (INAI #761) as a Category II, Habitat for Endangered and Threatened Species. Four Illinois threatened or endangered snakes occur on the reserve. Timber rattlesnake (*Crotalus horridus*) and flathead snake (*Tantillia gracilis*) are Illinois-threatened. The coachwhip snake (*Masticophis flagellum*) and Great Plains rat snake (*Elaphe emoryi*) are state-endangered. (Note: the coachwhip snake has not been documented in Illinois in many years now; the reserve was an historic location for this snake, but no recent surveys have been conducted.) In addition, the reserve provides habitat for the state-threatened eastern narrowmouth toad (*Gastrophryne carolinensis*) and the rare pickerel frog (*Rana palustris*). Also, the state-endangered, common striped or "Plains" scorpion (*Centruroides vittatus*) is found on the reserve. The American bluehearts (*Buchnera Americana*) and woolly buckthorn (*Bumelia lanuginosa*) are also found on the reserve.

The INAI also recognized the limestone cliff as Grade A. The loess hill prairie, dry, dry-mesic, and mesic upland forest were all included as Grade C on the inventory although some sections of prairie should be evaluated for upgrading to B.

### **TYPES AND EXTENT OF DEGRADATION; POTENTIAL FOR RESTORATION:**

Angela's Prairie is comprised of Grade C loess hill prairie, Grade A limestone cliff community, and Grade C dry, dry-mesic, and mesic upland forest, and agricultural fields. The prairie runs in a nearly continuous stretch across the slope for 3,400 feet in the reserve, though in



recent years woody cover has fragmented some sections. Historical photos show the bluff as one long stretch of grassland. In a section of about 600 feet, the prairie has been invaded, and in some areas, completely eliminated, by woody encroachment. However, brushcutting and controlled burning has been occurring on the site since 2002, opening some of these prairie pockets up to sunlight, with the long-term goal of one day reclaiming the continuous stretch of prairie across the bluff. The prairie on the Renault Herp Area INAI site was determined to be Grade C because of past grazing. Some area of prairie retain a good mixture of forbs and grasses but are currently infested with sweet clover (*Melilotus alba*). Other sections of the prairie on the northwest and southeast ends of the reserve are in good shape and should eventually be evaluated for upgrading to B. Approximately 3 acres of prairie adjacent to the cropfield is a mixture of prairie species (dominant) and pasture grasses, such as brome (*Bromus sp.*) Apparently, that prairie area was planted to pasture grasses at one time in decades past, but the harsh conditions for the pasture grasses has allowed the prairie to retain or regain some dominance in the stand. This prairie stand has a remarkable number of conservative prairie plants in it, despite its apparent past history. Recovery will occur but will take effort over a long period of time and various strategies such as using cool season-specific grass herbicides and/or growing season burns.

A new invasive has found its way into one lobe of prairie on the southern end. *Sericea lespedeza* (*Sericea lespedeza*) was discovered after a period of time of inaccessibility to the preserve due to changing ownership circumstances. A volunteer workday was conducted to try to contain the spread of the aggressive plant, but it has now moved into an additional area. INPC will need to take aggressive measures to eradicate this plant which is know to complete overtake native prairies.

Parts of the prairies have been extensively invaded by red cedar (*Juniperus virginiana*), smooth sumac (*Rhus glabra*), winged sumac (*Rhus copallina*), rough-leaved dogwood (*Cornus drummondii*), and various deciduous trees. A considerable amount of woody removal has occurred on the prairies over the last 20 years as part of C2000 grants, Landowner Incentive Program money, and some NAAF stewardship dollars. In addition, several prescribed burns, have occurred on southern ½ of the prairie. Sideoats grama (*Bouteloua curtipendula*) and little bluestem (*Schizachyrium scoparium*) are dominant grasses on the prairies. Many conservative forbs are found on the reserve, but are scattered, with locally abundant pockets. Species include white and purple prairie clover (*Dalea candida and purpureum*), round-headed bush clover (*Lespedeza capitata*), pale purple coneflower (*Echinacea pallida*), and goat's rue (*Tephrosia virginiana*), rough and cylindric blazing star (*Liatris aspera and cylindracea*), rattlesnake master (*Eryngium yuccifolium*) and green milkweed (*Asclepias viridiflora*). With continued management, eventually doing seed collection from existing forb populations and scattering them in treated areas will help improve plant diversity across the prairie community.

It should be noted that the prairie in Angela's Prairie LWR, along with the contiguous adjacent unprotected prairie, and the prairie contiguous with that, found in the Brickey-Gonterman nature preserve form a roughly 1-mile stretch of hill prairie. This is regionally and statewide-significant because it forms the longest stretch of contiguous hill prairie in 8 counties of southwestern Illinois, and one of the longest stretches in the entire state.

The limestone cliff community remains undisturbed on the reserve. The cliff is comprised of a series of large ledges in some areas. The ledges are inaccessible without ropes, but should someday be examined, as their undisturbed character and extensive nature makes them likely to



harbor some of the threatened and endangered plants found in the area, such as slender heliotrope (*Heliotropium tenellum*) and dwarf bedstraw (*Galium virgatum*). Most of the talus slope remains undisturbed, although a small area was quarried (approximately 20' x 50') in the past adjacent to Bluff Road. In addition, county road maintenance has occasionally included pushing back some of the talus piles along the road. The talus slope presumably has not been logged, as access with steep 60-70% slopes would be prohibitive. However, with the lack of disturbance such as logging or fire on some sections, this dry, southwest-facing slope is converting from an oak forest to a maple-dominated forest. In addition to this, large sections of the talus forest are being invaded by tree-of-heaven (*Ailanthus altissima*) and bush honeysuckle (*Lonicera sp.*). A combination of prescribed fire and some mechanical thinning of tree-of-heaven, bush honeysuckle and maples on the talus slopes will improve the habitat. Bush honeysuckle has been treated in the southern and middle sections of the talus slope and will continue. This would be a candidate for drone spraying but the presence of endangered woolly buckthorn, which keeps its green leaves as long as honeysuckle, prohibits this use.

This preserve is part of the **Hill Prairie and Glade Seed Collection Agreement - South Bluff Corridor** (attached to this management plan) and approves collection of seed on the site for use at other sites within the corridor as determined by the INPC/IDNR. This site may also be a recipient site of seed collected from other remnant hill prairies and glades within the corridor for the purposes of restoration as outlined in this management plan and the Agreement.

The dry-mesic and mesic upland forests are recovering second-growth. On steep, south to west facing interior slopes the forest are comprised primarily of black oak (*Quercus velutina*), chinquapin oak (*Quercus muhlenbergii*), white oak (*Quercus alba*), and various hickories (*Carya sp.*) although oaks are being replaced in some areas by white ash (*Fraxinus americana*), black cherry (*Prunus serotina*) and other species. In deep wooded ravines the reserve is composed of sugar maple (*Acer saccharum*), white ash, and elm (*Ulmus sp.*), with only occasional red oak (*Quercus rubra*). Many areas of the forest have a very small percentage of oak in the overall stand mix. The forests suffered damage from a straight-line windstorm in the mid-1990s and a heavy salvage logging occurred subsequently. This affected species composition and also resulted in a significant invasion of exotics in the forest, particularly bush honeysuckle, Japanese honeysuckle (*Lonicera japonica*), and tree-of-heaven. Exotics control is a priority for most of the forested areas, although with this extensive forest exotics control will be a slow process. Timber stand improvement under the direction of the district forester will work to improve the composition of the forests and encourage oaks to regain more dominance in the forests. Some prescribed burning will assist with exotics control and oak regeneration and will occur as possible.

The agricultural fields are being cropped. The landowners originally considered installing some field borders to improve wildlife habitat and reduce erosion, but ultimately did not occur. The INPC would provide guidance when this occurs. A longterm plan for phasing out the agricultural fields should eventually be created, and some sections of fields may benefit from NRCS-designed erosion control structures to protect the forests.

#### **AMOUNT OF CURRENT/POTENTIAL VISITOR USE, AS RELATED TO MANAGEMENT ISSUES.**

The reserve is not open to public use. The landowners and friends have hunted on the property in the past, and the owners have allowed the INPC to take a couple of conservation field



trips to the prairie, but otherwise the use of the forest and prairie is minimal. Because invasive *Sericea* likely came into the prairies on visitor's boots or ATV tires, hunters and others using the preserve should be educated on always cleaning their equipment and boots prior to entry. Some ATVs have illegally entered the property via an old logging road that commences on the Brickey-Gonterman Nature Preserve. Dropping trees in the path has helped alleviate some of this problem, and if it becomes necessary, the landowners may install a gate or fence to prohibit illegal access. Due to the ruggedness of the terrain and nearly impossible access from Bluff Road, unauthorized visitor use should otherwise not be a problem.

#### **POTENTIAL LINKAGE WITH NEARBY NATURAL LANDS; LAND PROTECTION BEING CONSIDERED:**

The Illinois Nature Preserves Commission is working to preserve numerous INAI sites up and down the bluff corridor from Prairie du Rocher to Valmeyer, which includes Angela's Prairie. There are 8 protected sites within four miles of Angela's Prairie, with some adjacent or a few hundred feet from the reserve. The Brickey-Gonterman Memorial Hill Prairie Nature Preserve and Brickey-Gonterman at Renault Bluffs Land and Water Reserve are located a few hundred feet away and are also part of the Renault Herpetological Areas INAI site. The land between the Brickey-Gonterman sites and Angela's Prairie LWR was previously owned by the Frederick family but has since been sold. Current landowner contacts are underway to work with this owner on protection or at least allowing prescribed fire to occur. Efforts will continue to work with all the landowners in the vicinity of the reserve.

#### **THREATS TO THE INTEGRITY OF THE LAND AND WATER RESERVE:**

There are several threats to the site that need to be monitored/addressed. Exotic plants in the forest and invasive plants in the prairie are primary threats to the site. Of central concern, a population of kudzu (*Pueraria lobata*) was located on the reserve circa 2000. The IDNR had been aggressively treating the population but in recent years staff reductions have led to no follow up. The population was nearly eradicated but needs immediate attention to prevent resurgence. The forest and talus slope harbor many exotic species that have exploded in the bluff corridor in the last 5-8 years, including the honeysuckles (*Lonicera japonica* and *Lonicera sp.*), tree-of-heaven (*Ailanthus altissima*), mimosa tree (*Albizia julibrissin*), autumn olive (*Elaeagnus umbellata*), and burning bush (*Euonymus alata*). *Sericea lespedeza* and sweet clover (*Melilotus alba*) are a serious threat in the prairies. The INPC has been working to treat exotics and invasive natives in the vicinity of the prairie off and on for several years, making some headway, but more needs to be done as soon as possible. Significant exotics control has also been conducted on the nearby Brickey-Gonterman Nature Preserve and the William A. Demint Nature Preserve. Efforts will continue.

Another threat to the reserve is the occasional bulldozing by local road departments of the talus slope at the base of the bluff. Because this talus slope harbors several of the endangered reptiles and amphibians and the striped scorpion, efforts will be made to work with the county highway commissioner to minimize or eliminate this activity. In addition to this, a new invasive, Japanese hops, (*Humulus japonicus*) was found in 2006 growing along the road at the edge of the reserve, bringing up the issue of exotics being transported by equipment. Discussions with the



road department will also address cleaning equipment tires prior to activity adjacent to this and nearby reserves.

Significant littering appears to be a persistent problem along Bluff Road. Because plastic bags, plastic and glass bottles and other litter pose a threat to birds and herptofauna, efforts will be made to periodically remove litter from the talus slope.

The threat to forests from herbicide vapor drift of 2,4, D and dicamba is appearing at many protected sites in the area in the last few years, including at this preserve and reserve. Monitoring will continue to occur at the sites during growing seasons to document any damage to trees or herbaceous plants. Reporting will occur through the IDNR reporting system, including being forwarded to the IL Dept of Agriculture, and the INPC is also independently developing more comprehensive monitoring to include tissue sampling. This proposed LWR may be included in the sampling if suspected herbicide damage is observed. Additionally, landowners are encouraged if they wish to also report the damage through other avenues such as the Illinois Forestry Association's report system, or Prairie Rivers Network reporting. Landowners may also file a complaint directly with the Illinois Department of Agriculture.

#### **ALLOWED USES:**

The following are allowed uses as part of the registration agreement: Timber harvest with approved IDNR forestry plan (the forester has not recommended a timber harvest for the foreseeable future due to lack of marketable trees), hunting, installation of deer stands, mushroom picking, firewood collection for personal use, maintaining existing trails and roads for access including replacing crushed rock on cropfield roads, use of ATVs for access, maintenance and hunting purposes on existing trails and roads only, and one primitive camp site (tents only). Harvesting of ginseng and goldenseal will be included as an allowed use, only when done in accordance with the Illinois Department of Natural Resources Administrative Rules and after an approved plan has been developed in conjunction with the INPC and IDNR to insure sustainable harvest of the plants. To date, this allowed use has not been exercised. Additionally, this reserve includes 60 acres of fields planted perennially to row crops (corn, soybeans, wheat, milo) and includes wildlife food plots and 12-foot fescue field borders for erosion control and access along some of the edges. Some food plots are semi-permanent cover of ladino clover and grasses, while some are comprised of corn. The agricultural fields are being managed in accordance with a Conservation Plan developed by the Natural Resources Conservation Service (NRCS). The plan includes crop rotation and residue management to reduce erosion, conserve moisture, improve soil condition and improve wildlife habitat. Two areas of cropfield also contains an NRCS-designed silt dam to reduce erosion. The landowners reserve the right to maintain the edges of the cropfields, such as trimming overhanging tree limbs, and removing trees falling into the cropped areas, the right to maintain the silt dams, and to periodically mow fescue border strips. When the landowners make the decision to cease cropping the fields, they will be returned to forested or native prairie habitat with assistance from the Illinois Nature Preserves Commission and/or the Illinois Department of Natural Resources.

#### **OVERALL MANAGEMENT GOALS (RANKED IN PRIORITY ORDER):**

1. Eradicate exotic and invasive species in the hill prairies.
2. Continue ecological processes, particularly fire, to loess hill prairie community as a

- priority, and forested areas as time allows.
3. Monitor for the continued presence/change in status of the endangered, threatened, and rare herpetofauna, invertebrate and plants of the preserve.
  4. Assist in revegetation and expanding populations of forbs in the prairies.
  5. As time allows, eradicate non-native plants from the forests surrounding the prairies
  6. Periodically remove litter from talus slope on Bluff Road.
  7. Visit with county road commissioner about activities at the reserve/Bluff Road interface.

**Management Schedule for Angela's Prairie LWR has been reviewed and approved by:**

The Landowner:

Henry Mayer  
Name Trustee

February 23, 2025  
Date

The Landowner:

Linda Craig  
Name Trustee

February 23, 2025  
Date

The Illinois Nature Preserves Commission:

\_\_\_\_\_  
Name

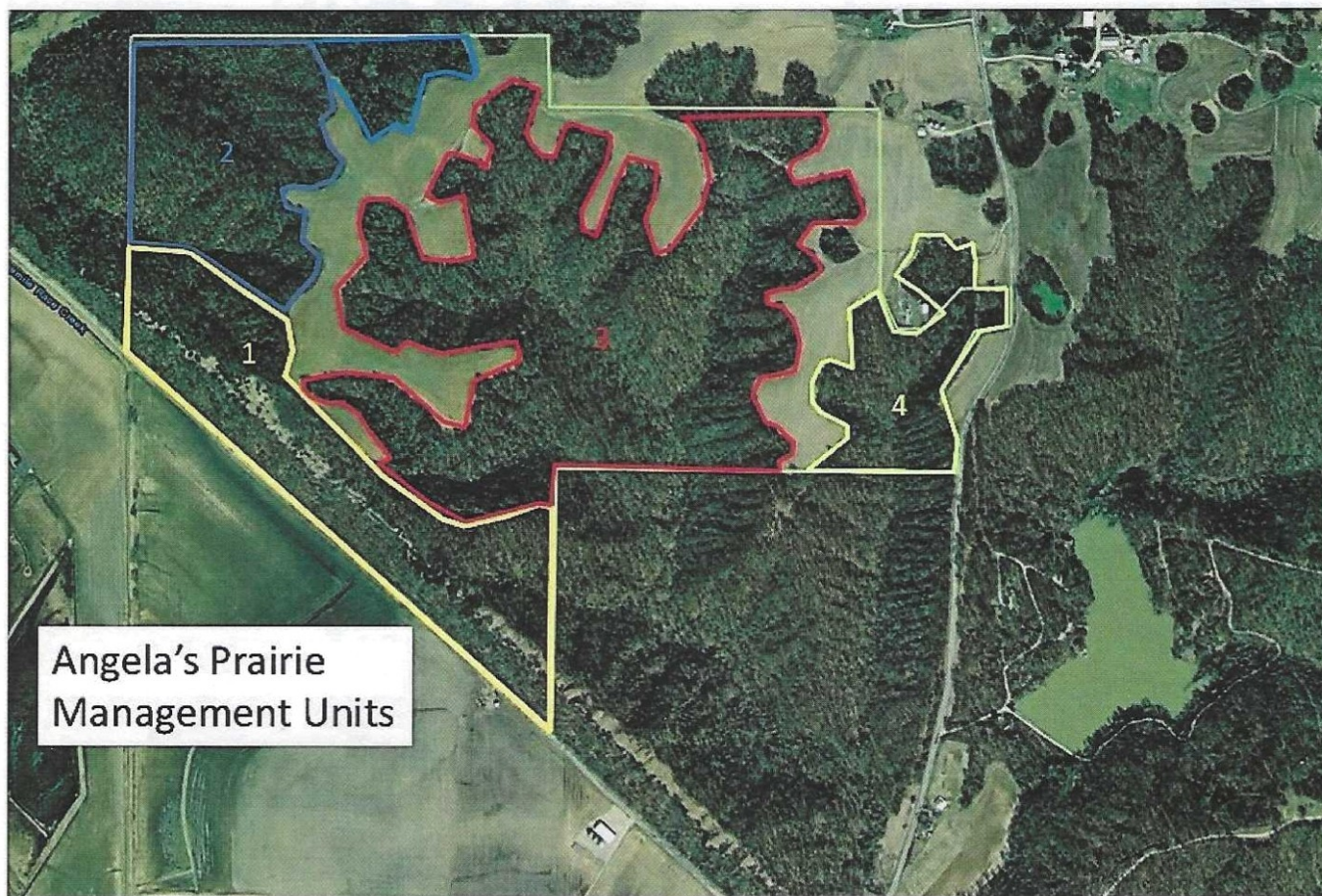
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The Illinois Department of Natural Resources:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date





## MANAGEMENT UNIT FEATURES

Angela's Prairie Land and Water Reserve

Author: Debbie S. Newman

### MANAGEMENT UNITS

A: General/Whole Reserve

### FEATURES

Loess hill prairie  
Limestone cliff  
Talus slope  
Dry upland forest  
Dry-mesic upland forest  
Mesic upland forest  
*Crotalus horridus*  
*Elaphe guttata emoryi*

	<i>Tantillia gracilis</i> <i>Masticophis flagellum</i> <i>Centruroides vittatus</i> <i>Gastrophryne carolinensis</i> <i>Buchnera americana</i> <i>Bumelia lanuginosa</i>
Prairie & Talus Unit 1	Loess hill prairie Limestone cliff Talus Slope Dry-mesic upland forest <i>Crotalus horridus</i> <i>Elaphe guttata emoryi</i> <i>Tantillia gracilis</i> <i>Masticophis flagellum</i> <i>Centruroides vittatus</i> <i>Gastrophryne carolinensis</i> <i>Buchnera americana</i> <i>Bumelia lanuginosa</i>
Forest Unit 2	Dry-mesic upland forest Dry upland forest Mesic upland forest <i>Crotalus horridus</i> <i>Elaphe guttata emoryi</i> <i>Tantillia gracilis</i> <i>Masticophis flagellum</i>
Forest Unit 3	Dry-mesic upland forest Dry upland forest Mesic upland forest <i>Crotalus horridus</i> <i>Elaphe guttata emoryi</i> <i>Tantillia gracilis</i> <i>Masticophis flagellum</i>
Forest Unit 4	Dry-mesic upland forest Mesic upland forest <i>Crotalus horridus</i> <i>Elaphe guttata emoryi</i> <i>Tantillia gracilis</i> <i>Masticophis flagellum</i>
Agricultural Fields	



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**OTHER SITE INFORMATION**

**Natural Heritage Biologist:** Blake Baum

**Natural Areas Preservation Specialist:** Debbie S. Newman

**Volunteer Steward:** None

**Topographic Map:** Renault

**Location:** T5S - R9W, Section 6, 3rdPM

**Natural Division:** 11a

**Registration Date:** 10-24-2006

**Size:** 283 acres

# Illinois Nature Preserve Commission Management Schedule

RESERVE NAME: Angela's Prairie Land and Water Reserve

INPC Approval Expires: 2/28/2030

Management Unit	Management Objective	Management Action	Start Date	End Date	Lead Agency(s)	Lead Person(s)
A: General	Identify ecological changes and management concerns	Conduct general surveillance on a biennial basis	3/1/2025	2/28/2030	INPC	Newman
A: General	Post and maintain boundaries	Maintain boundary signs as needed. Boundary signs should be placed every 330', with rectangles on all corners.	3/1/2025	2/28/2030	INPC	Newman
A: General	Monitor populations of endangered, threatened, & rare herpetofauna, invertebrate and plants as possible	Conduct biennial search, submit appropriate Element Occurrence Records	3/1/2025	2/28/2030	INPC, IDNR, Plants of Concern	Newman, IDNR Endangered Species Specialist, Plants of Concern Staff and Volunteers
A: General	Monitor for new invasive plant threats, map and treat.	Record, map and treat new invasives as possible.	3/1/2025	2/28/2030	INPC, Contractor, volunteers	Newman, Contractor, volunteers
A: General	Monitor for symptoms of damage from herbicide vapor drift	Visual monitoring and possibly leaf tissue sampling. Results are reported through IL Dept of Natural Resources, Prairie Rivers Network or other programs	4/1/2025	10/30/2029	INPC, Contractor, Trained Volunteer	Newman, Contractor, Trained Volunteer



Prairie Unit 1	Restore/maintain natural community	Conduct one to three prescribed burns during 5-year period	3/1/2025 8/15/2025 8/15/2026 8/15/2027 8/15/2028 8/15/2029	4/15/2025 4/15/2026 4/15/2027 4/15/2028 4/15/2029 4/15/2030	INPC, IDNR	Newman, DRB
Prairie Unit 1	Control exotic herbaceous vegetation	Hand pull sweet clover where feasible, in late spring/early summer when ground is moist. For larger amounts Transline may be used Control Sericea lespedeza with Garlon 3A, or in degraded areas with 2% glyphosate solution as a spot spray, after fire.	3/1/2025	2/28/2030	INPC, Contractor, Volunteers	Newman, Contractor, Volunteers
Prairie Unit 1	Control invasive and exotic woody vegetation in prairies and woods	Cut cedars, dogwood, sumac, tree-of-heaven, bush honeysuckle and other invasive species. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Cedar stumps do not need to be treated. Tree-of-heaven may also be basal bark sprayed with 25% Garlon 4 in carrier oil. Japanese honeysuckle and Japanese hops may be foliar sprayed with 2% solution of Roundup	3/1/2025	2/28/2030	INPC, Contractor	Newman, Contractor
Prairie Unit 1	To bolster herbaceous plant diversity, assist	Seed may be collected from in this preserve	3/1/2025	2/28/2030	INPC, IDNR	Newman, DRB

	in restoration and/or expand populations of T&E select species in hill prairies or glades in South Bluff Corridor, as determined by INPC or IDNR staff.	from Units 1 for use at designated remnant hill prairies or limestone glades within the defined South Bluff Corridor of the Northern IL Ozarks as designated by NAPS/DHB. Volunteers or landowners collecting seed should collect seed at appropriate times when seed is mature. Collectors will document what seed is collected and when/where it is planted within the corridor. INPC staff will note in file. (See attached Agreement)				
Prairie Unit 1	To bolster herbaceous plant diversity in and to expedite expanding of prairies and glades to their historic extent on the landscape in the Angela's Prairie LWR.	Seed may be collected from remnant hill prairies or limestone glades within the defined South Bluff Corridor of the Northern IL Ozarks and planted in Angela's Prairie remnant prairies and glades as designated by NAPS/DHB. Winter frost seeding of prairie seed is preferred. Plants may be planted in early spring with follow-up during dry periods. Species and source(s) of seed will be documented for the site file if/when such	3/1/2025	2/28/2030	INPC, Contractor	Newman, Contractor



Prairie Unit 1	Protecting herpetofauna from trash & associated mortality	plantings occur. (See attached <u>Agreement</u> )	3/1/2025	2/28/2030	INPC, IDNR, Landowner	Newman, DHB Landowner
Forest Unit 2	Control invasive and exotic woody and herbaceous vegetation	Cut bush honeysuckle, multiflora rose, tree-of-heaven, and other exotic invasive species. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Cedar stumps do not need to be treated. Tree-of-heaven may also be basal bark sprayed or hack n squirt method with 25% Garlon 4 in carrier oil.  Japanese honeysuckle and Japanese hops may be foliar sprayed with 2% solution of Roundup.	3/1/2025	2/28/2030	INPC, Contractor	Newman, Contractor
Forest Unit 2	Restore/maintain natural community	Conduct one to three prescribed burns during 5-year period	8/1/28	2/28/2030	INPC, IDNR	Newman, DRB
Forest Unit 2	Reduce stems of mesic woody species to rebalance/restore oak-hickory forest	Reduce stems of maple, hackberry and other mesics on south and west facing slopes and dry ridges to lower mesic species dominance and	3/1/2025	2/28/2030	INPC, IDNR	Newman, DHB Contractor

		encourage oak recruitment. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Small stems may be basal bark sprayed with 25% Garlon 4 in carrier oil.					
Forest Unit 3	Restore/maintain natural community	Conduct one prescribed burn during 5-year period.	3/1/2025 8/15/2025 8/15/2026 8/15/2027 8/15/2028 8/15/2029	4/15/2025 4/15/2026 4/15/2027 4/15/2028 4/15/2029 4/15/2030	INPC, IDNR	Newman, DHB	
Forest Unit 3	Control invasive and exotic woody and herbaceous vegetation	Cut bush honeysuckle, multiflora rose, tree-of-heaven, and other exotic invasive species. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Cedar stumps do not need to be treated. Tree-of-heaven may also be basal bark sprayed or hack n squirt method with 25% Garlon 4 in carrier oil. Japanese honeysuckle and Japanese hops may be foliar sprayed with 2% solution of Roundup.	3/1/2025	2/28/2030	INPC, IDNR	Newman	
Forest Unit 3	Reduce stems of mesic woody species to rebalance/restore oak-	Reduce stems of maple, hackberry and other mesics on south	3/1/2025	2/28/2030	INPC, IDNR	Newman, DHB Contractor	



	hickory forest	and west facing slopes and dry ridges to lower mesic species dominance and encourage oak recruitment. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Small stems may be basal bark sprayed with 25% Garlon 4 in carrier oil.					
F: Forest Unit 4	Restore/maintain natural community	Conduct one prescribed burn during 5-year period.	3/1/2025 8/15/2025 8/15/2026 8/15/2027 8/15/2028 8/15/2029	4/15/2025 4/15/2026 4/15/2027 4/15/2028 4/15/2029 4/15/2030	INPC, IDNR	Newman, DHB	
Forest Unit 4	Control invasive and exotic woody vegetation in forest	Cut bush honeysuckle, multiflora rose, tree-of-heaven, and other exotic invasive species. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3A in water. Cedar stumps do not need to be treated. Tree-of-heaven may also be basal bark sprayed or hack n squirt method with 25% Garlon 4 in carrier oil.  Japanese honeysuckle and Japanese hops may be foliar sprayed with 2% solution of	3/1/2025	2/28/2030	INPC, IDNR	Newman, DHB Contractor	

Forest Unit 4	Reduce stems of mesic woody species to rebalance/restore oak-hickory forest	Roundup.	3/1/2025	2/28/2030	INPC, Contractor	Newman, Contractor
		Reduce stems of maple, hackberry and other mesics on south and west facing slopes and dry ridges to lower mesic species dominance and encourage oak recruitment. Cut surfaces should be treated with 20% Roundup in water solution or 50% Garlon 3 A in water. Small stems may be basal bark sprayed with 25% Garlon 4 in carrier oil.				
Agricultural Fields	Restore agricultural fields to native vegetation as possible  Work with NRCS as needed for erosion control structures.	Assist landowner with planting grass/forbs or trees as cropland is retired.	3/1/2025	2/28/2030	INPC, Contractor	Newman, Contractor