

**ECOLOGICAL ASSESSMENT REPORT  
CLARK STATE FOREST GUN RANGE  
CLARK COUNTY, INDIANA**



*Prepared for:*

Indiana Department of Natural Resources – Division of Forestry  
402 W. Washington Street, Room W296  
Indianapolis, Indiana 46204

*Prepared by:*

Indiana Department of Natural Resources – Division of Nature Preserves  
402 W. Washington Street, Room W267  
Indianapolis, Indiana 46204

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**ECOLOGICAL ASSESSMENT REPORT  
CLARK STATE FOREST GUN RANGE  
CLARK COUNTY, INDIANA**

**INTRODUCTION**

Staff from Indiana Department of Natural Resources (IN DNR) – Division of Nature Preserves (DNP) conducted an ecological assessment of the 61.38 acre Clark State Forest Gun Range Site (“site”) in Clark County, Indiana on July 7-8, 2020, with a follow-up visit on October 28, 2020. The site consists of the proposed gun range (39.38 acres), an alternate gun range site (26.43 acres), and a revised gun range (28.15 acres), all of which slightly overlap (Appendix A Figure 1). The ecological assessment was limited to an assessment of wetlands on the site and an inventory of vascular plant species present. A stream assessment was not included, as an assessment of streams at the site was conducted by IN DNR – Division of Forestry. A formal rare plant and animal survey was not conducted, but during the field surveys, plant and animal species of conservation concern (endangered, threatened, or watch list plants and insects; endangered or special concern mammals, birds, fish, mollusks, amphibians, and reptiles) were documented when observed. The species of conservation concern noted in this report should not be interpreted to mean that no other species of conservation concern are present at the site, as the survey was conducted only on two consecutive days in July 2020 and one day in October 2020.

**METHODS**

Desktop Review

Prior to the field survey, resource maps including topographic maps (Appendix A Figure 1), an aerial photograph (Appendix A Figure 2), the National Wetlands Inventory (NWI) map (Appendix A Figure 2), the Soil Survey map (Appendix A Figure 3), and the Flood Hazard Map for Indiana (Appendix A Figure 4) were reviewed for the presence of features indicating potential wetlands. In addition, the Indiana Natural Heritage Database, housed within the DNP, was checked for the presence of any known endangered, threatened, or watch list plant or insect species, endangered or special concern mammal, bird, fish, mollusk, amphibian, or reptile species, and any high quality natural areas within the vicinity of the site.

Field Survey

A field survey was conducted on July 7-8, 2020 with the purpose of documenting any wetlands present on the site, vegetation present, and any plant or animal species of conservation concern; a follow-up visit was conducted on October 28, 2020. In addition to a visual survey for potential wetlands, the presence/absence of wetland hydrology, hydrophytic vegetation, and hydric soils at 10 data points within the site boundaries (Appendix A Figure 5) was assessed according to the Routine On-Site Determination Method as defined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont (Version 2.0)* (U.S. Army Corps of Engineers 2012). Streams were not assessed during the field survey. The wetland delineation has not been verified by the U.S. Army Corps of Engineers (USACE), who has final authority over determining the location and extent of wetlands and other “waters of the U.S.”

All vascular plant species observed during the surveys were recorded, and the Floristic Quality Assessment (FQA) (Rothrock 2004) was applied to the plant inventory. The FQA is a tool used to assess the natural area quality and potential of a given site. The basis of the FQA is the coefficient of conservatism (C) value. Every plant species in Indiana has been assigned a C value that is a measure of its fidelity to pre-settlement natural plant communities; this value also is a measure of how resilient a given plant species is to site degradation. Plant species that are conservative, i.e. that occur only in natural communities that have not been degraded, have C values on the higher end of the spectrum, whereas plant species that can tolerate degradation and that are not indicative of a pre-settlement natural community have C values at the lower end of the range. Non-native species by default have C values of 0. Rothrock (2004) uses the following categories to define C values for Indiana plants:

- 0-3 Species that provide little or no confidence that its inhabitation signifies remnant conditions.
- 4-6 Species that are typically associated with a remnant plant community, but tolerate significant to moderate disturbance.
- 7-8 Species found in high-quality remnant plant communities but appear to endure, from time to time, some disturbance.
- 9-10 Species restricted to remnant landscapes that appear to have suffered very little post-settlement trauma.

The FQA calculates and assesses a site based on two values: the mean C value (mean C) and the Floristic Quality Index (FQI). The mean C is simply an average of the C values of all plant species present at the site. The FQI takes into account the mean C and the number of species present (species richness) using the equation

$$FQI = \bar{C}\sqrt{N}$$

where  $\bar{C}$  is the mean C and N is the number of species present. Swink and Wilhelm (1994) state that sites with mean C of 3.5 or higher or FQI of 35 or higher likely are of at least marginal natural area quality, whereas sites with mean C of 4.5 or higher or FQI of 45 or higher almost certainly have remnant natural area potential.

## **RESULTS**

### Desktop Review

The desktop review did not reveal any obvious wetland features on the site. No marsh or swamp symbols are present on topographic maps of the area, and although Calf Run is near the site and runs along the site boundary, no streams are mapped on the site (Appendix A Figure 1) (National Geographic Society 2013). A review of the aerial photograph of the site did not reveal any wetland signatures (Appendix A Figure 2). The NWI map does not show any wetlands within the site boundaries (Appendix A Figure 2) (U.S. Fish and Wildlife Service 2014). The Soil Survey map shows 10 soil units within the site boundaries, but none of these are considered hydric soils (Appendix A Figure 3) (Soil Survey Staff, NRCS-USDA 2020). The Flood Hazard Map for

Indiana shows the entire site outside of the 100-year floodplain (Appendix A Figure 4) (IN DNR – Division of Water undated).

A review of the Indiana Natural Heritage Database did not result in the presence of any known endangered, threatened, or watch list plant or insect species, endangered or special concern mammal, bird, fish, mollusk, amphibian, or reptile species, or high quality natural areas within the site boundaries. Several rare plant and animal species and high quality natural areas are known from the vicinity of the site (Table 1).

Table 1. Plant and animal species of conservation concern and high quality natural communities known from the vicinity of the site.

Scientific Name	Common Name	Status
<i>Aimophila aestivalis</i>	Bachman's sparrow	State extirpated
<i>Calamagrostis porteri</i> ssp. <i>insperata</i>	Reed bent grass	State endangered
<i>Celastrina nigra</i>	Dusky azure	State endangered
<i>Dichanthelium bicknellii</i>	Bicknell's panic grass	State endangered
<i>Dryobius sexnotatus</i>	Six-banded longhorn beetle	State threatened
<i>Helmitheros vermivorus</i>	Worm-eating warbler	State special concern
<i>Isoetes engelmannii</i>	Appalachian quillwort	State endangered
<i>Lathyrus venosus</i>	Smooth veiny pea	State endangered
<i>Lechea racemulosa</i>	Illinois pinweed	State endangered
<i>Myotis sodalis</i>	Indiana bat	State endangered; federally endangered
<i>Opheodrys aestivus</i>	Rough green snake	State special concern
<i>Penstemon deamii</i>	Deam's beardtongue	State endangered
<i>Pieris virginianensis</i>	West Virginia white	State threatened
<i>Schoenoplectiella purshiana</i>	Weakstalk bulrush	State threatened
<i>Solidago squarrosa</i>	Stout-ragged goldenrod	State endangered
<i>Sorex fumeus</i>	Smoky shrew	State special concern
<i>Sorex hoyi</i>	Pygmy shrew	State special concern
<i>Stachys clingmanii</i>	Clingman's hedge-nettle	State watch list
<i>Terrapene carolina</i>	Eastern box turtle	State special concern
<i>Trifolium reflexum</i> var. <i>glabrum</i>	Buffalo clover	State endangered
	Highland Rim dry upland forest	NA
	Highland Rim dry-mesic upland forest	NA
	Highland Rim mesic upland forest	NA

### Field Survey

The site generally consists of rolling topography comprised of decent quality dry and dry-mesic upland forest with good age structure and heterogeneous understory on higher ground and heavily degraded mesic forest and openings (former clearcuts) with lower species richness along ephemeral drainages. Drainages are mostly confined to the northeastern portion of the site and were dry or with small pools of water in deeper spots at the time of the surveys. Several large (18-30" DBH) northern white oak (*Quercus alba*) and chestnut oak (*Quercus montana*) are present in the open woodland on drier ground. Although some wetland vegetation was present in places along the fringes of the drainages, no wetlands were observed on the site (Appendix A Figure 5). Site photographs are included in Appendix B. Wetland Determination Data Forms are provided in Appendix C. The hydrology, vegetation, and soils at the site are discussed in general below:

**Hydrology:** The main sources of hydrology to the site are direct precipitation and surface runoff. The site generally drains from west to east and eventually into Calf Run. The site is located outside of the 100-year floodplain (Appendix A Figure 4). Although soil was moist in places and distinct ephemeral drainages were present on the site, no primary or secondary wetland hydrology indicators were observed.

**Vegetation:** The site is forested throughout, with distinctly different vegetation in dry (usually rocky and on slopes or terraces) versus mesic (usually in or along drainages or at the base of slopes) areas. Data were collected at four points (Data Points 3, 5, 9, and 10) in the former and at six points (Data Points 1, 2, 4, 6, 7, and 8) in the latter.

In drier areas, vegetation is evenly distributed to the point that clear dominant plant species are difficult to define. Plant species commonly observed in the tree stratum in the driest areas include pignut hickory (*Carya glabra*, FACU), black tupelo (*Nyssa sylvatica*, FAC), northern white oak (*Quercus alba*, FACU), and chestnut oak (*Quercus montana*, UPL), with red maple (*Acer rubrum*, FAC), sugar maple (*Acer saccharum*, FACU), and American beech (*Fagus grandifolia*, FACU) being most common in dry-mesic areas. The shrub/sapling stratum is generally dominated by American beech (FACU), eastern hop-hornbeam (*Ostrya virginiana*, FACU), and chestnut oak (UPL). The herbaceous stratum is varied, but the most common plant species in the herbaceous stratum are seedlings of the trees red maple (FAC) and northern white oak (FACU). Other species that are dominant in portions of the herbaceous stratum include white-tinge sedge (*Carex albicans*, UPL), eastern woodland sedge (*Carex blanda*, FAC), white ash (*Fraxinus americana*, FACU), licorice bedstraw (*Galium circaezans*, UPL), eastern red-cedar (*Juniperus virginiana*, FACU), eastern hop-hornbeam (FACU), American lopseed (*Phryma leptostachya*, FACU), King Solomon's-seal (*Polygonatum biflorum*, FACU), oldfield cinquefoil (*Potentilla simplex*, FACU), black cherry (*Prunus serotina*, FACU), chestnut oak (UPL), northern red oak (*Quercus rubra*, FACU), horsebrier (*Smilax rotundifolia*, FAC), eastern poison ivy (*Toxicodendron radicans*, FAC), elm (*Ulmus* sp., FACW-UPL), and early low bush blueberry (*Vaccinium pallidum*, UPL).

In more mesic areas vegetation is evenly distributed, except along drainages where lower herbaceous species richness is present. Plant species most commonly observed in the tree stratum include American beech (*Fagus grandifolia*, FACU) and sweet-gum (*Liquidambar styraciflua*, FAC), with red maple (*Acer rubrum*, FAC), sugar maple (*Acer saccharum*, FACU), tuliptree (*Liriodendron tulipifera*, FACU), and black tupelo (*Nyssa sylvatica*, FAC) dominant in some places. The shrub/sapling stratum is mostly dominated by American beech (FACU) and tuliptree (FACU), but red maple (FAC), devil's-walkingstick (*Aralia spinosa*, FAC), northern spicebush (*Lindera benzoin*, FAC), eastern hop-hornbeam (*Ostrya virginiana*, FACU), rambler rose (*Rosa multiflora*, FACU), and blackberry/dewberry (*Rubus* sp., FACW-UPL) are dominant in at least one data point. The herbaceous stratum is varied, with the most dominant species including American hog-peanut (*Amphicarpaea bracteata*, FAC), tuliptree (FACU), Japanese stilt grass (*Microstegium vimineum*, FAC), Virginia-creeper (*Parthenocissus quinquefolia*, FACU), eastern poison ivy (*Toxicodendron radicans*, FAC), hooded blue violet (*Viola sororia*, FAC), and frost grape (*Vitis vulpina*, FAC). Other species dominant in portions of the herbaceous stratum include red maple (FAC), white snakeroot (*Ageratina altissima*, FACU), slender woodland sedge (*Carex digitalis*, UPL), spreading sedge (*Carex laxiculmis*, UPL), broad loose-flower sedge (*Carex*

*laxiflora*, FACU), sedge (*Carex* sp., OBL-UPL), American beech (FACU), white ash (*Fraxinus americana*, FACU), licorice bedstraw (*Galium circaezans*, UPL), fragrant bedstraw (*Galium triflorum*, FACU), eastern hop-hornbeam (FACU), black cherry (*Prunus serotina*, FACU), horsebrier (*Smilax rotundifolia*, FAC), and wreath goldenrod (*Solidago caesia*, FACU).

Overall at the site (irrespective of soil moisture), based on the sampled data points, the tree stratum is dominated by red maple (*Acer rubrum*, FAC), sugar maple (*Acer saccharum*, FACU), American beech (*Fagus grandifolia*, FACU), sweet-gum (*Liquidambar styraciflua*, FAC), black tupelo (*Nyssa sylvatica*, FAC), and chestnut oak (*Quercus montana*, UPL). The shrub/sapling stratum overall at the site is dominated by red maple (FAC), American beech (FACU), northern spicebush (*Lindera benzoin*, FAC), tuliptree (*Liriodendron tulipifera*, FACU), eastern hop-hornbeam (*Ostrya virginiana*, FACU), and chestnut oak (UPL). The herbaceous stratum is dominated by red maple (FAC), white ash (*Fraxinus americana*, FACU), licorice bedstraw (*Galium circaezans*, UPL), eastern hop-hornbeam (FACU), black cherry (*Prunus serotina*, FACU), northern white oak (*Quercus alba*, FACU), horsebrier (*Smilax rotundifolia*, FAC), and eastern poison ivy (*Toxicodendron radicans*, FAC). Woody vines are scattered but do not comprise a stratum at any of the data points.

Hydrophytic vegetation indicators were met at Data Point 1 and Data Point 10 (each with the dominance test met), but hydric soil indicators and wetland hydrology indicators were not met at these data points.

Overall at the site on the days of the surveys, 204 vascular plant taxa were observed, 186 (91.2%) of which are native to Indiana and 18 (8.8%) of which are non-native (Appendix D). The mean C that was calculated for the inventory of plants at the site was 4.1 (4.5 native mean C), and the FQI that was calculated was 58.6 (61.4 native FQI) (Appendix D). Species present that are said to occur in high-quality remnant plant communities but appear to endure, from time to time, some disturbance (C = 7 or 8) and that are said to be restricted to remnant landscapes that appear to have suffered very little post-settlement trauma (C = 9 or 10) make up 20.1% of the vascular plant taxa identified at the site (Appendix D).

**Soils:** The Soil Survey Geographic Database of Clark County, Indiana maps the project site as being underlain by the 10 soil units shown in Table 2; two additional soil units (Pekin silt loam, 6 to 12 percent slopes, eroded [PcrC2]; Stendal silt loam, 0 to 2 percent slopes, rarely flooded [StdAQ]) are present near the site (Appendix A Figure 3).

Table 2. Soil units on the site.

Code	Soil Unit Name	Hydric?
BfbC2	Blocher, soft bedrock substratum-Weddel silt loams, 6 to 12 percent slopes, eroded	No
BcrAW	Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded	No
BvoG	Brownstown-Gilwood silt loams, 25 to 75 percent slopes	No
ComC	Coolville silt loam, 6 to 12 percent slopes	No
ConD	Coolville-Rarden complex, 12 to 18 percent slopes	No
DbrG	Deam silty clay loam, 20 to 55 percent slopes	No
GmaG	Gnawbone-Kurtz silt loams, 20 to 60 percent slopes	No
PcrB2	Pekin silt loam, 2 to 6 percent slopes, eroded	No
StaAQ	Steff silt loam, 0 to 2 percent slopes, rarely flooded	No
WedB2	Weddel silt loam, 2 to 6 percent slopes, eroded	No

Although none of these soil units are considered hydric, the hydric soil indicator Depleted Matrix (F3) was observed at Data Points 2, 7, and 8. Hydrophytic vegetation and wetland hydrology indicators were not met at these data points.

### THREATENED/ENDANGERED SPECIES

Although a formal threatened/endangered species survey was not conducted, plant species tracked as endangered, threatened, or watch list by the Indiana Natural Heritage Data Center were documented when observed. Six species on this list were observed at the site (Table 3). No federally listed plant species were observed or are expected to be present on the site. A survey for endangered, threatened, and special concern animal species was not conducted as part of this survey, but one special concern animal was also observed during the survey (Table 3).

Table 3. Plant and animal species of conservation concern observed at the site.

Latin Name	Common Name	Indiana Status
<i>Actaea racemosa</i>	Black bugbane	Watch List
<i>Magnolia acuminata</i>	Cucumber magnolia	Endangered
<i>Ophioglossum pusillum</i>	Northern adder's-tongue	Threatened
<i>Panax quinquefolius</i>	American ginseng	Watch List
<i>Pinus strobus</i>	Eastern white pine	Threatened (but presumably planted at site)
<i>Pinus virginiana</i>	Virginia pine	Watch List
<i>Terrapene carolina</i>	Eastern box turtle	Special Concern

### PERMITTING REGULATIONS

Jurisdictional “waters of the U.S.,” including wetlands, are defined in 33 CFR Part 328.3. These regulatory features are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered by the USACE. Impacts to wetlands, ponds, and streams can require permits ranging from activities that are preauthorized, to those requiring a Nationwide Permit (NWP) or Regional General Permit (RGP), to those requiring an Individual Permit, with the latter being the most rigorous and time-consuming. Certain activities in wetlands and streams also require Water Quality Certification (WQC) from the Indiana Department of Environmental Management (IDEM). Impacts to greater than 0.1 acre of wetlands or 300 feet of stream generally require compensatory mitigation.

Under current regulations in Indiana, impacts to greater than one acre of jurisdictional “waters of the U.S.” or 1,500 feet of stream require an Individual Permit from the USACE, as well as WQC from IDEM. Impacts to “waters of the U.S.” between 0.1 acre and 1.0 acre or between 300 and 1,500 feet of stream can be authorized under a RGP from the USACE; this also requires WQC from IDEM. Impacts to less than 0.1 acre of “waters of the U.S.” or 300 feet of stream are pre-approved under the RGP, but require formal notification to IDEM. Wetlands or streams that are not jurisdictional are still subject to IDEM regulation as “waters of the State.”

Under the permit review process, the USACE is required to consult with the USFWS regarding potential impacts to threatened and endangered species under the federal Endangered Species Act and with the State Historic Preservation Office (SHPO) regarding potential impacts to cultural/historic sites eligible for listing on the National Register of Historic Places (NRHP) under

the National Historic Preservation Act. There is no formal protection for state endangered or threatened plant species, but their presence is sometimes factored in during the permitting process.

## **DISCUSSION**

The site was inspected on July 7-8, 2020 and again briefly on October 28, 2020. No wetlands were observed on the site. Several intermittent drainage features were observed but were not assessed as part of this survey as the IN DNR – Division of Forestry was conducting a stream assessment. Impacts to these drainage features may require permits and WQC from the USACE and/or IDEM. The USACE has final authority on the identification and boundaries of wetlands and streams, and as such we recommend forwarding them a copy of this report prior to any ground disturbance being conducted.

The site is forested, with various forest types in varying successional stages. Mesic forest areas are present along drainages and in general are more degraded with weedier plant species than are dryer forest on the site. Six plant species listed as endangered, threatened, or watch list by the Indiana Natural Heritage Data Center were observed at the site. In addition, the mean C and FQI indicate that the site almost certainly has natural area potential; this natural area quality is more restricted to the drier parts of the site.

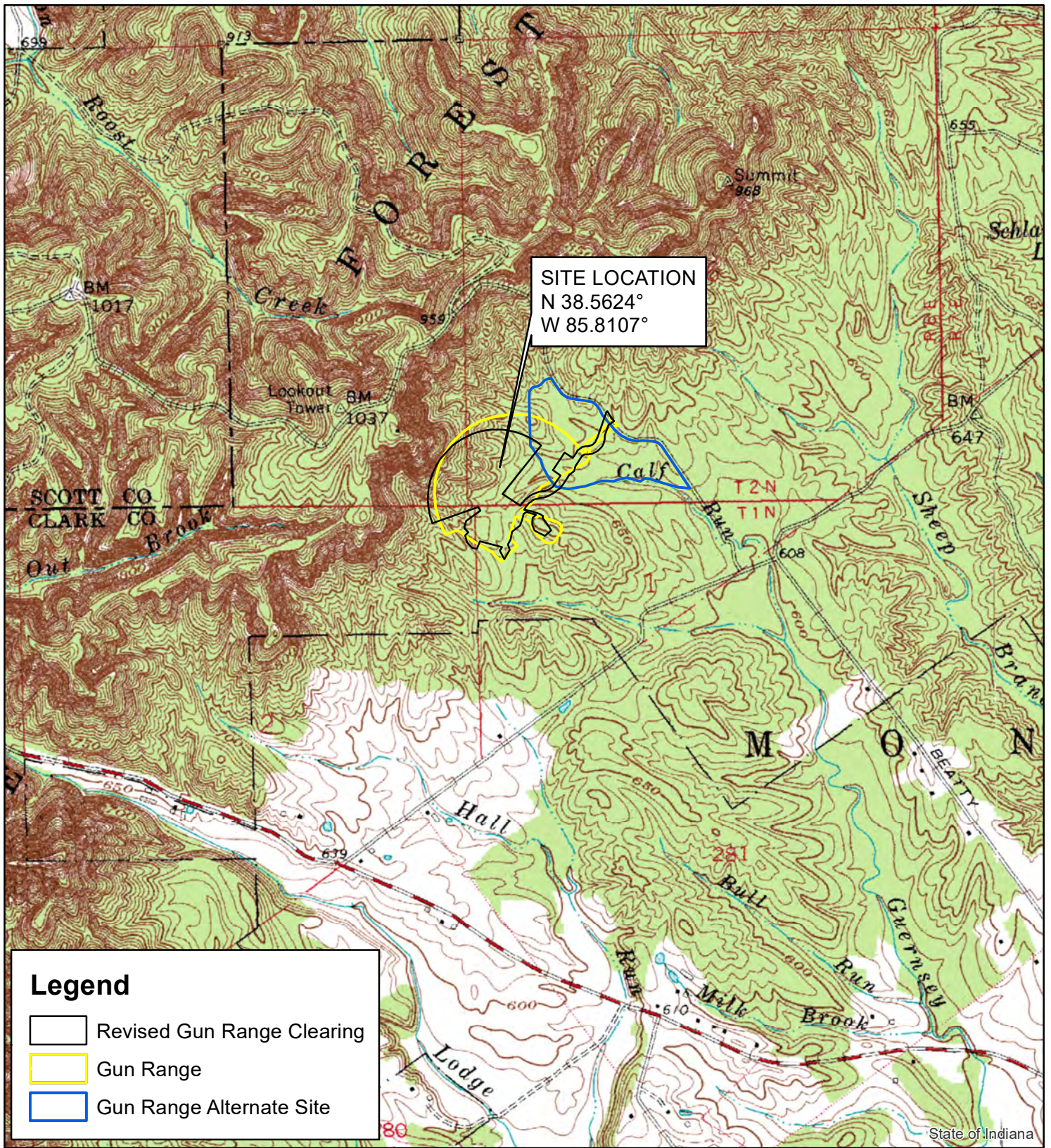
## **LITERATURE CITED**

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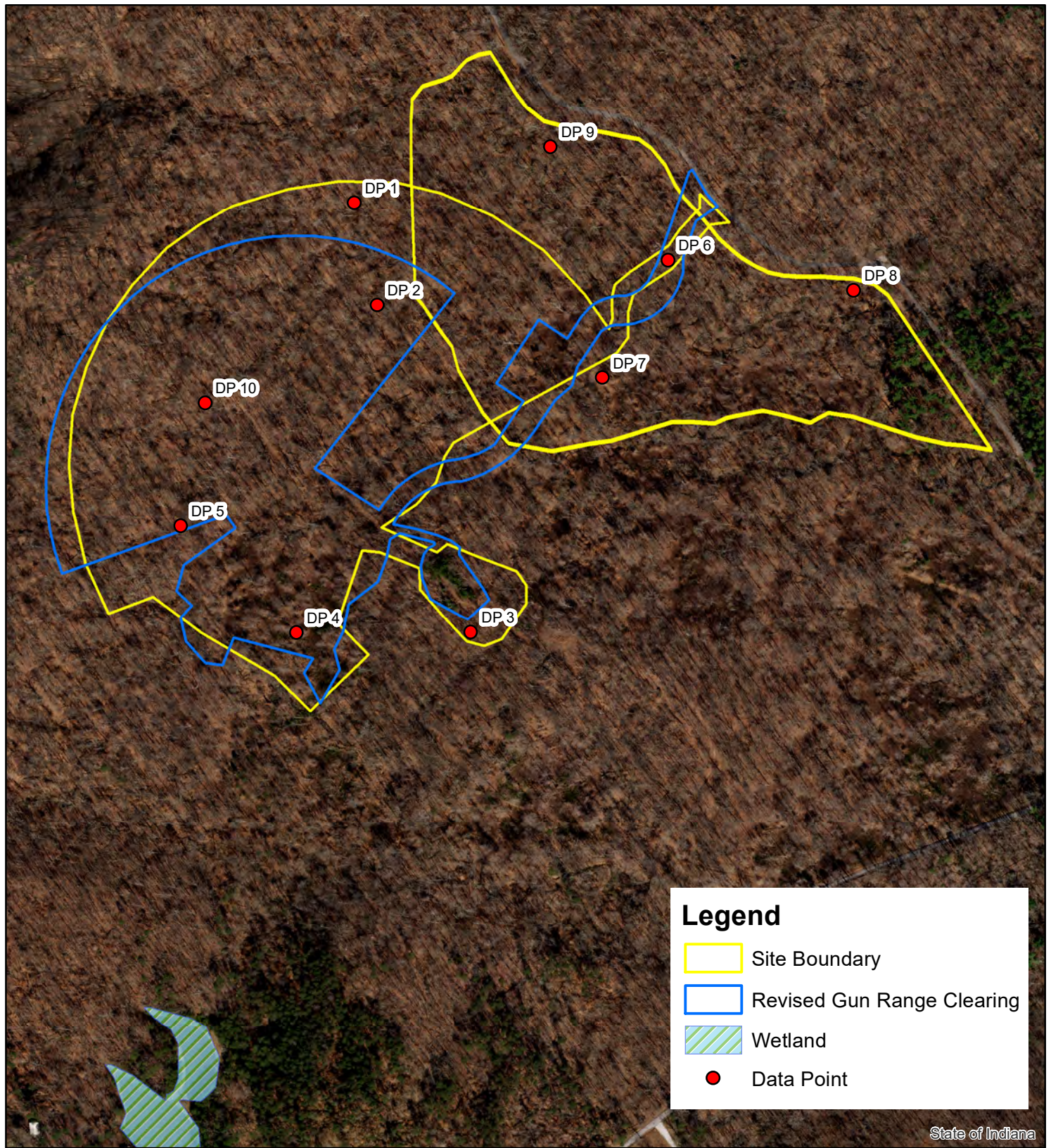


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**Appendix A  
Figures**



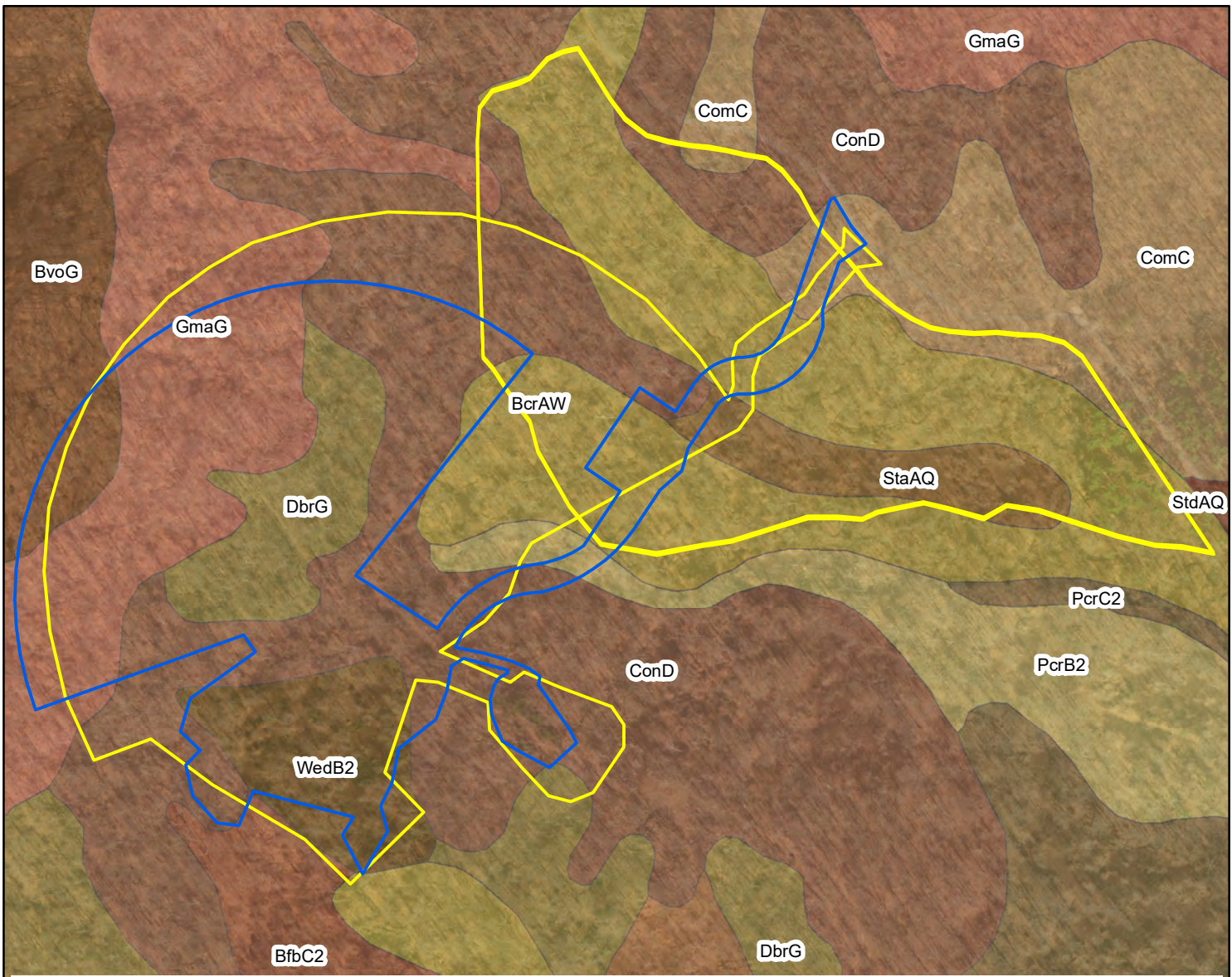
CLARK STATE FOREST GUN RANGE  
 CLARK COUNTY, INDIANA  
 FIGURE 1: SITE LOCATION MAP

















0 250 500 1,000 1,500 2,000 Feet

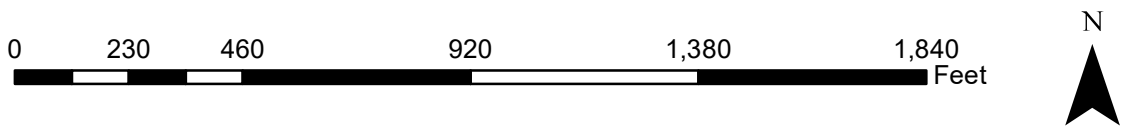


CLARK STATE FOREST GUN RANGE  
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 FIGURE 2: NATIONAL WETLAND INVENTORY MAP

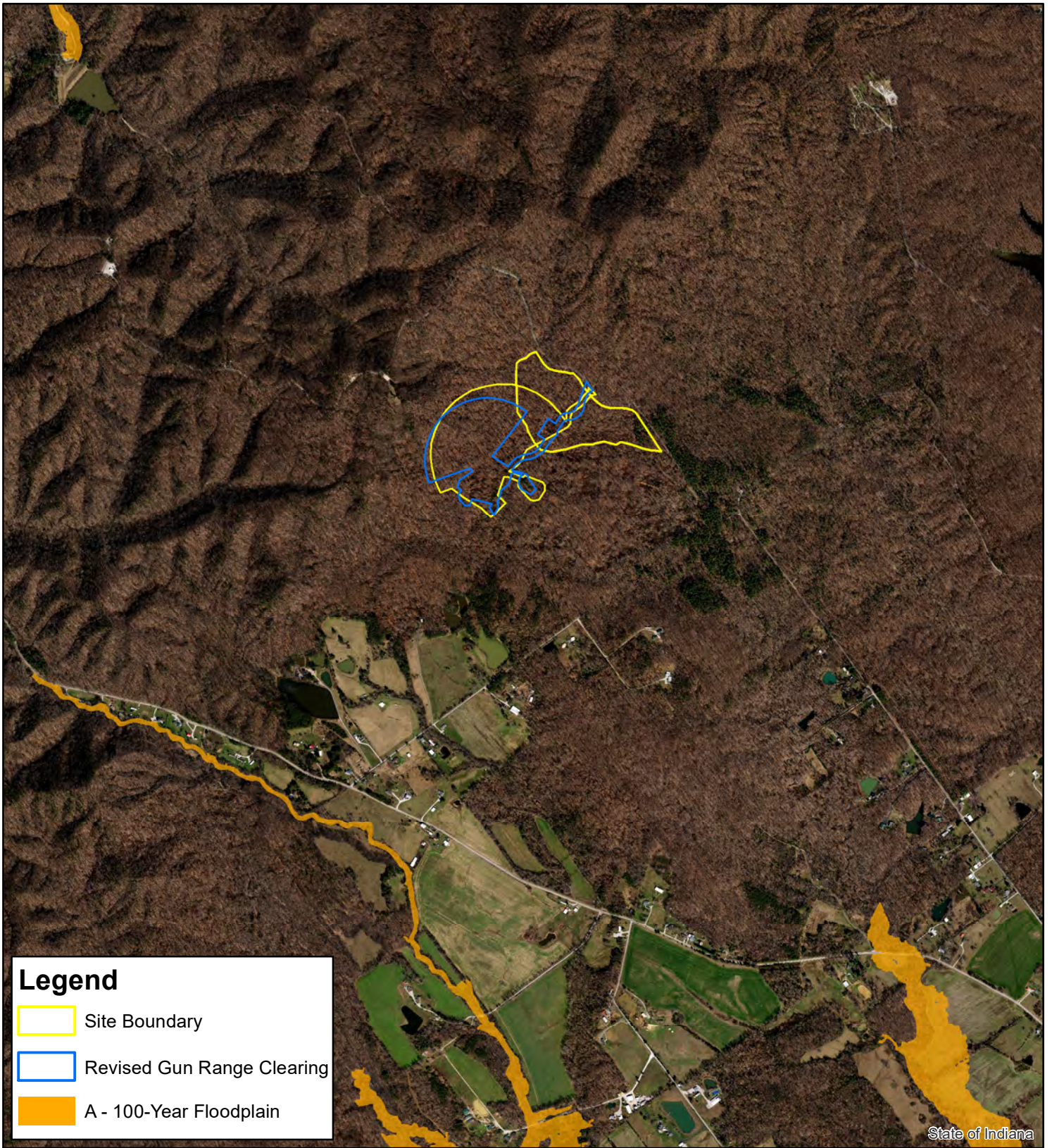


**Legend**




- |   |   |
|---|---|
|  Site Boundary  |  Revised Gun Range Clearing                                       |
|  BfbC2 - Blocher, soft bedrock substratum-Weddel silt loams, 6 to 12 percent slopes, eroded |  GmaG - Gnawbone-Kurtz silt loams, 20 to 60 percent slopes        |
|  BcrAW - Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded                 |  PcrB2 - Pekin silt loam, 2 to 6 percent slopes, eroded           |
|  BvoG - Brownstown-Gilwood silt loams, 25 to 75 percent slopes                              |  PcrC2 - Pekin silt loam, 6 to 12 percent slopes, eroded          |
|  ComC - Coolville silt loam, 6 to 12 percent slopes   |  StaAQ - Steff silt loam, 0 to 2 percent slopes, rarely flooded   |
|  ConD - Coolville-Rarden complex, 12 to 18 percent slopes                                   |  StdAQ - Stendal silt loam, 0 to 2 percent slopes, rarely flooded |
|  DbrG - Deam silty clay loam, 20 to 55 percent slopes                                       |  WedB2 - Weddel silt loam, 2 to 6 percent slopes, eroded          |



**CLARK STATE FOREST GUN RANGE**  
**CLARK COUNTY, INDIANA**  
**FIGURE 3: SOIL SURVEY MAP**



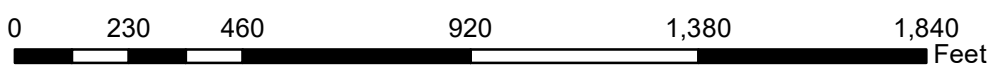
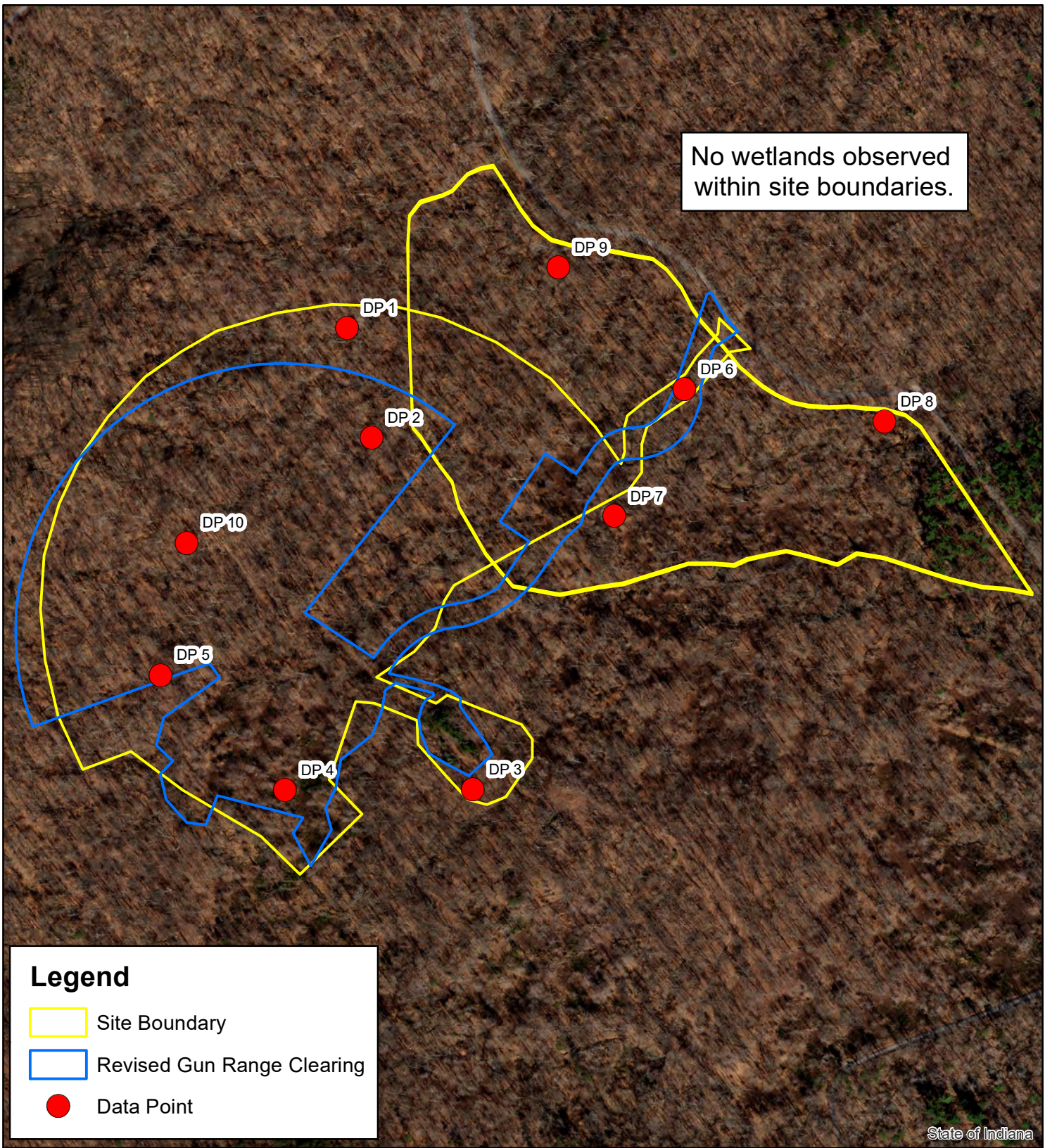
**Legend**

-  Site Boundary
-  Revised Gun Range Clearing
-  A - 100-Year Floodplain

0 1,000 2,000 4,000 6,000 8,000 Feet



**CLARK STATE FOREST GUN RANGE  
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FIGURE 4: FLOOD HAZARD MAP**



CLARK STATE FOREST GUN RANGE  
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 FIGURE 5: WETLAND DETERMINATION MAP

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**Appendix B  
Site Photographs**



Data Point 1.



Data Point 2.





Data Point 3.



Data Point 6.



Data Point 7.



Data Point 8.



Data Point 9.



Data Point 10.



Cucumber magnolia (*Magnolia acuminata*), state endangered.



American ginseng (*Panax quinquefolius*), state watch list.

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**Appendix C**

**Wetland Determination Data Forms**

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/7/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 1  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.563810 Long: -85.810195 Datum: WGS 84  
 Soil Map Unit Name: Coolville-Rardin complex, 12-18% slopes (ConD) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No indicators of wetland hydrology; nearby channel dry

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 1

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer saccharum</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Nyssa sylvatica</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Platanus occidentalis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. <u>Liquidambar styraciflua</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
5. <u>Ulmus americana</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
44 =Total Cover			
50% of total cover: <u>22</u>		20% of total cover: <u>9</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lindera benzoin</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Fagus grandifolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Ostrya virginiana</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
4. <u>Fraxinus americana</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
23 =Total Cover			
50% of total cover: <u>12</u>		20% of total cover: <u>5</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Amphicarpaea bracteata</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Bromus pubescens</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u>Carex blanda</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
6. <u>Oxalis grandis</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
7. <u>Fraxinus americana</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
8. <u>Leersia virginica</u>	<u>3</u>	<u>No</u>	<u>FACW</u>
9. <u>Brachyelytrum erectum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
10. <u>Cryptotaenia canadensis</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
11. <u>Impatiens capensis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
130 =Total Cover			
50% of total cover: <u>65</u>		20% of total cover: <u>26</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis vulpina</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
2 =Total Cover			
50% of total cover: <u>1</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>13</u>	x 2 = <u>26</u>
FAC species <u>134</u>	x 3 = <u>402</u>
FACU species <u>43</u>	x 4 = <u>172</u>
UPL species <u>9</u>	x 5 = <u>45</u>
Column Totals: <u>199</u> (A)	<u>645</u> (B)
Prevalence Index = B/A = <u>3.24</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes       No   

Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued (Four Strata) – Use scientific names of plants.

Sampling Point: DP 1

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
	44	=Total Cover		
50% of total cover: <u>22</u>		20% of total cover: <u>9</u>		
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
	23	=Total Cover		
50% of total cover: <u>12</u>		20% of total cover: <u>5</u>		
<u>Herb Stratum</u>				
12. <u>Lindera benzoin</u>	2	No	FAC	
13. <u>Parthenocissus quinquefolia</u>	2	No	FACU	
14. <u>Ageratina altissima</u>	1	No	FACU	
15. <u>Boehmeria cylindrica</u>	1	No	FACW	
16. <u>Carex albicans</u>	1	No	UPL	
17. <u>Carex communis</u>	1	No	UPL	
18. <u>Circaea canadensis</u>	1	No	FACU	
19. <u>Commelina communis</u>	1	No	FAC	
20. <u>Dichanthelium boscii</u>	1	No	UPL	
21. <u>Elymus hystrix</u>	1	No	UPL	
22. <u>Galium triflorum</u>	1	No	FACU	
	130	=Total Cover		
50% of total cover: <u>65</u>		20% of total cover: <u>26</u>		
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	2	=Total Cover		
50% of total cover: <u>1</u>		20% of total cover: <u>1</u>		

Remarks: (Include photo numbers here or on a separate sheet.)

Also in herb stratum: Quercus velutina, 1%, UPL; Ranunculus recurvatus, 1%, FAC ; Sanicula canadensis, 1%, UPL; Stellaria pubera, 1%, UPL



**SOIL**

Sampling Point: DP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/2	100					Loamy/Clayey	rocky/gravel
2-13	10YR 4/2	100					Loamy/Clayey	
13-16	10YR 3/2	75	10YR 4/2	15	D	M	Loamy/Clayey	
			5YR 4/4	10	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/7/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 2  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): upland depression along drainage Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.562943 Long: -85.809962 Datum: WGS 84  
 Soil Map Unit Name: Coolville-Rardin complex, 12-18% slopes (ConD) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 2

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Fagus grandifolia</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>75</u> =Total Cover		
	50% of total cover: <u>38</u>	20% of total cover: <u>15</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Liriodendron tulipifera</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Carya glabra</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
4. <u>Fraxinus americana</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
5. <u>Rubus sp.</u>	<u>1</u>	<u>No</u>	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	<u>10</u> =Total Cover		
	50% of total cover: <u>5</u>	20% of total cover: <u>2</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	<u>80</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Boehmeria cylindrica</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
3. <u>Aralia spinosa</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
4. <u>Leersia virginica</u>	<u>3</u>	<u>No</u>	<u>FACW</u>
5. <u>Rubus sp.</u>	<u>3</u>	<u>No</u>	_____
6. <u>Parathelypteris noveboracensis</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
7. <u>Viola sororia</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
8. <u>Acer rubrum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
9. <u>Ageratina altissima</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
10. <u>Carex blanda</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
11. <u>Circaea canadensis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
	<u>113</u> =Total Cover		
	50% of total cover: <u>57</u>	20% of total cover: <u>23</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>1</u> =Total Cover		
	50% of total cover: <u>1</u>	20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>14</u>	x 2 = <u>28</u>
FAC species <u>94</u>	x 3 = <u>282</u>
FACU species <u>87</u>	x 4 = <u>348</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>195</u> (A)	<u>658</u> (B)
Prevalence Index = B/A = <u>3.37</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes    No X

Remarks: (Include photo numbers here or on a separate sheet.)

**VEGETATION Continued (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 2

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
75 =Total Cover				
50% of total cover: <u>38</u> 20% of total cover: <u>15</u>				
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
10 =Total Cover				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				
<u>Herb Stratum</u>				
12. <i>Collinsonia canadensis</i>	1	No	FAC	
13. <i>Galium triflorum</i>	1	No	FACU	
14. <i>Persicaria longiseta</i>	1	No	FAC	
15. <i>Phegopteris hexagonoptera</i>	1	No	FAC	
16. <i>Pilea pumila</i>	1	No	FACW	
17. <i>Toxicodendron radicans</i>	1	No	FAC	
18. _____	_____	_____	_____	
19. _____	_____	_____	_____	
20. _____	_____	_____	_____	
21. _____	_____	_____	_____	
22. _____	_____	_____	_____	
113 =Total Cover				
50% of total cover: <u>57</u> 20% of total cover: <u>23</u>				
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
1 =Total Cover				
50% of total cover: <u>1</u> 20% of total cover: <u>1</u>				

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>		
0-3	10YR 4/2	100					Loamy/Clayey
3-16	10YR 5/2	70	10YR 3/2	5			Loamy/Clayey
			7.5YR 4/4	20			

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (MLRA 136)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> (outside MLRA 127, 147, 148)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N,	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> MLRA 136)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 122, 136)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147, 148)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/7/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 3  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 1, Township 1 North, Range 6 East  
 Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 25  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.560160 Long: -85.808995 Datum: WGS 84  
 Soil Map Unit Name: Deam silty clay loam, 20-55% slopes (DbrG) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)                      ___ True Aquatic Plants (B14) ___ High Water Table (A2)                    ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)                            ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)                          ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)                   ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)                        ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)                    ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 3

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus montana</u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>
2. <u>Quercus alba</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Acer saccharum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
4. <u>Quercus velutina</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
43 =Total Cover			
50% of total cover: <u>22</u>		20% of total cover: <u>9</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus montana</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>
2. <u>Fraxinus americana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
3. <u>Ostrya virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u>Fagus grandifolia</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
5. <u>Carya glabra</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
6. <u>Quercus rubra</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
7. <u>Quercus shumardii</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
8. <u>Quercus velutina</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
9. <u>Amelanchier arborea</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
71 =Total Cover			
50% of total cover: <u>36</u>		20% of total cover: <u>15</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus alba</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carex albicans</u>	<u>2</u>	<u>Yes</u>	<u>UPL</u>
3. <u>Potentilla simplex</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Acer rubrum</u>	<u>1</u>	<u>Yes</u>	<u>FAC</u>
5. <u>Fraxinus americana</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
6. <u>Juniperus virginiana</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
7. <u>Ostrya virginiana</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
8. <u>Polygonatum biflorum</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
9. <u>Prunus serotina</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
10. <u>Quercus rubra</u>	<u>1</u>	<u>Yes</u>	<u>FACU</u>
11. <u>Ulmus sp.</u>	<u>1</u>	<u>Yes</u>	_____
16 =Total Cover			
50% of total cover: <u>8</u>		20% of total cover: <u>4</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
2. <u>Toxicodendron radicans</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
4 =Total Cover			
50% of total cover: <u>2</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 15 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 6.7% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>8</u>	x 3 = <u>24</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>80</u>	x 5 = <u>400</u>
Column Totals: <u>133</u> (A)	<u>604</u> (B)
Prevalence Index = B/A = <u>4.54</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**    Yes       No X

Remarks: (Include photo numbers here or on a separate sheet.)

**VEGETATION Continued (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 3

<u>Tree Stratum</u>	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
43 =Total Cover				
50% of total cover: <u>22</u> 20% of total cover: <u>9</u>				
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
71 =Total Cover				
50% of total cover: <u>36</u> 20% of total cover: <u>15</u>				
<u>Herb Stratum</u>				
12. <i>Vaccinium pallidum</i>	1	Yes	UPL	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
19. _____	_____	_____	_____	
20. _____	_____	_____	_____	
21. _____	_____	_____	_____	
22. _____	_____	_____	_____	
16 =Total Cover				
50% of total cover: <u>8</u> 20% of total cover: <u>4</u>				
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
4 =Total Cover				
50% of total cover: <u>2</u> 20% of total cover: <u>1</u>				

Remarks: (Include photo numbers here or on a separate sheet.)



**SOIL**

Sampling Point: DP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 3/2	100					Loamy/Clayey	roots prevalent
1-12	10YR 6/3	75	10YR 6/1	5	D	M	Loamy/Clayey	
			5YR 5/6	20	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/7/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 4  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 1, Township 1 North, Range 6 East  
 Landform (hillside, terrace, etc.): foothills of knob Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.560176 Long: -85.810878 Datum: WGS 84  
 Soil Map Unit Name: Weddel silt loam, 2-6% slopes, eroded (WedB2) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<table style="width:100%;"> <tr> <td style="width: 60%;"><b>Is the Sampled Area within a Wetland?</b></td> <td style="width: 40%;">Yes <u>    </u> No <u>X</u></td> </tr> </table>	<b>Is the Sampled Area within a Wetland?</b>	Yes <u>    </u> No <u>X</u>
<b>Is the Sampled Area within a Wetland?</b>	Yes <u>    </u> No <u>X</u>		
Remarks:			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 4

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Magnolia acuminata</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
3. <u>Nyssa sylvatica</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
53 =Total Cover			
50% of total cover: <u>27</u>		20% of total cover: <u>11</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Aralia spinosa</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Liriodendron tulipifera</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Rosa multiflora</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Rubus sp.</u>	<u>2</u>	<u>Yes</u>	_____
5. <u>Cercis canadensis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
6. <u>Fagus grandifolia</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
7. <u>Lindera benzoin</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
8. <u>Platanus occidentalis</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
9. _____	_____	_____	_____
15 =Total Cover			
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ageratina altissima</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Carex laxiculmis</u>	<u>3</u>	<u>Yes</u>	<u>UPL</u>
3. <u>Carex laxiflora</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Viola sororia</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>
5. <u>Galium triflorum</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
6. <u>Liriodendron tulipifera</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
7. <u>Prunus serotina</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
8. <u>Vitis vulpina</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
9. <u>Acalypha gracilens</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
10. <u>Acer rubrum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
11. <u>Ailanthus altissima</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
36 =Total Cover			
50% of total cover: <u>18</u>		20% of total cover: <u>8</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
2. <u>Smilax rotundifolia</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
3 =Total Cover			
50% of total cover: <u>2</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 13 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 23.1% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>1</u>	x 2 = <u>2</u>
FAC species <u>18</u>	x 3 = <u>54</u>
FACU species <u>81</u>	x 4 = <u>324</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>105</u> (A)	<u>405</u> (B)
Prevalence Index = B/A = <u>3.86</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is >50%
  - 3 - Prevalence Index is ≤3.0<sup>1</sup>
  - 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**

Yes	<u>  </u>	No	<u>X</u>
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Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued (Four Strata) – Use scientific names of plants.

Sampling Point: DP 4

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
	53 =Total Cover			
50% of total cover: <u>27</u>		20% of total cover: <u>11</u>		
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
	15 =Total Cover			
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>		
<u>Herb Stratum</u>				
12. <u>Aralia spinosa</u>	1	No	FAC	
13. <u>Carya glabra</u>	1	No	FACU	
14. <u>Cornus florida</u>	1	No	FACU	
15. <u>Dichanthelium boscii</u>	1	No	UPL	
16. <u>Lindera benzoin</u>	1	No	FAC	
17. <u>Lobelia inflata</u>	1	No	FACU	
18. <u>Lonicera japonica</u>	1	No	FACU	
19. <u>Magnolia acuminata</u>	1	No	FACU	
20. <u>Morus alba</u>	1	No	UPL	
21. <u>Nyssa sylvatica</u>	1	No	FAC	
22. <u>Oxalis stricta</u>	1	No	FACU	
	36 =Total Cover			
50% of total cover: <u>18</u>		20% of total cover: <u>8</u>		
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	3 =Total Cover			
50% of total cover: <u>2</u>		20% of total cover: <u>1</u>		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Also in herb stratum: Rubus sp., 1%, NA; Sanicula canadensis, 1%, UPL; Smilax glauca, 1%, FACU; Smilax rotundifolia, 1%, FAC; Toxicodendron radicans, 1%, FAC; Ulmus sp., 1%, NA

**SOIL**

Sampling Point: DP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/2	100					Loamy/Clayey	
4-16	10YR 4/4	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/7/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 5  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 2, Township 1 North, Range 6 East  
 Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 5  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.561093 Long: -85.812112 Datum: WGS 84  
 Soil Map Unit Name: Coolville-Rardin complex, 12-18% slopes (ConD) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 5

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carya glabra</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Nyssa sylvatica</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Acer rubrum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
45 =Total Cover			
50% of total cover: <u>23</u>		20% of total cover: <u>9</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus montana</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>
2. <u>Ostrya virginiana</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
4. <u>Quercus alba</u>	<u>4</u>	<u>No</u>	<u>FACU</u>
5. <u>Rubus sp.</u>	<u>2</u>	<u>No</u>	_____
6. <u>Nyssa sylvatica</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
7. <u>Quercus velutina</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
88 =Total Cover			
50% of total cover: <u>44</u>		20% of total cover: <u>18</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus montana</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>
2. <u>Acer rubrum</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Quercus alba</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Smilax rotundifolia</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
5. <u>Carex digitalis</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
6. <u>Carex willdenowii</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
7. <u>Carex sp.</u>	<u>1</u>	<u>No</u>	_____
8. <u>Danthonia spicata</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
9. <u>Dichanthelium commutatum</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
10. <u>Dichanthelium dichotomum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
11. <u>Dichanthelium sphaerocarpon</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
35 =Total Cover			
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
2. <u>Vitis aestivalis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
4 =Total Cover			
50% of total cover: <u>2</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>44</u>	x 3 = <u>132</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>54</u>	x 5 = <u>270</u>
Column Totals: <u>168</u> (A)	<u>682</u> (B)
Prevalence Index = B/A = <u>4.06</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**    Yes       No   X  

Remarks: (Include photo numbers here or on a separate sheet.)

**VEGETATION Continued (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 5

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
45 =Total Cover				
50% of total cover: <u>23</u>		20% of total cover: <u>9</u>		
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
88 =Total Cover				
50% of total cover: <u>44</u>		20% of total cover: <u>18</u>		
<u>Herb Stratum</u>				
12. <u>Dioscorea villosa</u>	1	No	FAC	
13. <u>Fraxinus americana</u>	1	No	FACU	
14. <u>Rubus sp.</u>	1	No	_____	
15. <u>Smilax glauca</u>	1	No	FACU	
16. <u>Toxicodendron radicans</u>	1	No	FAC	
17. <u>Viola palmata</u>	1	No	FACU	
18. _____	_____	_____	_____	
19. _____	_____	_____	_____	
20. _____	_____	_____	_____	
21. _____	_____	_____	_____	
22. _____	_____	_____	_____	
35 =Total Cover				
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>		
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
4 =Total Cover				
50% of total cover: <u>2</u>		20% of total cover: <u>1</u>		

Remarks: (Include photo numbers here or on a separate sheet.)



**SOIL**

Sampling Point: DP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 3/2	100					Loamy/Clayey	roots prevalent
1-12	10YR 6/3	75	10YR 6/1	5	D	M	Loamy/Clayey	
			5YR 5/6	20	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/8/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 6  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): base of slope along drainage Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.563293 Long: -85.806817 Datum: WGS 84  
 Soil Map Unit Name: Coolville silt loam, 6-12% slopes (ComC) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 6

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Fagus grandifolia</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Quercus rubra</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u>Acer saccharum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
5. <u>Nyssa sylvatica</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
34 =Total Cover			
50% of total cover: <u>17</u>		20% of total cover: <u>7</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ostrya virginiana</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Fagus grandifolia</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Fraxinus americana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. <u>Liriodendron tulipifera</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
6. <u>Cercis canadensis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
74 =Total Cover			
50% of total cover: <u>37</u>		20% of total cover: <u>15</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Carex digitalis</u>	<u>3</u>	<u>Yes</u>	<u>UPL</u>
4. <u>Acer rubrum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
5. <u>Carex blanda</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
6. <u>Parthenocissus quinquefolia</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
7. <u>Quercus alba</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
8. <u>Dioscorea villosa</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
9. <u>Galium triflorum</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
10. <u>Liriodendron tulipifera</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
11. <u>Maianthemum racemosum</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
25 =Total Cover			
50% of total cover: <u>13</u>		20% of total cover: <u>5</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
2 =Total Cover			
50% of total cover: <u>1</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>49</u>	x 3 = <u>147</u>
FACU species <u>83</u>	x 4 = <u>332</u>
UPL species <u>3</u>	x 5 = <u>15</u>
Column Totals: <u>135</u> (A)	<u>494</u> (B)
Prevalence Index = B/A = <u>3.66</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes         No   X  

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DP 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/2	100					Loamy/Clayey	roots present
2-16	2.5Y 5/2	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (MLRA 136)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> (outside MLRA 127, 147, 148)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N,	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> MLRA 136)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 122, 136)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147, 148)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/8/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 7  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): drainage terrace Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.562301 Long: -85.807539 Datum: WGS 84  
 Soil Map Unit Name: Beanblossom silt loam, 1-3% slopes, occasionally flooded, very brief duration (BcrAW) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 7

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Nyssa sylvatica</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
4. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. <u>Acer rubrum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
6. <u>Quercus rubra</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
7. _____	_____	_____	_____
	<u>94</u> =Total Cover		
	50% of total cover: <u>47</u>	20% of total cover: <u>19</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Fagus grandifolia</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Lindera benzoin</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Aralia spinosa</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
5. <u>Ailanthus altissima</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
6. <u>Fraxinus americana</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
7. <u>Liquidambar styraciflua</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	<u>88</u> =Total Cover		
	50% of total cover: <u>44</u>	20% of total cover: <u>18</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Vitis vulpina</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Acer rubrum</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Carex sp.</u>	<u>2</u>	<u>Yes</u>	_____
5. <u>Fraxinus americana</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
6. <u>Parthenocissus quinquefolia</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
7. <u>Viola sororia</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
8. <u>Acalypha gracilens</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
9. <u>Ageratina altissima</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
10. <u>Aralia racemosa</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
11. <u>Collinsonia canadensis</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
	<u>43</u> =Total Cover		
	50% of total cover: <u>22</u>	20% of total cover: <u>9</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
2. <u>Vitis aestivalis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>2</u> =Total Cover		
	50% of total cover: <u>1</u>	20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 41.7% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>79</u>	x 3 = <u>237</u>
FACU species <u>142</u>	x 4 = <u>568</u>
UPL species <u>2</u>	x 5 = <u>10</u>
Column Totals: <u>223</u> (A)	<u>815</u> (B)
Prevalence Index = B/A = <u>3.65</u>	

**Hydrophytic Vegetation Indicators:**

\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_ 2 - Dominance Test is >50%

\_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>

\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes \_\_\_ No X

Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued (Four Strata) – Use scientific names of plants.

Sampling Point: DP 7

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
94 =Total Cover				
50% of total cover: <u>47</u> 20% of total cover: <u>19</u>				
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
88 =Total Cover				
50% of total cover: <u>44</u> 20% of total cover: <u>18</u>				
<u>Herb Stratum</u>				
12. <u>Desmodium nudiflorum</u>	1	No	UPL	
13. <u>Dichanthelium sp.</u>	1	No	_____	
14. <u>Geum virginianum</u>	1	No	FAC	
15. <u>Lindera benzoin</u>	1	No	FAC	
16. <u>Liquidambar styraciflua</u>	1	No	FAC	
17. <u>Microstegium vimineum</u>	1	No	FAC	
18. <u>Nyssa sylvatica</u>	1	No	FAC	
19. <u>Persicaria virginiana</u>	1	No	FAC	
20. <u>Prunus serotina</u>	1	No	FACU	
21. <u>Rubus sp.</u>	1	No	_____	
22. <u>Sanicula canadensis</u>	1	No	UPL	
43 =Total Cover				
50% of total cover: <u>22</u> 20% of total cover: <u>9</u>				
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
2 =Total Cover				
50% of total cover: <u>1</u> 20% of total cover: <u>1</u>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Also present in herb stratum: Sassafras albidum, 1%, FACU; Smilax glauca, 1%, FACU; Senecio hieraciifolius, 1%, FACU; unidentifiable herbaceous, 1%, NA

**SOIL**

Sampling Point: DP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/2	100					Loamy/Clayey	roots present
4-16	2.5Y 5/2	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes       No

Remarks:



Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/8/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 8  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.563017 Long: -85.804817 Datum: WGS 84  
 Soil Map Unit Name: Coolville silt loam, 6-12% slopes (ComC) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 8

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
		<u>80</u> =Total Cover	
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Liriodendron tulipifera</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Ostrya virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
4. <u>Acer saccharum</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
5. <u>Carya glabra</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
6. <u>Cornus florida</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
7. <u>Quercus velutina</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
		<u>64</u> =Total Cover	
50% of total cover: <u>32</u>		20% of total cover: <u>13</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Ostrya virginiana</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Parthenocissus quinquefolia</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Amphicarpaea bracteata</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
5. <u>Fagus grandifolia</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
6. <u>Galium circaezans</u>	<u>2</u>	<u>Yes</u>	<u>UPL</u>
7. <u>Solidago caesia</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
8. <u>Acer rubrum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
9. <u>Acer saccharinum</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
10. <u>Arisaema triphyllum</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
11. <u>Carex sp.</u>	<u>1</u>	<u>No</u>	_____
		<u>39</u> =Total Cover	
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis vulpina</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
		<u>1</u> =Total Cover	
50% of total cover: <u>1</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 27.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>2</u>	x 2 = <u>4</u>
FAC species <u>44</u>	x 3 = <u>132</u>
FACU species <u>131</u>	x 4 = <u>524</u>
UPL species <u>6</u>	x 5 = <u>30</u>
Column Totals: <u>183</u> (A)	<u>690</u> (B)
Prevalence Index = B/A = <u>3.77</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is >50%
  - 3 - Prevalence Index is ≤3.0<sup>1</sup>
  - 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**

Yes	<u>  </u>	No	<u>X</u>
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Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued (Four Strata) – Use scientific names of plants.

Sampling Point: DP 8

<u>Tree Stratum</u>	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
80 =Total Cover				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
64 =Total Cover				
50% of total cover: <u>32</u> 20% of total cover: <u>13</u>				
<u>Herb Stratum</u>				
12. <u>Carya glabra</u>	1	No	FACU	
13. <u>Celastrus orbiculatus</u>	1	No	FACU	
14. <u>Circaea canadensis</u>	1	No	FACU	
15. <u>Desmodium nudiflorum</u>	1	No	UPL	
16. <u>Dichanthelium boscii</u>	1	No	UPL	
17. <u>Galium triflorum</u>	1	No	FACU	
18. <u>Liriodendron tulipifera</u>	1	No	FACU	
19. <u>Maianthemum racemosum</u>	1	No	FACU	
20. <u>Pinus virginiana</u>	1	No	UPL	
21. <u>Potentilla simplex</u>	1	No	FACU	
22. <u>Prunus serotina</u>	1	No	FACU	
39 =Total Cover				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>				
<u>Woody Vine Stratum</u>				
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
1 =Total Cover				
50% of total cover: <u>1</u> 20% of total cover: <u>1</u>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Also in herb stratum: Quercus rubra, 1%, FACU; Sassafras albidum, 1%, FACU; Smilax glauca, 1%, FACU; Smilax rotundifolia, 1%, FAC; Tipularia discolor, 1%, FACU; Ulmus americana, 1%, FACW; Viola sororia, 1%; FAC

**SOIL**

Sampling Point: DP 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1	10YR 5/2	100						roots present
1-16	10YR 6/2	100						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:

Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/8/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 9  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 20  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.564267 Long: -85.808067 Datum: WGS 84  
 Soil Map Unit Name: Coolville-Rardin complex, 12-18% slopes (ConD) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b>	Yes <u>    </u> No <u>X</u>
Hydric Soil Present?	Yes <u>    </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u>    </u> No <u>X</u>		
Remarks:			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)                      ___ True Aquatic Plants (B14) ___ High Water Table (A2)                      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)                                      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)                                      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)                                      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)                                      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)                                      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 9

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer saccharum</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Fagus grandifolia</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
5. <u>Quercus montana</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>
6. <u>Ostrya virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
7. <u>Prunus serotina</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
	<u>70</u> =Total Cover		
	50% of total cover: <u>35</u>	20% of total cover: <u>14</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer saccharum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Ostrya virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Carya glabra</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
5. <u>Fraxinus americana</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
6. _____			
7. _____			
8. _____			
9. _____			
	<u>47</u> =Total Cover		
	50% of total cover: <u>24</u>	20% of total cover: <u>10</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Galium circaezans</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>
2. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Carex blanda</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Phryma leptostachya</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>
5. <u>Acer rubrum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
6. <u>Ageratina altissima</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
7. <u>Asclepias quadrifolia</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
8. <u>Carex radiata</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
9. <u>Carex willdenowii</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
10. <u>Carex sp.</u>	<u>1</u>	<u>No</u>	
11. <u>Carya ovata</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
	<u>42</u> =Total Cover		
	50% of total cover: <u>21</u>	20% of total cover: <u>9</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
	<u>3</u> =Total Cover		
	50% of total cover: <u>2</u>	20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>98</u>	x 4 = <u>392</u>
UPL species <u>23</u>	x 5 = <u>115</u>
Column Totals: <u>161</u> (A)	<u>627</u> (B)
Prevalence Index = B/A = <u>3.89</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**    Yes       No X

Remarks: (Include photo numbers here or on a separate sheet.)

VEGETATION Continued (Four Strata) – Use scientific names of plants.

Sampling Point: DP 9

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
70 =Total Cover				
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				
<u>Sapling/Shrub Stratum</u>				
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
13. _____	_____	_____	_____	
14. _____	_____	_____	_____	
15. _____	_____	_____	_____	
16. _____	_____	_____	_____	
17. _____	_____	_____	_____	
18. _____	_____	_____	_____	
47 =Total Cover				
50% of total cover: <u>24</u> 20% of total cover: <u>10</u>				
<u>Herb Stratum</u>				
12. <u>Circaea canadensis</u>	1	No	FACU	
13. <u>Dichanthelium boscii</u>	1	No	UPL	
14. <u>Dioscorea villosa</u>	1	No	FAC	
15. <u>Fraxinus americana</u>	1	No	FACU	
16. <u>Lindera benzoin</u>	1	No	FAC	
17. <u>Maianthemum racemosum</u>	1	No	FACU	
18. <u>Nyssa sylvatica</u>	1	No	FAC	
19. <u>Ostrya virginiana</u>	1	No	FACU	
20. <u>Parthenocissus quinquefolia</u>	1	No	FACU	
21. <u>Prenanthes altissima</u>	1	No	FACU	
22. <u>Prunus serotina</u>	1	No	FACU	
42 =Total Cover				
50% of total cover: <u>21</u> 20% of total cover: <u>9</u>				
<u>Woody Vine Stratum</u>				
6. <u>Smilax rotundifolia</u>	3	No	FAC	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
3 =Total Cover				
50% of total cover: <u>2</u> 20% of total cover: <u>1</u>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Also present in herb stratum: Quercus montana, 1%, UPL; Rosa multiflora, 1%, FACU; Rubus sp., 1%, NA; Sanicula canadensis, 1%, UPL; Smilax rotundifolia, 1%, FAC; Ulmus americana, 1%, FACW; Vitis vulpina, 1%, FAC

**SOIL**

Sampling Point: DP 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/2	100					Loamy/Clayey	
3-16	10YR 5/2	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:



Project/Site: Clark State Forest Gun Range City/County: Henryville/Clark Sampling Date: 7/8/2020  
 Applicant/Owner: Indiana DNR - Division of Forestry State: IN Sampling Point: DP 10  
 Investigator(s): S. Namestnik, J. Larson Section, Township, Range: Section 36, Township 2 North, Range 6 East  
 Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 30  
 Subregion (LRR or MLRA): LRR N, MLRA 120C Lat: 38.562133 Long: -85.811833 Datum: WGS 84  
 Soil Map Unit Name: Gnawbone-Kurtz silt loams, 20-60% slopes (GmaG) NWI classification: NA  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation     , Soil     , or Hydrology      naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP 10

Tree Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Quercus alba</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
3. <u>Quercus montana</u>	<u>10</u>	<u>No</u>	<u>UPL</u>
4. <u>Carya glabra</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
		<u>71</u> =Total Cover	
50% of total cover: <u>36</u>		20% of total cover: <u>15</u>	

Sapling/Shrub Stratum (Plot size: <u>15' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Carya ovata</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u>Quercus velutina</u>	<u>2</u>	<u>No</u>	<u>UPL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
		<u>42</u> =Total Cover	
50% of total cover: <u>21</u>		20% of total cover: <u>9</u>	

Herb Stratum (Plot size: <u>5' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Fagus grandifolia</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
4. <u>Quercus rubra</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
5. <u>Vaccinium pallidum</u>	<u>2</u>	<u>No</u>	<u>UPL</u>
6. <u>Carex sp.</u>	<u>1</u>	<u>No</u>	_____
7. <u>Carya ovalis</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
8. <u>Fraxinus americana</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
9. <u>Quercus alba</u>	<u>1</u>	<u>No</u>	<u>FACU</u>
10. <u>Quercus montana</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
11. <u>Quercus velutina</u>	<u>1</u>	<u>No</u>	<u>UPL</u>
		<u>33</u> =Total Cover	
50% of total cover: <u>17</u>		20% of total cover: <u>7</u>	

Woody Vine Stratum (Plot size: <u>30' radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
		<u>1</u> =Total Cover	
50% of total cover: <u>1</u>		20% of total cover: <u>1</u>	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>81</u>	x 3 = <u>243</u>
FACU species <u>49</u>	x 4 = <u>196</u>
UPL species <u>16</u>	x 5 = <u>80</u>
Column Totals: <u>146</u> (A)	<u>519</u> (B)
Prevalence Index = B/A = <u>3.55</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody Vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DP 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 5/2	100					Loamy/Clayey	
4-12	10YR 6/3	90	10YR 3/6	10	C	M	Loamy/Clayey	Distinct redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No X

Remarks:

**ECOLOGICAL ASSESSMENT REPORT  
CLARK STATE FOREST GUN RANGE  
CLARK COUNTY, INDIANA**

**Appendix D**

**Vascular Plant Species Inventory**

Ecological Assessment Report  
Clark State Forest Gun Range

November 5, 2020

Site: Clark State Forest Gun Range  
Location: Clark County, Indiana  
Practitioner: J. Larson, S. Namestnik  
Date: July 7-8, 2020; October 28, 2020

Conservatism-Based Metrics:

Total Mean C:	4.1
Native Mean C:	4.5
Total FQI:	58.6
Native FQI:	61.4
Adjusted FQI:	43.0
% C value 0:	11.8
% C value 1-3:	27.0
% C value 4-6:	41.2
% C value 7-10:	20.1
Native Tree Mean C:	4.5
Native Shrub Mean C:	4.1
Native Herbaceous Mean C:	4.5

Species Richness:

Total Species:	204	
Native Species:	186	91.20%
Non-native Species:	18	8.80%

Species Wetness:

Mean Wetness:	2.0
Native Mean Wetness:	2.0

Physiognomy Metrics:

Tree:	35	17.20%
Shrub:	15	7.40%
Vine:	14	6.90%
Forb:	92	45.10%
Grass:	23	11.30%
Sedge:	15	7.40%
Rush:	0	0.00%
Fern:	10	4.90%
Bryophyte:	0	0.00%

Duration Metrics:

Annual:	16	7.80%
Perennial:	184	90.20%
Biennial:	4	2.00%
Native Annual:	11	5.40%
Native Perennial:	172	84.30%
Native Biennial:	3	1.50%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name	Indiana Status
<i>Acalypha gracilens</i>	Euphorbiaceae	ACAGRA	native	3	3	forb	annual	slender three-seeded mercury	
<i>Acer rubrum</i>	Sapindaceae	ACERUB	native	5	0	tree	perennial	red maple	
<i>Acer saccharum</i>	Sapindaceae	ACESAR	native	4	3	tree	perennial	sugar maple	
<i>Actaea racemosa</i>	Ranunculaceae	ACTRAC	native	9	5	forb	perennial	false bugbane	Watch List
<i>Adiantum pedatum</i>	Pteridaceae	ADIPED	native	7	3	fern	perennial	maidenhair fern	
<i>Ageratina altissima</i> var. <i>altissima</i>	Asteraceae	AGEALT	native	2	3	forb	perennial	white snakeroot	
<i>Agrimonia rostellata</i>	Rosaceae	AGRROS	native	5	3	forb	perennial	woodland agrimony	
<i>Agrostis perennans</i>	Poaceae	AGRPER	native	2	0	grass	perennial	autumn bent grass	
<i>Ailanthus altissima</i>	Simaroubaceae	AILALT	non-native	0	3	tree	perennial	tree-of-heaven	
<i>Alliaria petiolata</i>	Brassicaceae	ALLPET	non-native	0	0	forb	biennial	garlic mustard	
<i>Ambrosia artemisiifolia</i>	Asteraceae	AMBART	native	0	3	forb	annual	common ragweed	
<i>Amelanchier arborea</i>	Rosaceae	AMEARB	native	6	3	tree	perennial	juneberry	
<i>Amphicarpaea bracteata</i>	Fabaceae	AMPBRA	native	5	0	vine	annual	hog-peanut	
<i>Andropogon virginicus</i> var. <i>virginicus</i>	Poaceae	ANDVIR	native	1	3	grass	perennial	broom sedge	
<i>Anthoxanthum odoratum</i>	Poaceae	ANTODO	non-native	0	3	grass	perennial	sweet vernal grass	
<i>Apocynum cannabinum</i>	Apocynaceae	APOCAN	native	2	0	forb	perennial	dogbane	
<i>Aralia racemosa</i>	Araliaceae	ARARAC	native	8	3	forb	perennial	american spikenard	
<i>Aralia spinosa</i>	Araliaceae	ARASPI	native	5	-3	shrub	perennial	devils walking stick	
<i>Arisaema triphyllum</i>	Araceae	ARITRI	native	4	-3	forb	perennial	indian turnip	
<i>Arnoglossum atriplicifolium</i>	Asteraceae	ARNATR	native	6	5	forb	perennial	pale indian plantain	
<i>Asclepias quadrifolia</i>	Apocynaceae	ASCQUA	native	8	3	forb	perennial	whorled milkweed	
<i>Asimina triloba</i>	Annonaceae	ASITRI	native	6	0	tree	perennial	papaw	
<i>Asplenium platyneuron</i>	Aspleniaceae	ASPPLA	native	3	3	fern	perennial	ebony spleenwort	
<i>Athyrium filix-femina</i> subsp. <i>asplenioides</i>	Athyriaceae	ATHFIL	native	6	0	fern	perennial	southern lady fern	
<i>Berberis thunbergii</i>	Berberidaceae	BERTHU	non-native	0	3	shrub	perennial	japanese barberry	
<i>Bidens frondosa</i>	Asteraceae	BIDFRO	native	1	-3	forb	annual	common beggars ticks	
<i>Boehmeria cylindrica</i>	Urticaceae	BOECYL	native	3	-5	forb	perennial	false nettle	
<i>Borodinia laevigata</i>	Brassicaceae	BORLAE	native	5	5	forb	biennial	smooth rock cress	
<i>Botrypus virginianus</i>	Ophioglossaceae	BOTVIR	native	4	3	fern	perennial	rattlesnake fern	
<i>Brachyelytrum erectum</i>	Poaceae	BRAERE	native	6	3	grass	perennial	long-awned wood grass	
<i>Bromus pubescens</i>	Poaceae	BROPUB	native	4	3	grass	perennial	woodland brome	
<i>Campsis radicans</i>	Bignoniaceae	CAMRAD	native	1	3	vine	perennial	trumpet creeper	
<i>Carex albicans</i> var. <i>albicans</i>	Cyperaceae	CXALBA	native	6	5	sedge	perennial	blunt-scaled oak sedge	
<i>Carex albursina</i>	Cyperaceae	CXALBU	native	7	5	sedge	perennial	blunt-scaled wood sedge	
<i>Carex amphibola</i>	Cyperaceae	CXAMPH	native	8	0	sedge	perennial	false gray sedge	
<i>Carex blanda</i>	Cyperaceae	CXBLAN	native	1	0	sedge	perennial	common wood sedge	
<i>Carex cephalophora</i>	Cyperaceae	CXCEPH	native	3	3	sedge	perennial	short-headed bracted sedge	
<i>Carex communis</i> var. <i>communis</i>	Cyperaceae	CXCOMM	native	8	5	sedge	perennial	common beech sedge	
<i>Carex digitalis</i>	Cyperaceae	CXDIGI	native	7	5	sedge	perennial	narrow-leaved wood sedge	
<i>Carex glaucoidea</i>	Cyperaceae	CXGLAU	native	3	0	sedge	perennial	blue sedge	
<i>Carex hirsutella</i>	Cyperaceae	CXHIRS	native	3	3	sedge	perennial	hairy green sedge	
<i>Carex jamesii</i>	Cyperaceae	CXJAME	native	4	5	sedge	perennial	grass sedge	
<i>Carex laxiculmis</i> var. <i>copulata</i>	Cyperaceae	CXLAXC	native	5	3	sedge	perennial	spreading sedge	
<i>Carex laxiflora</i>	Cyperaceae	CXLAXF	native	7	5	sedge	perennial	beech wood sedge	

Carex platyphylla	Cyperaceae	CXPLAT	native	10	5	sedge	perennial	broad-leaved wood sedge
Carex radiata	Cyperaceae	CXRADI	native	4	0	sedge	perennial	straight-styled bracted sedge
Carex willdenowii	Cyperaceae	CXWILL	native	8	3	sedge	perennial	willdenows grass sedge
Carex sp.	Cyperaceae		native			sedge	perennial	sedge
Carpinus caroliniana subsp. virginiana	Betulaceae	CARCAR	native	5	0	tree	perennial	blue beech
Carya glabra	Juglandaceae	CARGLA	native	4	3	tree	perennial	pignut hickory
Carya ovata	Juglandaceae	CAROVA	native	4	3	tree	perennial	shagbark hickory
Carya tomentosa	Juglandaceae	CARTOM	native	6	5	tree	perennial	mockernut hickory
Celastrus orbiculatus	Celastraceae	CELOB	non-native	0	5	vine	perennial	oriental bittersweet
Cercis canadensis var. canadensis	Fabaceae	CERCAN	native	3	3	tree	perennial	eastern redbud
Cinna arundinacea	Poaceae	CINARU	native	4	-3	grass	perennial	common wood reed
Circaea canadensis	Onagraceae	CIRCAN	native	2	3	forb	perennial	enchanters nightshade
Collinsonia canadensis	Lamiaceae	COLCAN	native	8	0	forb	perennial	citronella horse balm
Commelina communis	Commelinaceae	COMCOM	non-native	0	3	forb	annual	common day flower
Cornus florida	Cornaceae	CORFLO	native	4	3	tree	perennial	flowering dogwood
Corylus americana	Betulaceae	CORAME	native	4	3	shrub	perennial	american filbert
Crataegus sp.	Rosaceae					tree	perennial	hawthorn
Cryptotaenia canadensis	Apiaceae	CRYCAN	native	3	0	forb	perennial	honewort
Cunila origanoides	Lamiaceae	CUNORI	native	5	5	forb	perennial	dittany
Cynoglossum virginianum var. virginianum	Boraginaceae	CYNVIR	native	5	5	forb	perennial	common wild comfrey
Danthonia spicata	Poaceae	DANSPI	native	3	3	grass	perennial	poverty oat grass
Deparia acrostichoides	Athyriaceae	DEPACR	native	8	0	fern	perennial	silvery spleenwort
Desmodium sp.	Fabaceae		native			forb	perennial	tick trefoil
Dichanthelium acuminatum subsp. implicatum	Poaceae	DICACI	native	2	0	grass	perennial	hemlock witch grass
Dichanthelium boscii	Poaceae	DICBOS	native	4	5	grass	perennial	bearded witch grass
Dichanthelium commutatum	Poaceae	DICCOM	native	7	0	grass	perennial	variable witch grass
Dichanthelium dichotomum subsp. dichotomum	Poaceae	DICDID	native	5	0	grass	perennial	forked witch grass
Dichanthelium dichotomum subsp. microcarpon	Poaceae	DICDIC	native	4	0	grass	perennial	small-fruited witch grass
Dichanthelium polyanthes	Poaceae	DICPOL	native	5	3	grass	perennial	small-fruited witch grass
Dichanthelium sphaerocarpon	Poaceae	DICSPH	native	5	3	grass	perennial	round-fruited witch grass
Dioscorea quaternata	Dioscoreaceae		native	4	0	vine	perennial	four-leaf yam
Diospyros virginiana	Ebenaceae	DIOVIR	native	2	0	tree	perennial	persimmon
Elaeagnus umbellata	Elaeagnaceae	ELAUMB	non-native	0	3	shrub	perennial	autumn olive
Elymus hystrix	Poaceae	ELYHYS	native	5	3	grass	perennial	bottlebrush grass
Elymus virginicus	Poaceae	ELYVIR	native	3	-3	grass	perennial	virginia wild rye
Endodeca serpentaria	Aristolochiaceae	ENDSER	native	8	5	forb	perennial	birthwort
Epifagus virginiana	Orobanchaceae	EPIVIR	native	8	5	forb	annual	beech drops
Erechtites hieracifolius var. hieracifolius	Asteraceae	ERHIE	native	2	3	forb	annual	fireweed
Erigeron annuus	Asteraceae	ERIANN	native	0	3	forb	biennial	annual fleabane
Erigeron sp. (E. philadelphicus or E. pulchellus)	Asteraceae		native			forb	perennial	fleabane
Euonymus alata	Celastraceae	EUOALA	non-native	0	5	shrub	perennial	winged euonymus
Eupatorium serotinum	Asteraceae	EUPSER	native	0	0	forb	perennial	late boneset
Eurybia macrophylla	Asteraceae	EURMAC	native	7	3	forb	perennial	big-leaved aster
Euthamia graminifolia	Asteraceae	EUTGRA	native	3	-3	forb	perennial	grass-leaved goldenrod
Fagus grandifolia	Fagaceae	FAGGRA	native	8	3	tree	perennial	american beech
Fatoua villosa	Moraceae	FATVIL	non-native	0	0	forb	annual	mulberry weed

<i>Festuca subverticillata</i>	Poaceae	FESSUB	native	4	3	grass	perennial	nodding fescue	
<i>Fraxinus americana</i>	Oleaceae	FRAAME	native	4	3	tree	perennial	white ash	
<i>Fraxinus smallii</i>	Oleaceae	FRASMA	native	4	3	tree	perennial	blue ash	
<i>Galium circaezans</i>	Rubiaceae	GALCIR	native	6	3	forb	perennial	wild licorice	
<i>Galium concinnum</i>	Rubiaceae	GALCON	native	5	3	forb	perennial	shining bedstraw	
<i>Galium triflorum</i>	Rubiaceae	GALTRI	native	5	3	forb	perennial	fragrant bedstraw	
<i>Geum canadense</i>	Rosaceae	GEUCAN	native	1	0	forb	perennial	white avens	
<i>Geum virginianum</i>	Rosaceae	GEUVIR	native	5	3	forb	perennial	pale avens	
<i>Gillenia stipulata</i>	Rosaceae	GILSTI	native	6	5	forb	perennial	indian physic	
<i>Glyceria striata</i>	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass	
<i>Goodyera pubescens</i>	Orchidaceae	GOOPUB	native	5	0	forb	perennial	rattlesnake plantain	
<i>Helianthus microcephalus</i>	Asteraceae	HELMIC	native	8	3	forb	perennial	small wood sunflower	
<i>Houstonia longifolia</i>	Rubiaceae	HOULON	native	7	5	forb	perennial	long-leaved bluets	
<i>Houstonia purpurea</i>	Rubiaceae	HOUPUR	native	6	5	forb	perennial	large houstonia	
<i>Hydrangea arborescens</i>	Hydrangeaceae	HYDARB	native	7	3	shrub	perennial	wild hydrangea	
<i>Hylodesmum nudiflorum</i>	Fabaceae	HYLNUD	native	5	5	forb	perennial	bare-stemmed tick trefoil	
<i>Hypericum hypericoides</i> subsp. <i>multicaule</i>	Hypericaceae	HYPHYP	native	4	3	forb	perennial	st. andrews cross	
<i>Impatiens capensis</i>	Balsaminaceae	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not	
<i>Ipomoea pandurata</i>	Convolvulaceae	IPOPAN	native	3	3	vine	perennial	wild sweet potato	
<i>Iris cristata</i>	Iridaceae	IRICRI	native	7	5	forb	perennial	dwarf crested iris	
<i>Juglans nigra</i>	Juglandaceae	JUGNIG	native	2	3	tree	perennial	black walnut	
<i>Juniperus virginiana</i> var. <i>virginiana</i>	Cupressaceae	JUNVIR	native	2	3	shrub	perennial	eastern red cedar	
<i>Kummerowia striata</i>	Fabaceae	KUMSTR	non-native	0	3	forb	annual	japanese lespedeza	
<i>Lactuca canadensis</i>	Asteraceae	LACCAN	native	2	3	forb	biennial	wild lettuce	
<i>Leersia virginica</i>	Poaceae	LEEVIR	native	4	-3	grass	perennial	white grass	
<i>Lespedeza procumbens</i>	Fabaceae	LESPRO	native	6	5	forb	perennial	trailing bush clover	
<i>Lespedeza</i> sp. ( <i>L. frutescens</i> or <i>L. violacea</i> )	Fabaceae		native			forb	perennial	bush clover	
<i>Ligustrum</i> sp.	Oleaceae		non-native			shrub	perennial	privet	
<i>Lindera benzoin</i>	Lauraceae	LINBEN	native	5	-3	shrub	perennial	hairy spicebush	
<i>Liquidambar styraciflua</i>	Hamamelidaceae	LIQSTY	native	4	-3	tree	perennial	sweet gum	
<i>Liriodendron tulipifera</i>	Magnoliaceae	LIRTUL	native	4	3	tree	perennial	tulip poplar	
<i>Lobelia inflata</i>	Lobeliaceae	LOBINF	native	3	3	forb	annual	indian tobacco	
<i>Lobelia siphilitica</i>	Lobeliaceae	LOBSIP	native	3	-5	forb	perennial	great blue lobelia	
<i>Lonicera japonica</i>	Caprifoliaceae	LONJAP	non-native	0	3	vine	perennial	japanese honeysuckle	
<i>Ludwigia alternifolia</i>	Onagraceae	LUDALT	native	3	-5	forb	perennial	seedbox	
<i>Lysimachia quadrifolia</i>	Primulaceae	LYSQUA	native	6	3	forb	perennial	whorled loosestrife	
<i>Magnolia acuminata</i>	Magnoliaceae	MAGACU	native	10	3	tree	perennial	cucumber magnolia	Endangered
<i>Maianthemum racemosum</i> subsp. <i>racemosum</i>	Asparagaceae	MAIRAC	native	4	3	forb	perennial	feathery false solomon seal	
<i>Microstegium vimineum</i>	Poaceae	MICVIM	non-native	0	0	grass	annual	nepalese browntop	
<i>Mimulus alatus</i>	Phrymaceae	MIMALA	native	4	-5	forb	perennial	winged monkey flower	
<i>Monotropa uniflora</i>	Ericaceae	MONUNI	native	7	3	forb	perennial	indian pipe	
<i>Morus alba</i>	Moraceae	MORALB	non-native	0	0	tree	perennial	white mulberry	
<i>Muhlenbergia sobolifera</i>	Poaceae	MUHSOB	native	5	5	grass	perennial	rock satin grass	
<i>Muhlenbergia tenuiflora</i>	Poaceae	MUHTEN	native	7	3	grass	perennial	slender satin grass	
<i>Nabalus altissimus</i>	Asteraceae	NABALT	native	5	3	forb	perennial	tall white lettuce	
<i>Nyssa sylvatica</i>	Nyssaceae	NYSSYL	native	5	0	tree	perennial	black gum	



Onoclea sensibilis	Onocleaceae	ONOSEN	native	4	-3	fern	perennial	sensitive fern	
Ophioglossum pusillum	Ophioglossaceae	OPHPUS	native	10	-3	fern	perennial	northern adders tongue fern	Threatened
Ostrya virginiana	Betulaceae	OSTVIR	native	5	3	tree	perennial	hop hornbeam	
Oxalis grandis	Oxalidaceae	OXAGRA	native	8	3	forb	annual	great yellow wood-sorrel	
Oxalis stricta	Oxalidaceae	OXASTR	native	0	3	forb	perennial	tall wood-sorrel	
Panax quinquefolius	Araliaceae	PANQUI	native	7	5	forb	perennial	ginseng	Watch List
Parietaria pensylvanica	Urticaceae	PARPEN	native	1	3	forb	annual	pennsylvania pellitory	
Parthenocissus quinquefolia	Vitaceae	PARQUI	native	2	3	vine	perennial	virginia creeper	
Passiflora lutea	Passifloraceae	PASLUT	native	7	5	vine	perennial	small passion flower	
Persicaria longisetata	Polygonaceae	PERLON	non-native	0	0	forb	annual	bristly ladys-thumb	
Persicaria virginiana	Polygonaceae	PERVIR	native	3	0	forb	perennial	jumpseed	
Phaseolus polystachios var. polystachios	Fabaceae	PHAPOL	native	6	5	vine	perennial	thicket bean	
Phegopteris hexagonoptera	Thelypteridaceae	PHEHEX	native	7	3	fern	perennial	broad beech fern	
Phellodendron amurense	Rutaceae		non-native	0	3	tree	perennial	amur cork tree	
Phryma leptostachya	Verbenaceae	PHRLEP	native	4	5	forb	perennial	lopseed	
Phytolacca americana var. americana	Phytolaccaceae	PHYAME	native	0	3	forb	perennial	pokeweed	
Pilea pumila	Urticaceae	PILPUM	native	2	-3	forb	annual	canada clearweed	
Pinus strobus	Pinaceae	PINSTR	native	5	3	tree	perennial	eastern white pine	Threatened
Pinus virginiana	Pinaceae	PINVIR	native	5	5	tree	perennial	scrub pine	Watch List
Platanus occidentalis	Platanaceae	PLAOCC	native	3	-3	tree	perennial	american sycamore	
Podophyllum peltatum	Berberidaceae	PODPEL	native	3	3	forb	perennial	may apple	
Polygonatum biflorum	Asparagaceae	POLBIF	native	4	3	forb	perennial	small solomons seal	
Polystichum acrostichoides	Dryopteridaceae	POLACR	native	5	5	fern	perennial	christmas fern	
Potentilla simplex	Rosaceae	POTSIM	native	2	3	forb	perennial	common cinquefoil	
Prunus serotina var. serotina	Rosaceae	PRUSER	native	1	3	tree	perennial	wild black cherry	
Pycnanthemum sp. (P. loomisii or P. pycnanthemoides)	Lamiaceae		native			forb	perennial	mountain-mint	
Pyrus calleryana	Rosaceae	PYRCAL	non-native	0	5	tree	perennial	bradford pear	
Quercus alba	Fagaceae	QUEALB	native	5	3	tree	perennial	white oak	
Quercus montana	Fagaceae	QUEMON	native	7	3	tree	perennial	mountain chestnut oak	
Quercus rubra	Fagaceae	QUERUB	native	4	3	tree	perennial	northern red oak	
Quercus shumardii	Fagaceae	QUESHU	native	7	-3	tree	perennial	shumards oak	
Quercus velutina	Fagaceae	QUEVEL	native	4	5	tree	perennial	black oak	
Ranunculus recurvatus var. recurvatus	Ranunculaceae	RANREC	native	5	-3	forb	perennial	hooked buttercup	
Robinia pseudoacacia	Fabaceae	ROBPSE	native	1	3	tree	perennial	black locust	
Rosa multiflora	Rosaceae	ROSMUL	non-native	0	3	shrub	perennial	japanese rose	
Rosa setigera	Rosaceae	ROSSET	native	4	3	shrub	perennial	prairie rose	
Rubus allegheniensis	Rosaceae	RUBALL	native	2	3	shrub	perennial	common blackberry	
Rubus occidentalis	Rosaceae	RUBOCC	native	1	5	shrub	perennial	black raspberry	
Rubus sp.	Rosaceae		native			shrub	perennial	blackberry/dewberry	
Sabatia angularis	Gentianaceae	SABANG	native	3	0	forb	perennial	rose gentian	
Salvia lyrata	Lamiaceae	SALLYR	native	3	-3	forb	perennial	cancer weed	
Sambucus canadensis	Adoxaceae	SAMCAN	native	2	0	shrub	perennial	common elderberry	
Sanicula canadensis	Apiaceae	SANCAN	native	2	3	forb	perennial	canadian black snakeroot	
Sassafras albidum	Lauraceae	SASALB	native	1	3	forb	perennial	sassafras	
Scutellaria incana var. incana	Lamiaceae	SCUINC	native	4	5	forb	perennial	downy skullcap	
Sedum ternatum	Crassulaceae	SEDTER	native	8	3	forb	perennial	three-leaved stonecrop	

<i>Silene stellata</i>	Caryophyllaceae	SILSTE	native	5	5	forb	perennial	starry campion
<i>Silene virginica</i>	Caryophyllaceae	SILVIR	native	7	5	forb	perennial	fire pink
<i>Smilax glauca</i>	Smilacaceae	SMIGLA	native	4	3	vine	perennial	sawbrier
<i>Smilax rotundifolia</i>	Smilacaceae	SMIROT	native	4	0	vine	perennial	catbrier
<i>Solidago altissima</i> subsp. <i>altissima</i>	Asteraceae	SOLALT	native	0	3	forb	perennial	tall goldenrod
<i>Solidago caesia</i> var. <i>caesia</i>	Asteraceae	SOLCAE	native	7	3	forb	perennial	bluestem goldenrod
<i>Solidago nemoralis</i>	Asteraceae	SOLNEM	native	3	5	forb	perennial	old-field goldenrod
<i>Solidago rugosa</i>	Asteraceae	SOLRUG	native	6	0	forb	perennial	rough goldenrod
<i>Solidago ulmifolia</i> var. <i>ulmifolia</i>	Asteraceae	SOLULM	native	5	5	forb	perennial	elm-leaved goldenrod
<i>Sphenopholis nitida</i>	Poaceae	SPHNIT	native	8	0	grass	perennial	shining wedge grass
<i>Spiranthes</i> sp. (maybe <i>S. ovalis</i> )	Orchidaceae		native			forb	perennial	ladies tresses
<i>Stachys cordata</i>	Lamiaceae	STACOR	native	7	0	forb	perennial	heart-leaved hedge nettle
<i>Stellaria pubera</i>	Caryophyllaceae	STEPUB	native	7	5	forb	perennial	great chickweed
<i>Symphyotrichum lanceolatum</i>	Asteraceae	SYMLAN	native	3	0	forb	perennial	panicked aster
<i>Symphyotrichum racemosum</i>	Asteraceae	SYMRAC	native	4	-3	forb	perennial	small white aster
<i>Symphyotrichum shortii</i>	Asteraceae	SYM SHO	native	6	5	forb	perennial	shorts aster
<i>Symphyotrichum</i> sp.	Asteraceae		native			forb	perennial	aster
<i>Taraxacum officinale</i>	Asteraceae	TAROFF	non-native	0	3	forb	perennial	common dandelion
<i>Thalictrum thalictroides</i>	Ranunculaceae	THATHA	native	7	3	forb	perennial	rue anemone
<i>Thelypteris noveboracensis</i>	Thelypteridaceae	THENOV	native	5	0	fern	perennial	new york fern
<i>Tipularia discolor</i>	Orchidaceae	TIPDIS	native	4	3	forb	perennial	crane-fly orchid
<i>Toxicodendron radicans</i>	Anacardiaceae	TOXRAD	native	1	0	vine	perennial	eastern poison ivy
<i>Ulmus americana</i>	Ulmaceae	ULMAME	native	3	-3	tree	perennial	american elm
<i>Ulmus</i> sp.	Ulmaceae					tree	perennial	elm
<i>Vaccinium pallidum</i>	Ericaceae	VACPAL	native	5	5	shrub	perennial	late low blueberry
<i>Verbena urticifolia</i>	Verbenaceae	VERURT	native	3	0	forb	perennial	white vervian
<i>Verbesina helianthoides</i>	Asteraceae	VERHEL	native	7	5	forb	perennial	yellow crownbeard
<i>Vernonia gigantea</i>	Asteraceae	VERGIG	native	2	0	forb	perennial	tall ironweed
<i>Viburnum acerifolium</i>	Adoxaceae	VIBACE	native	8	5	shrub	perennial	maple-leaved arrowwood
<i>Viola palmata</i> var. <i>palmata</i>	Violaceae	VIOPAL	native	5	3	forb	perennial	cleft violet
<i>Viola sororia</i>	Violaceae	VIOSOR	native	1	0	forb	perennial	woolly blue violet
<i>Vitis aestivalis</i>	Vitaceae	VITAES	native	4	3	vine	perennial	summer grape
<i>Vitis vulpina</i>	Vitaceae	VITVUL	native	3	0	vine	perennial	frost grape