

## **Natural Resource Evaluation:**

### **Modoroo Property**

15571 Hemlock Rd., Chagrin Falls, Ohio 44022

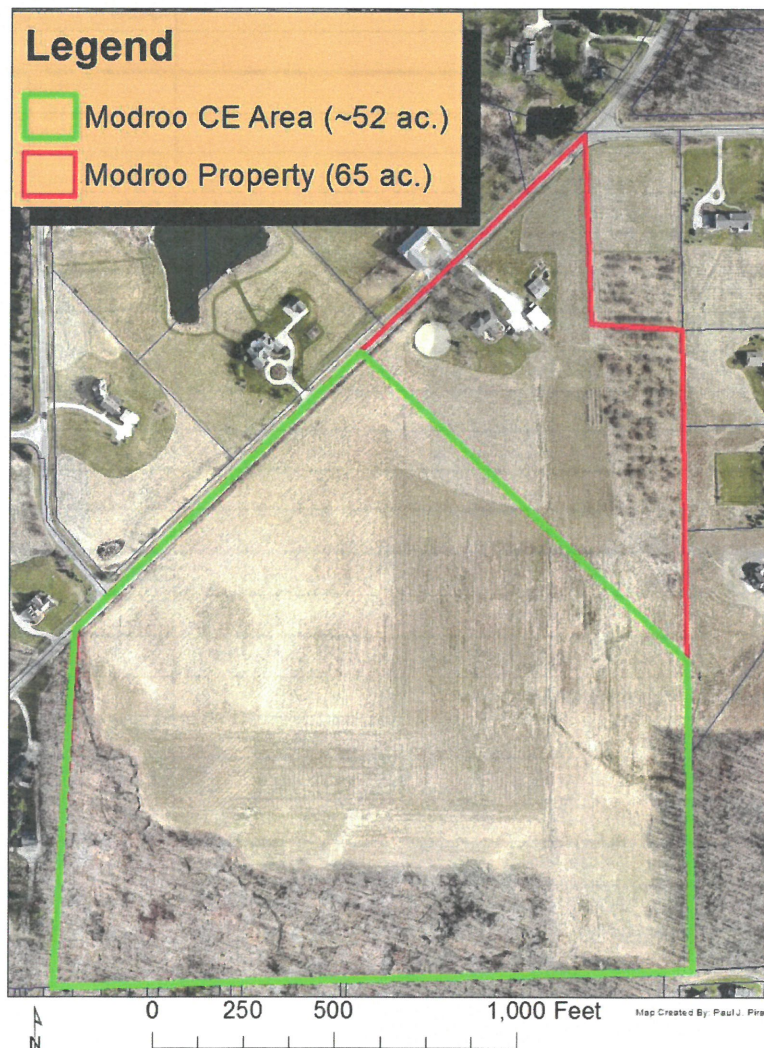
Parcel #: 26-119100

**Prepared by: Paul J. Pira**

Planning and Natural Resource Management Department

Geauga Park District, November 14, 2016

General Introduction: This 65.9 acre piece of property (~52 acres in potential conservation easement) was walked and rapidly assessed for natural quality/resources using visual observation (site visit) by NRM staff on November 10, 2016 and



**Figure 1:** Modroo Property parcel location and lines.

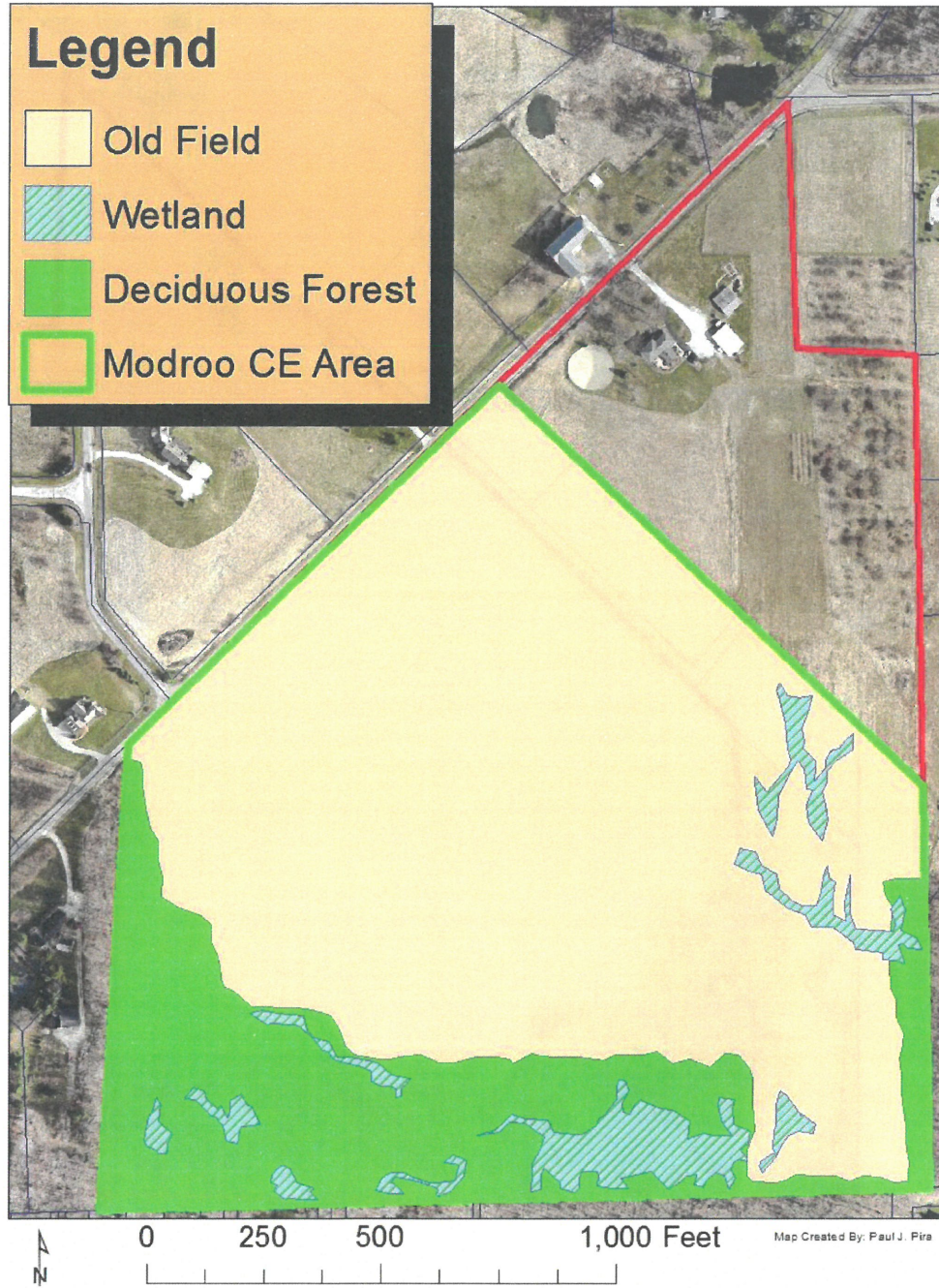
later reviewed in the office with GIS (geographic information systems) technology (Figure 1). This property is located in the southwestern portion of Geauga County (Chagrin Falls/Russell Twp.) and consists of primarily old field/meadow habitat (~38 ac. or 73%) (Table 1 & Figure 2). Most of the remaining land cover is comprised of secondary/mid-successional growth deciduous forest (~11 ac. or 22%) with small patches of forested wetlands interspersed (~2.0 ac.) (Figure 2). Small portions of the meadow have interesting reverting sedge-grass wetlands also associated.

Habitat (Vegetation) Type	Acres	Percent Composition
<b>Old Fields:</b>		
OF 01	38.0	73.1%
Total =	<b>38.0</b>	<b>73.1%</b>
<b>Wetlands:</b>		
Wet (Sedge-Grass) Meadows		
WT 01	0.4	0.8%
WT 02	0.4	0.8%
WT 03	0.1	0.3%
Appalachian Acid Swamps		
WT 04	1.4	2.6%
WT 05	0.1	0.2%
WT 06	0.1	0.2%
WT 07	0.2	0.3%
WT 08	0.1	0.2%
WT 09	0.2	0.3%
Total =	<b>3.0</b>	<b>5.7%</b>
<b>Forests:</b>		
Secondary Beech-Maple Forest		
MF 01	11.0	21.2%
Total =	<b>11.0</b>	<b>21.2%</b>
<b>Overall Total =</b>	<b>52.0</b>	<b>100%</b>

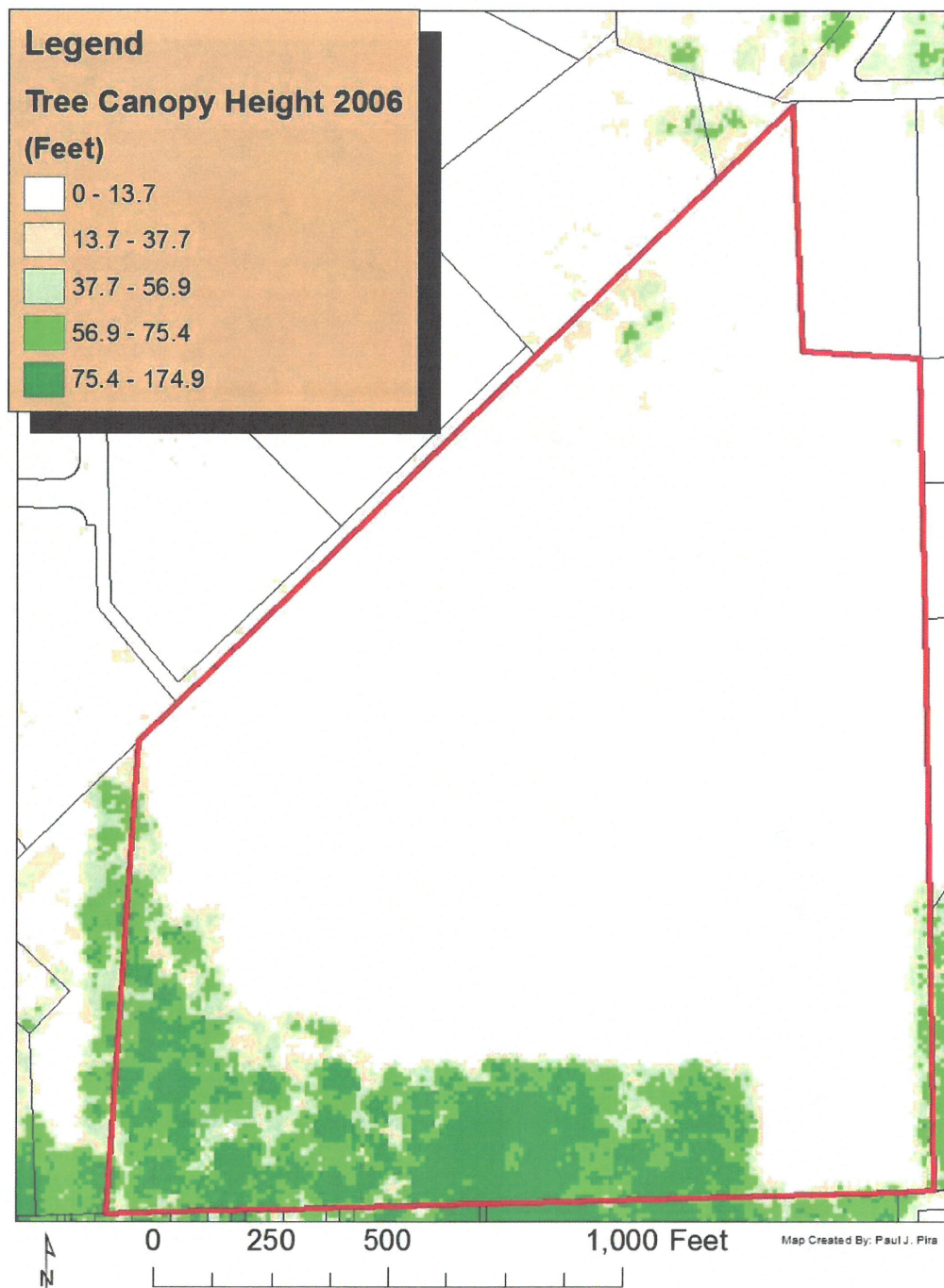
**Table 1:** Land cover map & composition data for Modroo Property, 2016  
(based on field & GIS interpretation).

The most notable and biologically important features of this property are the meadow and the swamp forests (which have associated vernal pool wetlands). All waters on the Modroo Property flow into the Chagrin River watershed.





**Figure 2:** GIS interpreted vegetation cover data for Modroo Property, 2016.



**Figure 3:** Tree canopy height data for Modroo Property, 2006  
(Data taken from Cleveland Metroparks & WRLC).



**Forests:** A small portion (~13 ac.) of this property is comprised of a mixed beech/maple and swamp forest (Figures 2 & 3). Much of the area was timbered recently (~ 10 years ago) and most of the large oak (*Quercus* spp.) trees were harvested. A few nice large swamp white oak (*Quercus bicolor*) trees still remain while the rest of the forest is comprised of mainly beech (*Fagus grandifolia*) and maple (*Acer* spp.) (Figure 4). Most of this forest (particularly the southwestern area) was dominated by younger intermediate to small sized trees (Figure 5). Remnants (tree tops and forest canopy gaps) of the logging were still noticeable.



**Figure 4:** Large mature forest trees located on the Modroo Property, 2016. **Photos:** Paul J. Pira



**Figure 5:** Photograph of younger/smaller upland forest located on the Modroo Property, 2016



**Old Fields/Meadows:** Old field/meadow habitat is the most dominant feature of the Modroo property (38 ac. or ~73%). This meadow had a mix of both non-native typical “hayfield” species (i.e. clovers, cool-season grasses, etc.) and to a lesser extent native species such as goldenrods, asters, etc. (Figure 6). This meadow has some limited potential to attract meadow/grassland nesting bird species. Furthermore, portions of this meadow contained reverting sedge-grass meadows which; if left to revert or are enhanced, can be biologically interesting wetlands and increase the wildlife diversity found on the property.



**Figure 6:** Photograph of large meadow on Modroo Property, 2016. **Photos:** Paul J. Pira

**Wetlands:** Wetlands were the third most dominant (~ 3.0 acres or 5.7%) natural resource found on the property. The majority of wetland acreage probably being modified Category 2 swamp forest according to Ohio EPA standards (Mack 2001). Swamp forested wetlands are important because they often harbor breeding pools for sensitive woodland amphibians and also provide habitat to uncommon birds. Some of these areas could be greatly enhanced through restoration efforts (Figure 7). The wet meadows (sedge-grass meadow wetlands) which are found within the 38 acre upland meadow are also biologically important areas which; again, could be greatly enhanced for biodiversity through restoration efforts and planting desirable wetland forbs (Figure 7).





**Figure 7:** **Top:** Photo documentation of reverting sedge-grass meadow wetland on Modroo Property;  
**Bottom:** Photo of vernal pool/swamp forest wetland located on the Modroo Property,  
**Photos:** Paul J. Pira, 2016.

This property's sensitive wetlands serve as important water quality buffers and help to mitigate anthropogenic impacts on the downstream aquatic ecosystems found within the watershed and eventually the Chagrin River.



**Rare Species Presence:** No rare species were detected on the quick NRM survey but, this property certainly has the potential to provide habitat for meadow/grassland bird species (such as bobolinks, etc.) that are of conservation concern.

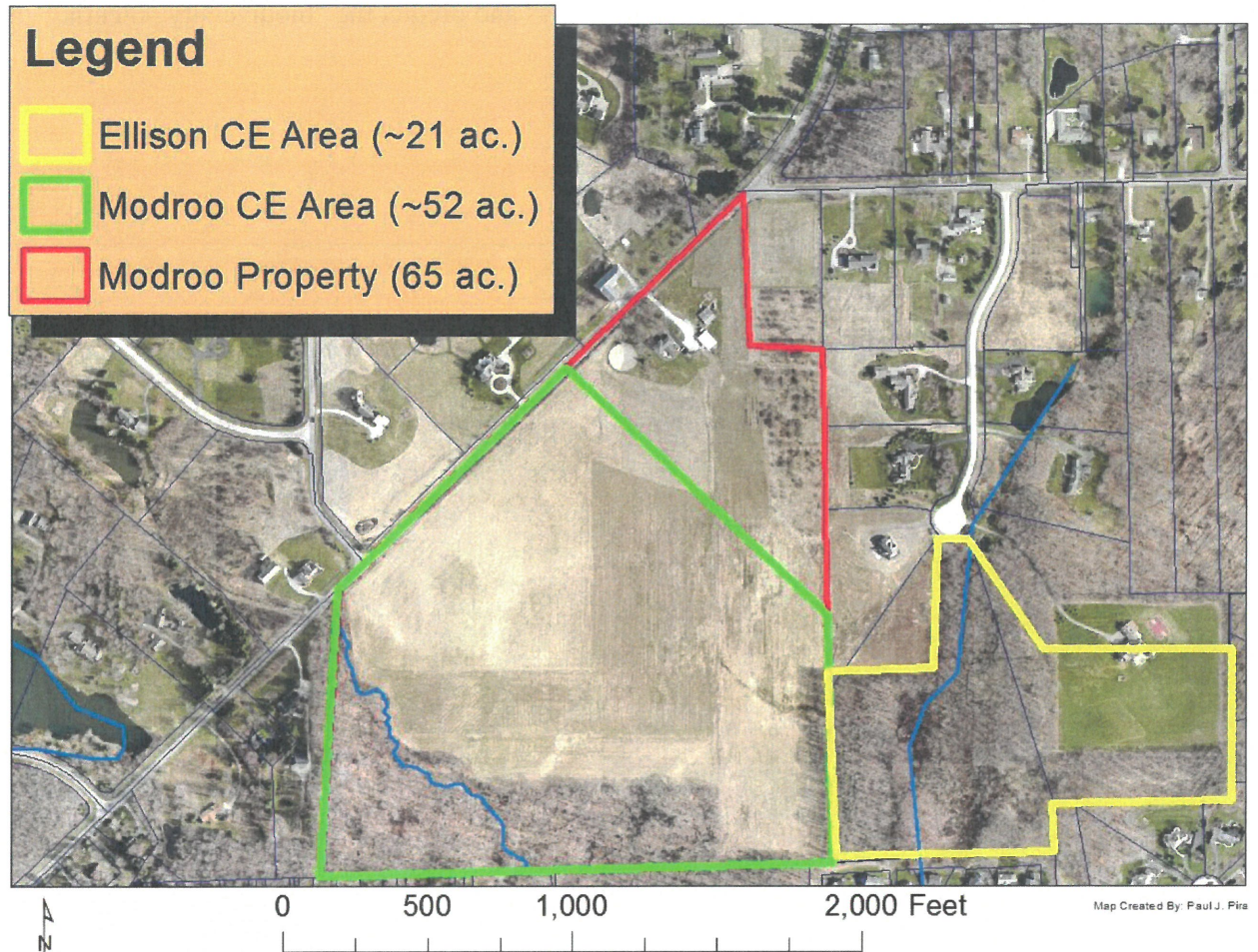
**Streams:** One small headwater tributary to the Chagrin River runs from south to northwest on this property. This stream appeared to be a moderate quality warm-water system comprised of mostly silt, sand, and gravels with some cobbles interspersed (Figure 8). Some entrenchment/erosion was observed and is undoubtedly caused by human-induced changes in the watershed.



**Figure 8:** Tributary stream located on the Modroo Property, 2016.



**Parcel Connectivity:** This parcel is contiguous with Western Reserve Land Conservancy's Ellison conservation easement (Figure 9). Together, the parcels would comprise over 65 acres of wildlife habitat.



**Figure 9:** Connectivity & proximity of Modroo Property to other preserved lands, 2016.

The protection of the Modroo parcel and would serve to enhance the wildlife sustainability within this part of Geauga County and further the watershed/water quality of this area within the Chagrin River watershed. It would also provide Geauga County residents with valuable open space for outdoor recreation and nature study.

**NQEI Score:** This property was evaluated using the Natural Quality Evaluation Index (NQEI) developed by previous Geauga Park District Natural Resource Management staff and subsequently revised (see below; Table 2). This property scored a total of 40 points (out of possible 100). This parcel falls within the “poor/fair” category rating in comparison to all other potential parcels reviewed by NRM staff over the last 10 years.

**The Department of Natural Resource Management Recommendation:**

The Department of Natural Resource Management would not recommend Geauga Park District pursue the acquisition of this property based on its low NQEI score (which attempts to quantify the relative “naturalness” and predict the “biodiversity potential” of the property).



Natural Quality Evaluation Index (Revised)						
Geauga Park District						
Property:	Modroo Property					
Date:	10-Nov-16					
Evaluator(s):	P. Pira					
Weather Conditions:	55 F, sunny					
Other Notes:						
	Score					
Ecological Factors	1	2	3	4	5	Score
1) Rivers/Streams:	50-999'	1,000-1,999'	2,000-2,999'	3,000-3,999'	>4,000'	2
2) Rivers/Streams: Condition	Channelized dammed				Natural, free flowing	3
3) Rivers/Streams: Substrate Material	Silted/Embedded Mud/Clay	Silted/Sand/Gravel	Moderate Silt Variable Bottom	Light Silt Diverse Bottom	No Silt Diverse Bottom	3
4) Water Quality (OEPA Designation)	Class V (very poor)	Class IV (poor)	Class III (fair)	Class II (WWH, good)	Class I (EWH, CWH, etc.)	3
5) Primary Headwater Streams	Present Heavy Impacts	Present Moderate Impacts	Present Light Impacts	Present Very Light Impacts	Present Not Impacted	0
6) PHWH Water Quality (OEPA Designation)	Class I		Class II		Class III	0
7) Lakes/Ponds	present hyper-eutrophic	present eutrophic	present, impounded and/or moderately impacted	present, slightly impacted	natural, pristine	0
8) Wetlands (Ohio EPA)	Cat. I Significant Disturbance	Cat. 1 (mitigated) Moderate Dist.	Mod. Cat.2 Slight Disturbance	Cat. 2 Very Slight Dist.	Cat. 3 Undisturbed	2.5

Ecological Factors	1	2	3	4	5	Score
9) Hydric Soils	absent		Non-hydric w/inclusions		Present	5
10) Riparian Conditions	Diked/levee denuded	Cultivated Grasses (<25')	Sedge/Grass Meadows (>25', <50')	Saplings Scrub/Shrub (<50')	Mature Forest (>50')	4.5
11) R, T, E Species	Reported or Migratory use	Within 0.5 mile	Adjacent property	Adjacent GPD property	Present	1
12) Invasive Species	Many (>4 spp.)	4	Moderate (2-3 spp.)	1	None	3
13) Forest Condition	Early Succession <10yrs. Old	Mid-Succession <25 yrs. Old	Late Successional <50 yrs. Old	Mature >50 yrs. Old	Mature ~100 yrs. Old	3.5
14) Interior Forest (area 500ft. from edges)	present (small <5 acres)		present (medium 5-25 acres)		present (large > 25 acres)	0
15) Forest Shape	Long, Linear, Narrow Broken		Oval Some Open		Square Closed	1
16) Steep Slopes	Absent				>12%	1
17) Notable Geology or Unique Habitat (bog, fen, very large meadow)	Absent				Present	1
18) Connectivity	None	Adjacent to Easement	Adjacent to other conservation area	Adjacent to GPD	Connects multiple GPD	2
19) Adjacent Land Use	Industrial/Commercial	Urban/Subdivisions	Agricultural/Timbered	Forested	Park, Preserve, Easements	2.5
20) Size of Parcel	<50 acres	50-250 acres	251-500 acres	501-1,000 acres	> 1,000 acres	2
<b>NQEI Score =</b>						<b>40.0</b>

**Table 2:** Revised Natural Quality Evaluation Index (NQEI) score for the Modroo Property, 2016.

### **LITERATURE CITED**

Mack, J.J. 2001. Ohio Rapid Assessment Methods for Wetlands, Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.

Ohio EPA. 2002. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Ohio EPA Division of Surface Water. Columbus, Ohio. 60pp.



