



# J&L CONSULTING SERVICES

- Environmental Assessments
- Mitigation Plans and Permits
- Site Evaluation and Analyses
- Wetlands Mapping

April 19, 1988

Kathryn Seitz, Deputy Clerk  
 Oakland Township  
 4393 Collins Road  
 Rochester, MI 48064-1098

RE: Wetland Determination, 210-Acre Parcel  
 Don Westphal - Divine Homes, Snell Road

Dear Ms. Seitz:

Enclosed please find the "Wetlands Map" for the 210-acre parcel in Section 25 located north of Snell Road. Wetlands amount to 51.88 acres of the total land area. You may send the mylar on to Don Westphal so that he can make copies for permit applications.

All the wetland boundaries have been flagged in the field with my pink & black surveyor's ribbon for subsequent field verification by the MDNR. Please inform the developer that the mapped wetland boundaries are approximations only as no field surveying of the flagged boundaries was done. Therefore, the developer may wish to survey and stake the wetland edge of critical boundary areas. Because of lack of geographic reference, the mapped wetland boundaries in the hardwoods in the northwest portion of the site, i.e. Wetland A, may be in error by as much as 50 feet.

### Wetland Descriptions

Thirteen separate wetland areas, labelled A thru M, have been indicated on the attached Wetlands Map. The basic characteristics of these wetlands are presented below in Table 1.

TABLE 1  
Characteristics of the Mapped Wetlands

Wetland #	Size	Wetland Type	Jurisdiction	
			MDNR	Oakland Twp
SMALL PORTION - A	6.39	Mostly Forested	Yes	Yes
B	12.44	Mostly Emergent	Yes	Yes
C	1.49	Emergent & Shrub	Yes	Yes
D	20.76	Mostly Emergent & Shrub	Yes	Yes
E	3.30	Forested & Shrub	Yes	Yes
F	1.94	Emergent & Shrub	No	Yes
G	0.18	Forested	No	No
H	0.42	Forested & Shrub	No	Yes
I	1.55	Forested	No	Yes
J	0.80	Forested	No	Yes
K	0.27	Forested & Shrub	No	No
L	0.45	Emergent & Shrub	No	No
M	1.89	Emergent & Shrub	No	Yes
TOTAL	51.88 Acres			

1. Wetland A consists of 6.39 acres of mostly forested wetland within the upland hardwoods in the northwest corner of the site. In addition to intermittent creeks and swales flowing downslope, there are scattered depressions where water ponds in flats 4 to 12 inches deep. Among the principal swamp trees are Red Ash, Red Maple and American Elm, along with some Eastern Cottonwood and Swamp Oak. Groundwater springs occur along the extreme northwest edge of the wetland. A small, clear creek flows southeast along the northern edge into Wetland B. Near the southern end, an intermittent creek carries seasonal runoff into a tile near the field. The boundaries of Wetland A, as mapped on the wetlands map, are only approximate due to a lack of geographic reference.

2. Wetland B is a large 12.44-acre wetland which is largely an emergent marsh along with patches of shrubs and Eastern Cottonwood saplings. Cattails, sedges, Swamp Goldenrod, and Canary Grass dominate the vegetation, along with Red Osier Dogwood and Willow shrub. An intermittent creek, about 2 - 3 feet wide with a sandy bottom, transports clear water to the northeast. The south and southwest edges of this emergent wetland were once farmed, but now have reverted back to Cattails and Swamp Goldenrod.

3. Wetland C is a 1.49-acre, irregularly-shaped wetland surrounded by gravelly hills. In the center is standing water with Buttonbush shrubs, Cattails and Sedges growing therein. Along the edges is a fringe of Dogwood shrubs and saplings of American Elm and Red Maple. A ditch on the eastern side carries overflow into the trout-stream-like creek in the extreme northeast corner of the parcel.

4. Wetland D contains 20.76 acres and trends northeast-southwest across much of the parcel. In the southern part, the wetland consists of Cattail and Sedge marshes, whereas in the northern half a mix of Cattail marshes, shrub swamps, and wet meadow prevails. In the wider part of the northern half of Wetland D, a Buttonbush swamp with standing water occurs. A fast-flowing, gravelly bottom, clean creek flows south along the far eastern edge of this wetland.

5. Wetland E consists of 3.30 acres and is located in the northeast corner of the site. Consisting of shrub and forested wetlands, the principal plant species are Willows, American Elm, Red Ash, and Red Maple. A shrub swale trends southeast just south of an upland island in the extreme eastern edge of the wetland. Again, the trout-stream-like creek flows south along the eastern edge of this wetland. A small wet spot in the old cornfield occurs approximately 650 feet south of Wetland E.

6. Wetland F consists of 1.94 acres of hydrologically isolated shrub and emergent marsh wetland. Scouring Rush (or Horsetail) is widespread in this wetland along with patches of Red Osier

Dogwood, Sedges, and Canary Grass. Standing water and wet, mucky soils were prevalent at the time of the field investigation on 4-10-88 and 4-13-88.

7. Wetland G consists of only 0.18 acres of forested and shrub wetlands along Snell Road. Among the common plant species were Red Osier Dogwood and Eastern Cottonwood. Water depths in the depressions ranged from 2 to 10 inches. No culvert was observed.

8. Wetland H is a 0.42-acre depression that is isolated from Wetland D. Herein is a mixture of trees, shrubs and marsh. Among the common species were Eastern Cottonwood, Red Maple, Red Osier Dogwood, Cattails, and Canary Grass. No standing water was observed, nor were there any inlets or outlets.

9. Wetland I contains 1.55 acres. It is largely a forested wetland with some shrub and open-water areas. Common wetland plants include Red Ash, Red Maple, Black Willow, Willow shrub, Red Osier Dogwood, and Sedges. Two pairs of Mallards were observed in the open-water area where water depths up to 2 feet were observed. Trash was noted on both the northern and southern edges of this wetland.

10. Wetland J consists of 0.80 acres of forested wetland with an open-water area in the southern part. The open-water area was smaller and shallower than that of Wetland J. Among the common plant species were Red Ash, American Elm, and Cattails. A dirt trail trends along the eastern margin, and trash, including an old car, was noted along the southern margin.

11. Wetland K is a 0.27 acre area of marginal shrub and forested wetland. This wetland is basically a depression along the northern edge of Snell Road where runoff is trapped. A culvert does transport water to the south under Snell Road. Among the common vegetation is Eastern Cottonwood, American Elm, Red Ash, Red Maple, and Red Osier Dogwood. Some siltation has previously occurred in this wetland.

12. Wetland L is a 0.45-acre mixed emergent and shrub wetland along the edge of two active cornfields. Basically this wetland is a depression where seasonal water collects and ponds. Among the common vegetation is Swamp Goldenrod, Sedges, Red Osier Dogwood, Willows, and American Elm saplings.

13. Wetland M contains approximately 1.89 acres of mixed emergent and shrub wetlands. In the northern part it is largely an emergent marsh of Swamp Goldenrod with scattered Red Osier Dogwood shrubs. The marsh grades into a mixed Willow and Dogwood shrub wetland. A ditch carries seasonal runoff southward along the edge of an active cornfield. The wetland ends abruptly in the cornfield.

DNR Jurisdiction

It is recommended that Oakland Township take jurisdiction and protect all the mapped wetlands, except for Wetlands G, K, and L. Wetland E is especially sensitive due to the high quality creek that flows through it. The smaller creek flowing through Wetland B is also important. With regard to waterfowl, Wetlands C and I are significant. Wetlands I and J could be restored by removing the trash about their perimeters.

While out in the field, a number of test pits for perc tests were observed. Some of those test pits were dug in or very near to the wetlands, and were thus poorly located.

Sincerely,

  
Eugene Jaworski, PhD  
Wetlands Consultant

EJ/nmm

## **Controlled Archery Antlerless Deer Hunting at Stony Creek Ravine Nature Park (Other Township parks do not permit any type of hunting)**

Oakland Township purchased Stony Creek Ravine Nature Park in March 2008 with 67% of our purchase cost being paid by a Michigan Natural Resources Trust Fund grant. One of the conditions of our receipt of this substantial grant was that we must allow controlled archery deer hunting at this park as part of the DNR's program to manage deer populations in southeast Michigan.

To meet this commitment, a maximum of four hunters per hunt date will be issued Township permits for antlerless archery deer hunting at Stony Creek Ravine Nature Park on restricted weekdays between October 1 and December 31, 2014. On the days when hunting will occur the park will be closed to other types of use. Signs are posted on the park perimeter indicating these days of closure.

**Hunters will be selected on a first-come, first-served basis. To be considered for this program, applications must be submitted between 8am and 4:30pm on the below-listed Mondays.**

**Hunters must each hunt with a partner to participate in this program. Partners' applications must be submitted at the same time to qualify for selection. Hunters must obtain their own deer hunting license and kill tags and must obey all Township regulations and State of Michigan hunting laws. Hunters must provide their own portable blinds and will be responsible for their own field dressing and transporting of all harvested deer. No baiting of any kind is allowed.**

**On the application date indicated below, between 8am and 4:30pm, bring this application, a copy of your current deer hunting license, and a copy of the identification used to purchase your deer hunting license, such as a driver's license to:**

Oakland Township Parks and Recreation Office,  
Paint Creek Cider Mill, 4480 Orion Road, Rochester, MI 48306.

If you have questions about this procedure please call (248) 651-7810. **No mailed applications will be accepted.**

Name \_\_\_\_\_ Driver's License# \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_ Vehicle Plate# \_\_\_\_\_

Phone: Home \_\_\_\_\_ Work \_\_\_\_\_ Cell \_\_\_\_\_

Hunting Partner's Name \_\_\_\_\_ Phone: \_\_\_\_\_

Check the dates you are interested in for antlerless archery deer hunting only:

Monday, Sept 29 Application

Monday, Oct 20 Application

Monday, Nov 24 Application

*For hunt dates of:*

*For hunt dates of:*

*For hunt dates of:*

Tues/Weds, Oct 7 & 8

Tues/Weds, Oct 28 & 29

Tues/Weds, Dec 2 & 3

Tues/Weds, Oct 14 & 15

Tues/Weds, Nov 4 & 5

Tues/Weds, Dec 9 & 10

Tues/Weds, Oct 21 & 22

Tues/Weds, Nov 11 & 12

Tues/Weds, Dec 16 & 17

Waiver

Safety Zone Map

Hunter Phone Numbers

Ordinance 38A-1 Hunter Rules

Mirror Tag Permit



Boreal Chickadee ✓  
 Tufted Titmouse ✓  
 Sittidae  
 Red-breasted Nuthatch  
 White-breasted Nuthatch  
 Certhiidae  
 Brown Creeper  
 Troglodytidae  
 Carolina Wren  
 Bewick's Wren  
 House Wren  
 Winter Wren  
 Sedge Wren  
 Marsh Wren  
 Muscicapidae  
 Golden-crowned Kinglet  
 Ruby-crowned Kinglet  
 Blue-gray Gnatcatcher ✓  
 Eastern Bluebird ✓  
 Townsend's Solitaire  
 Veery  
 Gray-cheeked Thrush  
 Swainson's Thrush  
 Hermit Thrush  
 Wood Thrush  
 American Robin ✓  
 Varied Thrush  
 Mimidae  
 Gray Catbird ✓  
 Northern Mockingbird  
 Brown Thrasher  
 Motacillidae  
 Water Pipit  
 Bombycillidae  
 Bohemian Waxwing  
 Cedar Waxwing  
 Lanidae  
 Northern Shrike  
 Loggerhead Shrike  
 Sturnidae  
 European Starling  
 Vireonidae  
 White-eyed Vireo  
 Bell's Vireo  
 Solitary Vireo  
 Yellow-throated Vireo  
 Warbling Vireo  
 Philadelphia Vireo  
 Red-eyed Vireo  
 Emberizidae  
 Blue-winged Warbler  
 Golden-winged Warbler  
 Tennessee Warbler  
 Orange-crowned Warbler  
 Nashville Warbler  
 Northern Parula

**CAPRIMULGIFORMES**  
 Caprimulgidae  
 Common Nighthawk  
 Whip-poor-will  
**APODIFORMES**  
 Apodidae  
 Chimney Swift  
 Trochilidae  
 Ruby-throated Hummingbird  
**CORACIIFORMES**  
 Alcedinidae  
 Belted Kingfisher  
**PICIFORMES**  
 Picidae  
 Red-headed Woodpecker  
 Red-bellied Woodpecker  
 Yellow-bellied Sapsucker  
 Downy Woodpecker ✓  
 Hairy Woodpecker  
 Three-toed Woodpecker  
 Black-backed Woodpecker  
 Northern Flicker  
 Pheasant Woodpecker  
**PASSERIFORMES**  
 Tyrannidae  
 Olive-sided Flycatcher ✓  
 Eastern Wood-Pewee ✓  
 Yellow-bellied Flycatcher  
 Acadian Flycatcher  
 Alder Flycatcher  
 Willow Flycatcher  
 Least Flycatcher  
 Eastern Phoebe  
 Great Crested Flycatcher  
 Western Kingbird  
 Eastern Kingbird  
 Scissor-tailed Flycatcher  
 Alaudidae  
 Horned Lark  
**Hirundinidae**  
 Purple Martin  
 Tree Swallow  
 Northern Rough-winged Swallow  
 Barn Swallow  
**Corvidae**  
 Gray Jay ✓  
 Blue Jay ✓  
 Black-billed Magpie  
 American Crow  
 Common Raven  
 Paridae  
 Black-capped Chickadee ✓

Purple Sandpiper  
 Dunlin  
 Stilt Sandpiper  
 Buff-breasted Sandpiper  
 Ruff  
 Short-billed Dowitcher  
 Long-billed Dowitcher  
 Common Snipe  
 American Woodcock  
 Wilson's Phalarope  
 Red-necked Phalarope  
 Red Phalarope  
**Laridae**  
 Pomarine Jaeger  
 Parasitic Jaeger  
 Long-tailed Jaeger  
 Laughing Gull  
 Franklin's Gull  
 Little Gull  
 Common Black-headed Gull  
 Bonaparte's Gull  
 Ring-billed Gull  
 California Gull  
 Herring Gull  
 Thayer's Gull  
 Iceland Gull  
 Glaucous Gull  
 Great Black-backed Gull  
 Black-legged Kittiwake  
 Sabine's Gull  
 Caspian Tern  
 Common Tern  
 Forster's Tern  
 Black Tern  
**COLUMBIFORMES**  
 Columbidae  
 Rock Dove ✓  
 Mourning Dove ✓  
**CUCULIFORMES**  
 Cuculidae  
 Black-billed Cuckoo  
 Yellow-billed Cuckoo  
**STRIGIFORMES**  
 Tytonidae  
 Common Barn-Owl  
 Strigidae  
 Eastern Screech-Owl  
 Great Horned Owl  
 Snowy Owl  
 Northern Hawk-Owl  
 Burred Owl  
 Great Gray Owl  
 Long-eared Owl  
 Short-eared Owl  
 Boreal Owl  
 Northern Saw-whet Owl

Red-winged Hawk  
 Ganson's Hawk  
 Red-tailed Hawk  
 Rough-legged Hawk  
 Golden Eagle  
 American Kestrel  
 Merlin  
 Peregrine Falcon  
 Gyrfalcon  
**GALLIFORMES**  
 Phasianidae  
 Ring-necked Pheasant  
 Spruce Grouse  
 Ruffed Grouse  
 Sharp-tailed Grouse ✓  
 Wild Turkey  
 Northern Bobwhite  
**GRUIFORMES**  
 Rallidae  
 Yellow Rail  
 King Rail  
 Virginia Rail  
 Common Moorhen  
 American Coot  
 Gruidae  
 Sandhill Crane  
**CHARADRIIFORMES**  
 Charadriidae  
 Black-bellied Plover  
 Lesser Golden-Plover  
 Semipalmated Plover  
 Piping Plover  
 Killdeer  
 Recurvirostridae  
 American Avocet  
 Scolopacidae  
 Greater Yellowlegs  
 Lesser Yellowlegs  
 Solitary Sandpiper  
 Willet  
 Spotted Sandpiper  
 Upland Sandpiper  
 Whimbrel  
 Hudsonian Godwit  
 Marbled Godwit  
 Ruddy Turnstone  
 Red Knot  
 Sandering  
 Semipalmated Sandpiper  
 Western Sandpiper  
 Least Sandpiper  
 White-rumped Sandpiper  
 Baird's Sandpiper  
 Pectoral Sandpiper

Date 5/16/05

Localities Kezlarian Property  
Weather overcast Temperature 50's Time 1-3pm  
Observers Alice Tamboulian species 21 Individuals \_\_\_\_\_

Regular and Casual Species: The species below range from abundant to uncommon in Michigan. Casual species (in italics) were recorded more than three times in the last ten years, but were less than annual during the period.

Location	A	B	C	D	Location	A	B	C	D
Dickcissel					Snow Bunting				
X Rufous-sided Towhee					Bobolink				
American Tree Sparrow					Red-winged Blackbird				
Chipping Sparrow					Eastern Meadowlark				
Clay-colored Sparrow					Western Meadowlark				
X Field Sparrow					Yellow-headed Blackbird				
Vesper Sparrow					Rusty Blackbird				
Lark Sparrow					Brewer's Blackbird				
Lark Bunting					Common Grackle				
Savannah Sparrow					Brown-headed Cowbird				
Grasshopper Sparrow					Orchard Oriole				
Henslow's Sparrow					Northern Oriole				
Le Conte's Sparrow					Pine Grosbeak				
Sharp-tailed Sparrow					Purple Finch				
Fox Sparrow					House Finch				
Song Sparrow					Red Crossbill				
Lincoln's Sparrow					White-winged Crossbill				
Swamp Sparrow					Common Redpoll				
White-throated Sparrow					Hoary Redpoll				
Wh. -ed Sparrow					Pine Siskin				
Hai. -ow					American Goldfinch				
Dark-eyed Junco					Evening Grosbeak				
Lapland Longspur					House Sparrow				

Prairie Falcon
Black Rail
Purple Gallinule
Snowy Plover
Wilson's Plover
Black-necked Stilt
Eskimo Curlew
Common Black-headed Gull
Heermann's Gull
Sandwich Tern
Dovekie
Thick-billed Murre
Ancient Murrelet
Band-tailed Pigeon
White-winged Dove
Common Ground-Dove
Groove-billed Ani
Barn Owl
Burrowing Owl
Chuck-will's-widow
White-throated Swift
Rufous Hummingbird
Golden-fronted Woodpecker
Hammond's Flycatcher
Say's Phoebe
Vermilion Flycatcher
(Ash-throated Flycatcher)
Gray Kingbird
Fork-tailed Flycatcher

Clark's Nutcracker
Black-billed Magpie
Carolina Chickadee
Rock Wren
Bewick's Wren
Northern Wheatear
Mountain Bluebird
Sage Thrasher
White/Black-backed Wagtail
Sprague's Pipit
Virginia's Warbler
Black-throated Gray Warbler
Townsend's Warbler
Painted Redstart
Western Tanager
Black-headed Grosbeak
Blue Grosbeak
Painted Bunting
Green-tailed Towhee
Bachman's Sparrow
Cassin's Sparrow
Black-throated Sparrow
Golden-crowned Woodpecker
McCown's Longspur
Smith's Longspur
Chestnut-collared Longspur
Brambling
Gray-crowned Rosy Finch

Location	A	B	C	D	Location	A	B	C	D
Red-throated Loon					Braun				
Common Loon					Canada Goose				
Pied-billed Grebe					Wood Duck				
Horned Grebe					Green-winged Teal				
Red-necked Grebe					American Black Duck				
Eared Grebe					Mallard				
Western Grebe					Northern Pintail				
American White Pelican					Blue-winged Teal				
Brown Pelican					Northern Shoveler				
Double-crested Cormorant					Gadwall				
American Bittern					Eurasian Wigeon				
Least Bittern					American Wigeon				
Great Blue Heron					Canvasback				
Great Egret					Redhead				
Snowy Egret					Ring-necked Duck				
Little Blue Heron					Greater Scaup				
Tricolored Heron					Lesser Scaup				
Cattle Egret					King Eider				
Green Heron					Harlequin Duck				
Black-crown. Night Heron					Olasquaw				
Yellow-crown. Night Heron					Black Scoter				
Glossy Ibis					Surf Scoter				
Tundra Swan					White-winged Scoter				
Mute Swan					Common Goldeneye				
Greater White-front. Goose					Barrow's Goldeneye				
Snow Goose					Bufflehead				
Ross' Goose					Hooded Merganser				

Accidental Species: The species listed below have been recorded less than three times or fewer in the last ten years in the state of Michigan. Species in italics are known only from sight records; those in brackets are still under review by the Michigan Bird Records Committee (MBRC). Any sighting of an accidental species should be documented with a detailed written description or, when possible, with photographs. Please send all documentation to the address at the end of the checklist, attention: MBRC.

Arctic/Pacific Loon	Fulvous Whistling-Duck
Northern Gannet	Trumpeter Swan
Magnificent Frigatebird	Garganey
Reddish Egret	Cinnamon Teal
White Ibis	Tufted Duck
White-faced Ibis	Common Eider
Wood Stork	American Swallow-tailed Kite

Notes: 5/16: Cornus florida (Flowering Dogwood) - one specimen in bloom  
6 spp. on MDNR list for "Greatest Conservation Need"

Order from: Michigan Audubon Society  
P.O. Box 80527  
Lansing Michigan 48257



Location	A	B	C	D	Location	A	B	C	D
Common Merganser					Piping Plover				
Red-breasted Merganser					X Killdeer				✓
Ruddy Duck					American Avocet				
Turkey Vulture		✓			Greater Yellowlegs				
Osprey					Lesser Yellowlegs				
Mississippi Kite					Solitary Sandpiper				
Bald Eagle					Willet				
Northern Harrier					Spotted Sandpiper				
Sharp-shinned Hawk					Upland Sandpiper				
Cooper's Hawk					Whimbrel				
Northern Goshawk					Hudsonian Godwit				
Red-shouldered Hawk					Marbled Godwit				
Broad-winged Hawk					Ruddy Turnstone				
Swainson's Hawk					Red Knot				
Ferruginous Hawk					Sanderling				
Red-tailed Hawk					Semipalmated Sandpiper				
Rough-legged Hawk					Western Sandpiper				
Golden Eagle					Least Sandpiper				
American Kestrel					White-rumped Sandpiper				
M					Baird's Sandpiper				
Falcon					Pectoral Sandpiper				
Gyr Falcon					Purple Sandpiper				
Ring-necked Pheasant					Dunlin				
Spruce Grouse					Curlew Sandpiper				
Ruffed Grouse					Stilt Sandpiper				
Sharp-tailed Grouse					Buff-breasted Sandpiper				
Wild Turkey					Ruff				
Northern Bobwhite					Short-billed Dowitcher				
Yellow Rail					Long-billed Dowitcher				
King Rail					Common Snipe				
Virginia Rail					American Woodcock				
Sora					Wilson's Phalarope				
Common Moorhen					Red-necked Phalarope				
American Coot					Red Phalarope				
Sandhill Crane					Pomarine Jaeger				
Black-bellied Plover					Parasitic Jaeger				
American Golden-Plover					Long-tailed Jaeger				
Semipalmated Plover					Laughing Gull				

Location	A	B	C	D	Location	A	B	C	D
Franklin's Gull					Belted Kingfisher				
Little Gull					Red-headed Woodpecker				
Bonaparte's Gull					Red-bellied Woodpecker				
Mew Gull					Yellow-bellied Sapsucker				
Ring-billed Gull					Downy Woodpecker				
California Gull					Hairy Woodpecker				
Herring Gull					Three-toed Woodpecker				
Thayer's Gull					Black-backed Woodpecker				
Iceland Gull					Northern Flicker				
Lesser Black-backed Gull					Pileated Woodpecker				
Glaucous Gull					Olive-sided Flycatcher				
Great Black-backed Gull					Eastern Wood-Pewee				
Black-legged Kittiwake					Yellow-bellied Flycatcher				
Sabine's Gull					Acadian Flycatcher				
Caspian Tern					Alder Flycatcher				
Common Tern					Willow Flycatcher				
Arctic Tern					Least Flycatcher				
Foster's Tern					Eastern Phoebe				
Least Tern					Great Crested Flycatcher			✓	
Black Tern					Western Kingbird				
Rock Dove					Eastern Kingbird				
Mourning Dove					Scissor-tailed Flycatcher				
Black-billed Cuckoo					Horned Lark				
Yellow-billed Cuckoo					Purple Martin				
Eastern Screech Owl					Tree Swallow				
Great Horned Owl					N. Rough-winged Swallow				
Snowy Owl					Bank Swallow				
Northern Hawk Owl					Cliff Swallow				
Barred Owl					Barn Swallow				
Great Gray Owl					Gray Jay				
Long-eared Owl					Blue Jay			✓	
Short-eared Owl					American Crow			✓	
Boreal Owl					Common Raven				
Northern Saw-whet Owl					Black-capped Chickadee			✓	
Common Nighthawk					Boreal Chickadee				
Whip-poor-will					Tufted Titmouse				
Chimney Swift					Red-breasted Nuthatch			✓	
Ruby-throat Hummingbird					White-breasted Nuthatch			✓	

Location	A	B	C	D	Location	A	B	C	D
Brown Creeper					Nashville Warbler				
Carolina Wren					Northern Parula				
House Wren		✓			Yellow Warbler				✓
Winter Wren					Chestnut-sided Warbler				✓
Sedge Wren					Magnolia Warbler				
Marsh Wren					Cape May Warbler				
Golden-crowned Kinglet					Black-throat Blue Warbler				
Ruby-crowned Kinglet					Yellow-rumped Warbler				
Blue-gray Gnatcatcher					Black-throat Green Warbler				
Eastern Bluebird					X Blackburnian Warbler				✓
Townsend's Solitaire					Yellow-throated Warbler				
Veery					Pine Warbler				
Gray-cheeked Thrush					Kirtland's Warbler				
Swainson's Thrush					Prairie Warbler				
Hermits Thrush					Palm Warbler				
Wood Thrush					Bay-breasted Warbler				
American Robin		✓			Blackpoll Warbler				
Varied Thrush					Cerulean Warbler				
Gray Catbird			✓		Black-and-white Warbler				
Northern Mockingbird					American Redstart				
X Brown Thrasher		✓			Prothonotary Warbler				
American Pipit					Worm-eating Warbler				
Bohemian Waxwing					Ovenbird				
Cedar Waxwing					Northern Waterthrush				
Northern Shrike					Louisiana Waterthrush				
Loggerhead Shrike					Kentucky Warbler				
European Starling					Connecticut Warbler				
White-eyed Vireo					Mourning Warbler				
Bell's Vireo					Common Yellowthroat				
Solitary Vireo					Hooded Warbler				
Yellow-throated Vireo					Wilson's Warbler				
Warbling Vireo					Canada Warbler				
Philadelphia Vireo					Yellow-breasted Chat				
Red-eyed Vireo					Summer Tanager				
X Blue-winged Warbler		✓			Scarlet Tanager				
Golden-winged Warbler					Northern Cardinal				✓
Tennessee Warbler					Rose-breasted Grosbeak				✓
Orange-crowned Warbler					Indigo Bunting				✓

## Stony Creek Corridor Park Floristic Quality, Natural Communities and Species of Greatest Conservation Need

### Significant Natural Resource

<u>Floristic Quality Index</u>	<u>Native Species Count</u>	<u>Total Species Count</u>	<u>Native Species Sq. Root</u>	<u>Index of Conservatism</u>
46.56*	138	177	11.75	3.96

\*Described as Important Natural Resource at the State-wide Level by Weatherbee's Botanical Surveys, August 2005

### State Threatened Plant

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Identified By</u>	<u>Date of Identification</u>
<i>Polemonium reptans</i>	Jacob's Ladder	Threatened	Weatherbee's	Summer 2005

### Uncommon Natural Communities

<u>Natural Community Name</u>	<u>State Rank</u>	<u>Identified By</u>	<u>Date of Identification</u>
Dry-mesic southern forest (Oak forest)	S3 (uncommon, rare)	Weatherbee's	Summer 2005
Southern floodplain forest	S3 (uncommon, rare)	Weatherbee's	Summer 2005

### Species of Greatest Conservation Need

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Identified By**</u>	<u>Date of Identification</u>
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#### Amphibians

<i>Rana pipiens</i>	Northern Leopard Frog		HRM	Summer 2005
<i>Ambystoma laterale</i>	Blue-spotted Salamander		HRM	Summer 2005

#### Birds

<i>Charadrius vociferous</i>	Killdeer		Alice Tombouliau	May 2005
<i>Ardea herodias</i>	Great Blue Heron		Weatherbee's	Summer 2005
<i>Pipilo erythrophthalmus</i>	Eastern Towhee		Alice Tombouliau	May/August 2005
<i>Spizella pusilla</i>	Field Sparrow		Alice Tombouliau	May 2005
<i>Toxostoma rufum</i>	Brown Thrasher		Alice Tombouliau	May 2005
<i>Dendroica fusca</i>	Blackburnian Warbler		Alice Tombouliau	May 2005
<i>Vermivora pinus</i>	Blue-winged Warbler		Alice Tombouliau	May 2005

#### Fishes

<i>Erimyzon sucetta</i>	Lake Chubsucker		NANFA	Continuous since 1960's
<i>Etheostoma flabellare</i>	Fantail Darter		NANFA	January 2005
<i>Esox americanus</i>	Grass Pickerel		MDNR/NANFA	July 2001
<i>Noturus gyrinus</i>	Tadpole Madtom		NANFA	Continuous since 1960's

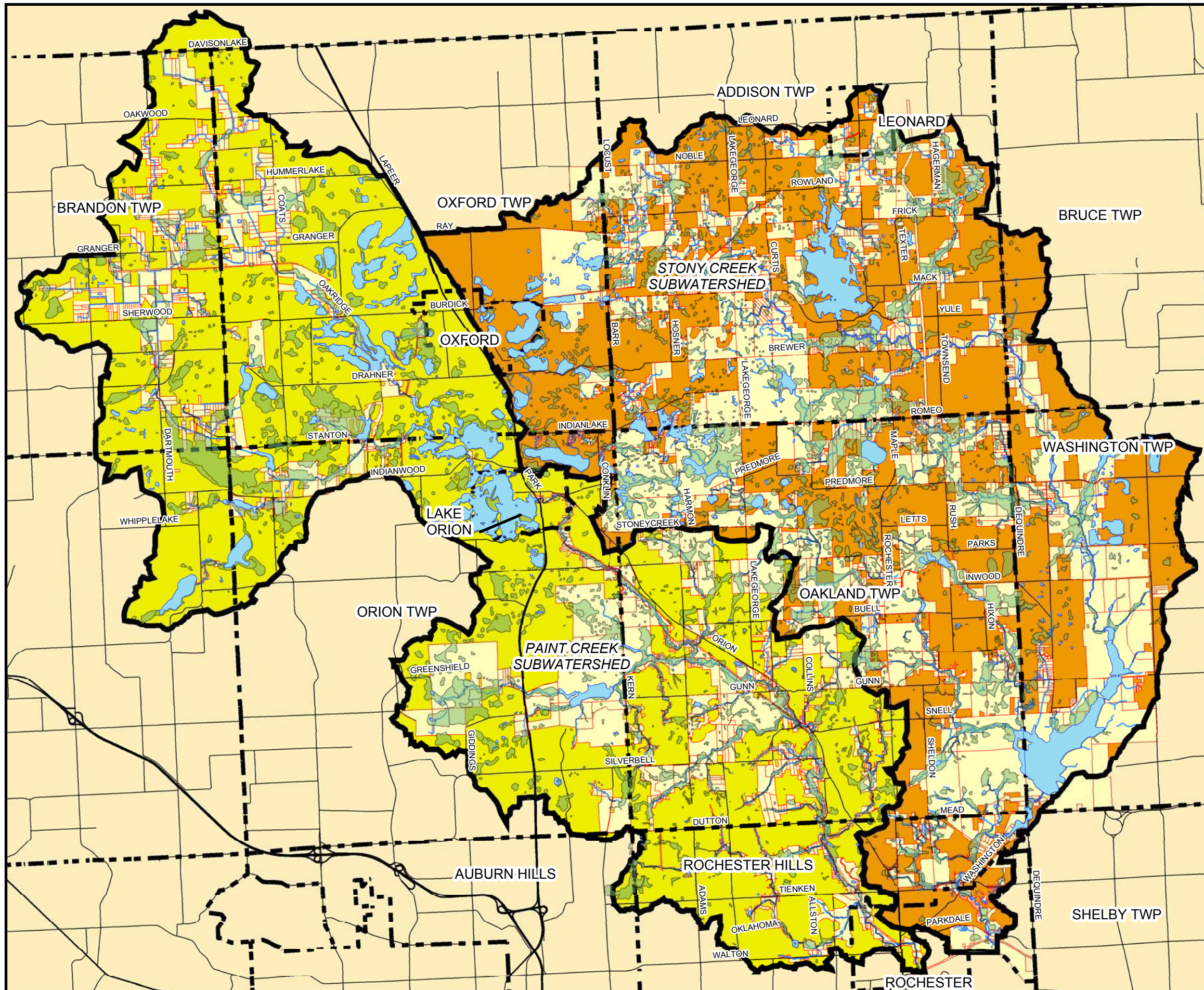
#### Reptiles









<i>Coluber constrictor foxii</i>	Blue Racer		ECT	August 2005
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\*\*HRM = Herpetological Resource & Mgt., NANFA = North American Native Fishes Assoc., ECT = Environmental Consulting & Tech.

# Stony/Paint Creek Subwatershed

## Figure 3.16 Critical Areas & Wetlands



-  Water Course
  -  Road
  -  Community Border
  -  Lake
  -  Potential Wetland
  -  Critical Area
- Subwatershed**
-  Stony Creek
  -  Paint Creek



9-26-05

0 4,000 8,000 16,000

1" = 8000'

MAP DATA PROVIDED BY: OAKLAND COUNTY AND MACOMB COUNTY

WETLAND DATA PROVIDED BY: NWI, OAKLAND TOWNSHIP AND ROCHESTER HILLS BY NISWANDER ENVIRONMENTAL

CRITICAL AREAS DERIVED FROM ECT ASSESSMENT 2005, POLLUTANT LOADING MODEL, MACROINVERTEBRATE SURVEY, ROAD CROSSING SURVEY AND BEHI SURVEY

...CRWC-PAINT CREEK/STONY PAINT SUBWATERSHED, SUBWATERSHED PLAN/WMP UPDATED MAPS, CRITICAL AREAS WITH WETLANDS 092605 11X17.MXD

**ECT**  
Environmental Consulting & Technology, Inc.

501 AVIS DRIVE, STE 5C  
ANN ARBOR, MI 48108

TEL: (734) 769-3004  
FAX: (734) 769-3164  
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# **STONY CREEK CORRIDOR PARK ACQUISITION -- ECOLOGICAL ASSESSMENT**

Prepared For

**Charter Township of Oakland --  
Parks and Recreation Commission  
4393 Collins Road  
Rochester, MI 48306-1670**

Prepared by

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Pinckney, Michigan  
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**AUGUST 2005**

## INTRODUCTION

The preservation of our remaining natural areas is an important goal for a variety of reasons. Preservation of natural areas provides opportunities for viewing wildlife, protects habitats which support and maintain our state's biodiversity, provides educational opportunities, allows for access to water bodies and fishing opportunities, as well as providing a host of other active and passive recreational activities. However, most importantly, natural areas allow people, from an ever increasingly urban population, to connect with nature, to experience it "hands-on", and gain an understanding of nature and the relationship of humans to the natural world; a relationship that is critical to the future of humankind.

In support of a grant application to the Michigan Natural Resources Trust Fund (MNRTF) to preserve natural areas in Oakland Township, the Oakland Township Parks Commission (the Commission) has undertaken an ecological assessment of a tract known as the Stony Creek Corridor Park Acquisition (Stony Creek Park Corridor). The property, which totals approximately 60 acres, is located in Section 25, Township 4 North, Range 11 East, Oakland Township, Oakland County, Michigan. In its ecological characterization, the Commission is especially interested in determining whether any of the rare species identified by the Michigan Natural Features Inventory as occurring in the general area of the parks are present on the park properties. The Commission is also interested more generally in whether any of the plant, amphibian or reptile species identified by the Michigan Department of Natural Resources as Species of Greatest Conservation Need occur on the properties.

To support the Commission's efforts, Weatherbee's conducted the ecological characterization of Stony Creek Park Corridor described in this report. Weatherbee's efforts focused on characterization of the plant, mammal, amphibian and reptile communities of the park, as well as considering other non-biotic features of the property and the setting of the Stony Creek Park Corridor property in relation to two other contiguous natural areas: Knob Creek Subdivision Conservation Easement (Knob Creek Easement) and Stony Creek Metro Park.

The general approach used by Weatherbee's for this project consisted of assembly of a project team with expertise in the specific taxonomic groups of interest, review of the background information, field reconnaissance of the parcel, and preparation of this report based on the background information and field observations. The general field procedures (described in more detail below) consisted of a walkover of the site during which a list of plant species, identifiable at that time of the year, was compiled. Observations as to the various types of plant communities present on the parcel, including those that may be of special value, as well as observations of wildlife, wildlife sign, significant natural features and nature interpretation opportunities were also made during the walkover.

## METHODS

### Plant Species, Plant Communities and Floristic Quality Assessment

Weatherbee's conducted three separate reconnaissance efforts of the Stony Creek Corridor Park in May, July and August 2005. The field team for this effort consisted of Ms. Ellen Elliott Weatherbee of Weatherbee's Botanical Surveys and Dr. Brian Klatt of Wetland Solutions – Klatt Environmental LLC. The Weatherbee's team also conducted a reconnaissance of the Knob Creek Easement in August 2005. During the reconnaissance, a list of all plant species, in a reasonably identifiable state, was compiled for the sites. Additionally, the major plant communities, as described in *Michigan Natural Community Types* (MNFI 2003), were identified and the approximate boundaries of the communities sketched onto an aerial photograph. Because a state-threatened species (*Polemonium reptans*) was found during the reconnaissance on the Stony Creek Corridor Park site, the population of this protected species was enumerated, the reproductive condition of the plants described, and the stand of plants photographically documented. As with the protected species, other representative and significant natural features of the site were also photographically documented.

The lists of plants and plant communities are presented in the section on Findings. For each species listed, the following information is presented: scientific name, common name, coefficient of conservatism, wetland indicator status and whether the species was found on the Stony Creek Corridor Park site, the Knob Creek Easement site, or both sites. The "coefficient of conservatism" is a value ranging from 0 – 10 that has been assigned to each plant species native to Michigan. This coefficient of conservatism represents "an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be a presettlement condition." In other words, plants with a low numerical rating can be found in a wide range of habitats, while those with a high number are "almost always restricted to a presettlement remnant, *i.e.* a high quality natural area." (Herman, *et al.* 2001).

Herman, *et al.* (2001) also present the wetland indicator status for each plant species native to, or naturalized in, Michigan. Species assigned a wetland indicator status of:

- OBL (Obligate Wetland) almost always occur in wetlands under natural conditions (more than 99% probability);
- FACW (Facultative Wetland) plants usually occur in wetlands, but occasionally are found in non-wetlands (67% - 99% probability);
- FAC (Facultative) plants are equally likely to occur in wetlands or non wetlands (34% - 66% probability);
- FACU (Facultative Upland) plants occasionally occur in wetlands, but usually occur in non-wetlands (estimated 1% - 33% probability); and
- UPL (Upland) plants almost never occur in wetlands under natural conditions (less than 1% probability).

## **Mammals**

Concurrent with the plant species inventory of the Stony Creek Corridor Park and Knob Creek Easement sites, Weatherbee's field team also noted the presence of any mammal species or sign, such as, prints, scat, nests, burrows, *etc.* Also, any observed significant habitat features (tree snags, nesting sites, *etc.*) related to mammals was noted.

## **Amphibians and Reptiles**

The herpetofauna of the Stony Creek Corridor site was assessed by Mr. David Mifsud of Herpetological Resource and Management. The inventory efforts were conducted from early June through early August 2005. Frogs and toads were inventoried using a modified version of the Michigan Frog and Toad Survey procedures. Other sampling methods included traps, turning cover (*e.g.* logs, boards, and debris) and time-constrained visual observations. Surveys took place during both daylight and nighttime periods. Mr. Mifsud's methods are further described in Appendix A.

In addition to the specific observations regarding the flora, mammals, and herpetofauna of the sites, observations as to the suitability of the areas for wildlife, wildlife viewing, and nature interpretation were made during the field reconnaissance. Though not censused specifically, anecdotal observations regarding birds were also made (intensive avifauna inventorying to be conducted by Oakland Township Parks staff and commissioners).

## FINDINGS

### Plant Communities and Plant Species

Floristically, Stony Creek Corridor Park and the Knob Creek Easement support a diverse flora, have high floristic quality indices, contain high quality examples of three native plant communities, as well as supporting a population of a state-threatened species (*Polemonium reptans*).

#### Plant Communities

The native plant communities (MNFI 2003), found on the sites are: 1) Southern Wet Meadow; 2) Southern Floodplain Forest; and 3) Dry-mesic Southern Forest. Additionally, a fourth plant community, Second-growth Forest/Old Field, widely recognized by ecologists though not described by the MNFI, also occurred on both sites. The approximate distribution of these plant communities on the sites is depicted in Figure 1. Due to the fine-grained mosaic nature of the Southern Wet Meadow areas and the Southern Floodplain Forest, these two communities are represented as a single map unit in Figure 1. Additionally, while Figure 1 depicts distinct borders between the Southern Floodplain Forest and the Dry-mesic Southern Forest, substantial ecotones typically existed for these communities in many areas of the sites.

*Southern Wet Meadow.* This is a sedge and grass dominated wetland community, located primarily south of the transition zone. It is typically found on muck soils, in stream valleys, along lake margins, and in depressions and channels in glacial outwash. Plant species characteristic of this community include: Canada blue joint grass (*Calamagrostis canadensis*), various sedges (*Carex*), reed canary grass (*Phalaris arundinacea*), cattail (*Typha*), Joe-Pye weed (*Eupatorium maculatum*) and boneset (*Eupatorium perfoliatum*). On the Stony Creek Corridor Park and Knob Creek Easement sites, this community was well developed and found as a series of discrete areas along the banks of Stony Creek, primarily limited to the first terrace above the creek. While this community is typically dominated by Canada blue joint grass, the community as present at the Oakland Township sites was dominated by rice cut-grass (*Leersia oryzoides*). (Photos 1 & 2)

*Southern Floodplain Forest.* Frequently referred to as “bottomland”, these broad-leaved, deciduous tree dominated lowlands typically occur along the banks of third order streams or greater on loams and silt loams, though they may also include sandy loams and thin mucks. Silver maple (*Acer saccharinum*) is the usual dominant of this community. Common co-dominants may include: green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), and second growth American elm (*Ulmus americana*). Other species that are also commonly associated with this community include: butternut (*Juglans cinerea*), black maple (*Acer nigra*), buckeye (*Aesculus glabra*), boxelder (*Acer negundo*), black ash (*Fraxinus nigra*), black willow (*Salix nigra*) and cottonwood (*Populus deltoides*). Surface water is a prime input to these communities, primarily due to spring flooding. However, despite it’s name, groundwater is frequently a significant component in insuring anaerobic conditions in the lower root zone in this community. At the Oakland Township sites, this community occupied low elevation areas along Stony Creek and inter-digitated with the Southern



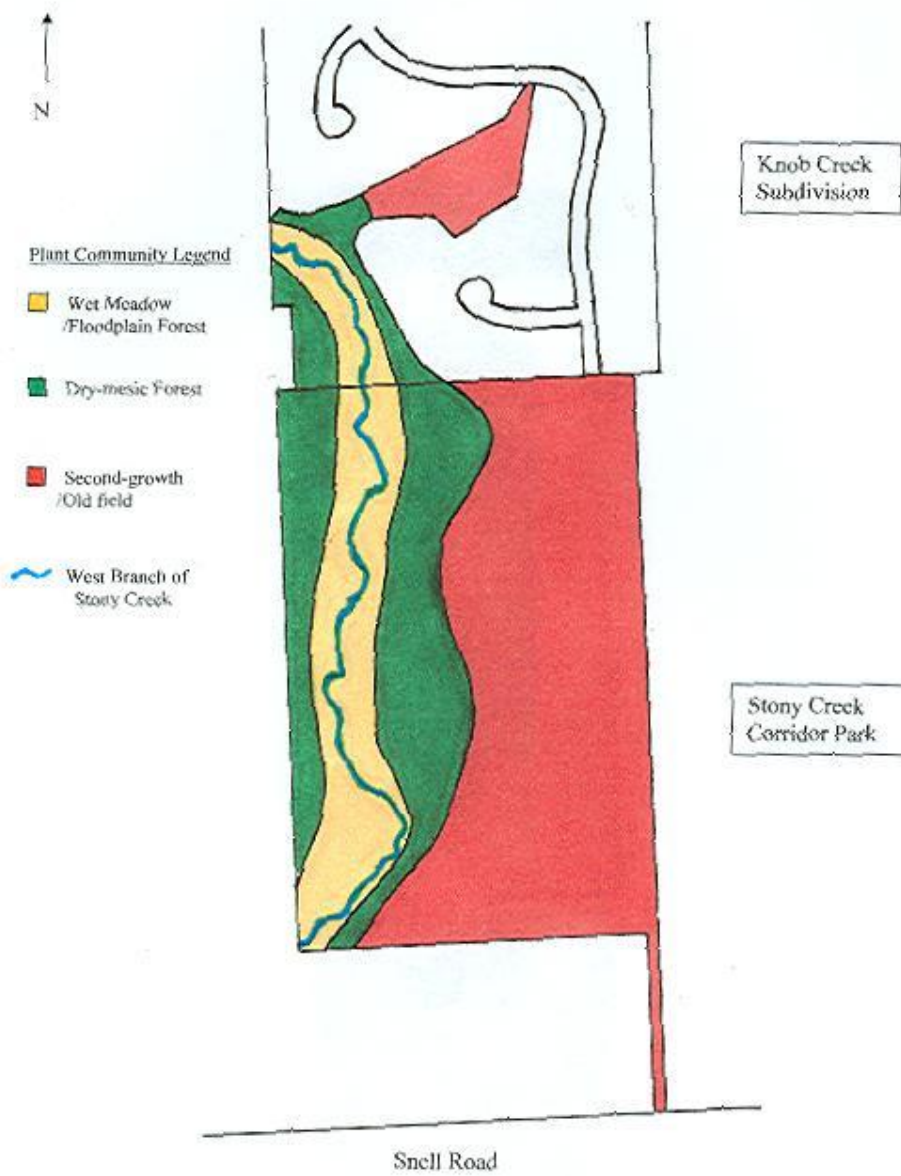


Figure 1. Plant Community Distribution. Map Not to Scale.

Wet Meadow community, sometimes forming a partial canopy over the meadow. Basswood (*Tilia americana*) replaced typical silver maple as the dominant tree species on-site. American elm (*Ulmus americana*) and hop hornbeam (*Carpinus caroliniana*) were also common, as was skunk cabbage (*Symplocarpus foetidus*) in seepage areas. (Photo 3)

*Dry-Mesic Southern Forest.* Dry-mesic southern forests are typically dominated by white and black oak. Other tree species frequently found in this community type include: wild-black cherry (*Prunus serotina*); shag-bark and pignut hickories (*Carya ovata* and *C. glabra*); and red maple (*Acer rubrum*), occurring on the moister, lower sections of slopes. This forest type tends to occur on dry-mesic sites in the southern half of Michigan's lower peninsula on glacial outwash, on kettle-kame topography, and on coarse-textured end and ground moraines. Most dry-mesic southern forests have at least some shrubs in the understory. The shrub species vary from native species (such as witch hazel (*Hamamelis virginiana*)) to non-native, invasive honeysuckles (*Lonicera*). This community was found to occupy the steep slopes on both the Stony Creek Corridor Park and Knob Creek Easement sites. In addition to dominant species of white, black, and red oaks (*Quercus alba*, *Q. velutina*, and *Q. rubra*), this community also included some tree species considered more mesic, such as beech (*Fagus grandifolia*) and sugar maple (*Acer saccharum*). (Photo 4)

*Second-growth/Old Field.* While this community is not recognized and described in the *Michigan Natural Community Types*, it is nevertheless a widespread community throughout Michigan, though primarily of anthropogenic origins. As implied by the name, this community is found in areas that have been disturbed, usually by plowing or pasturing, and subsequently abandoned. The dominant plant species are highly variable and dependent on the specific agricultural history of the site. Thus, areas that were formerly plowed may be dominated by both native and non-native weedy species such as common ragweed (*Ambrosia artemisiifolia*) and foxtail grasses (*Setaria* spp.). Areas that were used for pasturing are likely to be dominated by the forage grasses planted at the site. Frequently, these are brome grasses (*Bromus* spp.) or fescues (*Festuca* spp.). The community is considered successional, but may be the dominant plant community on a site for many decades. At the Oakland Township sites, this community occupied the highest elevation sites and contained a wide variety of native and non-native species, including most commonly autumn olive (*Elaeagnus umbellata*). Despite the disturbed nature of this community, it also contained a number of areas and species of interest at the Oakland Township sites. Of particular note were a number of areas that contained species typically associated with hillside prairies or oak barrens in Michigan, such as little blue stem (*Andropogon scoparius*), bush clover (*Lespedeza capitata*), showy goldenrod (*Solidago speciosa*), and stiff-stemmed goldenrod (*Solidago rigida*) (Photo 5). The majority of the area occupied by this community appears to be undergoing succession toward Dry Southern Forest or Dry-mesic Southern Forest, with saplings or young trees of the oaks, wild black cherry (*Prunus serotina*), and black walnut (*Juglans nigra*) being common (Photo 6).

### Plant Species and Floristic Quality Assessment

A complete list of all plant species found on the sites, as well as descriptive statistics of the Floristic Quality Assessment, is presented in Table 1. A total of 177 plant species was found at Stony Creek Corridor Park.; of these, 138 (78%) are native to Michigan. At Knob Creek Easement, 133 plant

species were found; of these, 106 (80%) are Michigan native species. Table 1 shows that both the Stony Creek Corridor Park and Knob Creek Easement sites have high floristic quality indices (46.05 and 39.43, respectively).

**Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.**  
(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)

<i>Scientific Name</i>	Common Name	C	W.I.	Stony Creek Corridor Park	Knob Creek Easement
<i>Acer negundo</i>	box elder	0	FACW-		X
<i>Acer rubrum</i>	red maple	1	FAC	X	
<i>Acer saccharum</i>	sugar maple; hard maple	5	FACU	X	
<i>Achillea millefolium</i>	yarrow	1	FACU	X	
<i>Agrimonia gryposepala</i>	tall agrimony	2	FACU+	X	X
<i>AGROPYRON REPENS</i>	quack grass	*	FACU		X
<i>AGROSTIS GIGANTEA</i>	redtop	*	[FAC]	X	
<i>AJUGA REPENS</i>	carpet bugle	*	UPL		X
<i>Ambrosia artemisiifolia</i>	common ragweed	0	FACU	X	
<i>Amelanchier arborea</i>	Juneberry	4	FACU	X	
<i>Amphicarpaea bracteata</i>	hog-peanut	5	FAC	X	X
<i>Andropogon scoparius</i>	little bluestem grass	5	FACU	X	X
<i>Anemone cylindrica</i>	thimbleweed	6	UPL		X
<i>Anemone quinquefolia</i>	wood anemone	5	FAC	X	
<i>Anemone virginiana</i>	thimbleweed	3	UPL	X	
<i>Apocynum androsaemifolium</i>	spreading dogbane	3	UPL	X	
<i>Apocynum cannabinum</i>	Indian hemp; hemp dogbane	3	FAC	X	X
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit; Indian-turnip	5	FACW-	X	X
<i>Asclepias incarnata</i>	swamp milkweed	6	OBL	X	
<i>Asclepias syriaca</i>	common milkweed	1	UPL	X	X
<i>ASPARGUS OFFICINALIS</i>	asparagus	*	FACU	X	X
<i>Asplenium platyneuron</i>	ebony spleenwort	2	FACU	X	
<i>Aster laevis</i>	smooth aster	5	UPL	X	
<i>Aster lateriflorus</i>	side-flowering aster	2	FACW-		X
<i>BARBAREA VULGARIS</i>	yellow rocket	*	FAC	X	
<i>BERBERIS VULGARIS</i>	common barberry	*	FACU	X	X
<i>BERTEROA INCANA</i>	hoary alsyssum	*	UPL		X
<i>Bidens frondosus</i>	common beggar-ticks	1	FACW		X
<i>Boehmeria cylindrica</i>	false nettle	5	OBL	X	X
<i>BROMUS INERMIS</i>	Hungarian brome; smooth brome	*	UPL	X	X
<i>Caltha palustris</i>	marsh marigold	6	OBL	X	
<i>Carex blanda</i>	sedge	1	FAC	X	
<i>Carex lacustris</i>	sedge	6	OBL		X
<i>Carex leptoneuria</i>	sedge	3	FAC	X	
<i>Carex pedunculata</i>	sedge	5	UPL	X	
<i>Carex pensylvanica</i>	sedge	4	UPL	X	X
<i>Carex radiata</i>	sedge	2	UPL	X	
<i>Carex stricta</i>	sedge	4	OBL	X	
<i>Carex vulpinoidea</i>	sedge	1	OBL	X	
<i>Carpinus caroliniana</i>	hornbeam; blue-	6	FAC	X	X

**Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.**

(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)

<i>Scientific Name</i>	<b>Common Name</b>	<b>C</b>	<b>W.I.</b>	<b>Stony Creek Corridor Park</b>	<b>Knob Creek Easement</b>
	beech				
<i>Carya cordiformis</i>	bitternut hickory	5	FAC	X	X
<i>CELASTRUS ORBICULATA</i>	Oriental bittersweet	*	UPL	X	X
<i>CENTAUREA MACULOSA</i>	spotted knapweed	*	UPL	X	X
<i>CHRYSANTHEMUM LEUCANTHEMUM</i>	ox-eye daisy	*	[UPL]	X	X
<i>Cicuta maculata</i>	water hemlock	4	OBL	X	X
<i>Cinna arundinacea</i>	wood reedgrass	7	FACW	X	X
<i>Circaea lutetiana</i>	enchanter's-nightshade	2	FACU	X	X
<i>CIRSIUM ARVENSE</i>	Canada thistle	*	FACU		X
<i>Cirsium muticum</i>	swamp-thistle	6	OBL	X	X
<i>CIRSIUM VULGARE</i>	bull-thistle	*	FACU-	X	
<i>Claytonia virginica</i>	spring-beauty	4	FACU	X	
<i>Clematis virginiana</i>	virgin's bower	4	FAC		X
<i>Collinsonia canadensis</i>	richweed	8	FAC	X	
<i>Conioselinum chinense</i>	hemlock parsley	10	OBL		X
<i>Cornus alternifolia</i>	alternate-leaved dogwood	5	UPL	X	X
<i>Cornus florida</i>	flowering dogwood	8	FACU-	X	
<i>Cornus foemina</i>	gray dogwood	1	FACW-	X	X
<i>Cornus rugosa</i>	round-leaved dogwood	6	UPL	X	
<i>Cornus stolonifera</i>	red-osier dogwood	2	FACW	X	
<i>Corylus americana</i>	hazelnut	5	FACU-	X	X
<i>Cryptotaenia canadensis</i>	honestwort	2	FAC		X
<i>DACTYLIS GLOMERATA</i>	orchard grass	*	FACU	X	
<i>DAUCUS CAROTA</i>	wild carrot; Queen-Anne's-lace	*	UPL	X	X
<i>Desmodium canadense</i>	showy tick-trefoil	3	FAC-		X
<i>Desmodium nudiflorum</i>	naked tick-trefoil	7	UPL	X	X
<i>DIANTHUS ARMERIA</i>	Deptford pink	*	UPL	X	
<i>Dioscorea villosa</i>	wild yam	4	FAC-	X	X
<i>Dryopteris carthusiana</i>	spinulose woodfern	5	FACW-	X	X
<i>Dryopteris intermedia</i>	glandular or evergreen woodfern	5	FAC	X	X
<i>ELAEAGNUS UMBELLATA</i>	autumn-olive	*	[FACU]	X	X
<i>Elymus canadensis</i>	Canada wild-rye	7	FAC-		X
<i>Elymus riparius</i>	riverbank wild-rye	8	FACW	X	X
<i>Elymus virginicus</i>	virginia wild-rye	4	FACW-	X	X
<i>Epilobium coloratum</i>	cinnamon willow-herb	7	FAC-		X
<i>Equisetum arvense</i>	common or field horsetail	0	FAC	X	
<i>Equisetum hyemale</i>	scouring rush	2	FACW-	X	X
<i>Equisetum laevigatum</i>	smooth scouring rush	2	FACW	X	X
<i>Equisetum palustre</i>	marsh horsetail	10	FACW		X
<i>Erigeron annuus</i>	annual fleabane	0	FAC-		X
<i>Erigeron strigosus</i>	daisy fleabane	4	FAC-	X	
<i>Erythronium americanum</i>	yellow trout lily	5	UPL	X	
<i>Eupatorium maculatum</i>	joe-pye weed	4	OBL	X	
<i>Euthamia graminifolia</i>	grass-leaved goldenrod	3	FACW-	X	X

**Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.**

(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)

<b>Scientific Name</b>	<b>Common Name</b>	<b>C</b>	<b>W.I.</b>	<b>Stony Creek Corridor Park</b>	<b>Knob Creek Easement</b>
<i>Fagus grandifolia</i>	American beech	6	FACU	X	
<i>Fragaria virginiana</i>	wild strawberry	2	FAC-	X	X
<i>Fraxinus americana</i>	white ash	5	FACU	X	
<i>Fraxinus nigra</i>	black ash	6	FACW+		X
<i>Fraxinus pennsylvanica</i>	red ash	2	FACW	X	
<i>Galium aparine</i>	annual bedstraw	0	FACU	X	
<i>Galium asprellum</i>	roughbedstraw	5	OBL		X
<i>Galium circaeans</i>	white wild licorice	4	FACU-	X	
<i>Galium lanceolatum</i>	yellow wild licorice	4	UPL		X
<i>Galium tinctorium</i>	stiff bedstraw	5	OBL		X
<i>Galium trifidum</i>	small bedstraw	6	FACW+	X	
<i>Galium triflorum</i>	fragrant bedstraw	4	FACU+	X	
<i>Geranium maculatum</i>	wild geranium	4	FACU	X	X
<i>Geum canadense</i>	white avens	1	FAC	X	X
<i>Glyceria striata</i>	fowl manna grass	4	OBL	X	
<i>Hackelia virginiana</i>	stickseed; beggar's lice	1	FAC-	X	X
<i>Hamamelis virginiana</i>	witch-hazel	5	FACU	X	X
<b>HELIANTHUS ANNUUS</b>	garden sunflower	*	FAC-	X	
<i>Helianthus divaricatus</i>	woodland sunflower	5	UPL		X
<i>Hepatica americana</i>	round-lobed hepatica	6	UPL	X	
<b>HIERACIUM PILOSELLOIDES</b>	glaucous king-devil	*	[UPL]		X
<b>HYPERICUM PERFORATUM</b>	common St. John's-wort	*	UPL	X	X
<i>Hystrix patula</i>	bottlebrush grass	5	UPL	X	X
<i>Impatiens capensis</i>	spotted touch-me-not	2	FACW	X	X
<i>Iris virginica</i>	southern blue flag	5	OBL	X	X
<i>Juglans cinerea</i>	butternut	5	FACU+		X
<i>Juglans nigra</i>	black walnut	5	FACU	X	X
<i>Juniperus communis</i>	common or ground juniper	4	[FACU]	X	
<i>Juniperus virginiana</i>	red-cedar	3	FACU	X	
<b>LACTUCA SALIGNA</b>	willow lettuce	*	FACU	X	
<i>Laportea canadensis</i>	wood nettle	4	FACW		X
<i>Leersia oryzoides</i>	cut grass	3	OBL	X	X
<i>Lespedeza capitata</i>	round-headed bush-clover	5	FACU	X	
<i>Lespedeza virginica</i>	slender bush-clover	7	UPL	X	
<i>Liriodendron tulipifera</i>	tulip tree	9	FACU+	X	
<i>Lobelia cardinalis</i>	cardinal flower	7	OBL		X
<i>Lobelia spicata</i>	pale spiked lobelia	4	FAC	X	X
<b>LONICERA MAACKII</b>	Amur honeysuckle	*	UPL	X	X
<i>Lysimachia ciliata</i>	fringed loosestrife	4	FACW		X
<b>MALUS PUMILA</b>	apple	*	[UPL]	X	
<b>MEDICAGO LUPULINA</b>	black medick	*	FAC-	X	
<b>MELILOTUS ALBA</b>	white sweet-clover	*	FACU	X	X
<b>MELILOTUS OFFICINALIS</b>	yellow sweet-clover	*	FACU	X	
<i>Menispermum canadense</i>	moonseed	5	FAC		X
<i>Mitella diphylla</i>	bishop's cap	8	FACU+	X	
<i>Monarda fistulosa</i>	wild bergamot	2	FACU	X	X
<i>Oenothera biennis</i>	common evening-	2	FACU	X	

**Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.**

(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)

Scientific Name	Common Name	C	W.I.	Stony Creek Corridor Park	Knob Creek Easement
	primrose				
<i>Onoclea sensibilis</i>	sensitive fern	2	FACW	X	X
<i>Osmunda cinnamomea</i>	cinnamon fern	5	FACW	X	
<i>Ostrya virginiana</i>	ironwood; hop hornbeam	5	FACU-	X	X
<i>Panicum columbianum</i>	panic grass	7	UPL	X	
<i>Parthenocissus quinquefolia</i>	Virginia creeper	5	FAC-	X	X
<i>Phalaris arundinacea</i>	reed canary grass	0	FACW+	X	
<b>PHLEUM PRATENSE</b>	timothy	*	FACU	X	X
<i>Phragmites australis</i>	reed; giant bulrush	1	FACW+		X
<i>Phryma leptostachya</i>	lopseed	4	UPL		X
<i>Pilea pumila</i>	clearweed	5	FACW	X	X
<b>PLANTAGO LANCEOLATA</b>	English plantain; ribgrass	*	FAC	X	
<b>PLANTAGO MAJOR</b>	common plantain	*	FAC+		X
<b>POA COMPRESSA</b>	Canada bluegrass	*	FACU+	X	
<b>POA PRATENSIS</b>	kentucky bluegrass	*	FAC-	X	
<i>Podophyllum peltatum</i>	may apple; mandrake	3	FACU	X	X
<i>Polemonium reptans</i> <T>	Jacob's ladder	10	FAC	X	
<i>Polygonum virginianum</i>	jumpseed	4	FAC	X	X
<i>Populus deltoides</i>	cottonwood	1	FAC+	X	X
<i>Populus grandidentata</i>	big-toothed or large-toothed aspen	4	FACU	X	X
<i>Populus tremuloides</i>	quaking aspen	1	FAC		X
<b>POTENTILLA RECTA</b>	rough-fruited cinquefoil	*	UPL	X	X
<i>Prenanthes alba</i>	white lettuce; rattlesnake-root	5	FACU	X	X
<b>PRUNELLA VULGARIS</b>	lawn prunella	*	FAC	X	X
<i>Prunus americana</i>	American wild plum	4	UPL	X	
<b>PRUNUS AVIUM</b>	sweet cherry	*	[UPL]	X	X
<i>Prunus serotina</i>	wild black cherry	2	FACU	X	X
<i>Pteridium aquilinum</i>	bracken fern	0	FACU	X	
<i>Pycnanthemum virginianum</i>	common mountain mint	5	FACW+	X	
<i>Quercus alba</i>	white oak	5	FACU	X	X
<i>Quercus bicolor</i>	swamp white oak	8	FACW+	X	X
<i>Quercus ellipsoidalis</i>	Hill's oak; Jack-oak	4	UPL	X	
<i>Quercus macrocarpa</i>	bur oak	5	FAC-	X	
<i>Quercus rubra</i>	red oak	5	FACU	X	X
<i>Quercus velutina</i>	black oak	6	UPL	X	X
<i>Ranunculus abortivus</i>	small-flowered buttercup	0	FACW-	X	
<i>Ranunculus hispidus</i>	swamp buttercup	5	FAC	X	
<i>Rhamnus alnifolia</i>	alder-leaved buckthorn	8	OBL	X	
<b>RHAMNUS CATHARTICA</b>	common buckthorn	*	FACU	X	X
<b>RHAMNUS FRANGULA</b>	glossy buckthorn	*	FAC+	X	X
<i>Rhus typhina</i>	staghorn sumac	2	UPL	X	X
<i>Ribes cynosbati</i>	prickly or wild gooseberry	4	UPL	X	

**Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.**

(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)

<i>Scientific Name</i>	Common Name	C	W.I.	Stony Creek Corridor Park	Knob Creek Easement
<i>ROBINIA PSEUDOACACIA</i>	black locust	*	FACU-	X	
<i>ROSA MULTIFLORA</i>	Japanese or multiflora rose	*	FACU	X	X
<i>Rubus allegheniensis</i>	common blackberry	1	FACU+	X	X
<i>Rubus occidentalis</i>	black raspberry	1	UPL	X	X
<i>Rubus strigosus</i>	wild red raspberry	2	FACW-		X
<i>Rudbeckia hirta</i>	black-eyed susan	1	FACU	X	X
<i>SALIX ALBA</i>	white willow	*	FACW		X
<i>Salix exigua</i>	sandbar willow	1	OBL		X
<i>Salix nigra</i>	black willow	5	[OBL]	X	
<i>Sassafras albidum</i>	sassafras	5	FACU	X	X
<i>Scirpus atrovirens</i>	bulrush	3	OBL	X	
<i>Scirpus pendulus</i>	bulrush	3	OBL	X	
<i>Scutellaria lateriflora</i>	mad-dog skullcap	5	OBL	X	X
<i>Senecio aureus</i>	golden ragwort	5	FACW	X	
<i>Smilacina racemosa</i>	false spikenard	5	FACU	X	
<i>Smilacina stellata</i>	starry false Solomon-seal	5	FAC-		X
<i>Solidago altissima</i>	tall goldenrod	1	FACU	X	X
<i>Solidago gigantea</i>	late goldenrod	3	FACW	X	X
<i>Solidago juncea</i>	early goldenrod	3	UPL	X	X
<i>Solidago nemoralis</i>	old-field goldenrod	2	UPL	X	
<i>Solidago rigida</i>	stiff goldenrod	5	FACU-	X	X
<i>Solidago speciosa</i>	showy goldenrod	5	UPL	X	
<i>Symplocarpus foetidus</i>	skunk-cabbage	6	OBL	X	X
<i>TARAXACUM OFFICINALE</i>	common dandelion	*	FACU	X	
<i>Teucrium canadense</i>	wood sage	4	FACW-	X	X
<i>Thalictrum dasycarpum</i>	purple meadow-rue	3	FACW-	X	
<i>Thalictrum dioicum</i>	early meadow-rue	6	FACU+	X	X
<i>Tilia americana</i>	linden; basswood	5	FACU	X	X
<i>Toxicodendron radicans</i>	poison-ivy	2	FAC+	X	X
<i>TRAGOPOGON DUBIUS</i>	goat's beard	*	UPL	X	
<i>TRIFOLIUM PRATENSE</i>	red clover	*	FACU+	X	
<i>Typha latifolia</i>	broad-leaved cat-tail	1	OBL	X	
<i>Ulmus americana</i>	white or American elm	1	FACW-	X	X
<i>ULMUS PUMILA</i>	Siberian elm	*	UPL	X	
<i>Urtica dioica</i>	nettle	1	FAC+		X
<i>Vaccinium angustifolium</i>	blueberry	4	FACU		X
<i>VERBASCUM THAPSUS</i>	common mullein	*	UPL	X	X
<i>Verbena hastata</i>	blue vervain	4	FACW+	X	X
<i>Verbena urticifolia</i>	white vervain	4	FAC+	X	X
<i>Veronicastrum virginicum</i>	Culver's root	8	FAC	X	
<i>Viburnum lentago</i>	nannyberry; sheepberry	4	FAC+	X	X
<i>VIBURNUM OPULUS</i>	European highbush cranberry	*	[FAC]	X	
<i>Vitis riparia</i>	riverbank grape	3	FACW-	X	X
<i>Zanthoxylum americanum</i>	prickly-ash	3	UPL	X	X

<b>Table 1. Plant species and floristic quality assessment for Stony Creek Corridor Park and Knob Creek Easement.</b>					
(C – Coefficient of Conservatism; W. I. – Wetland Indicator Status; names in all capitals indicate the species is non-native)					
<i>Scientific Name</i>	Common Name	C	W.I.	Stony Creek Corridor Park	Knob Creek Easement
				Floristic Quality Assessment	
				Stony Creek	Knob Creek
Mean Value of Index of Conservatism =				3.96	3.83
Native Species Count =				138	106
Total Species Count =				177	133
Square Root of Native Species Count =				11.75	10.30
Floristic Quality Index =				46.56	39.43



Of particular note was finding of Jacob’s ladder (*Polemonium reptans*), which is a state threatened species (Photo 7). The population of *P. reptans* was found on the Stony Creek Corridor Park site, on the west side of Stony Creek in an area transitional between Dry-mesic Southern Forest and Southern Floodplain plant communities (Photo 8). The population consisted of approximately 120 individual stems or rosettes. None of the individuals were in flower or fruit at the time of the survey. The population was roughly circular, with a diameter of about 5.5 meters. Other species associated with the population included: white oak (*Quercus alba*), American elm (*Ulmus americana*), black raspberry (*Rubus occidentalis*), poison ivy (*Toxicodendron radicans*), wild black cherry (*Prunus serotina*), and Amur honeysuckle (*Lonicera mackii*). A voucher specimen was collected and will be submitted to the University of Michigan Herbarium.

## Wildlife

Evidence of 24 different species of wildlife, both game and non-game, including mammals, birds, reptiles, and amphibians were observed on, or reported from, the Stony Creek Corridor Park site. Table 2 presents a complete list of the fauna observed directly, inferred by sign, or reported by Oakland Township Parks staff. Evidence of white-tailed deer, raccoon, and eastern chipmunks in the forms of scat, feeding stations, prints, and game trails, was particularly evident throughout the area. So too, sightings of, and indirect evidence of turkey was wide-spread. It was noted during the reconnaissance that the area supports a population of the black morph of the gray squirrel.

It is notable that the blue-spotted salamander, great blue heron, and the blue racer, all found on the site, have been identified as “Species of Greatest Conservation Need” by the Michigan Department of Natural Resources.

<b>Table 2. Animal species or sign observed, or species reported from Stony Creek Corridor Park.</b>	
<i>Scientific Name</i>	<b>Common Name</b>
<b>MAMMALS</b>	
<i>Blarina brevicauda</i>	short-tailed shrew
<i>Canis latrans</i>	coyote
<i>Microtus pennsylvanicus</i>	meadow vole
<i>Odocoileus virginianus</i>	white-tailed deer
<i>Procyon lotor</i>	raccoon
<i>Scalopus aquaticus</i>	eastern mole
<i>Sciurus carolinensis</i>	gray squirrel (black morph)
<i>Tamias striatus</i>	eastern chipmunk
<b>BIRDS</b>	
<i>Ardea herodias</i>	great blue heron
<i>Contopus virens</i>	eastern wood pewee
<i>Corvus brachyrhynchus</i>	American crow

<b>Table 2. Animal species or sign observed, or species reported from Stony Creek Corridor Park.</b>	
<i>Scientific Name</i>	<b>Common Name</b>
<i>Cyanocitta cristata</i>	blue jay
<i>Dendrocopos pubescens</i>	downy woodpecker
<i>Meleagris gallopavo</i>	turkey
<i>Parus atricapillus</i>	black-capped chickadee
<i>Pipilo erythrophthalmus</i>	rufous-sided towhee
<i>Richmondia cardinalis</i>	northern cardinal
<b>REPTILES</b>	
<i>Thamnophis sirtalis sirtalis</i>	Eastern garter snake
<b>FROGS AND TOADS</b>	
<i>Bufo americana</i>	American toad
<i>Hyla versicolor</i>	gray treefrog
<i>Rana clamitans</i>	green frog
<i>Rana sylvatica</i>	wood frog
<b>SALAMANDERS</b>	
<i>Ambystoma laterale</i>	blue-spotted salamander
<i>Plethodon cinereus</i>	red-backed salamander

## DISCUSSION

From an ecological and conservation perspective, the Stony Creek Corridor Park Acquisition tract is an extremely high-quality site. This opinion is based on a number of factors that will be discussed in greater detail below, but include:

- variable topography
- presence of a stream with natural meanders intact
- variety of habitats that can supply needs for wildlife populations
- wide-spread evidence of existing wildlife populations
- presence of multiple, well-developed native plant communities
- remnants of other native plant communities
- high plant species richness
- high percentage of native plant species
- intact native soil systems
- presence of extensive wetland complex
- position of the site in landscape, allowing it to act as wildlife corridor

The dominant feature of the Stony Creek Corridor Park site is, of course, the West Branch of Stony Creek. In the project area, this creek retains its free-flowing, natural meanders and, based on the lack of excessive algae build up on rocks by late summer, appears to have good water quality. The creek flows through a valley, the size of which, suggests that the creek was much larger in times past. It is likely that this valley carried melt water during end of the last glaciation. Indeed, the creek valley and surrounding topography is typical of many areas in southern Michigan that were subject to glaciation, which appears to largely explain the topography of the site. Based on observation and topographic maps, the various topographic features on the site appear to be the result of ice contact, whereas the creek valley was an area of meltwater run-off. Regardless of their origin, which can be the subject of future study, the hills and valley are important topographic features which affect surface water runoff patterns and, in combination with groundwater elevations, aspect, and changes in elevation, have a large impact on microhabitat conditions, which, in turn, determine small-scale vegetation patterns. In short, the variety of topographic and consequently varying physical conditions result in a large variety of habitats and microhabitats, all of which contribute to the functioning of the site as an ecosystem, including the wildlife which is supported in that ecosystem.

The wetland complex along Stony Creek (Wet Meadow/Floodplain Forest), the oak-hardwood forest (Dry-mesic Southern Forest) on the slopes bordering the wetland complex, and the Second-growth/Old Field areas on the higher elevations provide a significant amount of wildlife habitat. Perhaps the most significant aspect of these areas is their areal extent and lack of habitat fragmentation. The wetland complex and bordering upland forest is particularly noteworthy from this respect. The fact that these areas comprise continuous mosaics of native Michigan communities is important for two reasons. First, it is well established that habitat fragmentation is associated with decreased species diversity. That is, a one-acre area of continuous (*i.e.* unfragmented) habitat will support more species than one acre of habitat comprised of a number of fragments, all other things

being equal. The greater the degree of fragmentation, the fewer the species (plant and animal) the site is likely to support.

Secondly, the mosaic nature of the plant communities provides a variety of habitats and complementary resources for wildlife. For example, during the reconnaissance, coyote scat was found in a portion of the oak-hardwood forest; however, the scat was located near the wetland areas. While coyotes require well-drained soils for their dens, the wetlands provide a ready source of water and will support a greater abundance of prey items than will the forest. Similarly, the deciduous forest areas provide cover from predators, nesting structure and food for squirrels and canopy nesting birds; the low lying floodplain forest and valley provide winter shelter and perching sites for non-migratory birds, and may be especially good habitat for owls; the shrub communities in the oak-hardwood forest and old field areas provide food in the form of fruits or nuts, and nesting areas for small birds and browse for deer. The wetlands and forest provide habitat for the amphibians and reptiles, such as the frogs, toads and salamanders that were observed or heard during the reconnaissance. The frogs, in turn, can provide food for the great blue herons that were found on-site, as well as for raccoons, which appear to be plentiful. Thus, the combination of uplands, wetlands, forests, shrubs, and open areas provide a wide array of resources for wildlife use in both the wetland and upland areas.

With respect to wildlife viewing, the area provides a wealth of opportunities for strategic placement of trails and boardwalks and the prevalence of deer, chipmunks, turkey, and the unusual black squirrels, should provide ample opportunities for the public to enjoy this activity. The black-colored squirrels that occur on the Stony Creek Corridor site appear to be taxonomically *Sciurus carolinensis*, commonly referred to as the gray squirrel. This is a naturally occurring color morph for this species in Michigan and has been known from the state since early settlement times. Though the morph is not extremely rare, it does provide visual interest and could be used from an interpretive standpoint. Even in the absence of wildlife at any particular moment, the trails and boardwalks will also provide opportunity for aesthetic appreciation of the creek and wetlands (Photo 9). It is also important to note that the trail development can occur with minimum disruption to habitats and resultant fragmentation.

In addition to the wildlife aspects of the Stony Creek Corridor Park site, the high quality of the site with respect to vegetation is notable. To interpret values of the Floristic Quality Index, the Michigan Natural Heritage Program provides the following guidance, "Most of the remaining undeveloped land registers floristic quality indices (FQI) of less than 20 and has minimal significance from a natural quality perspective. Areas with a FQI higher than 35 possess sufficient conservatism and richness that they are floristically important from a statewide perspective. Areas registering in the 50s and higher are extremely rare and represent a significant component of Michigan's native biodiversity and natural landscapes". The FQI for the Stony Creek site was calculated to be 46.56, and there was a total of 177 plant species identified. It should be kept in mind that this FQI is based on a just a few days reconnaissance and that more thorough reconnaissance, or additional reconnaissance at different times of the growing season would likely increase the FQI, perhaps even putting it above the 50 level. Indeed, the site was found to support a state-threatened species, and other rare species are known to occur on the nearby Stony Creek Metro Park (e.g. ginseng (*Panax*

*quinquefolius*)) and appropriate habitat for these species exists on the Stony Creek Corridor site. Nevertheless, even without further species, or a higher FQI, *the Stony Creek Corridor Park site is an important natural resource at the state-wide level.*

From a broader perspective, the extensive wetland complex provides many of the “wetland functions” for which society values wetlands and has protected them:

- As noted above, they provide a very substantial wildlife function through the provision of: nesting and breeding habitat to various species of birds, reptiles, and amphibians; food, both in the form of plant material and prey items; and water.
- One of the functions that wetlands provide is aesthetic enjoyment. The Stony Creek Corridor Park project calls for development of a walking trail which will take advantage of the upland, wetland, and open water areas. For visitors to the park, aesthetics will be a prime function of these wetlands.
- The wetlands receive surface water from other areas of the site. Thus, from a more physical standpoint, they, no doubt, provide function with respect to stormwater storage, downstream flood attenuation, erosion control, and groundwater recharge.
- One of the primary functions wetlands provide is contaminant removal. The primary mechanisms through which wetlands perform this function are physical trapping of contaminants that are either attached to particulates, or are particulates themselves (*i.e.* suspended solids), and through breakdown of organic compounds or uptake of excess nutrients by bacteria and plants. In the former case, wetlands trap contaminants by slowing down the velocity of water flowing through them. The slower velocity allows the solids to settle out as sediment. In the latter case, storage of water in the wetland allows time for bacteria and plants to biodegrade pollutants and take up nutrients. In effect, the existing heavily-vegetated areas around the wetlands and the wetlands themselves act as “biofilters” for any contaminants and sediments that would be flowing into the local drainage system. Indeed, Thompson (1974) considered the vegetated borders of most streams and lakes in the Township a primary factor in keeping the water “clear”.
- Opportunities for nature interpretation and education at the Stony Creek Corridor site are almost unlimited. As noted throughout this discussion, the site is of high ecological integrity and exhibits a high degree of biodiversity. This combination provides excellent opportunities to interpret nature at a wide range of levels and with different focuses; to list a few possibilities:
  - Animal/wildlife diversity
  - Conservation and stewardship
  - Ecosystems
  - Forests/Trees
  - Geology
  - Habitats
  - Hydrology
  - Soils
  - Taxonomic groups (mammals, birds, etc.)
  - Watersheds
  - Wetlands

Thus, of the functions normally attributed to wetlands, namely: wildlife habitat, refuge for rare species, biodiversity maintenance, flood attenuation, contaminant removal, erosion control, groundwater recharge/discharge, aesthetics, and education; there is clear evidence of a significant role for the Stony Creek Corridor wetlands in all of these functions.

As evidenced by the list of animals reported from the site, and from the preceding discussion regarding wildlife and wildlife viewing opportunities, it should be evident that it is the opinion of Weatherbee's that the Stony Creek Corridor Park site constitutes an important wildlife resource. This importance stems not only from the range of upland and wetland habitats available, but also from their position in the greater landscape of Oakland Township. The site is located just north of Stony Creek Metro Park, which is an extremely significant natural area, and just south of the Knob Creek Subdivision Conservation Easement. As is clear from Table 1, and the photographs in Appendix B, the Knob Creek Conservation Easement is a very significant ecological area in and of itself. As noted above, habitat fragmentation has a deleterious effect on many wildlife populations, especially for those species that require forest interior, or are sensitive to nearby human activity. Having areas of suitable habitat near one another can have an ameliorating effect on habitat fragmentation in an area. The strategic position of Stony Creek Corridor Park between the Knob Creek Conservation Easement area and Stony Creek Metro Park would be important in the future by providing relatively closely located areas of suitable habitat. Thus, the extent and position of the Stony Creek Corridor site is an important aspect in the context of preserving and protecting significant natural resources in Oakland Township.

## CONCLUSION AND RECOMMENDATIONS

It should be clear from the preceding discussion that the Stony Creek Corridor site provides a wide variety of ecological functions. To summarize, these functions include: provision of wildlife habitat containing a wide variety of food for herbivores and predators alike, nesting sites, summer and winter cover, a variety of upland and wetland habitats, wildlife corridors, biofilters in the form of the extensive wetland areas which protect additional wetlands and high quality natural areas, high biodiversity, a wide array of plant and animal communities, and opportunities for aesthetic enjoyment and environmental education.

Because of the quality and extent of the Wet Meadow/Floodplain Forest, Dry-mesic Southern Forest, lack of fragmentation of these areas, the contiguity of these areas with Knob Creek Subdivision Conservation Easement and Stony Creek Metro Park, we feel that the Stony Creek Corridor site represents a significant natural resource and Weatherbee's makes the following specific recommendations:

1. Oakland Township should continue to pursue acquisition of this parcel.

Once acquired:

2. Because of the relative lack of invasive species in the wetland complex and oak-hardwood, these areas should be closely monitored for the establishment and spread of invasive species, especially purple loosestrife, *Phragmites* (which is in the area), and garlic mustard.
3. A prescribed burn regime should be devised and implemented in the oak-hardwood forest, but protecting the area where beech-maple has already been established.
4. The area should be made accessible to the public, but on a limited basis (designated trails, boardwalks, viewing stations, and fishing access).
5. Develop a monitoring and protection plan for the population of *Polemonium reptans*.
6. Continue inventorying of the plant and animal communities to further determine the presence or absence of protected species known to occur in the area.
7. Develop and implement a restoration plan for the old field areas, especially those areas containing remnant prairie and oak barren species (e.g. showy goldenrod, little bluestem, stiff goldenrod). Due to the size of the area, it provides an excellent opportunity to develop an "adaptive management plan" approach.
8. Consider culling the deer herd, which appears to having a depressing effect on the wildflowers of the oak-hardwood areas.

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**APPENDIX A**  
**Oakland Township**  
**Herpetological Survey Report**  
**(Herpetological Resource and Management – 2005)**

**APPENDIX B**  
**PHOTOGRAPHS**



Photograph 1. Wet Meadow at Stony Creek Corridor Park



Photograph 2. Wet Meadow at Knob Creek Easement



Photograph 3. Skunk cabbage in Floodplain Forest – Stony Creek



Photograph 4. Dry-mesic Southern Forest on steep slope – Stony Creek.



Photograph 5. Showy goldenrod in opening among autumn olive – Stony Creek



Photograph 6. Second-growth Forest, autumn olive and Old Field – Stony Creek



Photograph 7. *Polemonium reptans*.



Photograph 8. *Polemonium reptans* habitat.



Photograph 9. Scenic view along West Branch of Stony Creek.