

APPENDIX G: Plant Survey & Wildlife Habitat Assessments

123 Elk Mills Road Plant Survey Report

Note: Comparison of 1977 and 1938 aerial photographs shows both pieces of woodland in the same places, and wooded as present. Especially the north woods looks mature.

Common weedy species of chickweed, and Crucifers, etc. are omitted.

“N”, “F” – native or foreign to Maryland.

“*” – in flower on the date indicated.

A). Wet Zone, mainly east of the stream.

This is mostly covered with a thin woods that ends at the edge of a field to the north. Much of the ground is muddy in April, poorly drained by a small stream.

| aa | Real Name | Common Name | N,F | Dates, locations, notes |
|----|---|----------------------|-----|--|
| | <i>Acer rubrum</i> | Red maple | N | 4/19/19, scattered |
| | <i>Albizia julibrissin</i> | Mimosa | F | 5/21/19 |
| | <i>Alnus</i> sp. | alder | | 5/21/19, by the stream. |
| | <i>Anemone quinquefolia</i> | windflower | N | 4/19/19 at 39.91/50.82, a colony 6' in diameter, not flowering. |
| | <i>Anthoxanthum odoratum</i> | Sweet vernal grass | F | *5/21/19 |
| | <i>Arisaema triphyllum</i> | Jack in the pulpit | N | *4/19/19; a few, scattered |
| | <i>Barbarea vulgaris</i> | Wintercress | F | *4/19/19 |
| | <i>Bromus commutatus</i> (prob.) | Hairy chess | F | *5/21/19 |
| | <i>Carex atlantica</i> ssp. <i>atlantica</i> | Sedge | N | *5/21/19. Very common in wet places. |
| | <i>Carex laevivaginata</i> | Sedge | N | *5/21/19 |
| | <i>Carex lurida</i> (prob.) | Sedge | N | *5/21/19 |
| | <i>Claytonia virginica</i> | Spring beauty | N | 4/19/19 near 39.88/50.82, under pines |
| | <i>Cornus florida</i> | dogwood | N | *4/19/19, in the Northwestern extension of the wet zone |
| | <i>Dactylis glomerata</i> | Orchard grass | F | *5/21/19 |
| | <i>Elaeagnus umbellata</i> | Autumn olive | F | 4/19/19 at the edge of a field |
| | <i>Eleocharis tenuis</i> (?) | Slender spike-rush | N | *5/21/19 |
| | <i>Erigeron philadelphicus</i> | Daisy fleabane | N | *5/21/19 |
| | <i>Glechoma hederacea</i> | Gill-over-the-ground | F | *5/21/19 |
| | <i>Glyceria striata</i> | Fowl mannagrass | N | *5/21/19 |
| | <i>Ilex opaca</i> | American holly | N | 5/21/19 |
| | <i>Ilex opaca</i> | American holly | N | 4/19/19, scattered, biggest ~6" diam |
| | <i>Impatiens</i> sp. | Touch-me-not | N | 5/21/19. Widespread, but not yet in flower. |
| | <i>Juncus effusus</i> | Soft rush | N | *5/21/19 |
| | <i>Juncus tenuis</i> (?) | Path rush | N | *5/21/19. These plants seem too fragile to be this species. |
| | <i>Lilium</i> sp. (?) | | | 4/19/19 at 39.95/50.80; 3 single leaves at base of a tree, more later S of here. |
| | <i>Lindera benzoin</i> | spicebush | N | 5/21/19 |
| | <i>Liriodendron tulipifera</i> | Tulip poplar | N | 4/19/19 |
| | <i>Lonicera japonica</i> | Japanese honeysuckle | F | 4/19/19, scattered |
| | <i>Luzula multiflora</i> | Wood rush | N | 4/19/19 on mounds |
| | <i>Malus coronaria</i> | Sweet crabapple | F | *4/19/19 at the edge of the wood. |

| | | | |
|------------------------------------|----------------------|----|--|
| <i>Nyssa sylvatica</i> | tupelo | N | *5/21/19 |
| <i>Onoclea sensibilis</i> | Sensitive fern | N | 4/19/19, scattered |
| <i>Parthenocissis quinquefolia</i> | Virginia creeper | N | 4/19/19 |
| <i>Phalaris arundinacea</i> | Reed canary grass | N | *5/21/19. A 5-foot patch. |
| <i>Pinus strobus</i> | White pine | ~N | 4/19/19. These are scattered in the south west quadrant. They range from 7 inches to over 2 feet in diameter. I saw no cones or seedlings. |
| <i>Pinus virginiana</i> | Virginia pine | N | 4/19/19; near the entrance |
| <i>Platanus occidentalis</i> | Sycamore | N | 5/21/19. Scattered saplings. |
| <i>Podophyllum peltatum</i> | May apple | N | 4/19/19 in groups of 2 or 3 only, in the drier SW quadrant. |
| <i>Potentilla canadensis</i> | Cinquefoil | N | *5/21/19 |
| <i>Potentilla simplex</i> | Old-field cinquefoil | N | *4/19/19 |
| <i>Prunus serotina</i> | Black cherry | N | 5/21/19 |
| <i>Quercus palustris</i> | Pin oak | N | 5/21/19 |
| <i>Quercus phellos</i> | Willow oak | N | 5/21/19. Only seedlings seen |
| <i>Ranunculus</i> sp. | buttercup | | *5/21/19. In flower, but seeds are necessary to identify it to species. |
| <i>Rhus typhina</i> | Staghorn sumac | N | 5/21/19 |
| <i>Rosa multiflora</i> | Multiflora rose | F | *5/21/19 |
| <i>Rubus allegheniensis</i> | Common blackberry | N | *5/21/19 |
| <i>Rumex obtusifolia</i> | Bitter dock | F | 5/21/19 |
| <i>Sambucus canadensis</i> | elderberry | N | 5/21/19, not yet in flower |
| <i>Sisyrinchium angustifolium</i> | Blue eyed grass | N | *5/21/19 |
| <i>Smilacina racemosa</i> | False Solomon's seal | N | 4/19/19 at 39.88/50.82, a few. |
| <i>Smilax rotundifolia</i> | catbrier | N | 5/21/19 |
| <i>Smilax rotundifolia</i> | Cat brier | N | 4/19/19, scattered |
| <i>Symplocarpus foetidus</i> | Skunk cabbage | N | 4/19/19, scattered densely in the wettest spots. |
| <i>Toxicodendron radicans</i> | Poison ivy | N | 4/19/19 scattered |
| <i>Trifolium dubium/campestre</i> | Hop-clover | F | *5/21/19 |
| <i>Viburnum dentatum</i> | Arrow-wood | N | 5/21/19, by the stream |
| <i>Viola soraria</i> | Common blue violet | N | *4/19/19, scattered |
| <i>Vitis labrusca</i> | Fox grape | N | 5/21/19 |
| <i>Zizia aurea</i> | Golden alexander | N | *4/19/19 at N39deg 39.90 min W75deg 50.79 min, in a wet place; and elsewhere |

B). Woodland.

This upland wood is unusual in the large number of beech trees that it contains, in the paucity of shrubs (such as spicebush), and in the almost total lack of understory herbs. (Could they have been eliminated by drifting of weedkiller from adjacent fields?)

It looks like mature woodland on both the 1938 the 1977 aerial photographs.

| | | | |
|--------------------------------|-------------------------|---|--|
| Acer rubrum | Red maple | N | 5/21/19 |
| Carya sp. | Hickory | N | 5/21/19 |
| Celastrus scandens | Oriental bittersweet | F | 4/19/19 |
| Euonymus americanus | Hearts-a-bursting | N | 4/19/19, a few |
| Fagus grandifolia | American beech | N | 5/21/19 |
| Liriodendron tulipifera | Tulip poplar | N | 5/21/19 |
| Medeola virginiana | Indian cucumber root | N | 4/19/19 one small colony in the older, south part of the wood. |
| Nyssa sylvatica | Tupelo | N | 5/21/19. Two big ones at N 40.265/50.834 on opposite sides of a path: one is 22 inches in diameter (228 cm. in circumference). |
| Parthenocissus quinquefolia | Virginia creeper | N | 4/19/19 |
| Podophyllum peltatum | mayapple | N | 4/19/19 many large patches . |
| Quercus alba | White oak | N | 5/21/19 |
| Quercus falcata | Spanish oak | N | 5/21/19 |
| Quercus palustris | Pin oak | N | 5/21/19 |
| Quercus rubra | Red oak | N | 5/21/19 |
| Tipularia discolor | Crane-fly orchid | N | 4/19/19 one leaf seen in the younger, northern sector of the wood. |
| Viburnum dentatum | Arrow wood | N | 4/19/19 one shrub in the middle of the wood |
| Viola soraria | Common blue violet | N | *4/19/19 scattered thinly |

The following table shows the numbers and frequency of each tree in these woods. The data was obtained by walking randomly through the south western part of the woods and recording the size and species of each tree encountered whose diameter at breast height was greater than 4 inches. Species that I could not immediately identify, were lumped in "other". The frequency of beech is much higher than in most wood patches in the Fair Hill park

| Species | number | frequency |
|--------------------------|--------|-----------|
| Fagus grandifolia. | 82 | 0.44 |
| Liriodendron tulipifera. | 42 | 0.22 |
| Carya sp. | 6 | 0.03 |
| Acer rrubrum. | 12 | 0.06 |
| Quercus alba. | 8 | 0.04 |
| Quercus falcata. | 1 | 0.005 |
| Nyssa sylvatica. | 11 | 0.06 |
| Quercus palustris. | 7 | 0.04 |
| Quercus rubra. | 5 | 0.03 |
| Other | 14 | 0.07 |

Also, the diameter of each tulip poplar was recorded, for use in estimating the date of the most recent clearing event.



Wildlife Habitat Assessment

For: Cecil County Government Green Infrastructure Project

Site: Elk Mills Park

Overview: Members of the Susquehannock Wildlife Society including a master naturalist and field researchers surveyed the county property within hub/corridor network to determine both wildlife habitat and document any wildlife present during multiple visits during winter and spring of 2019.

Methods: Strategic placement of digital trail cameras, visual surveys, review of recent historic data for adjoining and nearby sites.

Habitat Types with Species: The property exhibits a unique variety of habitat zones that support the needs of many wildlife species despite being a somewhat narrow corridor.

Forest: Forest is the main feature of this area with half being in the floodplain of a small creek and the other half being an agricultural area. The forest appears to be healthy in sections with some diversity of tree species in different age classes in the southern section but many stretches to the north are dominated by beech trees and much is grazed heavily by deer. Invasive plant presence is noticeable in areas but has not yet overtaken. Along the forest floor many logs and rocks were found that provide cover for amphibians such as toads and salamanders as well as snakes and insect species. The forest provides an adequate expanse that acts as a corridor between other protected areas such as Fairhill Natural Resource Management Area to the north that will support eastern box turtles, several native owl species, a variety of song birds, woodpeckers, red fox, white-tailed deer, gray squirrel, chipmunks, opossum, striped skunk, raccoon, and other species.

Creek and Spring Seeps: The creek certainly has some heavy sedimentation due to the agricultural area runoff, which appears to have occurred more recently with modifications to the stormwater runoff grading of the farm fields. The creek provides water for woodland birds and mammals, including the potential for mink as well as habitat for a variety of small fish and salamanders if restored. There are several spring seeps that provide additional habitat, a water source, and saturated soil that can support additional plant and animal species. This site provide opportunity for spring amphibian breeding and egg laying for red salamanders and other springhead focused species. With the several springhead areas that we confirmed, a handful of sensitive species could use them to breed and go through their metamorphosis.

Trail Camera Survey Species Confirmation (On Site):

| |
|---------------------|
| Red fox |
| Groundhog |
| Red-tailed hawk |
| Raccoon |
| Opossum |
| Gray squirrel |
| White-tailed deer |
| Red-shouldered hawk |
| Blue jay |
| Turkey vulture |

Observed Survey Species Confirmation (On Site):

| |
|----------------------------------|
| Deer mouse |
| Red-tailed hawk |
| Green frog |
| Painted lady butterfly |
| White-tailed deer |
| Barn swallow |
| Tree swallow |
| White-throated sparrow |
| Cope's gray treefrog |
| Blue azure butterfly |
| Racoon (tracks) |
| Cabbage white butterfly |
| Leopard slug |
| Water strider |
| Wolf spider |
| American toad |
| Spring peeper (call) |
| American pipet |
| Horned lark |
| Northern red salamander (larvae) |

| |
|---------------------------|
| Downy woodpecker |
| American crow |
| Common grackle |
| Yellow-bellied sapsucker |
| Tufted titmouse |
| American goldfinch |
| Blue jay |
| Feral cat |
| Eastern bluebird |
| Great crested flycatcher |
| Red-eyed vireo |
| Carolina wren |
| House wren |
| Cedar waxwing |
| Blackpoll warbler |
| Northern parula |
| Blue-gray gnatcatcher |
| Northern cardinal |
| Common yellow-throat |
| American red-start |
| Ruby throated hummingbird |
| Gray catbird |
| Field sparrow |
| Brown headed cowbird |
| Grasshopper sparrow |
| Eastern wood pewee |

Basic Plant Overview:

Much of the north forest is dominated by beech trees and the southern tract is a mix of pine and common deciduous trees. Due to deer grazing there are a fair number of invasive plants present, especially along creek and forest edge such mile-a-minute, multiflora rose, and Japanese stiltgrass. There is some healthy variety of ferns along the creek and wetland areas. Springfed wetland areas have skunk cabbage and jack-in-the-pulpit.

Recommendation: Due to the location as part of the ecologically valuable Fair Hill corridor, habitat and species diversity, a manageable number of invasive species, connectivity to other preserved areas, and more developed areas surrounding this corridor, the Susquehannock Wildlife Society strongly recommends that any connected properties and corridors be purchased, protected, and enhanced so that it may continue to provide a much needed refuge for species moving along the this corridor. We noticed a fair amount of human traffic on our trail cameras, predominantly horseback riding. We recommend use be limited to hiking. Increased use, a substantial increase in traffic or other destructive change of this property would be a loss for local conservation. We recommend that invasive species be kept in check and if deer herds are being managed then it should continue. Native trees and plants should be introduced where possible. Bird nesting boxes could be installed to enhance populations of species such as bluebirds, owls, kestrels, woodpeckers, etc. We feel the most significant management recommendation is to create a native grass and wildflower corridor between the southern and northern forest tracts to connect habitat across the agricultural tract which likely prevents much of the movement across the property. Meadow habitat will increase diversity of species, provide cover, and food sources.

Susquehannock Wildlife Society

May 28, 2019



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Wildlife Habitat Assessment

For: Cecil County Government Green Infrastructure Project

Site: Elk River Park

Overview: Members of the Susquehannock Wildlife Society including a master naturalist and field researchers surveyed the county property within hub/corridor network to determine both wildlife habitat and document any wildlife present during multiple visits during winter and spring of 2019.

Methods: Strategic placement of digital trail cameras, visual surveys, review of recent historic data for adjoining and nearby sites.

Habitat Types with Species: The property exhibits a unique variety of habitat zones that support the needs of many wildlife species despite being an island near larger conservation lands, it's proximity to a major water source allows it more connectivity

Forest: The forest appears to be fairly sparse in many areas of the park with some of the buffer along the shoreline having somewhat more diversity. Some areas with previously planted reforestation trees appears to be doing well. Invasive plant presence is noticeable in areas along the shoreline and understory where mowed grass isn't present. Along the forest floor there aren't many logs or rocks to provide cover for amphibians such as toads and salamanders habitat for hiding. Some of the interior areas have well established older trees but much of the forest is successional forest dominated by sweet gum and maple. The forest, especially along the Elk river and the more mature forest area does support edge habitat for eastern box turtles, hawks, a variety of song birds, woodpeckers, red fox, white-tailed deer, gray squirrel, opossum, striped skunk, raccoon, and other species that are tolerant of human activities.

Open Space & Sediment Pond: While no significant wetlands were discovered within the land areas, a large sediment pond that receives dredge materials and a few smaller stormwater ponds hold water and provides habitat for wading birds and reptiles and amphibians. The ponds were subject to invasive plants due to disturbance and characteristics and habitat where little else can grow. Many areas of park are grass and paved road / parking. These areas may allow wildlife to move from one area to another but only for species that tolerant of human activity and not threatened moving in open areas.

Tidal Marsh and River: The surrounding edge of the property borders the Elk River north of where it transitions to the Chesapeake Bay, a freshwater tidal area. The main connecting corridor of this site is the waterfront where species that can swim may move to and from this park to other protected areas such as the nearby state park. This area provides adequate habitat for species that are accepting of open water. Some of the species using this area may include a variety of wading birds, wood ducks, beaver, muskrat, river otter, mink, great blue heron, eastern painted turtles, northern red-bellied turtles, eastern snapping turtles, green frogs, bullfrogs, southern

leopard frogs, Cope's gray tree frogs, spring peepers, northern water snakes, several species of fish, mollusks, crustaceans, and many insects.

Trail Camera Survey Species Confirmation (On Site):

| |
|-------------------|
| Red Fox |
| Raccoon |
| White-tailed deer |
| River otter |
| Opossum |
| American robin |

Observed Survey Species Confirmation (On Site):

| |
|------------------------|
| Eastern painted turtle |
| Cope's gray treefrog |
| Northern water snake |
| Bald eagle |
| Bullfrog |
| Red-winged blackbird |
| Forster's tern |
| Blue jay |
| Mallard |
| Northern harrier |
| White-tailed deer |
| American toad |
| Eastern garter snake |
| Eastern bluebird |
| Spring peeper |
| Turkey vulture |
| Carolina chickadee |
| Northern mockingbird |
| Dark-eyed junco |
| Common grackle |
| Great blue heron |
| Common merganser |

| |
|--------------------------|
| Bufflehead |
| Muskrat (lodges) |
| Beaver (sign) |
| American crow |
| Eastern cricket frog |
| Eastern box turtle |
| Double crested cormorant |
| Song sparrow |
| Brown headed cowbird |
| Tree swallow |
| Northern cardinal |
| Chipping sparrow |
| Great crested flycatcher |
| Barn swallow |
| Orchard oriole |
| Carolina wren |
| Scarlet tanager |
| Greater yellowlegs |
| Osprey |
| Least tern |
| Blue-gray gnatcatcher |
| American robin |
| American goldfinch |
| Indigo bunting |
| Red-eyed vireo |
| Wood thrush |
| Northern flicker |
| Prairie warbler |
| Yellow-breasted chat |
| Wood duck |
| European starling |
| Chipping sparrow |
| Black & white warbler |
| Blackpoll warbler |

| |
|--------------------|
| Solitary sandpiper |
| Lesser yellowlegs |
| Least sandpiper |

Basic Plant Overview:

The forest contains mixed hardwoods with half early successful, sweet gum and maple dominated with some more mature forest further away from the disturbed areas. Deer grazing is prevalent in many locations at this site and continued or enhanced management of deer is recommended to maintain a healthy understory and a healthy deer population. High invasive understory diversity in areas, especially along river and forest edge such as multiflora rose, Japanese stiltgrass, English ivy and Japanese honeysuckle. Bradford pear is prevalent along the sediment pond and successional areas. Tidal wetland areas and sediment pond include cattails and invasive phragmites.

Recommendation: Due to the location as part of the ecologically valuable Elk River ecosystem, the Susquehannock Wildlife Society strongly recommends that any connected properties and corridors be purchased, protected, and enhanced so that it may continue to provide a much needed refuge for species moving along the Elk river corridor. We noticed a fair amount of human traffic at the site that while not possible to restrict, some actions may be able to prevent with signage and enforcement. There was multiple instances of metal detecting and disruption of our trail cameras while surveying. The feeding of wildlife, intentional or not, may be common at this park, and availability of food via the outdoor trash cans pose a threat to the health and survival of wildlife. We recommend more active enforcement of wildlife feeding policies and wildlife proof trash cans. Fishing line litter was also prevalent so we recommend that fishing line receptacles be installed to prevent wildlife injuries from monofilament entanglement. We recommend that some of the grass mowing areas be converted into a native wildflower meadow to create more habitat diversity and prevent additional sediment or runoff into the Elk River. Additional native trees should be planted in a different areas to provide an understory and create some diversity of species. Increased use, a substantial increase in traffic or other destructive change of this property would be a major loss for local conservation. We recommend that invasive species be kept in check and if deer herds are being managed then it should continue. Bird nesting boxes could be installed to enhance populations of species such as bluebirds, owls, kestrels, woodpeckers, etc. The existing bluebird box had a breeding pair of bluebirds using it so it is working well. The existing bat box should be better maintained as it was currently full of bee nests.

Susquehannock Wildlife Society

May 28, 2019