



October 25, 2016

Morristown Town Council
200 South Street
Morristown, NJ 07960

**RE: Morristown Environmental Commission
Environmental Review of Foote's Pond**

Dear Town Council:

In Mayor Dougherty's letter, dated April 26, 2016, he requested that the Morristown Environmental Commission (MEC) complete a formal review and provide recommendations regarding the proposed dredging of Foote's Pond at Foote's Park. The MEC subsequently developed a draft letter, summarizing our preliminary review which was presented to the town council on June 28, 2016. Our preliminary review concluded that engineering consultants would be required in order to complete our comprehensive study for the project. The following letter details the history of Foote's Pond, review of the past studies that have been performed for the pond, results of the recent engineering studies, and analyses of several options that have been developed for approaching the maintenance or decommissioning of the pond. Our recommendations in this letter may be used to help the Administration to make a final decision on the matter.

MEC REVIEW OF PROJECT

The MEC's review focused on the following considerations in order to develop recommendations to the Administration:

1. We reviewed the history and current use of the Park to determine why the Park/Pond was originally constructed and how it is currently being utilized. Part of this review included a survey to determine how the Park/Pond is currently used by residents, the frequency of use, and a determination if the original intended use remains the same;
2. We reviewed the science behind the natural meadowing process to determine what it is, how it occurs, the negative impacts it can create, how it can be prevented, and how fast it

is occurring at Foote's Pond. We were authorized by the Administration to hire a third party consultant, PK Environmental, to provide a review and recommendation for this task;

3. We reviewed the area in and around Foote's Pond to determine the likelihood of endangered species and whether meadowing will cause damage to the habitats of any endangered species or if it should be allowed to naturally occur. We also reviewed the potential risk to the habitat if an intrusive construction measure such as dredging is completed in the Pond. Furthermore, we considered whether there is an obligation to maintain the habitat in its current state. We were authorized by the Administration to hire a third party consultant, PK Environmental, to provide a review and recommendation for this task;
4. We reviewed the Pond and surrounding watershed to determine if the Pond serves as a water storage mechanism in preventing flooding from occurring downstream, and if the meadowing process will exacerbate any existing issues. We were authorized by the Administration to hire a third party consultant, Suburban Consulting Engineers, to provide a review and recommendation for this task;
5. We reviewed the sampling and testing program performed by Princeton Hydro, LLC to determine if their testing recommendations still remains valid;
6. We reviewed the procedures and costs associated with the implementation of the dredging project; and,
7. We reviewed the order of magnitude costs for dredging and alternative approaches, such as allowing the Pond to become a dry basin and/or decommissioning of the Foote's Pond Dam.

DESCRIPTION OF FOOTE'S PARK/POND

Foote's Park - also known as Block 8901, Lot 2 on the Morristown tax map, is an approximately 14-acre property situated between James Street and Overlook Road in Morristown. Foote's Park is referred herein as "the Property." The Property is mostly wooded with an approximately 2 to 3-acre Pond known as Foote's Pond located in the northeast corner of the park. The Property is bounded by the Thomas Jefferson Elementary School to the north, the Loyola Jesuit Center to the South, James Street and residences to the east, and the Temple B'nai Or and Overlook Road beyond to the west. The amenities at the park include a network of walking paths, bridges, a fireplace, park benches, plants, and birdhouses.

HISTORY OF FOOTE'S PARK/POND

The evolution of transportation within Morris County in the early 19th century brought about an insurgence of development in Morristown. Morristown truly began to develop with the improvement of its transportation systems. In 1838 the track of the Morris & Essex Railroad

reached Morristown, and on January 1, 1838 the first train service opened in Morristown providing eastbound and westbound trains for businessmen commuting to and from New York City.

One of those businessmen was the late William Whitney, son of one of the wealthiest merchants in New York City in the first half of the 19th century, and one of the city's first multi-millionaires. William Whitney built his fortune as an importer/exporter and investor in real estate. Following in his father's footsteps, one of William's first real estate investments was the purchase of property on the road to Mount Vernon (we know it as James Street). Following his marriage to Mary Stuart Vicar in 1843, Whitney built a large-bracketed Italianate farmhouse (**Figure No. 1**) on the property and developed a significant farming property on that parcel of land. Whitney was known as a "gentleman farmer" breeding prize winning cattle and horses on his Morristown property. William Whitney died on June 12, 1862, and a few years later a great auction was held and advertised in *The Jerseyman* on April 8, 1865. Included among the listed items for sale were tools from the ice house (**Figure No. 2**).

In the summer of 1865, John Trainor Foote purchased the Whitney property. Born in 1819, John T. Foote was a prominent businessman who came to Morristown with his wife, Marie C. Foote, and their four children, after making a fortune in the Cincinnati commission business selling "high wines and rectifying spirits" among other commodities. Shortly following the move to Morristown, Mary died and John became a gentleman farmer, breeding Jersey cattle and Aberdeen-Angus cattle. He subsequently purchased additional land south of the former Whitney property to expand his holdings, which stretched between present day James St and Mt. Kemble Avenue south to Harter Road. The property included an ice pond seen on Hull Map of 1874 (**Figure No. 3**) and is noted in the 1868 Beers, Ellis & Soule Atlas of Morris County (**Figure No. 4**) as an "Skating Pond – Drained in Summer." The pond along the road to Mount Vernon (James Street), called Foote's Pond, was used for the purposes of ice production. John T Foote's ran advertisements in *The Jerseyman* on November 16, 1877 (**Figure No. 5**) "ICE, ICE, ICE" for sale "to supply those having Ice Houses," claiming, "the lowest price around," and noting the water source as "perfectly pure, being free from cesspools or other drainage."

Following John T. Foote's death at the age of 84 on July 5, 1902, his son Robert Dumont Foote inherited the property. Shortly after inheriting the property, Robert D. Foote began a major redesign of his father's property which he called Spring Brook Farms and commissioned the construction of a large Neo-Classical mansion designed by NY architects George A. Freeman and Frances George Hassleman to replace his father's farmhouse (**Figure No.6**). The Georgian mansion cost \$400,000 to build and was known as one of the grandest properties of the Gilded Age of Morristown with a staff of 15 full-time gardeners to maintain the grounds (**Figure No.7**). The mansion is known today as the Loyola House of Retreats.

Robert D. Foote was president of the National Iron Bank, which at the turn of the century was located at 10 Washington Street, and later became home of the law office of Schenck, Price and King. It was under Foote's direction that the modern bank building was erected and is now the home of Heritage Bank North (225 South Street). Like his father before him, John D. Foote's was a gentleman farmer and his property boasted a pheasant pen, deer forest, greenhouses, sunken gardens, stables, orchards, dairy, several farm buildings as well as an ice house. A noted hunter, Foote is credited with bringing some of the first Springer Spaniels to America using them for authentic English hunts practiced at Spring Brook Farms. Robert D. Foote was at the forefront

contributing to the progress of Morristown and the residents of this Town have benefited greatly from his charitable works, good counsel and overall assistance

Upon Robert D. Foote's death in 1926, Mrs. Foote sold the house and the 125-acre estate to Charles Anderson of Montclair. The following year, William W. Bender of Elizabeth purchased "Spring Brook Farm" mansion and 20 acres and gave them outright to the Society of Jesus and was given the name "Loyola House of Retreats." Mrs. Foote sold off the remaining acres shortly thereafter, including the property which is known today as the Springbrook Country Club.

On March 1, 1939, Marie C. Foote deeded the remaining 14-acre parcel of land (Foote's Estate), owned by her husband Robert D. Foote, for the uses and purposes of a public recreational park and playground for the people of the Town of Morristown (**Figure No. 8**). For years Foote's Pond was used by the residents as a municipal park, and many residents who grew up in Morristown remember skating on Foote's Pond. However, by the early 1990s, the land became the site of more unnatural elements, including old file cabinets, bicycles and dozens of old, discarded tires.

In 1998, The Town of Morristown hired Joann Casadeval to coordinate a 10-year renovation project for which she enlisted the help of volunteers and professionals in removing debris and cutting through vegetation to make room for pathways and seating areas. The \$450,000 renovation included a fireplace, a foot bridge and a dock used in outdoor excursions by teachers at the adjacent Thomas Jefferson School. Grants were awarded from several foundations and private donors and included The Great Swamp Watershed Committee, Morristown Rotary Club, the Nathan Cummings Foundation and the Geraldine Dodge Foundation. Pathways were built to provide better access to the park, allowing disabled patrons full wheelchair accessibility. The renovation also included the addition of flowering trees, such as dogwoods and cherry trees, along the pathways and native wild flowers, including daisies and purple cone flowers, planted in the no-mow meadows. The Foote's Pond dam spillway was replaced and a bluestone and brick donor path from James Street to the fire place was completed, placing boulders around the fireplace with benches made of recycled plastic and a bike rack. Flowering trees were planted along the bluestone paths and a no-mow flowering meadow near James Street. Junipers were planted in an outside aviary and in no-mow meadows.

Permitting and engineering designs were required as part of the renovation project and a detailed analysis and design process was completed by Schoor Depalma from 2003 to 2004. A permit package was submitted by Schoor Depalma to the NJDEP in July 2004, which included construction of the aforementioned nature trails, construction of the dock, reconstruction or removal of the dam, and dredging of one acre of the pond. The General Permits were authorized by the NJDEP in a letter dated February 10, 2005 and were valid for a period of five years. The detailed bid documents for the dredging project were developed in January 2008. Although most of the renovation work was completed, the dredging project did not move forward prior to the end of the permit period for reasons unknown - one reason may have been the lack of funding.

Princeton Hydro, LLC was retained by Morristown in 2010 to assess the physical and chemical properties of the sediment in the pond. Princeton Hydro developed the "Foote Pond Sediment Testing Report," dated April 2010. Princeton Hydro recommended the reapplication for appropriate permits that were previously required to complete a dredging project; however, it is our understanding that the permits were not applied for.

Based on NJDEP policy changes in recent years, additional analyses will likely be required in order to obtain permits from the NJDEP for dredging and/or decommissioning of the dam, if pursued. The permitting review and additional required analyses are discussed in the latter sections in this report.

CURRENT USE OF POND

The MEC completed a study to determine the current use(s) of the pond and its impact on the residents of Morristown. The MEC created a log to track & capture the observations made over the course of a few weeks. The consolidated tracking log is included as **Figure 10**. The observations that were tracked were as follows:

- How often the Pond is it frequented by residents;
- Is the pond itself being used for recreation;
- The type of wildlife observed & numbers;
- Types of vegetation observed;
- Amount and type of litter observed;
- Odors observed; and,
- Any pests or other impediments observed such as mosquitoes, poison ivy, etc.

Of the twenty-one (21) total hours logged, fourteen (14) visitors were observed and the activity included everything from walking by the pond to sitting and reading at the pond. Out of the seventeen (17) total visits made, 6 of the visits determined no residents using the pond at all. The commissioners overall found the pond to be a haven for wildlife including but not limited to the following:

- Multiple small turtles,
- 3 snapping turtles,
- Redwing blackbird,
- Great white egret,
- Yellow warbler,
- Tree swallow,
- Bull frog,
- Green frog,
- Eastern phoebe,
- Green heron,
- Great blue heron,
- American gold finch,
- Wood duck (female with 6 ducklings),
- Gray catbird,
- American robin,
- Crow chimney swift,
- Song sparrow,

- Blue Jay,
- Hairy Woodpecker,
- Northern Cardinal,
- Canadian Goose with 6 goslings, and,
- Chipmunks.

In general, the commissioners all noted overgrown vegetation (mostly along the path routes); however, only one commissioner noted an odor present, and that was due to stagnant water on a particularly hot day. No mosquitoes were noted and there was little to no litter observed at the pond.

Based on our review, the Park is used by a few residents and passerby's who primarily go to the Park to enjoy nature and by the adjacent school as a teaching resource. Ice skating is no longer permitted on the pond.

REVIEW OF MEADOWING PROCESS (EUTROPHICATION)

The Administration retained a third party consultant, PK Environmental, to provide a review of the meadowing process as it related to Foote's Pond. The meadowing process, formally known as eutrophication, is described in PK Environmental's report entitled, "Habitat Suitability Analyses," dated October 14, 2016. This report and its associated figures and addendums are attached to this report as **Attachment 1**. The following is an excerpt from the report detailing the meadowing process, "By definition, a freshwater pond is defined as a shallow body of water, generally less than 6-feet in depth, with a muddy or silty bottom that generally supports semi-emergent plant growth from shore to shore, which over time can become stagnant, weed choked, and eutrophic. Accelerated eutrophication is caused by excessive pollution, which affects dissolved oxygen levels and elevates water temperatures, and is the primary factor upsetting the natural balance of a healthy Pond ecosystem. One of the most common results of accelerated eutrophication is the rapid growth of algae, commonly referred to as algal bloom, and to offset the potential for accelerated eutrophication and growth of excessive aquatic vegetation, control of nutrient-rich runoff from non-point sources (NPS) is important within the planning and maintenance of the Pond. Palustrine Open Water eutrophication (meadowing) is a natural process for a shallow pond, and based upon the intensity of modified hydrology, the transition affects adjacent Palustrine emergent wetlands, Palustrine scrub/shrub wetlands, Palustrine forest, and upland foresting processes."

The following is an excerpt from the report discussing how the meadowing process is affecting Foote's Pond, "The Great Brook is the sole source of surface water in Foote's Pond, and it appears that the Pond has always been a shallow Palustrine Open Water habitat. Paradoxically, the Great Brook now introduces more NPS pollutants into the Pond from the developed upstream drainage areas, which includes extensive stormwater runoff from street systems, residential landscaping, golf course maintenance, and commercially developed properties. NPS pollutants are the primary cause of accelerated eutrophication with negative impacts related to surface water quality and water supply, and the natural functioning of plant, animal, and aquatic wildlife."

Based on our review of the letter by PK Environmental, it is our understanding that the eutrophication process (meadowing) is accelerated by the NPS pollutants; and as sediment and plant decay continue to accumulate, new plants will continue to thrive in areas of the pond that were once open water. If the meadowing process is allowed to continue, then the open water areas will be transformed into wetlands and eventually may become a dry meadow. This transition process is known as pond succession.

REVIEW OF POTENTIAL IMPACTS TO WILDLIFE

PK Environmental also provided a review of the habitat and threatened and endangered (T&E) species in and around Foote's Pond in the, "Habitat Suitability Analyses," dated October 14, 2016 (**Attachment 1**). According to the report, "Based upon our on-site analyses, the Pond does not appear to provide suitable habitat for any T&E aquatic dependent herpetile species of wildlife, particularly bog turtle and wood turtle, but as observed, the Pond and adjacent woodland does provide diverse habitat opportunities. During our brief on-site analyses, we observed numerous common Palustrine Open Water (Pond) aquatic dependent species (snapping turtle, painted turtle, great blue heron, mallard duck, wood duck, Canada geese, fish). As such, Foote's Pond Wood is a stable natural resource within a suburban developed area, which provides for landscape diversity and species/habitat conservation, freshwater wetland function, flood protection, and public scenic attributes..."

PK concluded that pond maintenance, whether by dredging or other means, or allowing the pond to naturally meadow, "would not impact the or adversely modify any present or documented habitat for T&E species." This conclusion was in agreement with the previous conclusions developed by Schoor Depalma in 2004 for T&E.

REVIEW OF POND AS A STORWATER ATTENUATION MEASURE

The Administration hired a third party consultant, Suburban Consulting Engineers (SCE), to provide a review and recommendation related to the Pond's current value as a stormwater attenuation measure and the effect of meadowing on the Pond's capacity as such. Suburban Consulting Engineer's report, entitled, "Foote's Pond Watershed Analysis," dated October 10, 2016, is attached to this report as **Attachment 2**. According to the Suburban's report, an approximately 295-acre drainage area feeds into Foote's Pond. The drainage area includes both suburban and urban runoff by either overland flow or stormwater discharge from storm drains. The dam that holds back the water and sediment in Foote's Pond is an approximately 5-foot-high Class III- Low Hazard Dam with a 20-foot long principal spillway and an auxiliary/emergency spillway approximately 1.5 feet above the principal spillway, which discharge into the Great Brook. The report indicates the following regarding stormwater attenuation: "The design and permitting for the dam accounted for a wet pond with an initial water surface elevation at the principal spillway. Storage of the pond was accounted for by including the stage storage characteristics of elevations above the mean water surface elevation and the restrictions of the spillway. Any water or sediment below the principal spillway elevation is omitted from storage calculations regardless of composition, as no storage capacity below the mean water surface elevation can be assumed. When sediment and/or plants accumulate above the mean water surface elevation used in the design of the spillway, a loss in storage occurs, and the ability for the pond to attenuate stormwater

is compromised. It was evident during SCE's site visit that the level of the sediment near the wetland formations was above the water surface elevation and, therefore, the pond has already lost storage volume. Reducing storage, in turn, increases the flow rate of discharge through the spillway. To determine the extent of the increase in the slow rate of discharge, a detailed hydrologic and hydraulic study would be required. It should be noted that this increase in flow can potentially result in erosion, property damage, and flooding within the lower portion of the watershed." Suburban went on to indicate that, "Additionally, to allow the pond to continue through the pond succession process, the Town would be in conflict with prior approvals gained from the spillway and pond improvements. To abide by the conditions of these permits, the design storage volume is required to be maintained or calculations need to be provided proving that attenuation by the pond is not required within this watershed to maintain the stability and integrity of the downstream channel."

Suburban Consulting Engineers concluded that the following approaches could be taken to maintain or decommission Foote's Pond with the associated order of magnitude costs:

1. Return the pond to original design conditions by dredging (\$1,000,000);
2. Convert the pond to a dry detention basin and provide ongoing future maintenance (\$350,000);
3. Decommissioning of the dam with no further stormwater attenuation features (\$160,000); and,
4. Decommissioning of the dam with further stormwater attenuation features (\$235,000).

A more detailed description of each of the proposed approaches is provided in Suburban's letter in **Attachment 2**. All of the options presented by Suburban Consulting Engineers require additional detailed hydrologic and hydraulic studies, which they estimate to be approximately \$30,000. Specifically, the three non-dredging options, involve draining the pond; therefore, the analyses will be particularly important in determining the potential impacts that could be caused downstream of the dam from decommissioning or meadowing.

REVIEW OF 2010 PRINCETON HYDRO REPORT

Princeton Hydro, LLC was retained by Morristown in 2010 to assess the physical and chemical properties of the sediment in the pond. Princeton Hydro developed the "Foote Pond Sediment Testing Report," dated April 2010. Based on our review, the following is a summary of Princeton Hydro, LLC's investigation:

- Two total composite samples consisting of 10 grab samples (cores) from the north and south ends of the pond were collected;
- The samples were analyzed for a full chemical analytical suite which included Volatile Organic Compounds, Semi-Volatile Organic Compounds, Metals, Pesticides, PCB's, Phenols, and Cyanide;
- A total of eight (8) additional cores were analyzed for Semi-Volatile Organic Compounds only;

- The thickness of the sediments ranged from 30-48 inches and were composed of black silts and clays with high organic content.

Based on the MEC's review of the Princeton Hydro Report, Polyaromatic hydrocarbons (PAH's) were the primary contaminant of concern in the sediments and are the driving factor in the cost of disposal for the sediments. The New Jersey Department of Environmental Protection (NJDEP) non-residential direct contact soil remediation standards (NRDCSRS) have not changed for most of the PAH's in the Princeton Hydro report since 2010; therefore, the contaminant exceedance in the Princeton Hydro report still remain valid. The contaminants which exceeded the NRDCSRS in Princeton Hydro's testing program included:

- Benzo(a)anthracene;
- Benzo(b)fluoranthene;
- Benzo(a)pyrene; and;
- Dibenz(a,h)anthracene.

The above contaminants are present in the Foote's Pond sediments at levels that are considered contaminated, thus the end-use disposal facilities would need to be able to accept the levels that are present.

The following are our conclusions based on our review of the Princeton Hydro Report:

- The MEC believes that the sampling and testing data provided by Princeton Hydro is still valid; however, a supplemental round of sampling and testing would be required for disposal waste classification if the dredging project is implemented to provide current data to the prospective disposal facilities; and,
- The permitting process stated by Princeton Hydro in their report still remains valid in 2016 and has been confirmed by Suburban Consulting Engineers.

REVIEW OF DREDGING PROCESS

The MEC reviewed the process associated with the dredging process and confirmed the process with Suburban Consulting Engineers. Prior to the consideration and implementation of the dredging program, the following items would need to be researched and addressed:

- More research on the land use regulations, permitting, and additional hydrologic and hydraulic analyses will be required;
- A property survey, wetlands delineation, and bathymetric survey would be required to determine the Property limits, extent of the wetlands, and the in-place waterbody volume and depths.
- Sediment thicknesses and chemical and physical properties of the sediments would need to be generally confirmed during a subsequent sediment sampling and testing program to obtain the current contaminant concentrations in the sediment and estimate the volume of sediment requiring disposal. The sediment sampling and testing program would need to be performed in accordance with the Import Fill Guidance for SRP Sites, dated April 2015 to develop a testing package the meets the disposal requirements for various disposal facilities;

- A scope and cost proposal would need to be prepared by an environmental consulting firm to prepare the required permit packages for NJDEP approval which include the following:
 - Modified General Permit #13 – The permit is required for a dredging operation and there is a formal procedure in place for obtaining the permit;
 - Flood Hazard Area Permit – The permit is required to determine what effect the dredging will have on the existing flood plain and, to a lesser extent, what affect the project will have downstream;
 - Lake Lowering Permit – The Pond will need to be lowered during a period that will provide additional protection to the natural habitat. Additional considerations to the wildlife in the area may also need to be made and there is a possibility that fish relocation may also be required; and,
 - Fish Salvage- The need for this item would need to be determined by a fish and wildlife expert.

- A scope and a formal RFQ and RFP would need to be developed for determining a cost from various contractors for completing the dredging operations.

CONCLUSION AND RECOMMENDATIONS

Based on our review we have come to the following conclusions:

1. Foote's Park is used by a few residents and passerby's who primarily go to the Park to enjoy nature, and by the adjacent school as a teaching resource;
2. Foote's Pond was originally constructed for agricultural/commercial purposes and was not originally intended as a stormwater attenuation measure. However, the pond may have inadvertently become a stormwater attenuation measure due to development that has occurred over the past century in and around the area. The effects on stormwater attenuation have not been confirmed and require additional study;
3. Foote's Pond has filled with sediment; however, the rate of sedimentation has not been determined from any of the studies and can only be crudely estimated based on current sediment thicknesses (48 inches over 178 years);
4. The pond's spillway was reconstructed in 2005, however, it appears that no baseline water storage volume was determined during the permitting process, and no consideration was made to establishing a control to determine frequency of dredging;
5. Naturally meadowing is occurring in the Pond; however, the rate at which it is occurring has not been measured. In addition, no known stormwater impacts have been reported (to our knowledge) downstream of the pond;
6. There are no threatened and endangered species in the Pond area which would be adversely impacted by dredging or natural meadowing;
7. There are several options that can be considered by the Town to approaching maintenance of the Pond, which are as follows:

- a. Return the pond to original conditions by dredging (\$1,000,000);
 - b. Convert the pond to a dry detention basin and provide ongoing future maintenance (\$350,000);
 - c. Decommissioning of the dam with no further stormwater attenuation features (\$160,000); and,
 - d. Decommissioning of the dam with further stormwater attenuation features (\$235,000).
8. All of the options presented by Suburban Consulting Engineers require additional detailed hydrologic and hydraulic studies which they estimate to be approximately \$30,000.

It is the position of the Morristown Environmental Commission that further analyses in the form of a comprehensive hydrologic and hydraulic studies be performed for the Pond and the downstream section of the Great Brook to determine the Pond's value as a stormwater attenuation measure and the affect it has on the lower portion of the watershed prior to implementing any of the options provided above. In order to complete the study, the Town will need to secure bids from several consulting engineering firms and implement the study over the next 8 to 12 months. Following the study, a decision can be made as to what measure will be implemented for Foote's Pond, followed by a formal design and permitting process.

If you have any questions, please call contact Maureen Denman, Chair, Morristown Environmental Commission

Sincerely,

MORRISTOWN ENVIRONMENTAL COMMISSION

Justin M. Protasiewicz, PE, Presenter
Maureen Denman, Chair, Presenter
Richard E. Isleib, Treasurer
Steven Pylypchuk, Secretary, Vice Chair
Nathan Umbriac
Justin Davis

Priscilla Grigas, 1st Alternate
Marc Baumann, 2nd Alternate

FIGURES

Wood Mills

Mrs F. F. Hitchcock

Miss M

Michael Ambrose

Mad. Nelson

Thos. Hooper

J. David

John Tabor

Wm. Hooper

John Mann

GREEN ST

John T. Foote

John T. Foote

J.T.F.

J.T.F.

J.T.F.

J.T.F.

J.T.F.

Estate of Fran

Estate of J. Da

M.H.

Mr Howland

Mr Howland

Mr Howland

M.H.

Estate of Geo T. Galt

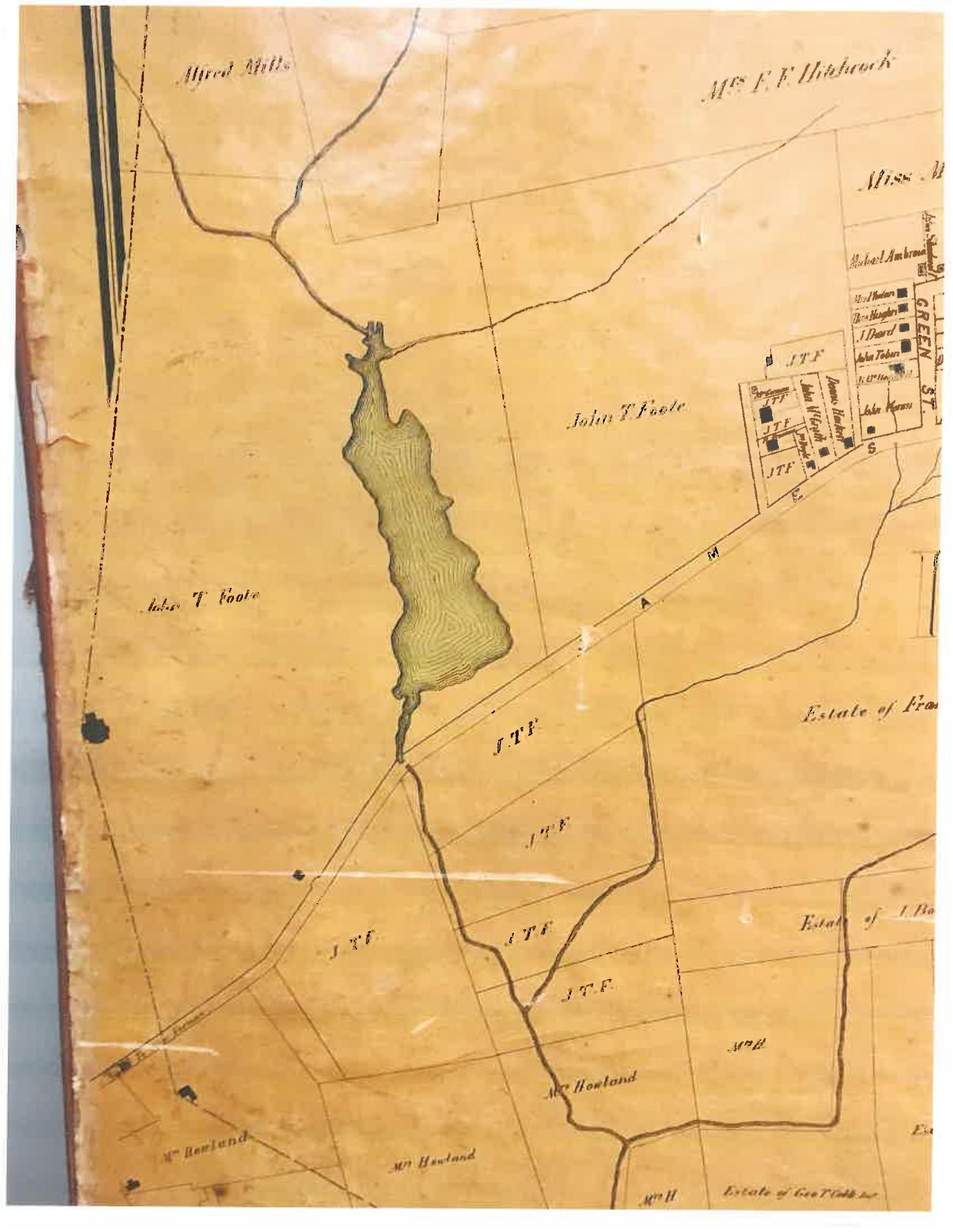


Fig.#1



Figure No. 7
1861, Farm Map of Morris Township

1861 sketch of William Whitney's bracketed Italianate residence, believed to have been constructed in the early 1840s. This residence was later owned by John T. Foote.

Credit: Michael Hughes, *Farm Map of Morris Township, Morris Co. NJ* (Philadelphia: Hughes, 1861). On display at the North Jersey History & Genealogy Center of the Morristown & Morris Township Public Library.

Wm Whitney

Editor of "The Jerseyman":
DEAR SIR:—With your permission I wish to say to the readers of your paper that I will send, by return mail, to all who wish it (free) a Receipt, with full directions for making and using a simple Vegetable Balm, that will effectually remove, in ten days, Pimples, Blisters, Tans, Freckles, and all Impurities of the Skin, leaving the same soft, clear, smooth and Beautiful.
 I will also send gratis to those having Bald Heads, or Bare Faces, simple directions and information that will enable them to start a full growth of Luxuriant Hair, Whiskers, or a Moustache, in less than thirty days.
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DIED.
 In Troy, N. Y., March 29th, **FRINEAS**, son of James E., and Mary B. Qafuby, aged 3 years and 3 months.
 Near Walnut Grove, Sunday, March 10th, **ELIAS THORNTON**, aged 81 years.

Obituary.
 Mr. J. F. Holmes departed this life, March 2d, 1865, at the residence of his brother-in-law N. N. Kough, Villa Ridge, Palaski Co., Illinois. Mr. Holmes was born in Wareham, Mass., Jan. 24, 1838, spending his earlier years in his native town.

GREAT AUCTION SALE OF STOCK, FARMING UTENSILS AND FURNITURE.

The Subscriber will sell a Public Auction, at the Mansion of the late Wm. Whitney, dec'd, about one mile from Morristown, on the road to New Vernon, and adjoining the estate of the late Wm. Howland, on

Tuesday and Wednesday, April 18th and 19th, all the Stock, Horses, Colts, Wagons and Farming Utensils; and the entire Furniture of the Mansion, consisting in part of the following, to wit:

- One large oak extension Dining Table, oak Dining room Chairs, 1 large oak Dining room Side Board, Mexican camp Chairs, 3 large oak Gothic Chairs, 1 large hall Gothic Sofa, 2 walnut hall Chairs, cloth trimmings; 1 walnut Library Table, 1 mahogany Side Board, Book Case, 1 large walnut Secretary, 1 heavy Parlor Chair, silk brocade; 4 mahogany Chairs, rep. trimmings; 1 large French easy Chair, rep. trimmings; 1 marble top Side Board Table, 1 mahogany Lounge, rep. trimmings; Rosewood Parlor Suit, blue silk brocade trimmings, 13 pieces; 1 Blue enamel Gold Suit, 11 pieces; Rosewood, Mahogany, Green and White and Oak Toilet Sets; 200 Yards of Parlor, Dining-room and Bed-room Brussels Carpet; Brussels Stair Carpet, Ingrain Carpet and Matting, first quality Mattresses, Feather Bolsters and Pillows, Peltasses, Dining-room Utensils, Crockery and Glass ware.

AT BARN AND GARRIAGE HOUSE.
 One leather top Spring Wagon, with pole and shafts; 1 light Sulky, 1 top Wagon, 1 Farm Wagon 2 Carts; 1 single and one double Sleigh, single and double Harness, 1 Sled, Allen's Improved Mowing Machine in good order, 1 large Feed Bin, 1 Bin of Corn and Rye Horse Feed, 1 tent Stock and Hay Cutler.

Three Bay Horse Colts, by the celebrated Stallion Serpent, 1, 2 & 3 years old;
 One black Mare, 1 Pony do., 1 Farm Mare, one 8 year old Cow and calf, one 5 year old Cow and calf, one 8 year old Cow with calf and 1 two year old Heifer. Fowls and Turkeys, Plovers, Hares, Wheelbarrows, Rollers, 1 large Savery patent Furnace and Boiler, 300 chestnut Posts and Rails, Garden tools, and many other articles not here enumerated.

On the first day will be sold the Stock, Wagons, Sleighs, Farming Implements, Posts, Rails, Harness and all the out-door and cellar articles.
 The second day will be exclusively for the sale of Furniture in the mansion, to commence at 10 o'clock, A. M. The property will be arranged and can be seen at any time from 8 o'clock, A. M. to 5 P. M. on the Monday previous to the sale, and any day during the sale. Catalogues will be furnished on the Mansion.
 Conditions made known on the day of sale by J. S. W. W. PARCHILL, Auctioneer.

MORRIS COUNTY SURROGATE'S OFFICE.

1st Ser. March 29th, 1865.—In the matter of J. Elliot Condit, Executor of Jacob Johnson, deceased.—Surrogate's Order to Limit Creditors.
 On application of the above-named Executor, it is ordered by the Surrogate that said Executor give public Notice to the creditors of the estate of said decedent, to bring in their debts, demands and claims against the same under oath, within nine months from this date, by setting up a copy of this Order, within twenty days hereafter, in five of the most public places in the County of Morris for two months, and also within the said twenty days by advertising the same in the Jerseyman, one of the newspapers of this State, for the same space of time, (the Surrogate judging any further notice to be unnecessary) and if any creditor shall neglect to exhibit his or her debt, demand and claim, within the said period of nine months, public notice being given as aforesaid, such creditor shall be forever barred of his or her action therefor against the said Executor.
 A true copy from the minutes.
 J. S. W. W. BALLENTINE, Surrogate.

MORRIS COUNTY SURROGATE'S OFFICE.

2d Ser. March 29th, 1865.—In the matter of John G. Welch, Administrator of Jacob Welch, deceased.—Surrogate's Order to Limit Creditors.
 On application of the above-named Administrator, it is ordered by the Surrogate that said Administrator give public notice to the creditors of the estate of said decedent, to bring in their debts, demands and claims against the same under oath, within nine months from this date, by setting up a copy of this order, within twenty days hereafter, in five of the most public places in the County of Morris for two months, and also within the said twenty days by advertising the same in the Jerseyman, one of the newspapers of this State, for the same space of time, (the Surrogate judging any further notice to be unnecessary) and if any creditor shall neglect to exhibit his or her debt, demand and claim, within the said period of nine months, public notice being given as aforesaid, such creditor shall be forever barred of his or her action therefor against the said Administrator.
 A true copy from the minutes.
 J. S. W. W. BALLENTINE, Surrogate.

THE THOROUGH-BRED AND WELL-KNOWN HORSE CHOICE FARMER,

WILL stand at the Brick Stables in Morristown, on Monday, Tuesday, Friday and Saturday, and on Wednesdays and Thursdays at Chatham.

Choice Farmer was sired by Side Hammet, an imported horse from England, and his dam was a thorough-bred Morgan mare of Canada West.

Choice Farmer is a beautiful dapple bay, black legs, mane and tail, sixteen hands high, weighs 1,300 pounds, and is eight years old.

\$11 to insure with feed, 48 the season and 45 the single leap. The season will commence on the first of April, and close about the middle of July. Insurance money must be paid by the 1st of March, 1865. All mares parted with will be considered with foal, and the owner held responsible. All accidents at the risk of the owner. Good nature provided.

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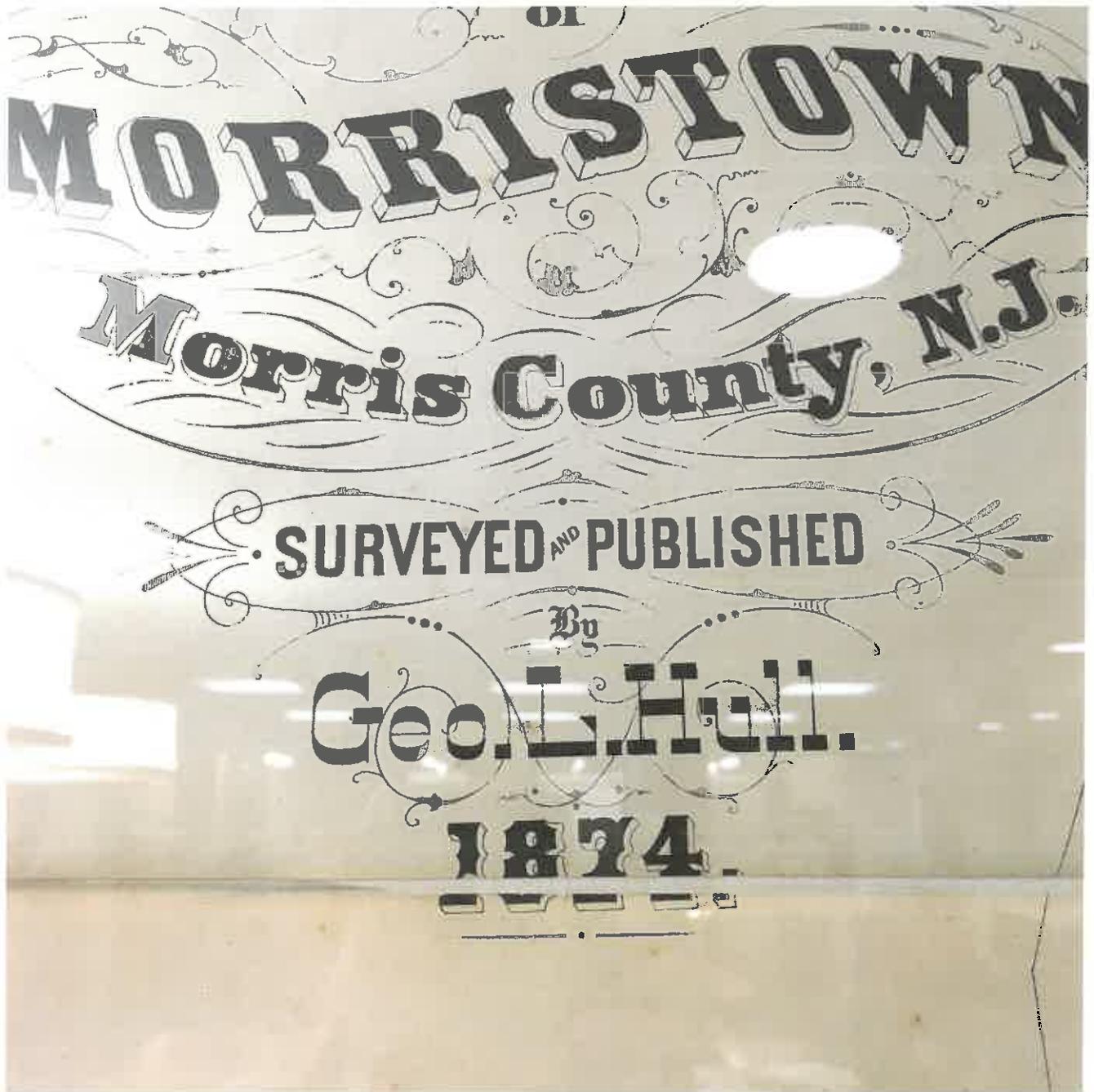
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Fig. #2



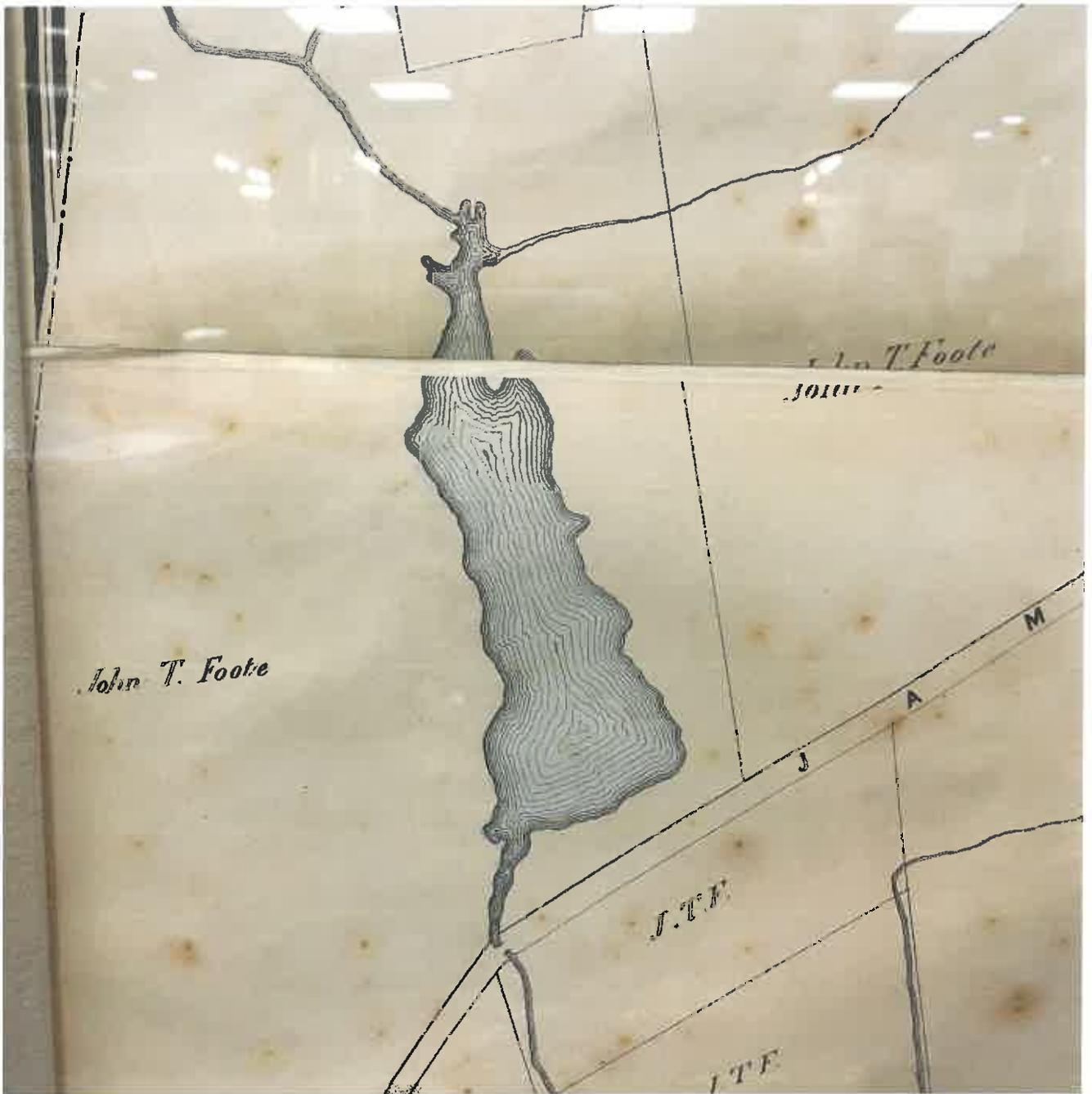
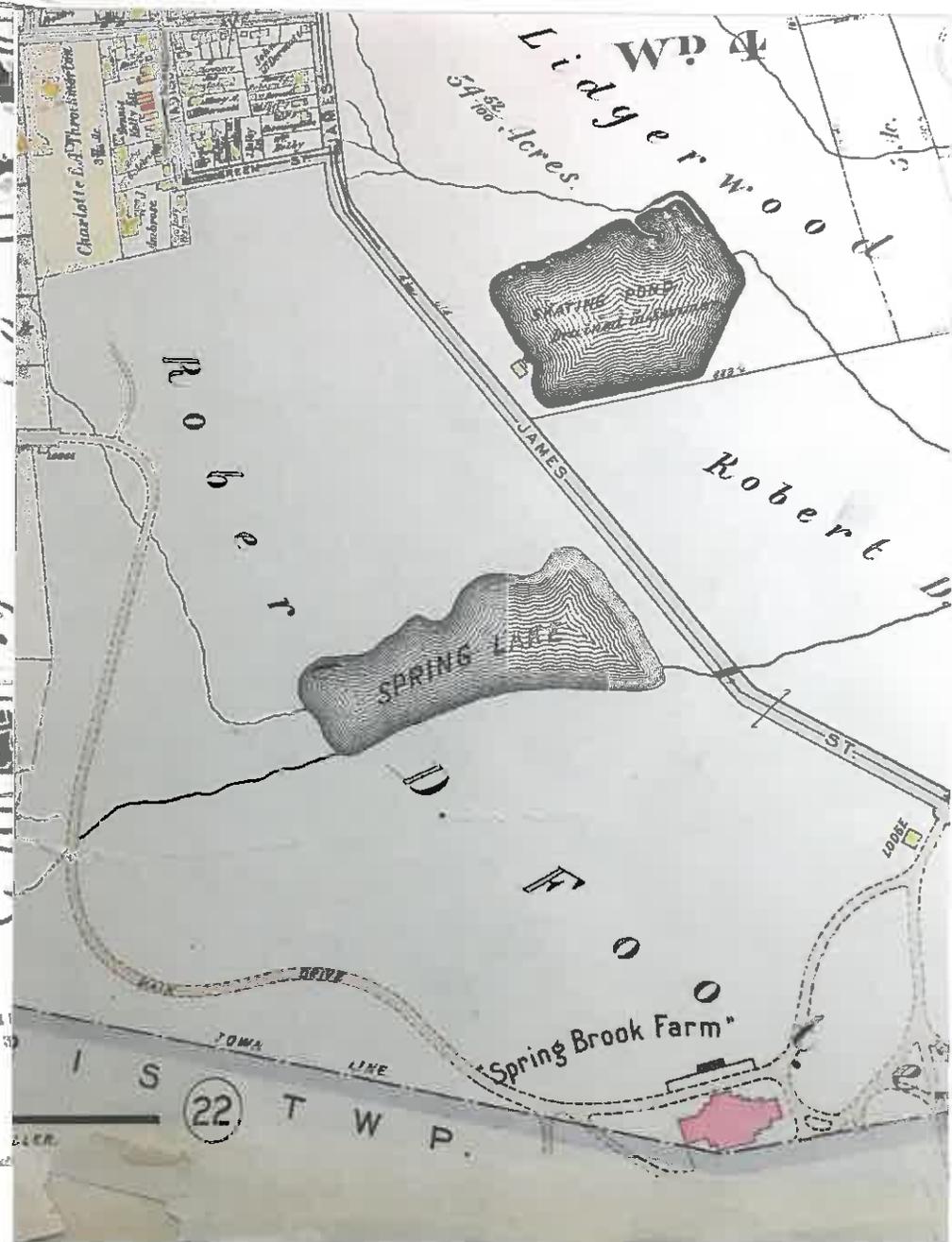


Fig.#4

ATLAS
 OF
MORRIS COUNTY
NEW JERSEY
 From actual Surveys
 by and under the direction of
F.W. BEERS,
 assisted by A.B. Prindle & others.
 PUBLISHED BY
F.W. BEERS, A.D. ELLIS & G.G.S.
 ASSISTANTS:
 W.T. COMSTOCK A.J. BINGHAM
 H.D. WHITMAN G.H. JONES
 L.H. CHURCH
 95 Maiden Lane
New York
 (1868.)

Eng'd by Warley & Brasher
 320 Chestnut St. Philada.

Printed by
 Cor. S



Entered according to Act of Congress in the year 1858, by F.W. Beers, in the Clerk's Office of the District Court of the United States in the South

Reprinted by
 Morris County Historical Society,
 47011 Morristown, N.J. 07960

Fig.#5



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ANTIQUE

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NOTICE OF SETTLEMENT—Notice is here- by given, That the accounts of the sub- scriber, Assignee of Samuel J. Hells, will be audited and stated by the Surrogate and reported for settlement to the Orphans' Court of the Coun- ty of Nor. Is. on Tuesday, the 15th day of Janu- ary next.
GEORGE W. WESTWORTH.
Dated Nov. 18th, 1877. [Pra. fees \$3 30
767-10w

ICE!
ICE! ICE! ICE!
The subscriber having leased the sheet of water known as the
John T. Foote's Pond,
I am enabled to supply those having Ice Houses, and who wish to have them filled, at as reasonable a rate as it is possible to do it. All those who are annually engaged in filling houses by contract, will find my prices as low as at any other place of selling ice. The above- named sheet of water is perfectly pure, being free from cesspools or other drainage.
767-3w **DANIEL SWEENEY.**

FOR SALE.
A very fine
NEW MILCH COW,
Seven years old. Inquire of
P. McCORMICK, Horse Hill
Morristown, Nov. 10th, 1877. 767-1w

NOTICE.
The Annual Meeting of the Mt. Olive Vig- ilant Society for the detection of horse thieves, will meet at the Hotel of James Dufford in

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Convert PDF files to Word or Excel online.

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Microsoft Word (*.docx)

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Change

Convert

Create PDF Files
Send Files

Fig.#6

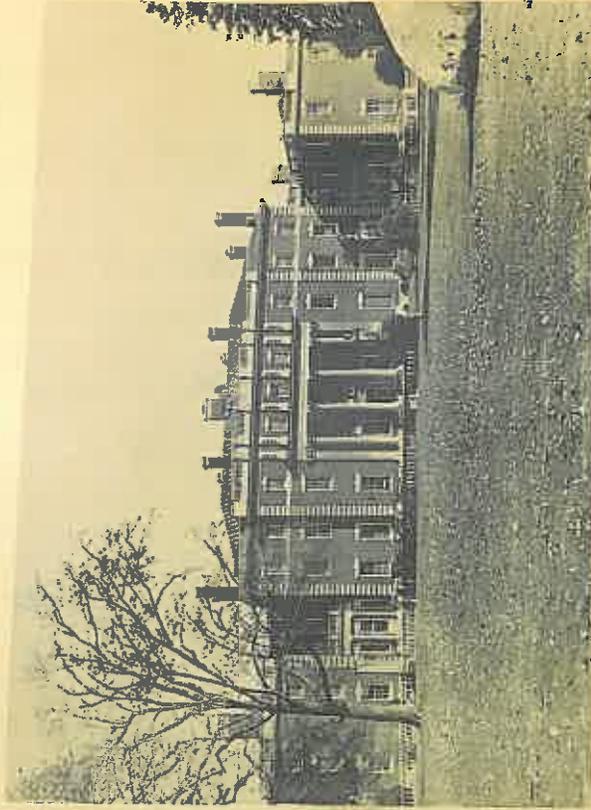


Figure No. 15
Early-20th Century, Robert D. Foote residence

Undated photograph of Robert D. Foote's Neo-Classical residence, designed by Freeman & Hasselman, which replaced his father's bracketed Italianate farmhouse.

Credit: "Springbrook, Foote Estate, (now Loyola Retreat), not date, Morristown, NJ," The North Jersey History and Genealogy Center Photograph and Image Collection, Image ID MO1367, <http://cdm15387.contentdm.oclc.org/cdm/singleitem/collection/p13079coll1/id/279/rec/9> (accessed December 2015).

Morristown's Forgotten Past "The Gilded Age"



The Story Of A New Jersey Town,
Once A Society Center For
The Nation's Millionaires
During The Gilded Age — 1890-1929



By John W. Rae And John W. Rae, Jr.

Fig.#7

Fig.#8

FOOTE Park
T. S. School

MARIE G. FOOTE (widow) : BARGAIN AND SALE DEED.
 To : DATED June 5, 1942
 : RECORDED July 24, 1942
 TOWN OF MORRISTOWN : BOOK H-37, pages 483 &c.
 : CONSIDERATION \$1.00 &c.

All that certain lot, tract or parcel of land and premises, situate, lying and being in the Town of Morristown, in the County of Morris and State of New Jersey.

BEGINNING at a point in the center line of James Street, which point is distant 120 feet measured along a course of North 9 degrees and 56 minutes East from a concrete monument placed in the side of James Street in line with the center line thereof; thence along said center line, North 9 degrees and 56 minutes East 1212.94 feet to the point of its intersection with the center line of Ogden Place; thence along the center line of Ogden Place, following the second to the fifteenth course herein, (2) North 80 degrees and 4 minutes West 100 feet; (3) North 76 degrees and 49 minutes West 49.97 feet; (4) North 70 degrees and 32 minutes West 50.17 feet; (5) North 61 degrees and no minutes West 50.29 feet; (6) North 53 degrees and 49 minutes West 49.97 feet; (7) North 48 degrees and 24 minutes West 50 feet; (8) North 45 degrees 31 minutes and 30 seconds West 59.75 feet; (9) North North 40 degrees 41 minutes and 30 seconds West 90.22 feet; (10) North 40 degrees 11 minutes and 30 seconds West 50 feet; (11) North 40 degrees 54 minutes and 30 seconds West 50 feet; (12) North 51 degrees, 5 minutes and 30 seconds West 74.50 feet; (13) North 74 degrees 44 minutes and 30 seconds West 100 feet; (14) South 66 degrees, 45 minutes and 30 seconds West 63.20 feet; thence along the center line of Overlook Road following the fifteenth to the twenty-fifth course herein, (15) South 44 degrees and 24 minutes West 76 feet; (16) South 25 degrees and 30 minutes West 60.13 feet; (17) South 21 degrees 13 minutes and 30 seconds West 78.06 feet; (18) South 34 degrees 3 minutes and 30 seconds West 75.21 feet; (19) South 42 degrees and 39 minutes West 71.72 feet; (20) South 44 degrees 31 minutes and 30 seconds West 216.93 feet; (21) South 45 degrees 55 minutes and 30 seconds West 91.88 feet; (22) South 45 degrees and 34 minutes West 125.89 feet; (23) South 40 degrees and 1 minute West 125.90 feet; (24) South 35 degrees and 16 minutes West 220 feet; thence across property of which this is a part, the following concluding courses: (25) South 56 degrees and 10 minutes East 1147.86 feet; (26) South 80 degrees and 4 minutes East 250 feet to the point and place of Beginning.

The above courses and distances along James Street, Ogden Place and Overlook Road are from survey of same by Edward Howell, C. E., October 14, 1937.

Being part of the lands and premises of which Robert D. Foote died seized June 24th, 1924, and in and by his Last Will and Testament, duly proved July 7th, 1924, and recorded in Book A-3 of Wills for Morris County on pages 472 &c., devised the same to his widow, the said Marie G. Foote.

It is expressly understood and agreed, by and between the parties hereto, and this conveyance is made and accepted upon the express understanding and agreement that the lands and premises hereinbefore mentioned and described are herein and hereby granted and conveyed for the uses and purposes of a public recreational park and playground for the people of the Town of Morristown, it being understood and agreed that upon the abandonment of said lands by the party of the second part, or the use of said lands and premises for other than a public recreational park and playground, then and in such case the lands and premises herein mentioned and described shall immediately revert to and become the property of the party of the first part, her heirs and assigns, to the same extent as if this deed had not been made.

and purposes therein expressed.

Elden Mills
An Attorney at Law of New Jersey
Elden Mills

Received and recorded December 20th, 1937 at 2:27 o'clock P. M.
E. Bertran Mott, Clerk No. 16159

MARIE G. FOOOTE TO TOWN OF MORRISTOWN
Permission is hereby granted to the Town of Morristown, County of Morris, State of New Jersey to enter upon property belonging to the Estate of Robert D. Foots, Deed, located to the East of and adjoining James Street, Morristown, Morris County, New Jersey, for the purpose of deepening, straightening and widening the channel of Loantake Brook which crosses said property flowing to the Southeast, following along and on either side of the hereinafter described line, and disposing of surplus excavated material while doing the work in a manner satisfactory to the owner. BEGINNING at a point in the center line of James Street in the middle of a stone arch culvert crossing said Loantake Brook, which point is distant 1225.85 feet measured along said center line of James Street on a course of S 9° 56' W from its intersection with the center line of Ogden Place, thence (1) S 60° 11' E 375 feet, thence (2) N 75° 49' E 135 feet, thence (3) S 51° 11' E 255 feet, thence (4) S 76° 11' E until said brook crosses the most easterly line of property belonging to said estate of Robert D. Foots, deed.

Dated: November 26, 1937 Marie G. Foots

Witness:
Gladys L. Stuart

STATE OF NEW JERSEY SS.: On this 26th day of November, A. D. 1937 before me, Gladys L. COURT OF MORRIS Stuart, a Notary Public of New Jersey, duly commissioned and qualified and fully authorized by the laws of said State to take acknowledgment and proof of Deeds, grants or conveyances of lands, tenements, or hereditaments in said State, personally appeared Marie G. Foots who I am satisfied is the grantor of the within instrument of conveyance named; and I having first made known to her the contents thereof, she did acknowledge that she signed, sealed and delivered the same as her voluntary act and deed for the uses and purposes therein expressed.

Gladys L. Stuart
Notary Public N. J.

Received and recorded December 20th, 1937 at 2:35 o'clock P. M.
E. Bertran Mott, Clerk No. 16160

JOHN ROSENBAUM TRU. TO ERNEST D. BRITA
THIS INDENTURE, made the Fourteenth day of December in the year of Our Lord, One Thousand Nine Hundred and Thirty-six Between John Rosenbaum, as Trustee in Bankruptcy of Joseph F. Sagarese and Robert A. Sagarese, bankrupts, of the Town of Boonton in the County of Morris and State of New Jersey party of the first part; AND Ernest D. Brita of the Town of Morristown in the County of Morris and State of New Jersey party of the second part: WITNESSETH, That the said party of the first part, for and in consideration of One Hundred Dollars (\$100.00) lawful money of the United States of America, to him in hand well and truly paid by the said party of the second part, at or before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, and the said party of the first part being therewith fully satisfied, contented and paid, has given, granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does give, grant, bargain, sell, alien, release, convey and confirm unto the said party of the second part, and to his heirs and assigns, forever ALL his right, title and interest as Trustee in Bankruptcy aforesaid, in and to the two tracts or parcels of land and premises, hereinafter particularly described, situate, lying and being in the Town of Morristown in the County of Morris, and State of New Jersey. FIRST TRACT: BEGINNING on the southerly side of Logan Place at a point therein distant four hundred and eighty-five feet more or less from the southeasterly corner of Logan Place and Speedwell Avenue thence (1) along the Easterly line of lot Number Forty-four (44) on a map entitled "A Map of Building Lots Belonging to Enay Crupelli, Morristown, New Jersey, Revised January 25th, 1910" Edward Howell, C. E. South Eleven degrees and five minutes West seventy-five feet and ninety-nine hundredths of a foot; thence (2) South seventy-eight degrees and forty-eight minutes East forty-five feet; thence (3) North eleven degrees and five minutes

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and agreed between the within Grantor and Grantee that the parcel of ten (10) acres of land of the Grantor immediately adjoining the northerly line of the lands herein conveyed to the Grantee shall only be sold as a ten (10) acre plot and that the parcel of ten (10) acres of land of the said Grantee immediately adjoining his said northerly line and the tract so restricted of the Grantee shall only be sold as a ten (10) acre plot; and it is further agreed that said restrictions shall run with the said restricted land of the said Grantor and Grantee but will not restrict any other land of the Grantor or Grantee. TOGETHER with all and singular the houses, buildings, trees, ways, waters, profits, privileges, and advantages, with the appurtenances to the same belonging or in anywise appertaining: Also, all the estate, right, title, interest, property, claim and demand whatsoever, of the said party of the first part, of, in and to the same, and of, in and to every part and parcel thereof. TO HAVE AND TO HOLD, all and singular the above described land and premises, with the appurtenances, unto the said party of the second part, his heirs and assigns, to the only proper use, benefit and behoof of the said party of the second part, his heirs and assigns forever: And the said Elizabeth E. Nicklaus does for herself, her heirs, executors and administrators covenant and grant to and with the said party of the second part, his heirs and assigns, that she the said party of the first part is the true, lawful and right owner of all and singular the above described land and premises, and of every part and parcel thereof, with the appurtenances thereunto belonging; and that the said land and premises, or any part thereof, at the time of the sealing and delivery of these presents, are not encumbered by any mortgage, judgment, or limitation, or by any encumbrance whatsoever, by which the title of the said party of the second part hereby made or intended to be made, for the above described land and premises, can or may be changed, charged, altered or defeated in any way whatsoever: And also, that the said party of the first part now has good right, full power and lawful authority to grant, bargain, sell and convey the said land and premises in manner aforesaid. And also, that said party of the first part, Elizabeth E. Nicklaus, will warrant, secure, and forever defend the said land and premises unto the said C. Russell MacGregor, his heirs and assigns, forever, against the lawful claims and demands of all and every person or persons, freely and clearly freed and discharged of and from all manner of encumbrance whatsoever. IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand and seal the day and year first above written.

Signed, Sealed and Delivered
 In the presence of
 Edward L. Stasse
 Edward L. Stasse

Elizabeth E. Nicklaus (L.S.)
 Elizabeth E. Nicklaus

\$15.00 in
 U.S. Int.
 Rev. Stamp
 Canceled

\$15.00 in
 U.S. Int.
 Rev. Stamp
 Canceled

STATE OF NEW JERSEY, SS. BE IT REMEMBERED, That on this 28th day of September, in the year of our Lord One Thousand Nine Hundred and Thirty-nine, before me, a Master in Chancery of New Jersey, personally appeared ELIZABETH E. NICKLAUS, WIDOW, who, I am satisfied, is the grantor mentioned in the within indenture, and to whom I first made known the contents thereof, and thereupon she acknowledged that she signed, sealed and delivered the same as her voluntary act and deed, for the uses and purposes therein expressed.

Edward L. Stasse
 Edward L. Stasse
 Master in Chancery of New Jersey

Received and Recorded September 29, 1939, at 11:23 o'clock A. M.
 E. Bertrem Mott, Clerk No. 3924.

Marie G. Foote THIS INDENTURE made the first day of March, Nineteen Hundred and
 To Thirty-nine, Between MARIE G. FOOTE, widow of Robert D. Foote
 Town of Morristown and Sole Devisee under his last Will and Testament, of the Town of
 Morristown, in the County of Morris and State of New Jersey, party
 of the first part; And TOWN OF MORRISTOWN, a municipal corporation of the State of New
 Jersey, party of the second part: WITNESSETH, that the said party of the first part, for
 and in consideration of the sum of ONE DOLLAR (and other good and valuable considerations
 lawful money of the United States, to the party of the first part well and truly paid by
 the party of the second part at or before the sealing and delivery of these presents,
 the receipt whereof is hereby acknowledged, and the said party of the first part being
 therewith fully satisfied, contented and paid, has given, granted, bargained, sold and con-
 veyed, and by these presents does give, grant, bargain, sell, and convey unto the said party
 of the second part, its successors and assigns forever, the right to enter in and upon

certain lands and premises hereinafter particularly described, situate, lying and being in the Town of Morristown, in the County of Morris and State of New Jersey, being a strip of land fifteen feet wide, seven and one-half feet on each side of the following center line: BEGINNING at a point in the center line of James Street, which point is distant sixteen and fifty-seven hundredths feet measured along said center line of said street on a course of North nine degrees fifty-six minutes East from another point in the center line of a stone arch bridge crossing Leontaka Brook; thence (1) South sixty degrees eleven minutes East four hundred and sixty feet; thence (2) South seventy-three degrees twenty-six minutes East three hundred and seven and nine tenths feet; thence (3) North thirty-five degrees ten minutes East five hundred and five feet to a point in the dividing line of lands of the said Estate of Robert D. Foote, deceased, and lands belonging to the Town of Morristown known as the Lidgerwood Fly Ground, said point being thirty feet distant measured northwesterly along said dividing line, from a stone monument placed at a corner of property belonging to Elizabeth Clafin and John Clafin, deceased; and to dig up the same and to lay, construct and forever maintain a sanitary sewer or sewer pipe of such size and capacity, with its appurtenances, including manholes, and at such depth as the said party of the second part, its successors and assigns, may consider advisable, and to use and maintain such sewer or sewer pipe when so laid as a sewer, and also the right to enter in and upon the said land at any and all times with its servants and agents, to inspect the same and to do such excavating and digging as shall be necessary and proper to repair, renew or replace said sewer or sewer pipe, and the appurtenances, including manholes, doing no unnecessary damage to the said party of the first part, her heirs or assigns, thereby, and replacing the surface of the soil, so far as practicable, in its present condition, but nothing herein contained shall prevent the said party of the second part, its successors and assigns, in case the said sewer or sewer pipe or manholes, or any part thereof, are replaced, from altering the size or capacity of the same or the depth at which they are laid. It is hereby understood and agreed that the said party of the first part, her heirs and assigns, may occupy the surface of said strip of land and cross and recross the same after the said sewer is finished, provided, however, that such occupation does not interfere with the said sewer or sewer pipe or manholes, or the operation of the same, and does not prevent the said party of the second part, its successors and assigns, from inspecting, repairing, replacing or removing the same. Together with all and singular the appurtenances to the same belonging or in anywise appertaining, and also all the estate, right, title, interest, property, claim and demand whatsoever, of the said party of the first part, of, in and to the same, and of, in and to every part and parcel thereof. To Have and To Hold and same, with the appurtenances, unto the said party of the second part, its successors and assigns, to the only proper use, benefit and behoof of the said party of the second part, its successors and assigns. IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand and seal the day and year first above written.

Signed, sealed and delivered in the presence of
 Robert H. Schenck
 Marie G. Foote (L.S.)

STATE OF NEW JERSEY SS. BE IT REMEMBERED, That on this eighth day of March, Nineteen
 COUNTY OF MORRIS hundred and thirty-nine, before me, the subscriber, a Master
 in Chancery of New Jersey personally appeared MARIE G. FOOTE,
 widow of Robert D. Foote and Sole Devisee under this Last Will and Testament, who, I am
 satisfied, is the person mentioned in and who executed the foregoing instrument, and I
 having first made known to her the contents thereof, she did acknowledge that she sign-
 ed, sealed and delivered the same as her voluntary act and deed, for the uses and purposes
 therein expressed.

Robert H. Schenck
 Master in Chancery of New Jersey

Received and Recorded October 14, 1939, at 11:35 o'clock A. M.
 E. Bertram Kott, Clerk. No. 4163

Charles W. Anderson, Jr. & Wf. THIS INSTRUMENT made the first day of March, Nineteen Hun-
 To dred and Thirty-nine, BETWEEN CHARLES W. ANDERSON, JR.,
 Town of Morristown and M. ANTOINETTE ANDERSON, his wife, of the Town of
 Morristown, in the County of Morris and State of New Jer-
 sey, party of the first part; And TOWN OF MORRISTOWN, a municipal corporation of the

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Next two hundred and fifty feet to the point and place of BEGINNING. The above courses and distances along James Street, Ogden Place and Overlook Road are from survey or same by Edward Howell, C.E., October 14, 1937. Being part of the lands and premises of which Robert D. Foote died seized June 24th, 1924, and in and by his Last Will and Testament, duly proved July 7th, 1924, and recorded in Book A-3 of Wills for Morris County on pages 472 et seq., devised the same to his widow, the said Marie G. Foote. It is expressly understood and agreed, by and between the parties hereto, and this conveyance is made and accepted upon the express understanding and agreement that the lands and premises hereinbefore mentioned and described are herein and hereby granted and conveyed for the uses and purposes of a public recreational park and playground for the people of the Town of Morristown, it being understood and agreed that upon the abandonment of said lands by the party of the second part, or the use of said lands and premises for other than a public recreational park and playground, then and in such case the lands and premises herein mentioned and described shall immediately revert to and become the property of the party of the first part, her heirs and assigns, to the same extent as if this deed had not been made. TOGETHER with all and singular the houses, buildings, trees, ways, waters, profits, privileges, and advantages, with the appurtenances to the same belonging or in anywise appertaining; ALSO, all the estate, right, title, interest, property, claim and demand whatsoever, of the said party of the first part, of, in and to the same, and of, in and to every part and parcel thereof, TO HAVE AND TO HOLD, all and singular the above described land and premises, with the appurtenances, unto the said party of the second part, its successors and assigns, to the only proper use, benefit and behoof of the said party of the second part, its successors and assigns forever; except as aforesaid. AND the said Marie G. Foote, for herself, her heirs, executors and administrators, does covenant, promise and agree to end with the said party of the second part, its successors and assigns, that she has not made, done, committed, executed or suffered any act or acts, thing or things whatsoever, whereby or by means whereof the above mentioned and described premises, or any part or parcel thereof, now are, or at any time hereafter shall or may be impeached, charged or encumbered, in any manner or way whatsoever. IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand and seal the day and year first above written.

Signed, Sealed and Delivered
 in the presence of
 Robert H. Sohenok
 (Robert H. Sohenok)
 Marie G. Foote (L.S.)
 Marie G. Foote

No consideration is passing, This deed being a gift, no Revenue Stamps are annexed.

STATE OF NEW JERSEY
 COUNTY OF MORRIS SS.: BE IT REMEMBERED, That on this fifth day of June, in the year of our Lord One Thousand Nine Hundred and Forty-two, before me, the subscriber, a Master in Chancery of New Jersey, personally appeared Marie G. Foote (widow) who, I am satisfied, is the grantor mentioned in the within Instrument, to whom I first made known the contents thereof, and thereupon she acknowledged that she signed, sealed and delivered the same as her voluntary act and deed, for the uses and purposes therein expressed.

Robert H. Sohenok
 (Robert H. Sohenok)
 Master in Chancery of New Jersey

Received and recorded July 24th, 1942 at 2:48 o'clock P. M.
 H. Bertram Mott, Clerk No. 19461

IN CHANCERY OF NEW JERSEY
 137/546

Between
 Town of Morristown, a
 municipal corporation
 Complainant,
 and
 Mary Elizabeth King,
 et als.,
 Defendants.

On Bill to Foreclose &c.
 FINAL DECREE.

This cause being opened to the Court by Nathaniel C. Tom, solicitor of the complainant, and it appearing that the complainant is the purchaser of certain land and premises sold to it by the Collector of Taxes of the Town of Morristown in the County of Morris and State of New Jersey, on February 25, 1935; that there was due to the complainant on May 27, 1942

Fig.#9



FOOTES POND ACTIVITY UPDATE WORKSHEET

OBSERVATION DETAILS:

Date _____ Time arrived: _____

Duration of visit by commissioner _____

Weather Conditions _____

of visitors observed using pond _____

Length of time/visit _____

Observed Activity of visitor _____

Type of Wildlife observed (please include type, if know: i.e. wood turtle & #s seen)

Mosquito activity observed: _____

Odor Observed _____

Overgrown Vegetation Observed: _____

Litter Observed _____

Any additional observations or impediments observed on your visit you believe important to the MEC's review and assessment of the conditions around Footes

Pond. _____

Commissioner: _____

Fig.#10

Cum # of visits	Date & time of visit	Duration of Visit (hours)	Weather Conditions	# of visitors at pond	Observed activity of visitors	Wildlife Observed	Odor	Vegetation	Litter	Add'l observation assessing the conditions around Foote's Pond	Commissioner
1	6/15/16 7pm	1	Sunny & Clear	2	visitors on peer with one reading on bench	great egret, yellow warbler, tree swallow, bull frog, green frog, multiple small turtles, 3 snapping turtles, redwing blackbird	N/A	N/A	N/A	Pond shallow. Water clear except for floating algae & duckweed in calm sections	R. Isleib
2	6/15/16 7:15am	0.5	Sunny & Clear	1	Jogging on footbridge	Eastern phoebe, green heron, great blue heron, american gold finch, wood duck (female with 6 ducklings) gray catbird, American robin, tree swallow, crow chimney swift, song sparrow, yellow warbler, redwing blackbird	N/A	N/A	N/A	N/A	R. Isleib
3	6/8/16 7:15am	1	Sunny	2	one person reading near fireplace & one person thrashing at weeds across the pond	Northern cardinal, great blue heron, wood thrush, tree swallow, wood duck, song sparrow, yellow warbler, eastern kingbird, american robin, hairy woodpecker, blue jay, crow, snapping turtle, deer tracks, redwing blackbird	N/A	N/A	N/A	N/A	R. Isleib

4	6/18/16 7pm	1	Sunny	2	1 person sitting and another one smoking "possibly weed"	wood duck (female with 7 chicks), green heron, redwing blackbirds, dowery woodpecker, tree swallows, barn swallow, american robin, yellow warbler, song sparrow	N/A	N/A	Aluminum can on James St side	Pond is very shallow due to the lack of rain in the last week. It looks like algae is starting on surface	R. Isleib
5	6/15/16 3:30pm	1.5	Sunny & Clear	1	one person sitting on dock	box wood turtle, yellow warbler, song sparrow, canadian goose (female with 4 goslings, wood duck, green heron, redwing blackbirds, tree swallows, american robin,	N/A	Poison ivy spotted near foot bridge	debris noted in the dam	grounds should be maintained - especially clearing the overgrown path	M. Denman
6	6/20/16 7pm	1	Sunny & humid	1	feeding fish	fish, squirrels, frogs toads	yes stagnant water	yes	litter in dam	overgrown	M. Baumann
7	6/12/16 3:30pm	1	Sunny & Clear	1	young couple sitting on dock - man runs every day & usually never sees anyone	egret, 4 geese & numerous goslings, numerous turtles all sizes	N/A	overgrown	dog & geese waste on path	grounds overgrown-clearing the path	P. Grigas
8	6/13/16 3:00pm	1.5	Overcast	1	one man walking	egret, redwing blackbird, bull frogs heard	N/A	overgrown		blocked by overgrown vegetation	P. Grigas
9	6/14/16 8:30am	0.5	Sunny & Clear	0	N/A	wood turtles, bullfrogs and white egret	N/A	overgrown	N/A	Pathways overgrown	N. Umbriac
10	6/13/16 8:30am	0.5	Sunny & Clear	1	walking dog past pond	wood turtle and white egret	N/A	overgrown	N/A	briars/brush overgrown	N. Umbriac
11	6/13/16 6:30pm	1	Overcast	0	(9) Visitors attending Footes Pond Info Session hosted by Alison Deeb		N/A	overgrown	N/A	Pathways overgrown	S. Pylypchuk
12	6/13/16 7:30pm	1	Overcast	0	N/A	bullfrogs, chipmunks, fish, milkweed, raspberries, poison Ivy	N/A	overgrown	N/A	Pathways overgrown	S. Pylypchuk
13	6/18/16 1pm	1	Sunny	0	N/A	turtle, frogs and egret	N/A	overgrown	N/A	Pathways overgrown	J. Davis
14	6/12/16 1pm	2.5	Sunny	0	N/A	redwing blackbird, yellow warbler, wood boxer turtle, canadian goose with 4 goslings, multiple frogs heard but not seen	N/A	overgrown	N/A	Pathways overgrown	M. Denman

ATTACHMENT 1

October 14, 2016

Habitat Suitability Analyses
Footes Pond Wood
Town of Morristown, Morris County, NJ

PK ENVIRONMENTAL (PK) conducted on-site analyses of Footes Pond and adjacent woodlands during September 2016, to determine if proposed pond dredging of Footes Pond, or allowing a natural meadowing process (eutrophication), would result in minimal feasible impairment or degradation of the Pond. PK analyzed the area for the presence or absence of rare, threatened, or endangered (T&E) species of flora or fauna, in cross-reference with the NJDEP Landscape Project GIS GeoWeb database, the US Fish and Wildlife Service (USFWS) Trust Resources Report, and the August 29, 2016, NJDEP Natural Heritage database results.

The NJDEP GIS GeoWeb aerial photo (**Figure 1**) indicates the presence of on-site woodlands, intermediate resource value wetlands, and State open waters (pond/stream). The USFWS Trust Resources Report (**Appendix A**) indicates that there is no critical T&E habitat in the Footes Pond area, but that the Pond and woodlands may provide extensive avian habitat for migratory birds and birds of conservation concern. The corresponding Natural Heritage database (**Appendix B**) indicates that this area may provide suitable on-site habitat for two (2) species of special concern (Conservation Rank 2), including forest nesting habitat for Coopers Hawk (*Accipiter cooperii*) and Palustrine (freshwater) open water foraging habitat for Great Blue Heron (*Ardea Herodias*).

Based upon our on-site analyses, the Pond does not appear to provide suitable habitat for any T&E aquatic dependent herptile species of wildlife, particularly bog turtle and wood turtle, but as observed, the Pond and adjacent woodland does provide diverse habitat opportunities. During our brief on-site analyses, we observed numerous common Palustrine Open Water (Pond) aquatic dependent species (snapping turtle, painted turtle, great blue heron, mallard duck, wood duck, Canada geese, fish). As such, Footes Pond Wood is a stable natural resource within a suburban developed area, which provides for landscape diversity and species/habitat conservation, freshwater wetland function, flood protection, and public scenic attributes, within the following areas (**Photos 1 - 10**):

PK ENVIRONMENTAL
Planning & Engineering

- **Palustrine Open Waters (Footes Pond)** are shallow natural and man-made ponds that are permanently flooded water bodies with aquatic beds that include floating vegetation species (duckweed) and rooted vascular plants (water lily, pondweeds, green algae).
- **Riverine Open Waters (Great Brook)** are well-defined moving water channels, with adjacent fringe wetland or floodprone woodland ecosystems.
- **Palustrine Emergent** wetlands are typical of inundated freshwater marshes dominated by persistent grasses, rushes, sedges, and semi-aquatic vegetation, including cattails, arrow arum, tussock sedge, soft rush, rice cutgrass, sweet flag, wool grass, pickerelweed, purple loosestrife, and reed canary grass.
- **Palustrine Scrub-Shrub Deciduous** wetlands are dominated by woody understory vegetation less than 20-feet in height, including alder, willows, silky dogwood, red osier dogwood, northern arrowwood, pepperbush, snowberry, greenbriar and highbush blueberry.
- **Palustrine Forested Broad Leaved Deciduous** wetlands are dominated by hydrophytic, forested/woodland overstory vegetation taller than 20-feet, with a limited understory. Examples of hydrophytic tree species identified in the wetland overstory include red maple, silver maple, swamp white oak, tupelo, sweet gum, American elm and pin oak. Understory vegetation includes spicebush, highbush blueberry, snowberry, greenbriar, alder, silky dogwood, phragmites, cattails, reed canary grass, skunk cabbage, jewelweed, sensitive fern, cinnamon fern, and sedges.
- **Mesic Upland Woodlands/Forest** include early to mid-stage successional growth mesic upland woodlands are interspersed throughout the study areas, where the dominant hardwood overstory vegetation includes white ash, black cherry, red oak, white oak, black oak, sugar maple, shagbark hickory, American beech, tuliptree/poplar, and a dense, shrubby understory including multiflora rose, wild grape, poison ivy, bittersweet, raspberry, and Japanese barberry. Much of the mesic upland woodlands provide an effective functioning wetland buffer, riparian zone stream buffer, natural soil erosion protection, natural stormwater runoff filter and groundwater infiltration area, and contrasting wildlife habitat opportunities.
- **Maintained Fields/Hedgerows** include broad, previously cleared upland areas and disturbed grassy meadow areas that are dominated by herbaceous species including meadow fescue, timothy grass, orchard grass, bluestem grass, common milkweed, yarrow, phragmites, and white clover, with adjacent young woodland edge species including Eastern red cedar, black cherry, white ash, Allegheny blackberry, raspberry, bittersweet, and multiflora rose.

Eutrophication

By definition, a freshwater pond is defined as a shallow body of water, generally less than 6-feet in depth, with a muddy or silty bottom that generally supports semi-emergent plant growth from shore to shore, which over time can become stagnant, weed choked, and eutrophic. Accelerated eutrophication is caused by excessive pollution, which affects dissolved oxygen levels and elevates water temperatures, and is the primary factor upsetting the natural balance of a healthy Pond ecosystem. One of the most common results of accelerated eutrophication is the rapid growth of algae, commonly referred to as algal bloom, and to offset the potential for accelerated eutrophication and growth of excessive aquatic vegetation, control of nutrient-rich runoff from non-point sources (NPS) is important within the planning and maintenance of the Pond. Palustrine Open Water eutrophication (meadowing) is a natural process for a shallow pond, and based upon the intensity of modified hydrology, the transition affects adjacent Palustrine emergent wetlands, Palustrine scrub/shrub wetlands, Palustrine forest, and upland foresting processes

The Great Brook is the sole source of surface water in Footes Pond, and it appears that the Pond has always been a shallow Palustrine Open Water habitat. Paradoxically, the Great Brook now introduces more NPS pollutants into the Pond from the developed upstream drainage areas, which includes extensive stormwater runoff from street systems, residential landscaping, golf course maintenance, and commercially developed properties. NPS pollutants are the primary cause of accelerated eutrophication with negative impacts related to surface water quality and water supply, and the natural functioning of plant, animal, and aquatic wildlife.

Conclusions

In conclusion, to maintain the open water area of small urban/suburban Ponds, they need to be maintained periodically, typically by dredging of accumulated sedimentation within the Pond substrate, and removal of invasive species of aquatic and emergent vegetation. As depicted on the enclosed site photographs, Footes Pond is impacted from excessive upstream urban runoff, and there is invasive aquatic and emergent vegetation growing within the unconsolidated silty deposition material, which at the current time is reducing fish habitat. According to prior Footes Pond analyses, proposed Pond dredging activities would need to remove between 30 to 40-inches of accumulated silt/sediment to maintain the historic depth and size of the Pond, which would not jeopardize or adversely modify a present or documented habitat for T&E species.

Conversely, if no Pond dredging is undertaken, the natural and accelerated Pond eutrophication (meadowing) would result in the reduction of open water fish habitat, but the expansion of Palustrine emergent, Palustrine scrub-shrub, and Palustrine forested wetland habitat. Because of the surrounding upland woodlands/forest, the overall wildlife habitat area within the Footes Pond Wood may be modified, but will not be reduced, which would also not jeopardize or adversely modify a present or documented habitat for T&E species.

STATEMENT OF QUALIFICATIONS & EXPERIENCE

JOHN PEEL, P.P.

Environmental Scientist / Professional Planner

Education:

- B.A. Environmental Sciences and English, **Fairleigh Dickinson University, Madison, NJ**
- Master of City and Regional Planning (MCRP), Environmental Policy & Planning concentration, **Rutgers University, New Brunswick, NJ**
- Cook College Office of Continuing Professional Education (**Rutgers**) including numerous courses in Wetlands Management, Threatened/Endangered Species & Habitat Analyses, Ecology, Stormwater Management, Hydrogeology, Site Remediation, GIS Applications

Professional Registration and Societies:

- Society of Wetland Scientists, 1986
- Licensed Professional Planner (PP) #5211
- Member, Urban Ecology

Experience:

Thirty (30) years of project design and technical experience in land use planning, regulatory compliance, environmental science and site evaluation for open space acquisitions, municipal consulting, habitat identification & restoration, development alternative analyses, and wetlands analyses and management. A licensed Professional Planner with expertise in environmental land use consulting associated with NJDEP permitting analyses and approvals (Freshwater Wetlands, Flood Hazard Area, Waterfront Development, Highlands, CAFRA, Enforcement), functional value analyses within Special Water Resource Protection Areas (SWRPA), Phase 1 Environmental Site Assessment, NJDEP Preliminary Assessments (PA), Phase 2 Site Investigations, Site Remediation, riparian zone analyses (RZ), environmental impact statements (EIS), habitat identification, and comprehensive freshwater and coastal wetlands analyses including delineation, restoration, and mitigation/monitoring projects for USCOE and NJDEP permitting.

SANDRA E. KEHRLEY, P.E.
Environmental Engineer / Hydrologist

Education:

- A.S. in Engineering Science from **SUNY @ Morrisville**, New York
- B.S. in Forest Engineering, dual forestry and civil engineering program, **SUNY-Environmental Science & Forestry @ Syracuse University**
- Cook College Office of Continuing Professional Education (**Rutgers**) including numerous courses in Preliminary Assessments, Underground Storage Tanks, Site Remediation, Soil Remediation Standards, Geology/Hydrogeology, Non-Point Source (NPS) Pollution Analyses, Stormwater Management Design/Best Management Practices, and Ecology.
- NJ Water Environment Association (NJWEA) Education Courses/Seminars in **Site Remediation, LSRP Legislation.**
- 40-Hour Health & Safety Certification Course (OSHA) for Hazardous Waste Site Operations

Professional Registrations and Memberships:

- Professional Engineer, NJ PE License No. 38560
- Member, National Society of Professional Engineers
- NJDEP UST License No. 0018790

Experience:

Twenty-five (25) years of professional experience in environmental engineering, regulatory compliance, and land use consulting, with extensive experience in the preparation of Environmental Impact Statements (EIS), Phase 1 Environmental Site Assessments, NJDEP Preliminary Assessments (PA), Phase 2 Site Investigations (SI), Phase 3 Remedial Investigations (RI) & Remedial Activities (RA), Industrial Site Recovery Act (ISRA) closures, Bureau of Underground Storage Tank (BUST) closures, landfill/solid waste closure plans, design of stormwater management systems, non-point source (NPS) pollutant analyses, riparian zone analyses (RZ), forest inventory identification of species, age, and growth characteristics, wildlife habitat suitability indices, HEC-RAS analyses for NJDEP Flood Hazard Area permits (hydrologic/hydraulic stream studies, flood hazard area/floodway modeling), quantifying the effects of development on stormwater quantity and quality, conceptual site planning for residential development, and comprehensive wetlands analyses including delineation, restoration, evaluation, and preparation of NJDEP permit applications.

REFERENCE DOCUMENTS & INFORMATION

- NJDEP Landscape Project GIS GeoWeb database
- NJDEP Natural Heritage Program database (Appendix A)
- United States Fish & Wildlife Service (USFWS), Web Database
- “Foote Pond Sediment Testing Report”, April 2010 (Princeton Hydro, LLC)
- “Pond and Brook” (Michael J. Caduto)
- Endangered and Threatened Wildlife of New Jersey (Beans & Niles)
- “Wetlands of New Jersey” (USFWS)
- Plant Communities of New Jersey (Collins & Anderson)
- Handbook of Turtles (Archie Carr)
- Reptiles and Amphibians (Conant & Collins)
- Sibley Guide to Birds / Life and Behavior (David Allen Sibley)
- American Ornithologists’ Union, 1998. “Checklist of North American Birds”, 7th edition.

PK ENVIRONMENTAL
PO Box 1066, 205 Main Street
Chatham, New Jersey 07928
(973) 635 - 4011

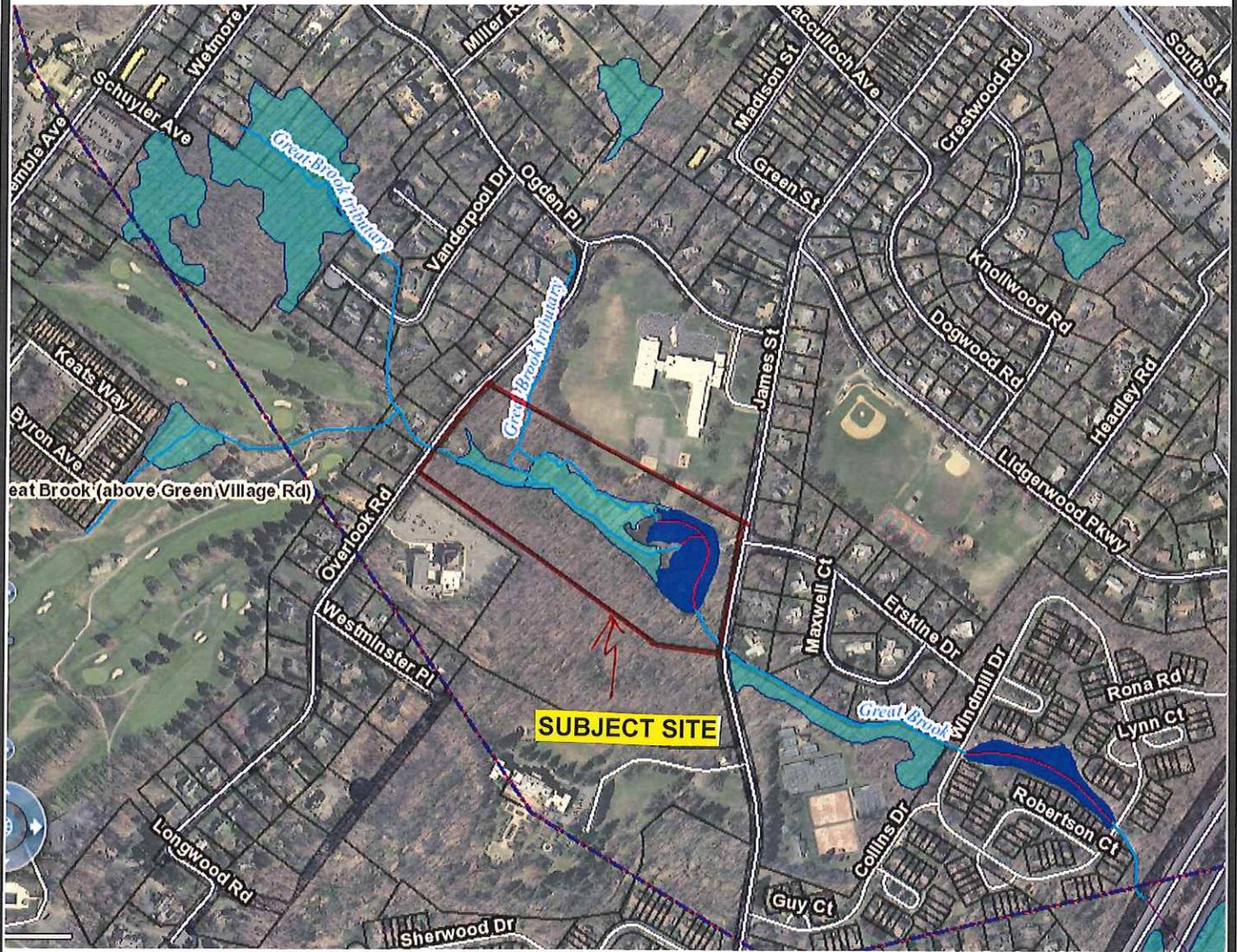


FIGURE 1 - 2012 AERIAL PHOTO
SOURCE: NJDEP GIS GeoWeb
Foote's Pond
Block 8901 Lot 2
Town of Morristown, Morris County, NJ
NTS

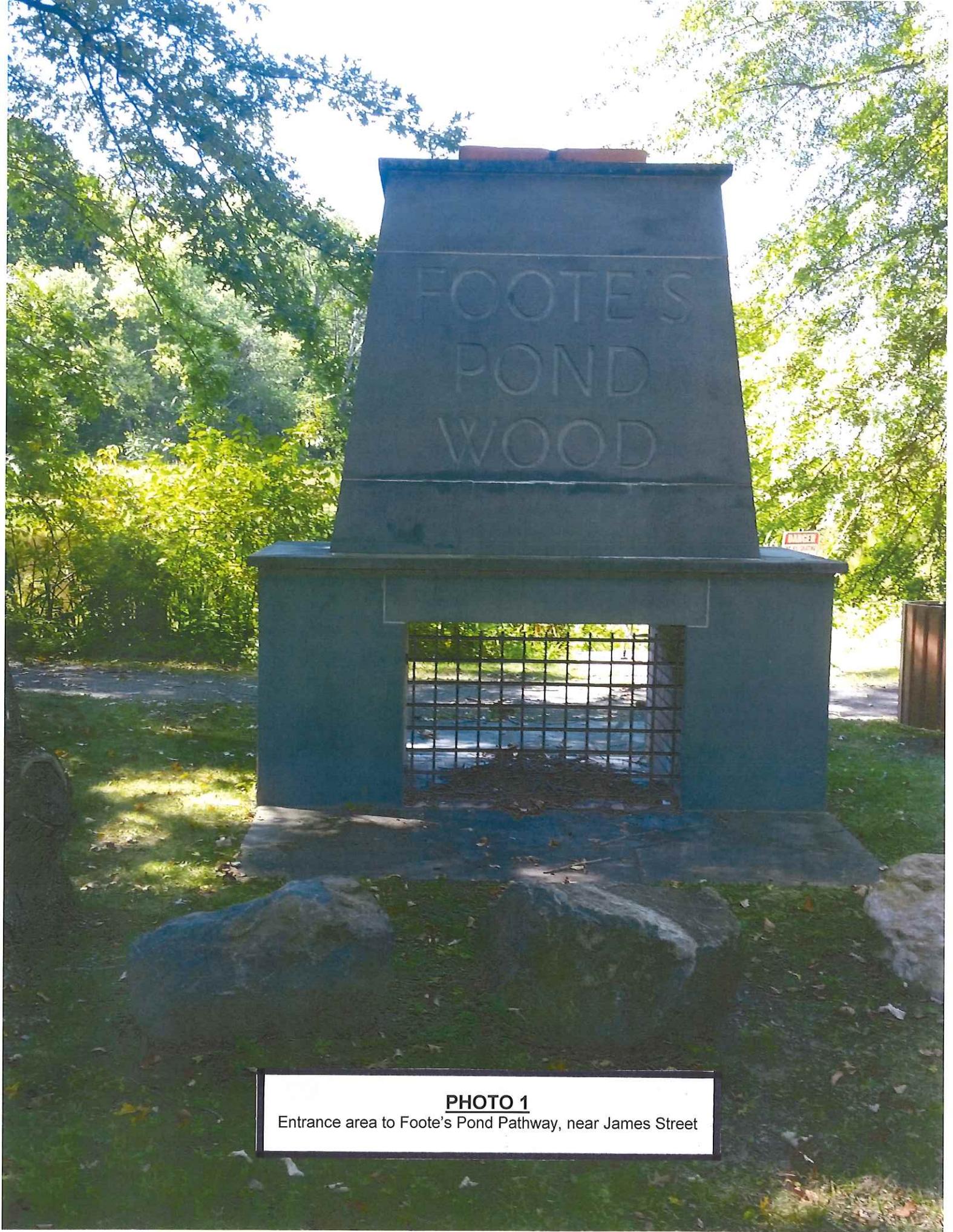


PHOTO 1
Entrance area to Foote's Pond Pathway, near James Street

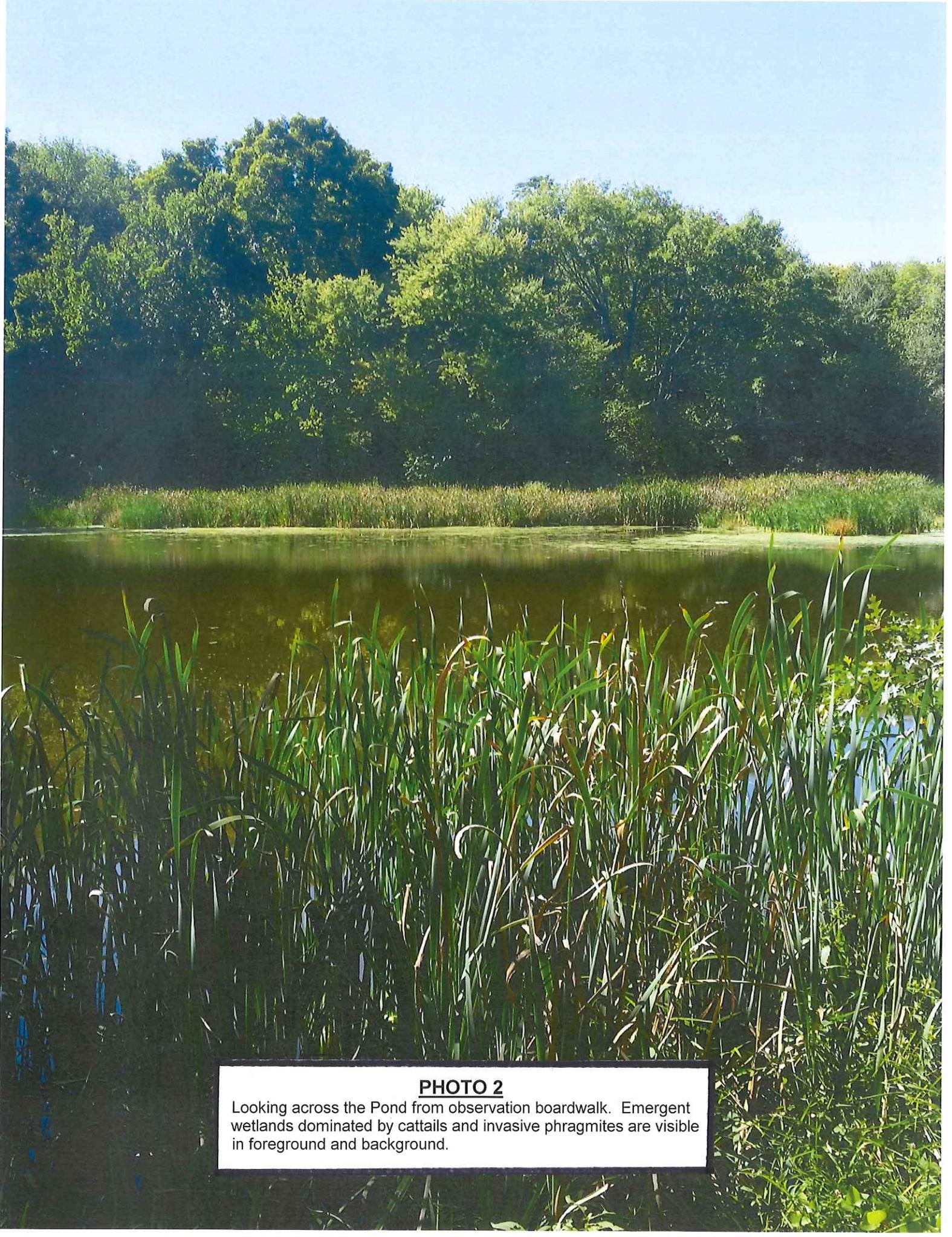


PHOTO 2

Looking across the Pond from observation boardwalk. Emergent wetlands dominated by cattails and invasive phragmites are visible in foreground and background.

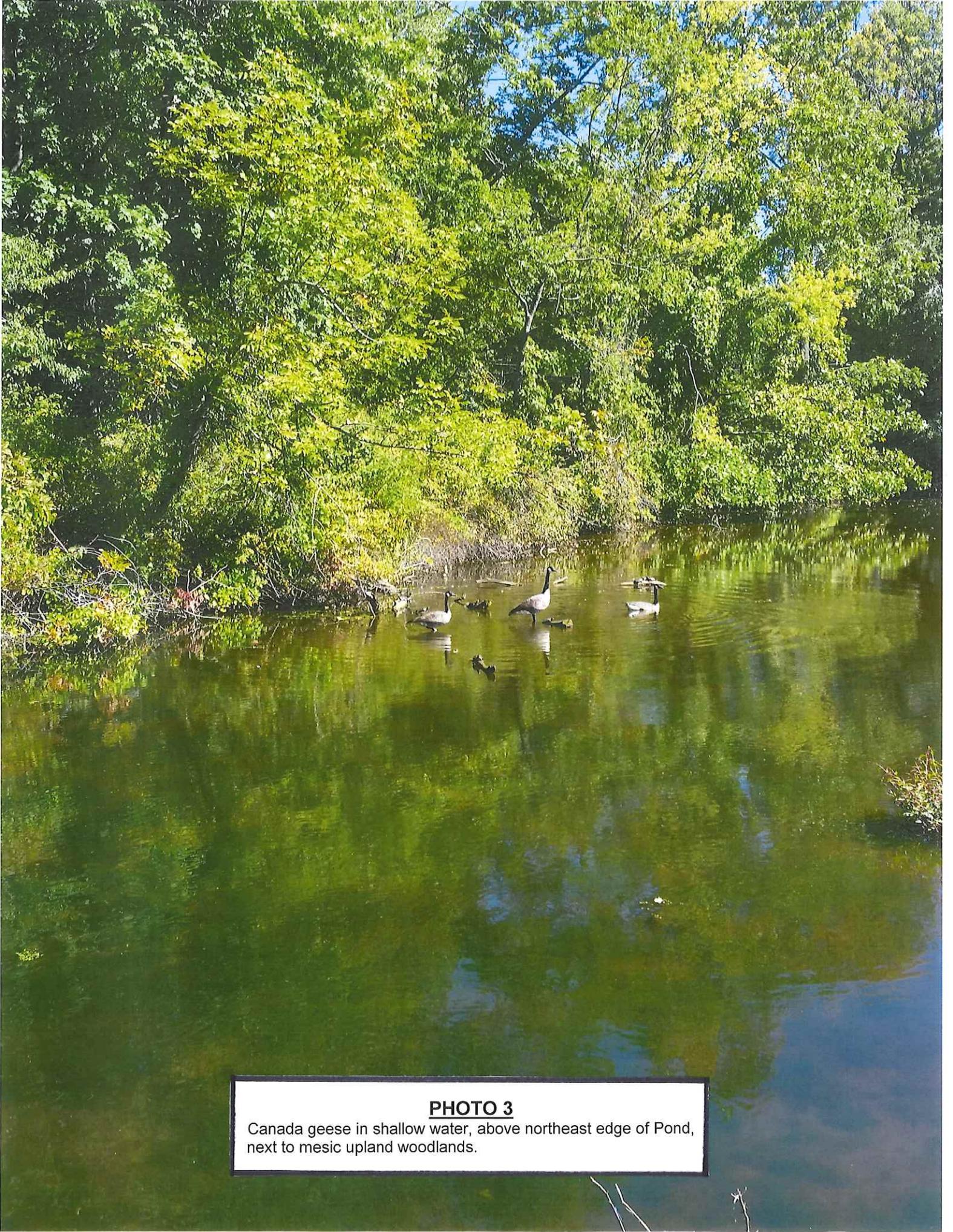


PHOTO 3
Canada geese in shallow water, above northeast edge of Pond,
next to mesic upland woodlands.

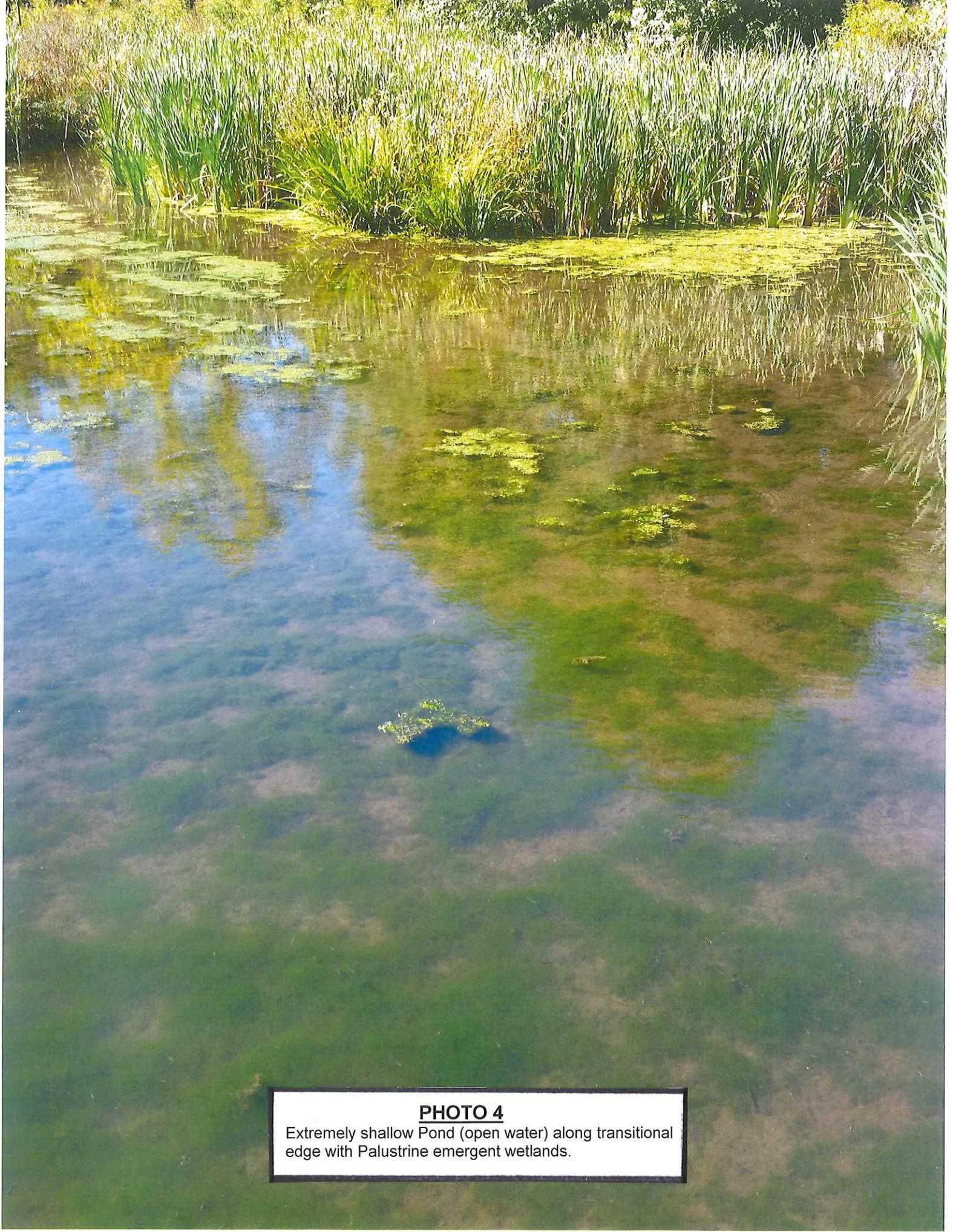


PHOTO 4
Extremely shallow Pond (open water) along transitional edge with Palustrine emergent wetlands.



PHOTO 5

Edge area in a more advanced stage of eutrophication (meadowing).

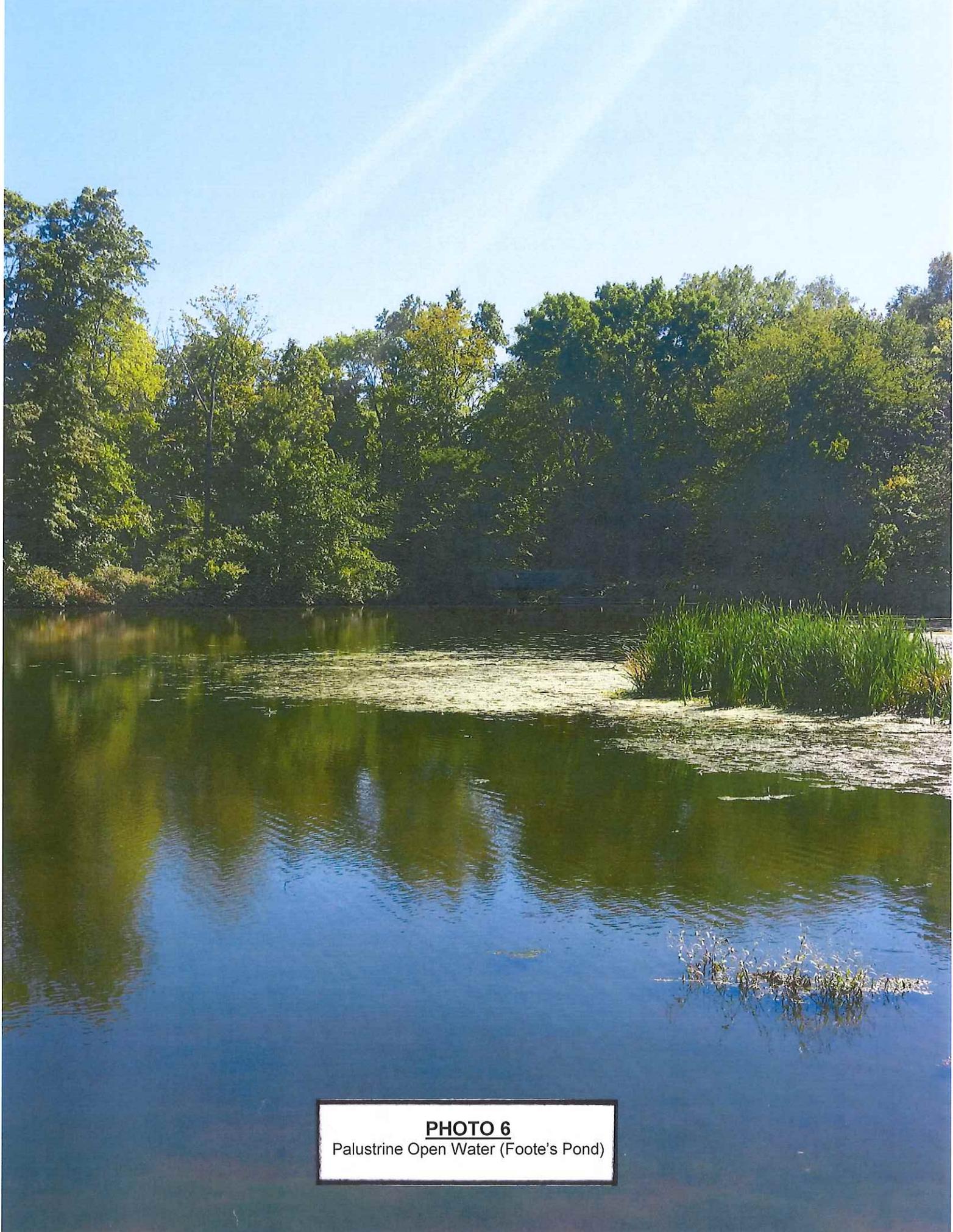


PHOTO 6
Palustrine Open Water (Foote's Pond)

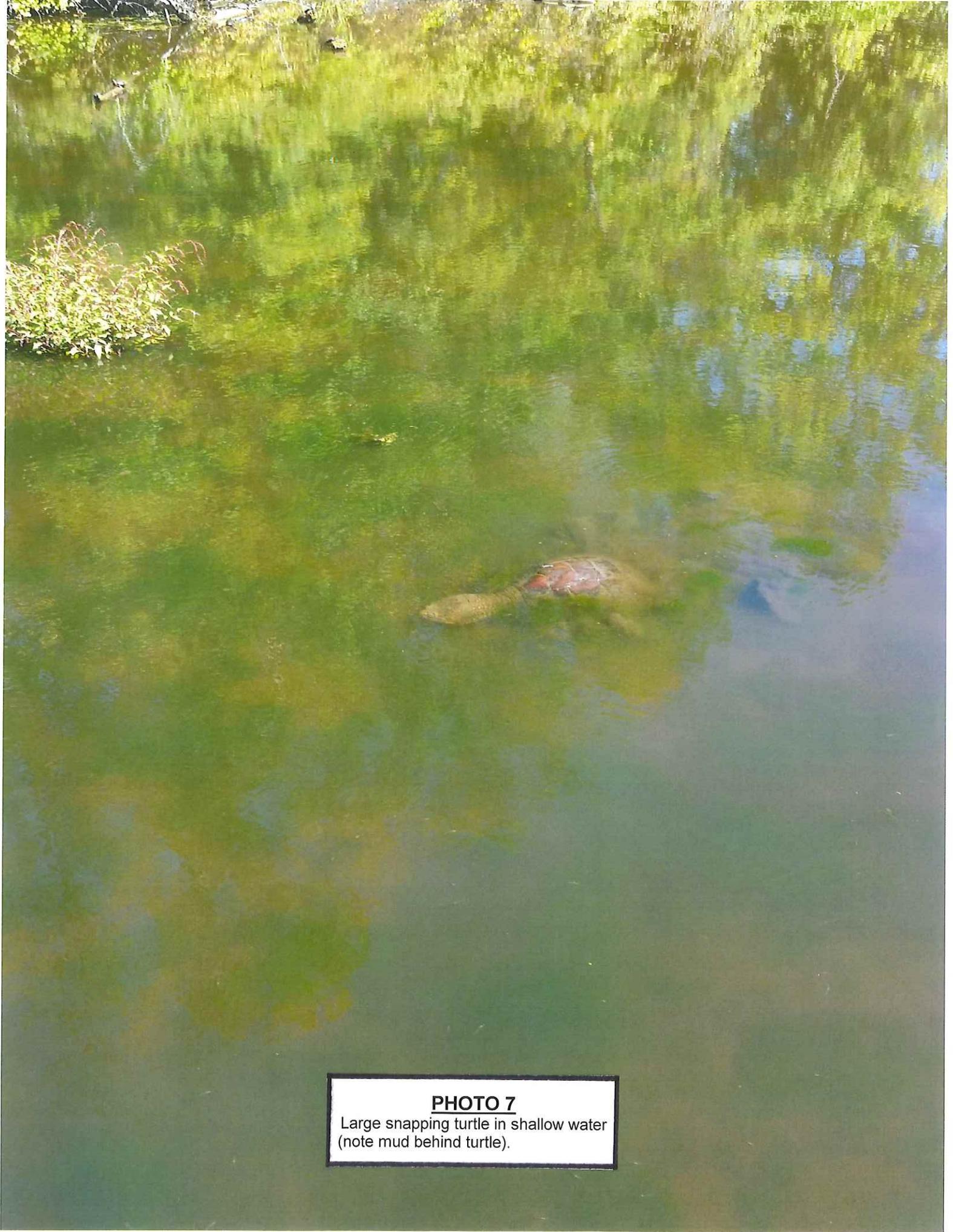


PHOTO 7
Large snapping turtle in shallow water
(note mud behind turtle).

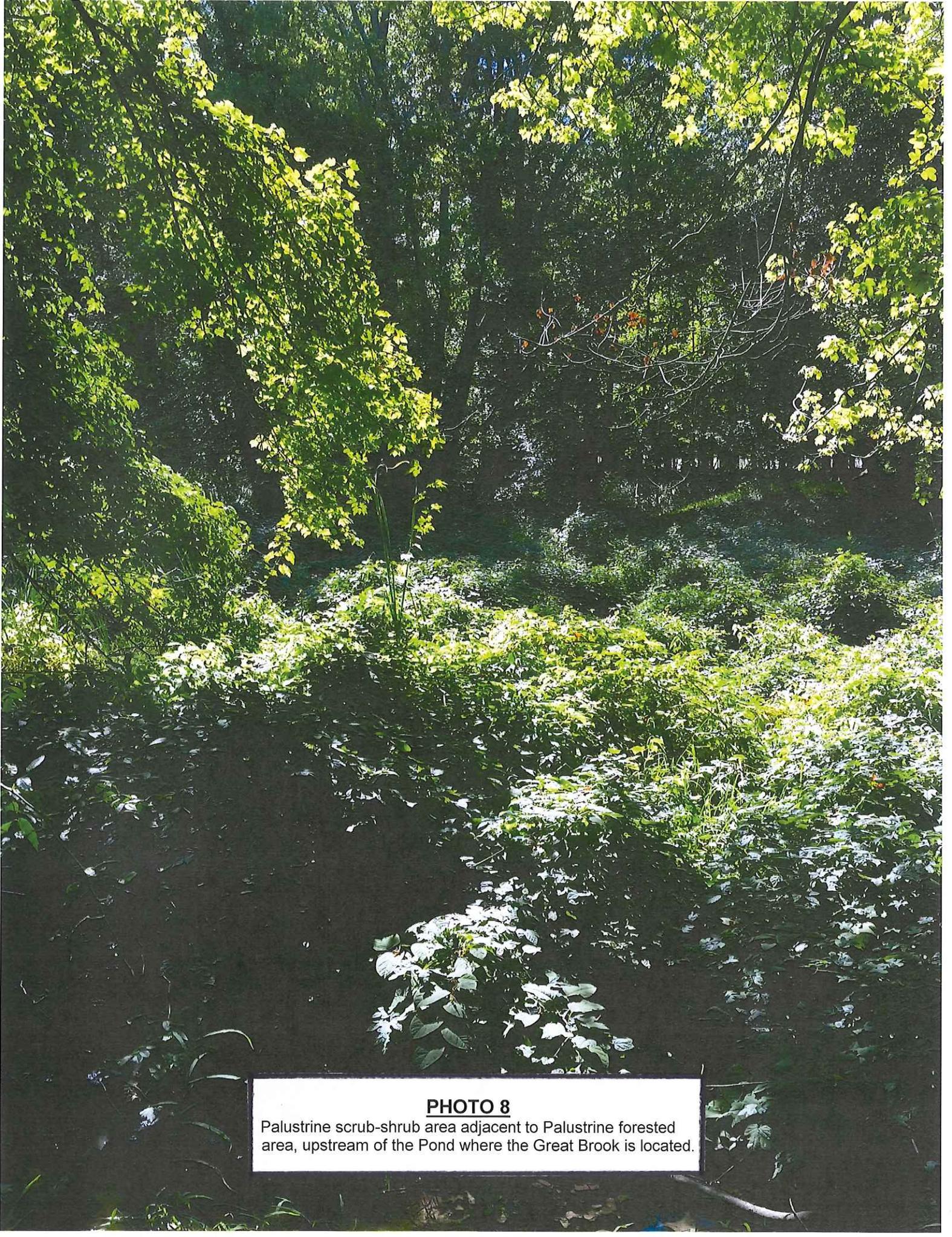


PHOTO 8

Palustrine scrub-shrub area adjacent to Palustrine forested area, upstream of the Pond where the Great Brook is located.

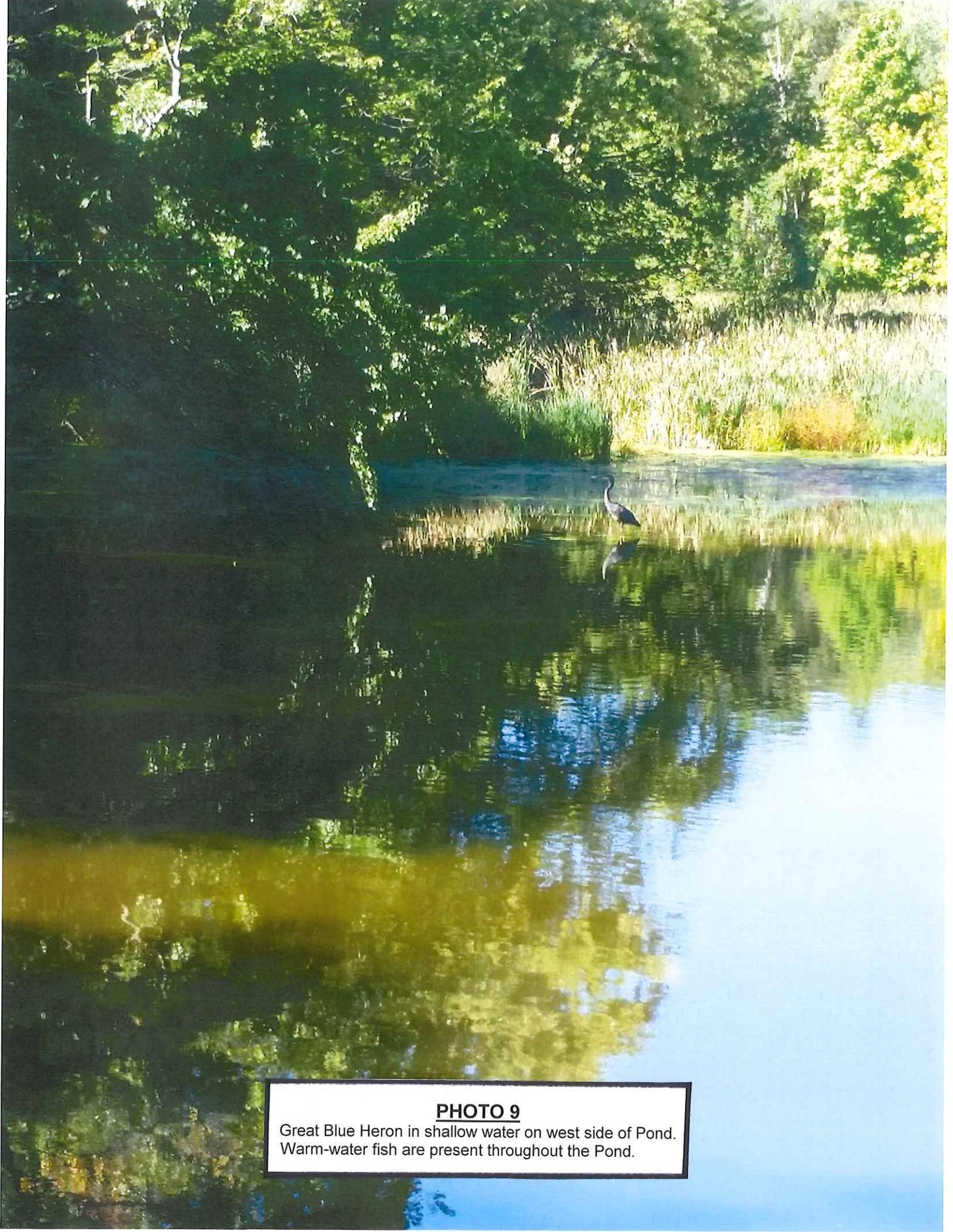


PHOTO 9
Great Blue Heron in shallow water on west side of Pond.
Warm-water fish are present throughout the Pond.



PHOTO 10

Mesic upland forest, west of the Pond, near its transitional edge with Palustrine forested wetlands above western shore of the Pond (Coopers Hawk habitat).

APPENDIX A

**USFWS Trust Resources Report Database
(September 8, 2016)**

Footes Pond T&E Assessment

IPaC Trust Resources Report

Generated September 08, 2016 11:28 AM MDT, IPaC v3.0.8

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

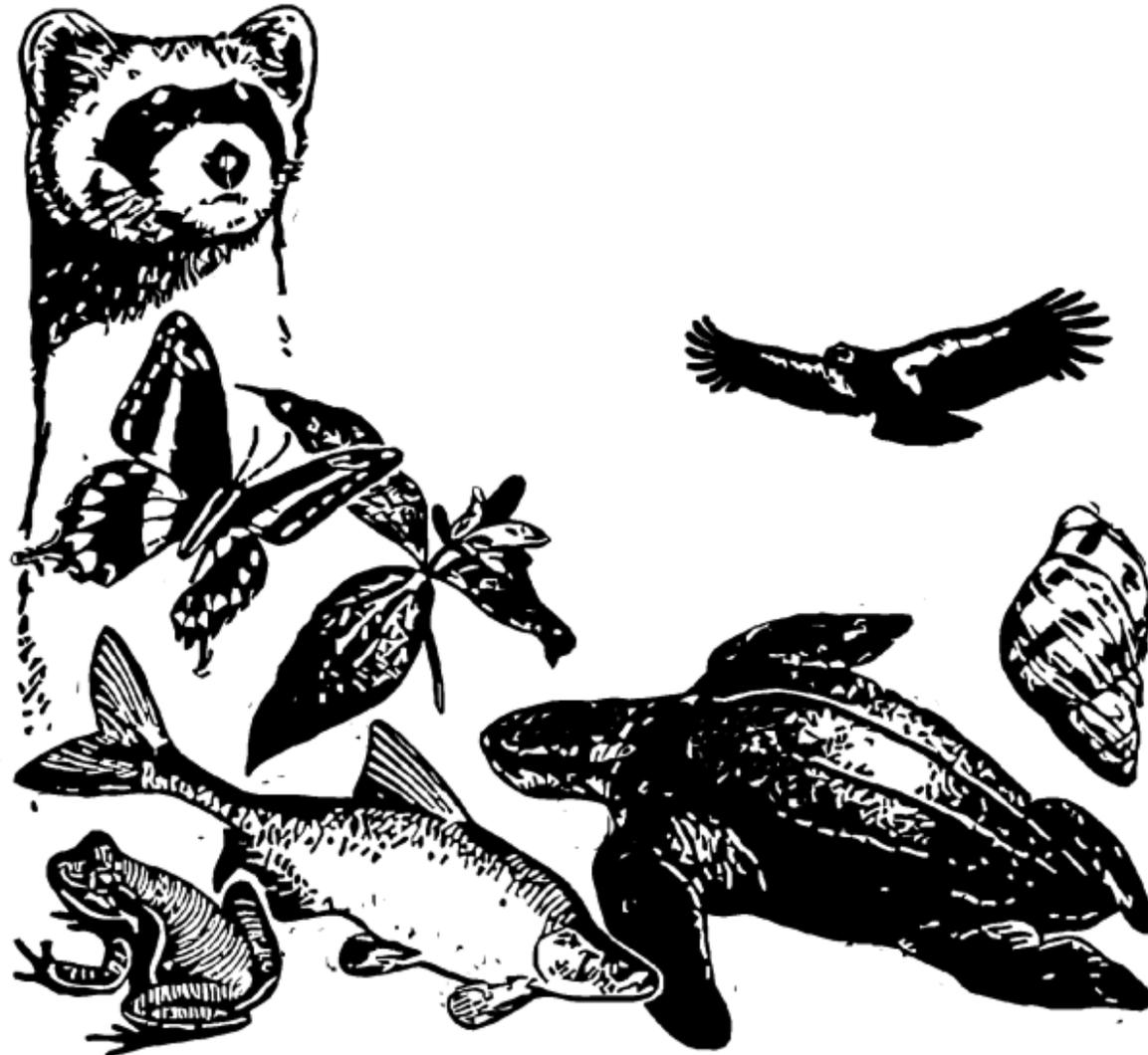


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Migratory Birds	4
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Wetlands	8

U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

Footes Pond T&E Assessment

LOCATION

Morris County, New Jersey

DESCRIPTION

Footes Pond is located in Morristown, NJ, where pond appears to be eutrophying.

IPAC LINK

<https://ecos.fws.gov/ipac/project/NQJRH-B45NR-BPFI-X-ZTTMO-AFB6RE>



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

New Jersey Ecological Services Field Office

927 North Main Street, Building D

Pleasantville, NJ 08232-1454

(609) 646-9310

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Mammals

Indiana Bat *Myotis sodalis* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A000

Northern Long-eared Bat *Myotis septentrionalis* Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A0JE

Reptiles

Bog (=muhlenberg) Turtle *Clemmys muhlenbergii* Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=C048

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

American Bittern <i>Botaurus lentiginosus</i>	Bird of conservation concern
On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F3	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
On Land Season: Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008	
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i>	Bird of conservation concern
On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HI	
Blue-winged Warbler <i>Vermivora pinus</i>	Bird of conservation concern
On Land Season: Breeding	
Canada Warbler <i>Wilsonia canadensis</i>	Bird of conservation concern
On Land Season: Breeding	

Cerulean Warbler <i>Dendroica cerulea</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B09I	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> On Land Season: Wintering	Bird of conservation concern
Golden-winged Warbler <i>Vermivora chrysoptera</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0G4	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> At Sea Season: Migrating	Bird of conservation concern
Kentucky Warbler <i>Oporornis formosus</i> On Land Season: Breeding	Bird of conservation concern
Olive-sided Flycatcher <i>Contopus cooperi</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> On Land Season: Year-round	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> On Land Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> On Land Season: Wintering	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> On Land Season: Wintering	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> On Land Season: Breeding	Bird of conservation concern
Upland Sandpiper <i>Bartramia longicauda</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HC	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> On Land Season: Breeding	Bird of conservation concern

Worm Eating Warbler *Helmitheros vermivorum*

On Land Season: Breeding

Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

Freshwater Emergent Wetland

[PEM1C](#)

Freshwater Forested/shrub Wetland

[PFO1A](#)

Freshwater Pond

PUBHx

Riverine

R4SBC

R4SBCx

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website: <http://107.20.228.18/decoders/wetlands.aspx>

APPENDIX B

**NJDEP Natural Heritage Program Database
(August 29, 2016)**



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Parks & Forestry

State Forestry Service

Mail Code 501-04

Office of Natural Lands Management – Natural Heritage Program

P.O. Box 420

Trenton, NJ 08625-0420

Tel. (609) 984-1339 Fax. (609) 984-1427

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

August 29, 2016

John Peel, P.P.
PK Environmental
P.O. Box 1066, 205 Main St.
Chatham, NJ 07928

Re: Foote's Pond
Block(s) - 8901, Lot(s) - 2
Morristown Town, Morris County

Dear Mr. Peel:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.1) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Natural Heritage Data Request Form into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

This report does not include information concerning known Northern Long-eared Bat hibernacula and maternity roost trees protected under the provisions of the U.S. Fish & Wildlife Service's 4(d) Rule. You must contact the U.S. Fish & Wildlife Service, New Jersey Field Office, for additional information concerning the location of these features, or visit their website at: <http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html>.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

We have also checked the Landscape Project habitat mapping and Biotics Database for all occurrences of rare wildlife species or wildlife habitat within one mile of the referenced site. Please refer to Table 3 (attached) to determine if any rare wildlife species or wildlife habitat is documented within one mile of the project site. Detailed reports are provided for each category coded as 'Yes' in Table 3. These reports may include species that have also been documented on the project site.

For requests submitted as part of a Flood Hazard Area Control Act (FHACA) rule application, we report records for all rare plant species and ecological communities tracked by the Natural Heritage Program that may be on, or in the immediate vicinity of, your project site. A subset of these plant species are also covered by the FHACA rules when the records are located within one mile of the project site. One mile searches for FHACA plant species will only report precisely located occurrences for those wetland plant species identified under the FHACA regulations as being critically dependent on the watercourse. Please refer to Table 3 (attached) to determine if any precisely located rare wetland plant species covered by the FHACA rules have been documented. Detailed reports are provided for each category coded as 'Yes' in Table 3. These reports may include species that have also been documented on, or in the immediate vicinity of, the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1, 2 and 3 (attached) to determine if any priority sites are located on, in the immediate vicinity, or within one mile of the project site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive NJ-GeoWeb website at the following URL, <http://www.state.nj.us/dep/gis/geoweb splash.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Robert J. Cartica
Administrator

c: NHP File No. 16-4007474-10419

Table 1: On Site Data Request Search Results (6 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.1	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat on the
Project Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>	Cooper's Hawk	Accipiter cooperii	Nest	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Other Animal Species
On the Project Site Based on
Additional Species Tracked by
Endangered and Nongame Species Program**

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
Polites mystic	Long Dash			G5	S3?
Total number of records:		1			

Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.1	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat Within the
Immediate Vicinity of the Project Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>	Cooper's Hawk	Accipiter cooperii	Nest	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Other Animal Species
In the Immediate Vicinity of the Project Site Based on
Additional Species Tracked by
Endangered and Nongame Species Program**

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
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Invertebrate Animals

Polites mystic	Long Dash			G5	S3?
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Total number of records: 1

Table 3: Within 1 Mile for FHACA Searches (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Rare Plant Species Occurrences Covered by the Flood Hazard Area Control Act Rule Within One Mile of the Project Site Based on Search of Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within 1 mile	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Species Based Patches	Yes	2 page(s) included
4. Vernal Pool Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat Within One Mile of the Project Site Based on Search of Landscape Project 3.1 Stream Habitat File	No	0 pages included
6. Other Animal Species Within One Mile of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat Within
One Mile of the Project Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>								
	Canada Warbler	<i>Wilsonia canadensis</i>	Breeding Sighting	2	NA	Special Concern	G5	S3B
	Cooper's Hawk	<i>Accipiter cooperii</i>	Nest	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	<i>Ardea herodias</i>	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Hooded Warbler	<i>Wilsonia citrina</i>	Breeding Sighting	2	NA	Special Concern	G5	S3B
	Veery	<i>Catharus fuscescens</i>	Breeding Sighting	2	NA	Special Concern	G5	S3B
	Wood Thrush	<i>Hylocichla mustelina</i>	Breeding Sighting	2	NA	Special Concern	G5	S3B
<i>Insecta</i>								
	Tiger Spiketail	<i>Cordulegaster erronea</i>	Breeding/Cour tship	2	NA	Special Concern	G4	S3
	Tiger Spiketail	<i>Cordulegaster erronea</i>	Occupied Habitat	2	NA	Special Concern	G4	S3
	Tiger Spiketail	<i>Cordulegaster erronea</i>	Territorial Display	2	NA	Special Concern	G4	S3
<i>Mammalia</i>								
	Indiana Bat	<i>Myotis sodalis</i>	Breeding Sighting	5	Federally Listed Endangered	State Endangered	G2	S1

**Rare Wildlife Species or Wildlife Habitat Within
One Mile of the Project Site Based on Search of
Landscape Project 3.1 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
	Indiana Bat	Myotis sodalis	Maternity Colony	5	Federally Listed Endangered	State Endangered	G2	S1
	Indiana Bat	Myotis sodalis	Non-breeding Sighting	5	Federally Listed Endangered	State Endangered	G2	S1
Reptilia	Wood Turtle	Glyptemys insculpta	Occupied Habitat	3	NA	State Threatened	G4	S2

**Vernal Pool Habitat Within
One Mile of the Project Site
Based on Search of
Landscape Project 3.1**

Vernal Pool Habitat Type	Vernal Pool Habitat ID
Potential vernal habitat area	2331
Total number of records: 1	

**Other Animal Species Within
One Mile of the Project Site Based on
Additional Species Tracked by
Endangered and Nongame Species Program**

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
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Invertebrate Animals

Polites mystic	Long Dash			G5	S3?
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Total number of records: 1

ATTACHMENT 2



October 10, 2016

Town of Morristown
200 South Street, 2nd Floor
Morristown, New Jersey 07963

Attn.: Jillian C. Barrick, AICP/PP
Business Administrator

Re: Town of Morristown, County of Morris, State of New Jersey
Foote's Pond Watershed Analysis
Our File No.: SCE-R08981.011

Dear Ms. Barrick:

SUBURBAN CONSULTING ENGINEERS, INC. (SCE) has performed a watershed and permitting overview for Foote's Pond located in the Town of Morristown, New Jersey to evaluate the stormwater management impacts of allowing the pond to continue through pond succession. SCE utilized provided stormwater infrastructure mapping, a Flood Plain Delineation previously performed for this pond, Morris County Lidar Topography, and field visits to establish and understand the contributory drainage area to Foote's Pond. The delineated drainage area totals approximately 295 acres as shown on the attached Drainage Area Map and is mostly comprised of residential neighborhoods to the Northeast of the pond. The point of analysis for our consideration was the outflow structure of the pond. The outflow structure is made up of an approximately 5-foot-high, Class III-Low Hazard Dam with a 20-foot principal spillway and an auxiliary/emergency spillway approximately 1.5 feet above the principal spillway, both of which discharge to the Great Brook.

Dams, by nature, are constructed to impede flow and release stormwater downstream in a controlled manner. Often dams are constructed as a solution to stormwater inundation complications as controlling flooding requires that the rate of stormwater from a contributory area that reaches the point of analysis is decreased and/or the capacity of stored water above the point of analysis is increased. Though it is understood that this pond was likely created for commercial purposes (ice production) many years ago, it has served in a stormwater management capacity by holding back water from the downstream channel since creation and, therefore, should be considered a stormwater management feature. As stormwater drains from the contributory watershed, it transports sediment which is deposited into the pond. A large benefit of having a pond within a watershed is the impact of extended detention which allows sediment to settle prior to water being released downstream, as this greatly enhances water quality. This process, over time, will make the pond shallower and, eventually, decaying material will also accumulate on the pond bottom, adding more materials and enriching the sediment with nutrients. Plants will begin to thrive in this rich sediment and, in turn, begin to take up more volume. This process allows the sediment level to continue to grow to a depth above the mean water surface elevation throughout the pond.



Per SCE's field visit, it was apparent that this process is advancing within Foote's Pond and has already replaced a large portion of the pond with wetlands. If Foote's Pond is not dredged and maintained, plants will continue to thrive where the pond once was, and the area will be transformed into a wetland and eventually may become a dry meadow. The process is known as pond succession, and the progression is already reducing the size of the pond. The lasting effects of pond succession are most common issues with downstream water quality and downstream flooding. The purpose of our analysis was to identify if the Pond provided stormwater attenuation measures that will be compromised or even eliminated during and following pond succession.

This particular pond has received NJDEP Flood Hazard Area Permits, NJDEP Freshwater Wetlands Permits, and NJDEP Dam Safety Permits for proposed improvements to the property. SCE was provided a prior NJDEP Flood Hazard Area (FHA) Permit for review as part of this exercise. The permit is standard for a FHA approval and includes various conditions and references of the provided data, without listing the details of the design. SCE was not provided a copy of all of the listed reference plans and supporting calculations, but as we have prepared numerous comparable permit applications, an overview of the data that was likely provided to substantiate the application is offered for your information. It is assumed that the calculations and plans submitted for the permit application included the delineation of the flood plain associated with Foote's Pond and the upstream drainage area, storage and flow characteristics of the pond and upstream drainage area, and the connectivity to the downstream studied NJDEP Floodplain delineation. An NJDEP permit ties all submitted support documents to the approval, and a condition that states "no change in plans or specifications shall be made except with the prior written permission of the Department of Environmental Protection of the State of New Jersey," applies to all submitted support documents. Therefore, to modify the characteristics of the pond or dam, further NJDEP Land Use Permitting is required.

The design and permitting for the dam accounted for a wet pond with an initial water surface elevation at the principal spillway. Storage of the pond was accounted for by including the stage storage characteristics of elevations above the mean water surface elevation and the restrictions of the spillway. Any water or sediment below the principal spillway elevation is omitted from storage calculations regardless of composition, as no storage capacity below the mean water surface elevation can be assumed. When sediment and/or plants accumulate above the mean water surface elevation used in the design of the spillway, a loss in storage occurs, and the ability for the pond to attenuate stormwater is compromised. It was evident during SCE's site visit that the level of the sediment near the wetland formations was above the water surface elevation and, therefore, the pond has already lost storage volume. Reducing storage, in turn, increases the flow rate of discharge through of the spillway. To determine the extent of the increase in the flow rate of discharge, a detailed hydrologic and hydraulic study would be required. It should be noted that this increase in flow can potentially result in erosion, property damage, and flooding within the lower portion of the watershed.

Additionally, to allow the pond to continue through the pond succession process, the Town would be in conflict with prior approvals gained from the spillway and pond improvements. To abide by the conditions of these permits, the design storage volume is required to be maintained or calculations need to be provided proving that attenuation by the pond is not required within this watershed to



maintain the stability and integrity of the downstream channel. In our opinion, the Town can approach this project in various ways to achieve consistency with state permitting;

- A. Return the pond to original design conditions. It should be understood that this option should also consider the commitment to future maintenance. Per the NJ BMP manual, the cleanout cycle for a wet pond is typically every ten (10) years, other published data, for example by the Rutgers Cooperative Water Resources Program, pushes this cycle to 25-50 years. As part of this commitment, the Town may want to further invest in practices upstream of the pond to lengthen the life cycle of the pond prior to requiring dredging. Some of these practices may be creating a forebay to the pond or installing numerous smaller water quality features upstream of the pond. The process for dredging would likely start with a survey and testing of the sediment. This will allow the Town to understand the quantity of sediment and the disposal options. Likely, the sediment will require disposal at a certified landfill due to contamination typical to water bodies downstream of a developed area containing roadways and driveways subject to regular vehicular loading. Once the amount and chemistry of the sediment is identified, engineering calculations and design would be performed to specify the dredging logistics. Once it is understood what process would be followed, the approvals would be applied for to perform the work. It is anticipated that the following approvals would be required: NJDEP Land Use, NJDEP Division of Fish and Wildlife, NJDEP Bureau of Solid Waste, and the Morris County Soil Conservation District.
- B. Convert the pond to a dry detention basin. This process would require the dewatering of the pond and earthwork to create a dry grassed detention basin with a bottom which slopes from the pond inlets to the spillway. The first step would be to review the full design plans for the spillway that indicate the storage characteristics of the pond. A survey would be performed to establish the current conditions of the project area. The next step would be to perform watershed calculations to determine the required storage volume and outflow characteristics of a dry basin with the existing spillway as an outlet structure. These calculations would be used in conjunction with the surveyed information to value engineer the design/layout of the detention basin. Environmental and geotechnical services should be expected, as leaving all sediment in place would represent a large cost savings, and their services would be required to determine the viability/approach of achieving this. The selected/design layout and required progression of earthwork to achieve the determined basin design would be included in documents for construction and permitting requirements. The basin would require regular maintenance, but the maintenance would be very similar to the maintenance of the remainder of the property to include mowing, debris and sediment removal, stabilization, and erosion control repairs. It is anticipated that the following approvals would be required: NJDEP Land Use, NJDEP Dam Safety Division, NJDEP Division of Fish and Wildlife, and the Morris County Soil Conservation District.
- C. Determine the viability of decommissioning the dam by performing a hydrologic and hydraulic analysis of the watershed to the nearest downstream NJDEP studied waterway. The calculations will identify if stormwater attenuation is required at the pond. The calculations will require survey of the pond, the channels contributory to the pond, and downstream features to provide input for a HEC-RAS model of the watershed. This model



will have to be calibrated to a delineation performed by the NJDEP of the downstream watershed. After establishing the model, the HEC-RAS software will simulate a storm event and calculate how the watershed reacts to same. If it is determined that attenuation is not required at the pond, decommission the dam. To be able to decommission the dam the Town will have to prove to the NJDEP that there will be no negative impacts to the watershed by allowing the dam to not serve as a controlling structure, hence, the pond to no longer serve water storage purposes for storm events. This could result in the NJDEP requiring the spillway be removed or modified but should not require extensive construction efforts. The main effort behind this option would be the permitting effort. It is anticipated that the following approvals would be required: NJDEP Land Use, NJDEP Dam Safety Division, NJDEP Division of Fish and Wildlife, and the Morris County Soil Conservation District.

- D. Determine the viability of decommissioning the dam by performing a hydrologic and hydraulic analysis of the watershed to the nearest downstream NJDEP studied waterway. The calculations will identify if stormwater attenuation is required at the pond. The calculations will require survey of the pond, the channels contributory to the pond, and downstream features to provide input for a HEC-RAS model of the watershed. This model will have to be calibrated to a delineation performed by the NJDEP of the downstream watershed. After establishing the model, the HEC-RAS software will simulate a storm event and calculate how the watershed reacts to same. Construct an alternate stormwater attenuation measure to replace the calculated required design storage of the pond and decommission the dam to allow pond succession to occur. Preliminary calculations exclusively based upon the topography and dam elevations estimate that the stormwater volume currently provided by the pond is approximately 3.25 acre-feet (142,000 cf) of storage. This would require a viable location upstream of the existing spillway and engineering design and approvals. The volume of storage identified in the hydrologic and hydraulic study would be utilized for the design as the storage criteria, and the NJDEP Stormwater Regulations and Best Management Practices would have to be met for this new feature. Upon identifying the proposed location of the stormwater feature, survey would be required to identify the extent of construction required. The design would be based on achieving the same attenuation as the pond while maintaining stability throughout the watershed. Upon construction of an alternate measure, the dam can be decommissioned, and the pond can proceed through natural succession. It is anticipated that an above ground detention basin can be constructed and that mechanical means will not be necessary. To permit the construction of the basin, it is likely that the following approvals will be required: NJDEP Land Use, NJDEP Dam Safety Division, NJDEP Division of Fish and Wildlife, and the Morris County Soil Conservation District.

SCE understands that stormwater attenuation is not the only factor that the Town has to consider in this determination. The Town will have to consider the environmental, natural aesthetic, educational, water quality, wildlife impacts, and various other factors in their decision. Compiling the benefits and negative impacts of each option are imperative. SCE offers this report for the purposes of understanding the conditional requirements of current permitting and alternatives for stormwater attenuation at this site.



As requested, SCE has estimated the construction costs and design costs for each option. These estimates are approximate and are based on the limited information as discussed in the report. To provide more precise cost estimates, further data and analysis would be required by numerous professionals.

Optional Project Approaches	Estimated Costs
A. Dredge/Maintain Pond	\$1,000,000
B. Conversion to Dry Basin	\$350,000
C. Decommission Dam	\$160,000
D. Alternative Stormwater Measure (excludes land costs)	\$235,000

It should be understood that the options B, C & D have significant engineering costs associated with the design, modelling, and permitting process. It is recommended that if any of these options are preferred, that a preliminary hydrologic and hydraulic study be performed to verify the viability and update the costs estimates for the implementation of the option. The costs for the preliminary study are estimated at \$30,000, and the data collection and analysis are a prerequisite for options B, C & D.

If you shall have any questions or concerns in regard to the above, please do not hesitate to contact our office.

Very truly yours,
SUBURBAN CONSULTING ENGINEERS, INC.

Daren J. Phil, PE, PP, CME,
President/Principal Engineer

Erin B. Abline, EIT
Project Coordinator