

**Town of Tolland, Connecticut
Conservation Commission
Knofla Conservation Area
Management Plan
148 and 119 Bakos Road**



A Passive Recreation Open Space Conservation Area

Adopted by Conservation Commission: August 13, 2015

Adopted by Town Council: August 25, 2015

Town of Tolland

Conservation Commission Property Management Plan

Knofla Conservation Area, 148 and 119 Bakos Road

Background – The Tolland Conservation Commission is responsible for overseeing properties purchased by the Town of Tolland for conservation purposes and for preparing a management plan for each property. The management plans are based upon the environmental characteristics of the property and determine appropriate conservation and usage. Each plan includes a property description, an analysis of the unique characteristics and acceptable uses of the property, and a management program. The management program outlines the property management and improvement needs; the individuals and organizations to manage the property; and protection needs related to the site. Each management plan is developed under the Commission’s management planning process.

I. PROPERTY DESCRIPTION, RESOURCES, POTENTIAL, AND CONCERNS

Property Description – The north parcel of the Knofla Conservation Area is a 70.5 acre parcel of land on the north side of Bakos Road (#148) and east side of Hunter Road in the north central section of Tolland. It was purchased from the Knofla Family Trust by the Town of Tolland on December 22, 2009 with assistance from an Open Space and Watershed Land Acquisition Program grant from the State Department of Energy and Environmental Protection.

The south parcel of the Knofla Conservation Area is a 67.6 acre parcel of land on the south side of Bakos Road (#119). It was purchased from Keystone Enterprises by the Town of Tolland on May 21, 2014 with assistance from an Open Space and Watershed Land Acquisition Program grant from the State Department of Energy and Environmental Protection.

North Parcel



This parcel is within an “Important Wildlife Areas and Corridors with Significant Natural Habitats” (Town of Tolland Open Space & Conservation Plan, map 12) and is in a chain of several conservation parcels: Campbell Peaceful Valley Conservation Area and Stoppleworth Conservation Area to the west and the Schindler/Schmidt Conservation Area and Palmer Kendall Mountain Conservation Area to the east. All are Town-owned passive open space areas and are protected in perpetuity. A hike can be easily made of the five areas with only the smallest of road use needed.

It is located in the Charters Brook watershed which is part of the Shenipsit Lake Watershed public water supply system. The parcel contains a mixed forest cover and wetlands including a 15 acre bog area in the southerly section of the parcel. The bog area contains a variety of amphibians and reptiles. An array of wildlife can be found on the parcel. In addition to the diverse species of hardwoods, the parcel has an abundance of Mountain Laurel and wildflowers providing habitat for wildlife, including deer, fox, coyote, and a number of smaller animals such as raccoon, squirrel, and chipmunks. Birds are plentiful including forest songbirds, hawks, owls, pheasants, partridge, and waterfowl.

South Parcel



This parcel has two noncontiguous sections of frontage of 500 feet and 1,059 feet on Bakos Road. At its northwestern corner at Bakos Road, the parcel has an elevation of approximately 800 feet above sea level; it slopes gently to the center of the parcel to an elevation of approximately 750 feet above sea level and then more sharply to the edge of the pond to an elevation of approximately 700 feet above sea level. The eastern third of the parcel is primarily wetlands which includes a 5.74 acre pond. A 2,300 foot long woods road leads to the pond from Bakos Road.

The pond is approximately 9 feet in depth at its deepest part. From the dam, the pond bottom is flat for the first 10 feet and then drops off into the excavated area. It is fed by ground water, springs and Cemetery Brook which flows into the northern end of the pond. A small seasonal brook also flows into the pond at the southern end. The dam has a copper shear gate to regulate the water level. An earthen dam creates the pond and an underground spillway allows Cemetery Brook to continue its journey to Shenipsit Lake. The dam is an earthen embankment dam with a primary drop inlet spillway and an auxiliary overflow spillway.

Summarizing from the 05/14/2015 Dam Inspection Report, which can be found in full on the Town of Tolland website:

- (Part II) General Dam Information: Hazard Classification: BB, Dam Height: approximately 9 feet, Dam Length: 115 feet, Spillway Length: 45 feet, Spillway Type: drop inlet, Normal Freeboard: 3.5 feet, Drainage Area: 0.58 square miles, Impoundment Area: 5.65 acres
- (Part IV) Dam/Embankment: 3:1 u/s slope and 2:1 d/s slope, good condition, somewhat irregular in crest width and horizontal and vertical alignment, seepage/wet area noted on d/s slope on left embankment and right embankment, clay well tile 12" diameter on right d/s abutment contact, water level approximately 6" below ground surface, no riprap, no erosion, a little soil missing on left side of end wall, turf well established.
- (Part V) Spillway: drop inlet structure, auxiliary vegetated/overflow spillway, good condition, minor spilling visible on interior of drop inlet, no settlement, no cracks, no scouring.
- (Part VI) Auxiliary Spillway: vegetated overflow spillway, graded into natural grade at left of dam, good condition, uniformly graded, good stand of turf, minimal debris at end of spillway, some saplings and brush crowding outlet end.
- (Part VII) Downstream Channel: Cemetery Brook, reasonably clear, no scouring, minimal wood debris, no riprap.
- (Part VIII) Intake Structures: valve on pipe to drop inlet structure, shear gate not operated in a long time.
- (Part IX) Outlet Structures: corrugated metal pipe, end wall is make-shift stone masonry and concrete block with concrete slurry and asphalt covering, fair condition, no scouring, some soil loss to left of outlet pipe.
- (Part XII) Recommendations: Keep drop inlet clear of debris. Remove debris in auxiliary channel as woody vegetation crowding channel outlet end. Plan to remove all trees within 25 feet of dam components. Explore restoring operability of low level outlet valve. Longer term, plan to camera inspect the corrugated metal pipe in dry to assess degree of corrosion. It is to be expected that at some point future pipe will need to be repaired (proper slip lining) or replaced.

Most of the parcel is woodland and was managed by the owners under a Forest Management Plan for family recreational use; maintenance of its natural woodland beauty; improvement through annual cordwood cuttings; and improvement of the wildlife habitat and food supply. As hardwoods have been harvested, the White Pine and Hemlock stock has increased. A small portion of the parcel is classified as Productive Forest Soils (Town of Tolland Open Space & Conservation Plan, map 8).

This is a deer and turkey habitat and other small forest animals are seen. The pond's appearance and cool temperature – due to the springs – is indicative of a healthy aquatic habitat. The brooks and springs yield a continuous water flow. Beavers and woodchucks live around the pond area. The pond used to be stocked by the former owners with brown trout and brook trout; it now has an abundance of bullheads. This parcel is in the Shenipsit Lake Watershed public water supply system and the water from the pond flows toward the reservoir.

Potential Uses of the Knofla parcels – In accordance with the DEEP grant conditions and deed restrictions, uses of the Knofla Conservation Area must be limited to passive recreation. Accepted uses include:

- Hiking
- Snowshoeing and cross-country skiing
- Dog walking on leash and under owner's control; town ordinance requires dogs to be on a leash
- Mountain biking on north parcel only
- Habitat, wildlife and nature studies

Utilizing the *Conservation Commission Standards for Mountain Biking and Horseback Riding Use of Trails*, horseback riding is not allowed. The following standards for horseback riding are not met on the north parcel: no bridges or boardwalks, not traversing frequently wet areas or watercourses, trails to be at least eight feet wide. All standards for mountain biking are currently met on the north parcel so mountain biking is allowed there. Deed restrictions expressly prohibit mountain biking and horseback riding on the south parcel.



Use Restrictions - With the transfer of the parcels to the Town, there are inherent restrictions under the State of Connecticut conservation easement. The conservation easement requires that the parcels must be used as a passive recreation open space conservation area in perpetuity.

Concerns – Because the pond is in such an isolated location, there is a water safety issue if visitors do not follow the use restrictions. Under prior ownership, night use, fires, and deer hunters were an issue and may continue to be difficult to monitor. Given the associated risks, trespassing requires management attention. The condition of the dam could deteriorate in years to come and its condition must be carefully observed. The old woods road needs to remain passable for emergency vehicles and repair/maintenance vehicles.

Future Plans – It may be possible to connect a trail from the south parcel to Brookmoor Road through Town open space. Planting clover may eliminate the need to mow the dam area. The access gate where the old woods road of the south parcel meets Bakos Road will need to be evaluated regarding a sturdier locking gate.

Use Restrictions and Visitor Responsibilities – Visitors are to use the Knofla Conservation Area in a manner consistent with land use guidelines for the protection of open space resources. The following guidelines are the standards for use and are identified on parcel signage:

- Dogs must be leashed and under control.
- Leave no trace.
- No motorized vehicles or other means of motorized transport.
- Visitors shall stay on marked trails.
- Do not disturb vegetation or wildlife.
- No horseback riding on either parcel.
- No mountain biking on south parcel.

- No setting of fires
- No hunting or firearms allowed.
- No littering. Carry out what you carry in
- Respect the rights of other visitors
- No activities on or in the pond year round.
- No boating, canoeing, kayaking, watercraft or floatation devices allowed on the pond.
- No swimming in the pond. No lifeguards are on duty.
- No fishing in the pond.
- No ice skating, ice fishing or any other activities on the frozen surface of the pond.
- Area is closed from sunset to sunrise. Night use is by permit only.
- Notify the Conservation Commission of organized group activities.

II. OPEN SPACE MANAGEMENT PLAN

Management Objectives – The principal objectives are to conserve the Knofla Conservation Area and protect wildlife habitat while providing access and passive recreational opportunities for the general public. While the Conservation Commission, acting as an agent of the Tolland Town Council, is ultimately responsible for property management, implementation of a management program is a shared responsibility with the Tolland Conservation Corps, property steward, and a variety of Town agencies and resources in accordance with the *Open Space Management Guideline and Process*.

Specific objectives for these parcels include:

- Follow best property management processes.
- Expand and maintain the approved trail system.
- Maintain the old woods road on south parcel.
- Protection of the 15 acre bog.
- Expand and maintain the existing parking area on the north side of Bakos Road.
- Conduct a natural resource inventory.
- Pursue educational, documentation, and protection opportunities for habitat, wildlife, and unique features.
- Maintain property boundary markings.
- Manage the woodlands following the guidance of a professional forester.
- Monitor and protect the condition of the dam.
- Preserve the health of the pond.
- Contract for the grass by the pond to be mowed at least once during the growing season if needed.
- Ensure that all safety related signs are maintained.
- Monitor the parcels, especially the pond area for evidence of fires and night use.
- Coordinate with the Town Engineer, for a yearly visual inspection of the dam and the drop inlet structure and the low level outlet pipe utilizing the attached Dam Inspection Checklist.

Although it is not the intention of the Conservation Commission to manage the Knofla Conservation Area for timber production with periodic commercial harvests, it may be necessary, from time to time, to carry out certain silviculture practices to maintain the health of the forest or to encourage a particular habitat. Such management activities, if deemed necessary, will be done in consultation with a professional forester to ensure that the appropriate practices are implemented.

To maintain the condition of the dam, brush and trees need to remain clear of the downstream slope and within 25 feet of the embankment toe and abutment contacts at either end. These areas should be mowed and/or weed-wacked if needed at least once a year to keep woody vegetation from taking hold. Clover will be planted to minimize the mowing that is needed. The trash rack cage on the drop inlet structure needs to be kept clear of floating debris. People need to be kept away from the drop inlet structure. People also need to be kept off the downslope of the dam on the outlet side to prevent erosion.

The Town Engineer is requested to perform an annual inspection of the dam area in accordance with the State guidelines. The inside of the drop inlet structure needs to be viewed to determine its condition. The low level outlet pipe should also be viewed to inspect for corrosion and condition. The Connecticut DEEP has issued “Guidelines for Inspection and Maintenance of Dams”, which can be found on their website at http://www.ct.gov/deep/lib/deep/water_inland/dams/guidelinesforinspectionandmaintenanceofdams.pdf. The attached Dam Inspection Checklist is taken from that document and is provided for the use of the Town Engineer. Upon completion of the annual inspection, the Conservation Commission requests that the Town Engineer provide a copy of the completed checklist to the Commission. The requirements of dam inspection and management are beyond the technical competencies of the Commission, therefore it is requested that the Town Engineer be responsible for its oversight. It should be noted that the Dam Safety Program Dam Inspection Report is a state required review that much be undertaken every seven years for hazard class BB.

The existing parking area on the north side of Bakos Road needs to be expanded. That area will provide parking for the vehicles of users of the trails on both the north and south parcels. People should not park on Bakos Road and a sign will direct them to “park at lot”. Two road crossing warning signs will be placed on the trail about 30 feet on either side of Bakos Road.

Management Plan and Program – Tasks required to assure that management objectives are achieved shall be overseen by the Conservation Commission and implemented by the Head Steward and the Property Steward. Tasks include:

- Maintain the approved trail system.
- Keep the old woods road passable for emergency vehicles.
- Maintain trail markings and signs, including road crossing warning signs on trail and safety related signs near pond and dam,”.
- Maintain map containers and keep supplied with property brochures.
- Perform litter patrol as needed.
- Maintain parking area and access control points.
- Install and maintain property boundary markings. Conduct a yearly walk of the boundaries.
- Mark trails where mountain biking is prohibited.
- Assess trail use. Assess unauthorized use.
- Yearly (or as needed) remove debris from the trash rack cage and the square drop inlet structure, checking the structural integrity of the trash rack cage.
- Monitor beavers and woodchucks for their activities posing harm to the dam, including water flow damming and burrowing into dam.
- Keep vegetation clear on the upstream and downstream slopes of the dam and within 25 feet of embankment toe and abutment contacts at either end.
- Keep the overflow spillway channel unobstructed.
- Remove any brush growing in open area at pond. Monitor the growth of the grass and clover.

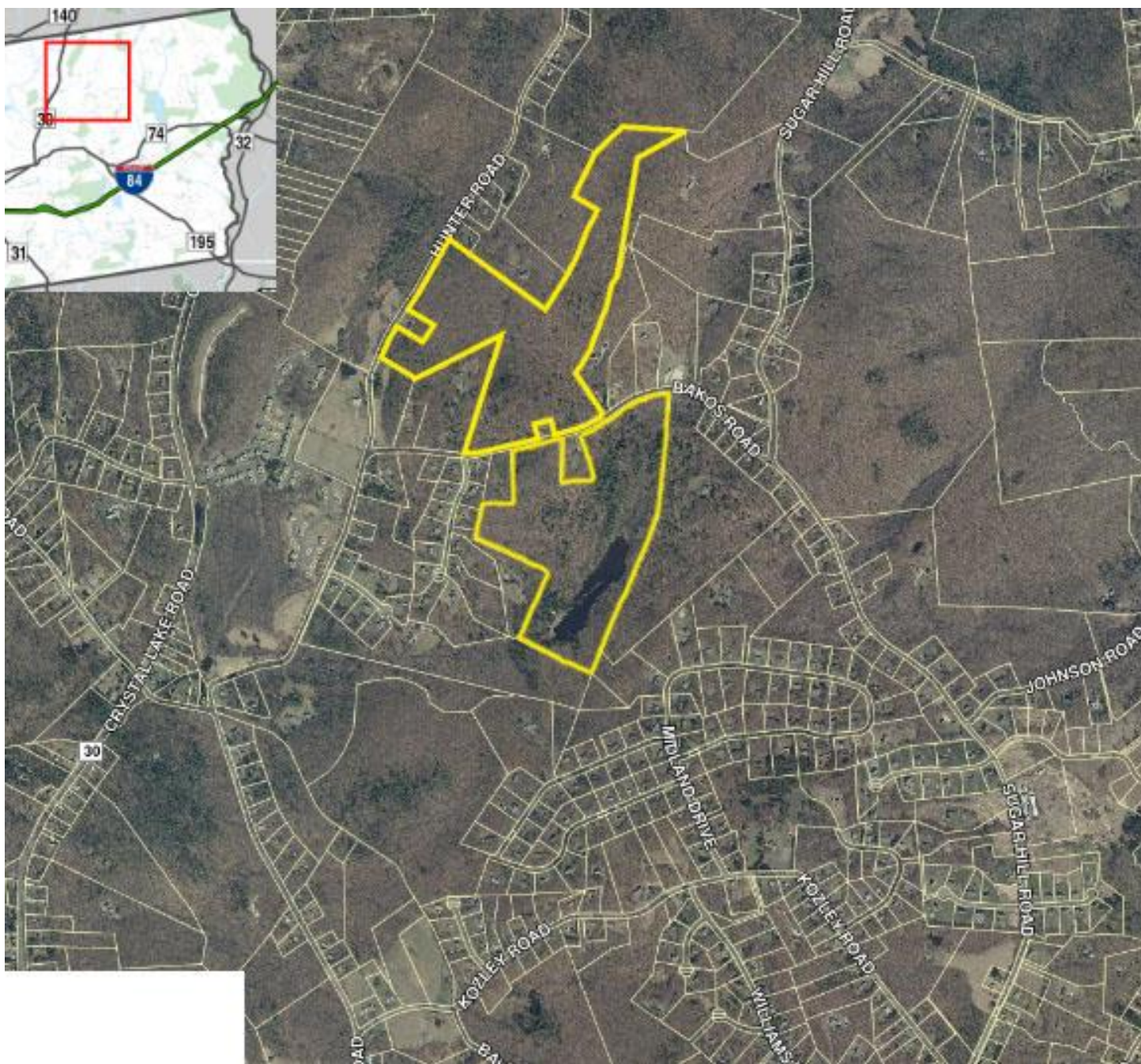
Appendix A - Dam Safety Program Dam Inspection Report Form 5/14/2015

Attachments

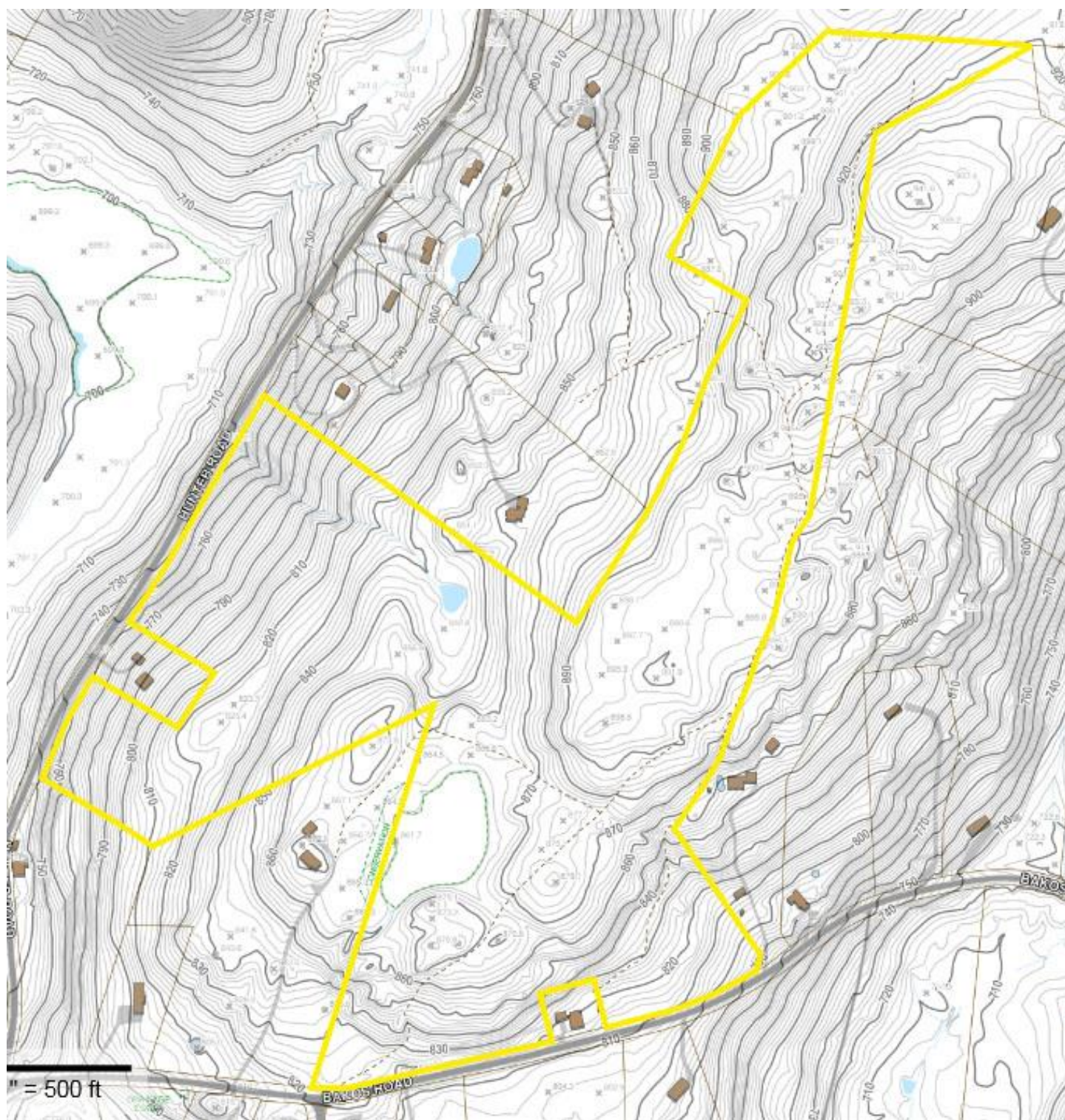
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The stewards for this conservation area are George and Mary Mantak.

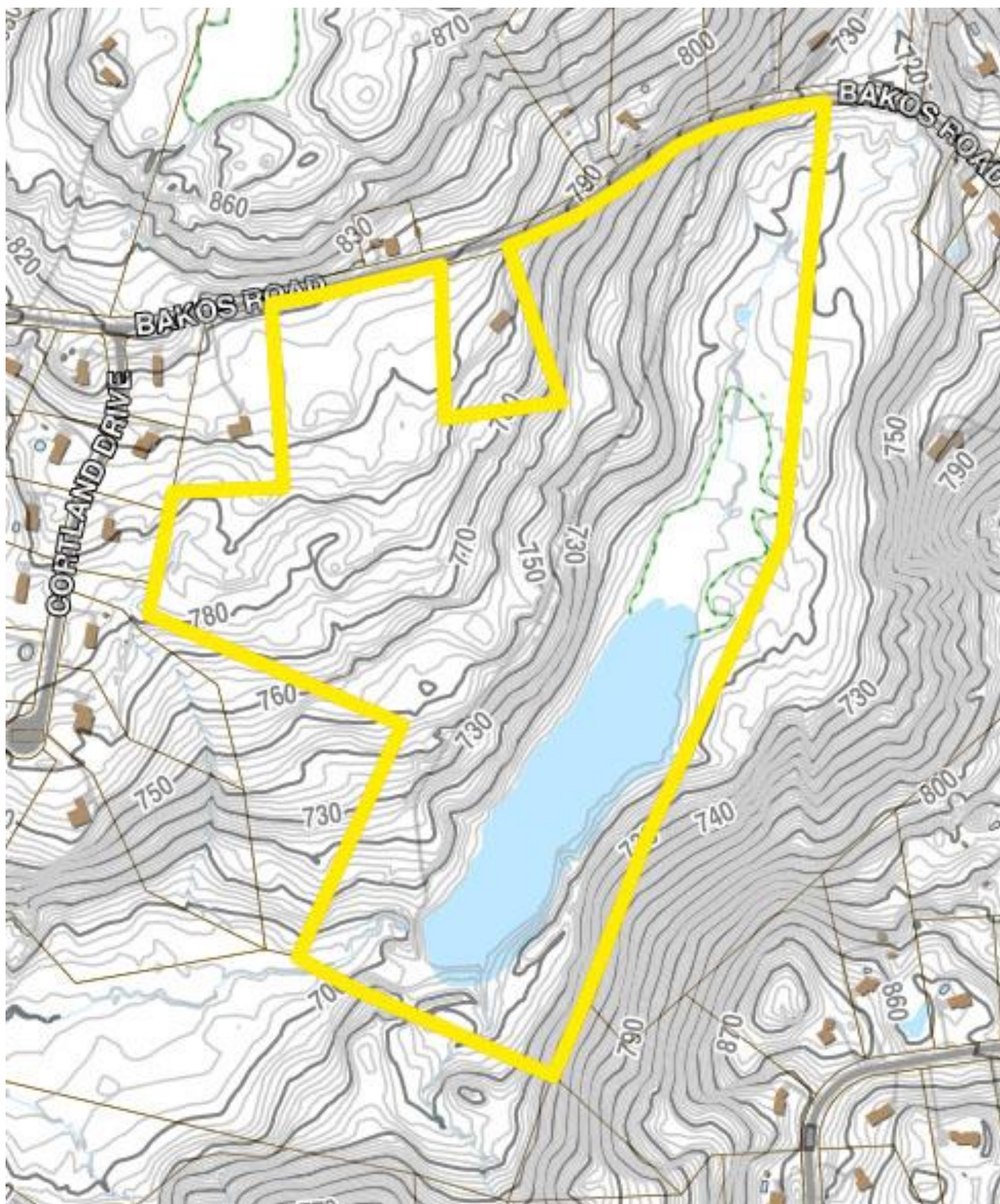
2012 Aerial Map with Location Map Insert



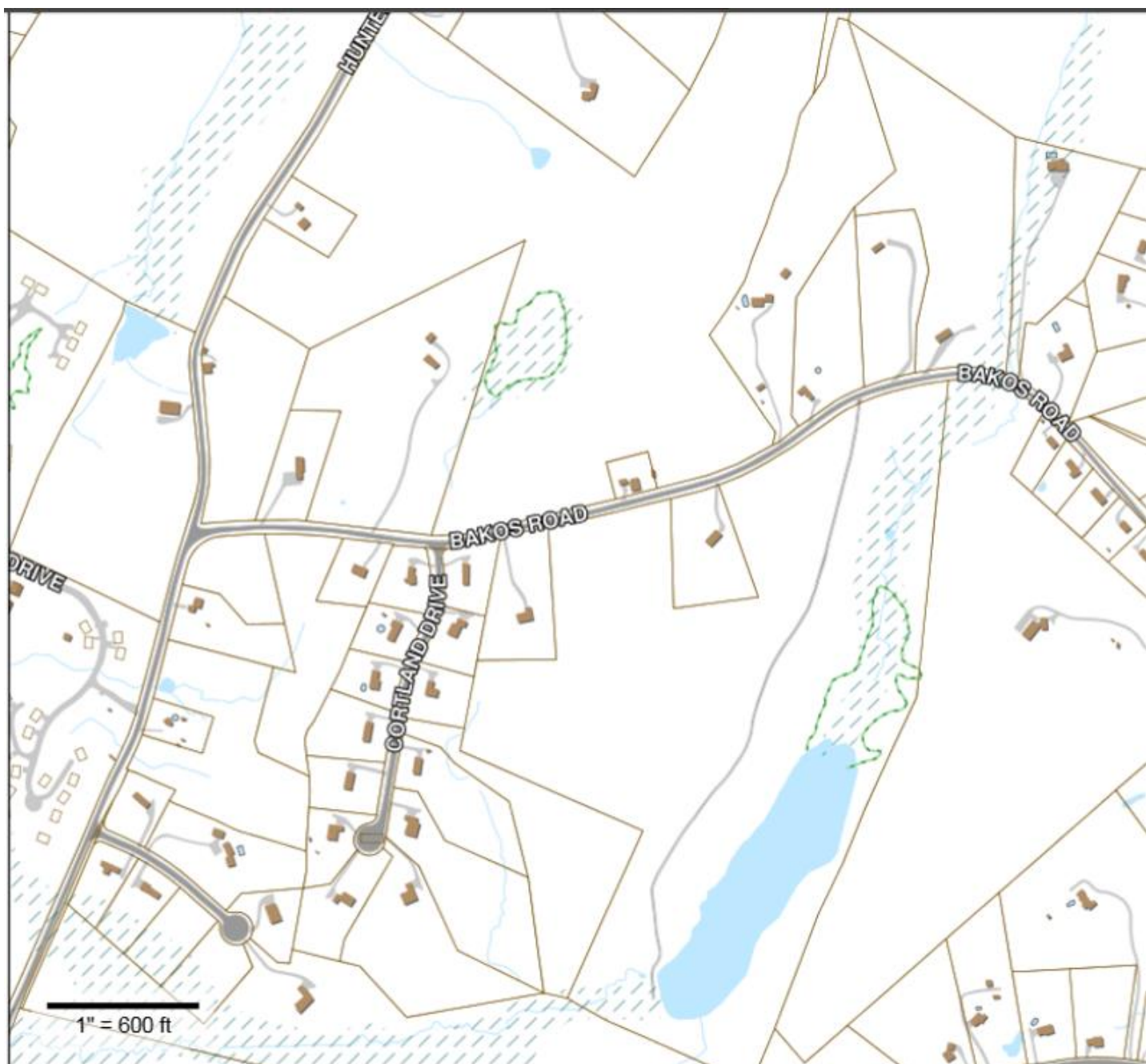
Topographical Map of North Parcel



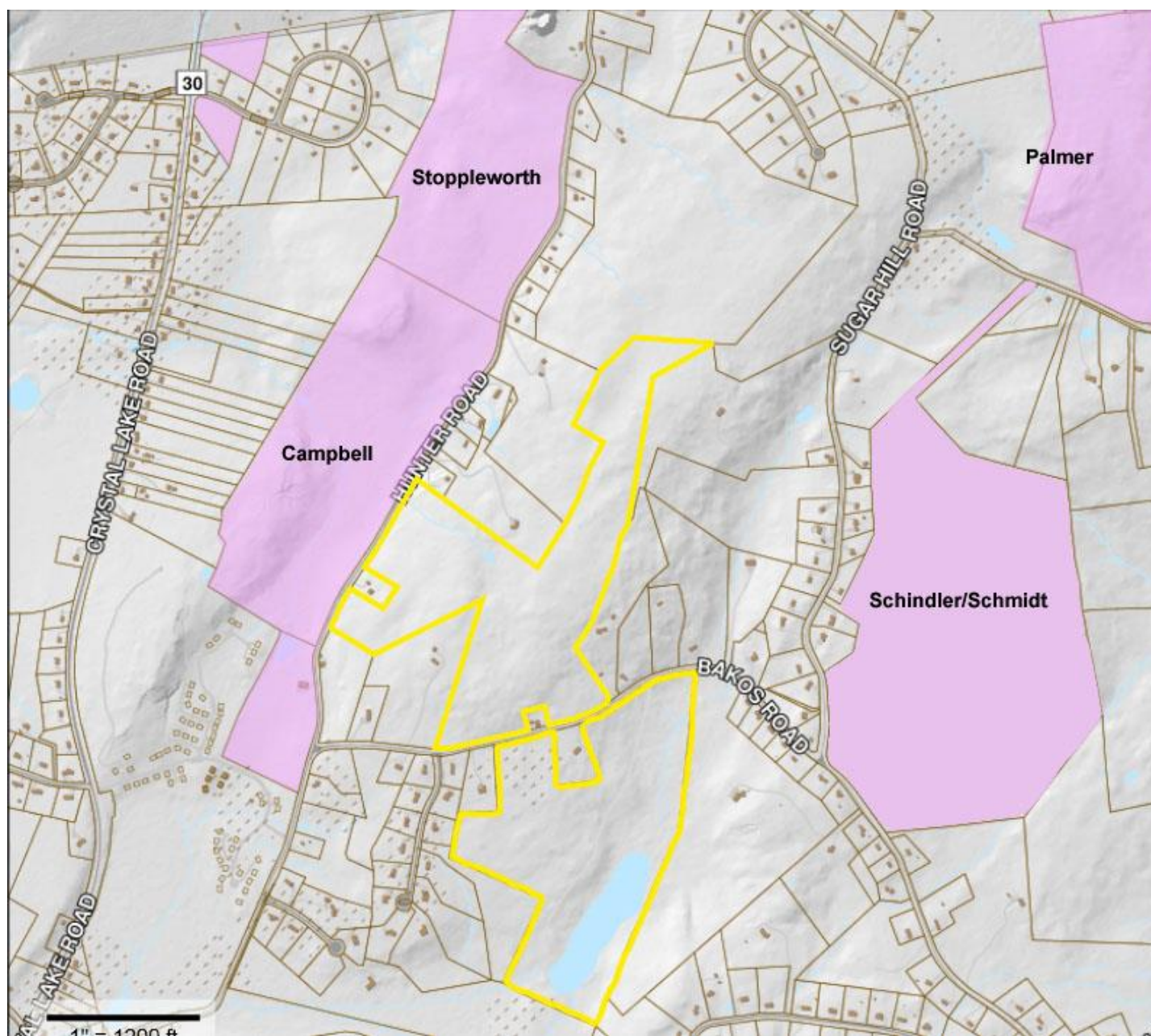
Topographical Map of South Parcel



Wetlands

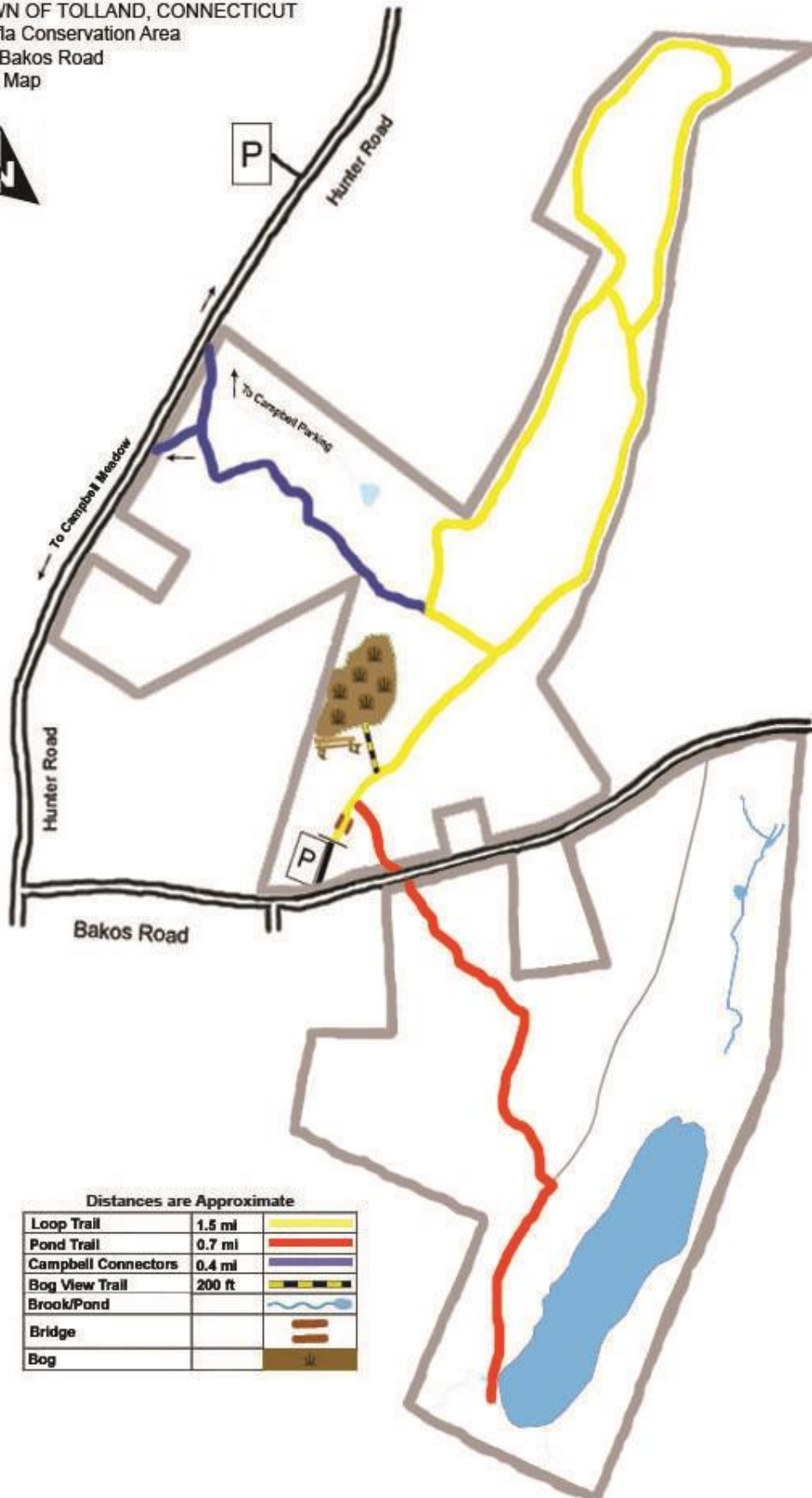


Nearby Conservation Areas



Trail Map

TOWN OF TOLLAND, CONNECTICUT
Knofla Conservation Area
148 Bakos Road
Trail Map



Distances are Approximate

Loop Trail	1.5 mi	
Pond Trail	0.7 mi	
Campbell Connectors	0.4 mi	
Bog View Trail	200 ft	
Brook/Pond		
Bridge		
Bog		

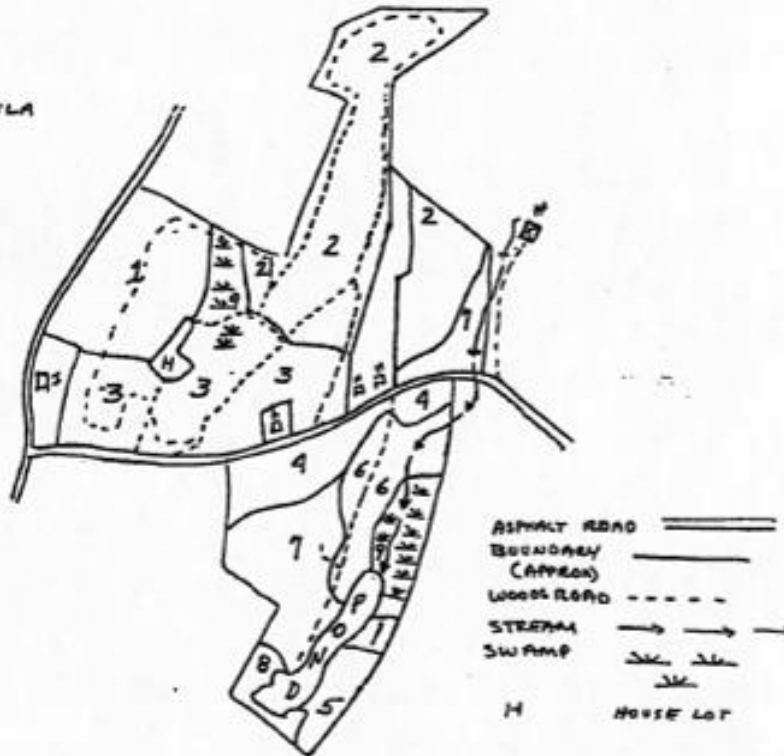
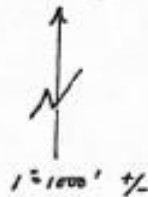
Forest Survey

KNOFLA FAMILY FOREST MANAGEMENT PLAN

A FOREST SURVEY TAKEN IN THE 1950's ^{1980's} by
Jim Parda

PROPERTY OF:

ALAN + SHIRLEY KNOFLA
156 BAKOS RD
TOLLAND, Ct. 06084
812-6727



- STAND 1: 28 ACRES MIXED HARDWOODS (MIXED OAKS, WHITE BIRCH, RED MAPLE) SAPLING/PLE WITH SCATTERED FIRE SCARRED SAWTIMBER. OLD BURN AREA
- STAND 2: 50 ACRES OAK-HICKORY (BLACK, SCARLET, WHITE, RED OAK, RED MAPLE WHITE PINE) PREDOMINANTLY POLETIMBER
- STAND 3: 35 ACRES OAK RIDGE (OAKS, WHITE-PITCH PINE, SLUG OAK, WHITE BIRCH)
- STAND 4: 17 ACRES SOFTWOOD-HARDWOOD (OAKS, RED MAPLE, ASPEN, WHITE PINE ALLAGE)
- STAND 5: 5 ACRES MIXED HARDWOOD (RED OAK, WHITE, BLACK, SCARLET OAKS, BLACK BIRCH, RED MAPLE) POLETIMBER-SAWTIMBER
- STAND 6: 15 ACRES SOFTWOOD-HARDWOOD (WHITE PINE- WHITE OAK, RED MAPLE) ALL
- STAND 7: 22 ACRES MIXED HARDWOOD (BLACK, WHITE, RED, SCARLET OAK, BLACK BIRCH, RED MAPLE, HICKORY, WHITE PINE, SUGAR MAPLE) POLETIMBER-SAWTIMBER
- STAND 8: 3 ACRES SOFTWOOD-HARDWOOD (RECREATION SITE)
- STAND 9: 15 ACRES HARDWOOD SWAMP (RED MAPLE) INCLUDES BOG

KNOFLA FAMILY FOREST MANAGEMENT PLAN

PLAN OBJECTIVES

1. ACETIC AND RECREATIONAL

Purpose: To create recreational use of the land and enhance its natural beauty;

2. PRODUCTIVITY AND PROFIT

Purpose: To improve the forestland through annual cord wood cuttings on different 10 acre plots each year.

3.WILDLIFE SANCTUARY

Purpose: To establish desirable habitat and food for wildlife.

Contrary to the forest inventory plan shown on page 2 of this plan, there now remains only two of the three parcels of land which once made up the original purchase.

The land was once thought to be 250 acres but surveys later showed that it was more like 185 acres of land. Presently due to some land sales our plot now consists of 146 acres divided into two plots. One plot is on the North side of Bakos Road and has the family homestead on it. This plot consists of 85 acres. The other plot is on the South side of Bakos Road and consists of 61 acres of land. The plots will hereafter be referred to as the North or South plot.

The North plot with the family homestead on it has been used primarily for recreational purposes. Also we have attempted to cultivate the area as a wildlife sanctuary. There never has been any lumbering activity on this plot.

Most of the family activity has been in the South plot. This is the plot with the farm pond and cabin on it. There has been extensive lumbering on this plot under the guidance of a licensed forester. In addition, 10 different acres of land has been devoted each year to cutting firewood for our homes.

More detail will be given to the activities in the North and South plots in subsequent pages.

The North Plot

The north plot, see overview map in appendix section, item #1 has been used by the family for recreational purposes such as walking the established trails that have been cut around the outside boundaries of the plot. A survey had been made of the property in the 1960's but there was no time to locate the boundary markers at that time. A couple of decades after the survey we did start to locate the boundaries and as we did this we made forest roads between the different property markers. The survey map of the property has been filed with the town of Tolland and has not been contested over the decades.

The forest roads were initially made to establish the boundaries. As the years passed we then started to use the trails for nature walks and occasionally for getting some firewood for our home. Often we were asked by hunters if they could have a permit to hunt our property but we declined to offer any permits. One main concern was to establish an animal sanctuary on this plot. The second main concern was not to have any stray hunter's bullets passing by our home.

We have established bird feeding stations around our home and each year we have abundance as well as a variety of birds spending the winter and summers with us.

Deer are a common sight from our home. Before we had a German Shepherd dog the deer would walk right through our front lawn. When there was a poor acorn year the deer would come right up to our house and eat the ornamental shrubs. Poor acorn years are not common and during the past 20 years I can only think of one year. But, during that year, the deer were starving. We lost several shrubs to the deer that year and felt it was for a good cause.

Again, before we had a dog, we often would see foxes on the front lawn. We enjoyed watching them, as they can be very playful as they stalk smaller animals in the snowdrifts.

With our home in the middle of the forest we feel at home seeing the animals and birds pass by and stop to feed in our home area.. We have had a police dog since 1997 and he's overly protective of the house plot. As a result, the animals no longer walk though our front yard or eat our shrubs. What has happened is the animals are still with us but they stay a reasonable distance from our home that is now on patrol by our German Shepherd dog.

In 1999 we started our first cutting of firewood on 10 acres of land. Each year we plan on marking a different 10 acres and cutting selectively on the plot. Most of the wood that is cut for use in the homes is oak, both red and white oak.

Knofla Family Forest Management Plan (Page 3)

While cutting firewood we spread the tops out over the forest and keep them below 2 feet in height. This allows them to completely decay over a period of about 7 years.

We try to cut all the trees that would not make good timber in future years, such as trees with split tops or trees that are not growing straight.

The firewood is hauled from the forest using 4 wheel drive truck so there is no damage to the ground cover. We do have to cut access roads into the forest but this is done with minimal damage.

Occasionally we find a white pine tree and we do want to promote this tree in all sections of the forest. If the pine has hard wood to closely surrounding it, we will cut out the hard wood leaving the pine to grow without competition. Further, we cut the lower limbs of the pine up to as high as we can reach, or about 10 feet. We have been doing this in the South section of the forest for the past 4 decades and it has become very noticeable as one sees a year around green forest. Although our first priority is aesthetics the second priority is a tree that can be converted to lumber.

One of the biggest problems that we have on both the North and South plots is the uninvited hunter, or poacher. They enter the wooded area and kill a deer and then they cut out the hindquarters leaving the remainder of the deer to decay. You can normally spot this activity after it has happened by the crows that gather in a flock to feed upon the remains. However, domestic dogs also feed upon this carnage and this often causes the animal to have intestinal problems.

Civilization has caused another problem with maintaining the forestland in both plots. Even though our forest roads have gates on them, it is not uncommon to find that someone has broken down the gate and used the access road for a party or other activity. Once we had 10 cars of teenagers at our pond site and they were planning on spending the weekend. They took down the no trespassing signs, dismantled the gate and made themselves at home. In time the local police came and cleared the area. There was much vandalism after this happening as the landowner became the bad guy for closing down the party rather than being the victim.

Forest fires have also been a concern to us. What we suspect to be teenagers have built fires in the pond area. The ones doing this have walked into the area rather than breaking down the gate and driving in. We have given the local fire marshal a key to the access road in the event that a fire should threaten surrounding areas.

Bakos Farm (north parcel)

The Bakos Farm

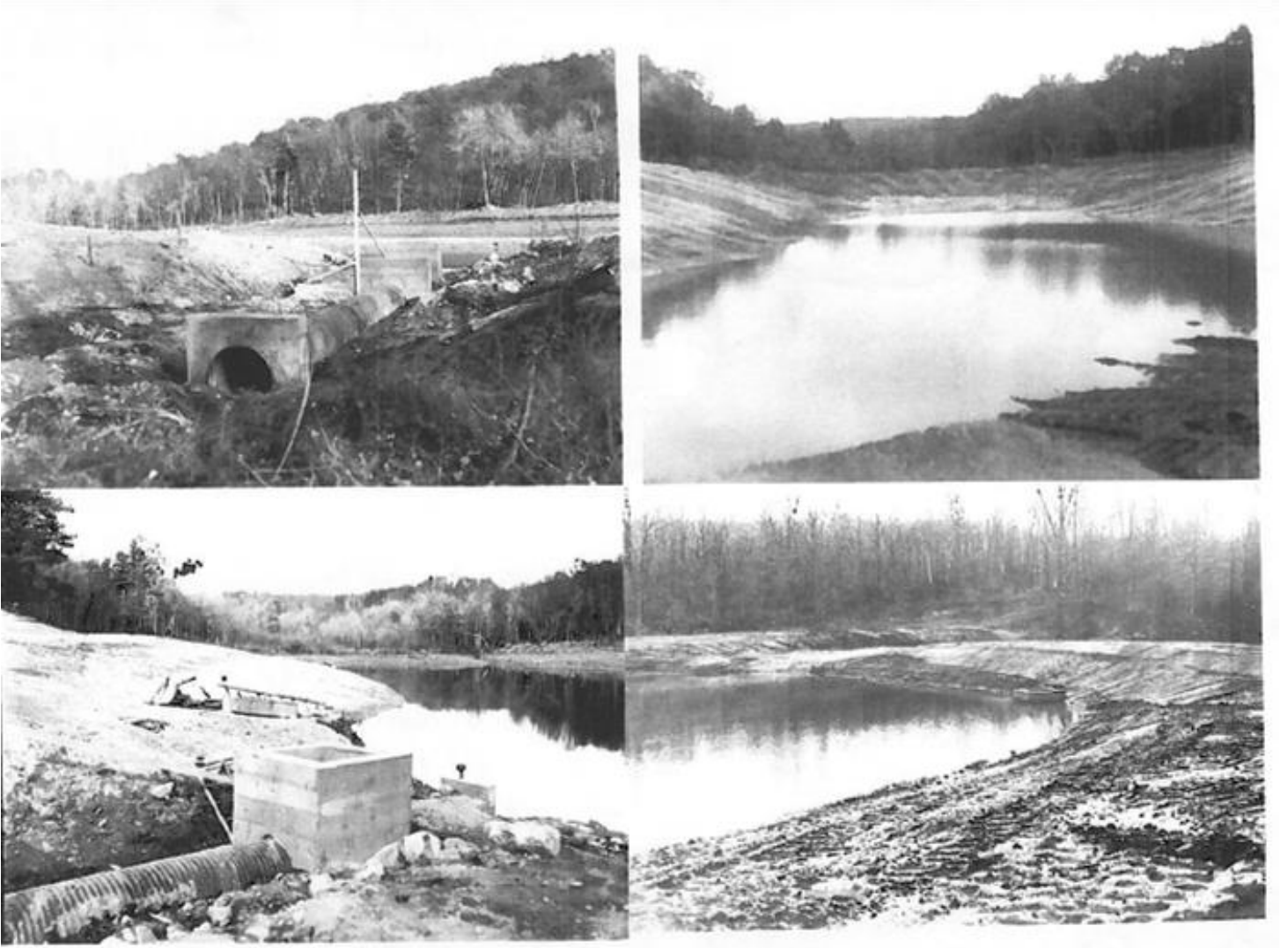
In the Tolland Town Clerks Office, there is a framed map on the wall that dates back into the 1850's. It Shows the Bakos Farm house located on Bakos Road. At that time, Bakos Road was a dirt road, as were many of the town roads.

Below is a photo taken in 2000 of the original Bakos Farm house. The original part of the farm house was the section of the house facing the bushes. In recent years, a bedroom section and unattached garage were added.



The house and lot are now owned by Pam Lord. The property is surrounded by the 70 acres the town is purchasing.

Dam Construction



Pictures from the Knoflas



Pictures from the Knoflas



1966

DRAFT

Location: Knofla Property Dam, Bakos Road, Tolland

Subject: Visit with Steve Lowrey and Linda Farmer

Date/Time: November 4, 2010 @ 8:30 AM

Weather: Rainy Day about 55 degrees

Visual Observations:

- Dam is an earth embankment dam with a primary drop inlet spillway and an auxiliary overflow spillway. Based upon order of magnitude estimates of size, the dam is approximately 8 to 10 feet high, embankment crest width of approximately 12 feet, and is approximately 150 feet long.

Fair Condition:

- Turf on crest of dam and upstream slope
- Downstream slope and abutment areas covered with trees less than 4 inches in diameter and brush
- Seepage and wet areas noted along downstream toe area particularly along embankment toe to right side of low level outlet (looking in a downstream direction) extending to the right abutment. Seepage not flowing, but very soggy.
- Low level outlet pipe appears to be corrugated metal as viewed from the downstream side. Stone masonry end wall has a slurry of concrete dumped on top, but wall appears to be relatively stable even though it isn't very attractive looking.
- Overflow spillway channel at left abutment area appears to be in good condition with turf cover and is unobstructed.
- Concrete drop inlet structure appears to be in decent condition as viewed from upstream slope. Did not look down into structure to assess internal condition, but if exterior is an indication it should be in decent condition. Also did not look to see if a low level outlet valve was installed on the concrete structure which would allow for lowering of the pond level and is not uncommon with dams of this type of construction.
- No evidence of soil loss (depressions or sink holes) over the alignment of the low level outlet pipe.
- Embankment crest looked relatively level and upstream slope did not show any major irregularities which would indicate soil loss, void formation or instabilities.
- Downstream slope was more difficult to see due to brush, but no obvious depressions or deformities were observed.

Assessment

- Dam appears to be in fair condition with the following areas of maintenance that should be undertaken in the near future:
 - Brush and trees should be cleared from downstream slope and within 25 feet of embankment toe and abutment contacts at either end. All brush and trees should be removed to allow unrestricted viewing of the dam and these downstream foundation areas. These areas should be mowed at least once a year to keep the woody vegetation from taking hold.
 - Consideration should be given to installing a trash rack cage on the drop inlet structure to keep it from getting clogged with floating debris (branches, etc.) and to keep people out of the structure.
 - The inside of the drop inlet structure should be viewed to determine its condition and whether a low level outlet valve exists and is operational.
 - The low level outlet pipe should be viewed to determine if any evidence of corrosion exists.
- The following activities should be undertaken over time:
 - The seepage at the downstream toe should be monitored to determine if concentrated seepage flow is occurring. If concentrated seepage flow is detected then it should be observed periodically as part of normal maintenance to assure that it is not beginning to move soil. If concerns existed about this area a relatively simple repair of installing a toe drain could be undertaken here.
 - The low level outlet pipe appears to be asphalt coated corrugated metal pipe (ACCMMP) which is typically assumed to have a design life of 50 years. Depending on the gauge of the pipe, its coating integrity and the aggressiveness of the water, these pipes can last shorter or longer than this. The repair generally consists of sliplining the corrugated metal with HDPE piping that is then grouted in place within the larger pipe. This is a common repair with these Soil Conservation Service design type of dams.

Phil Moreschi: _____ Chairperson Conservation Commission

C:\Phil's Files\Temporary Files\Knoffa Dam\PWM_Site Visit_2010\1104.doc



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



CERTIFICATE OF DAM REGISTRATION

The Commissioner of the Department of Environmental Protection hereby certifies that an application for a dam registration for the dam described below has been duly filed with the Inland Water Resources Division by the dam owner. The registration complies with State of Connecticut Regulation 22a-409-1 (Registration of dams and similar structures) and is on file with this agency.

DAM NAME/#: KNOFLA'S POND DAM, #14203

OWNER'S NAME: KEYSTONE ENTERPRISES
119 BAKOS ROAD

OWNER'S ADDRESS: TOLLAND, CT 06084

TOWN DAM IS LOCATED IN: TOLLAND

HEIGHT: 9.00 ft.

FEE RECEIVED: \$25.00

DATE OF ISSUE: 9/18/02

Robert L. Smith, Chief
Bureau of Water Management

TRANSFER OF OWNERSHIP

To be completed by the seller at the time of transfer of the above referenced dam and submitted to the Department of Environmental Protection, Inland Water Resources Division, Dam Safety Section, 79 Elm Street, Hartford, CT 06106-5127.

DAM NAME/#: KNOFLA'S POND DAM, #14203

BUYER'S NAME: The Town of Tolland

BUYER'S ADDRESS: 21 Tolland Green
Tolland, CT 06084

DATE SOLD: May 21, 2014

DAM INSPECTION CHECKLIST

DAM NAME: _____

OWNER: _____

DAM I.D. No.: _____

INSPECTOR

: _____

Directions: Mark an "X" in the YES or NO column. If an item does not apply, write "NA." If possible, identify any changes since the last inspection in Section 11 - Other Comments/Observations.

ITEM	DATE:		WEATHER:		TEMPERATURE:					
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
1. TOP OF DAM										
a. Any visual settlements?										
b. Misalignment?										
c. Cracking?										
2. UPSTREAM SLOPE										
a. Adequate grass cover?										
b. Any erosion?										
c. Are trees growing on slope?										
d. Longitudinal cracks?										
e. Transverse cracks?										
f. Adequate riprap protection?										
g. Any stone deterioration?										
h. Visual depressions or bulges?										
i. Visual settlements?										
j. Debris or trash present?										
3. DOWNSTREAM SLOPE										
a. Adequate grass cover?										
b. Any erosion?										
c. Are trees growing on slope ?										
d. Longitudinal cracks?										

DAM INSPECTION CHECKLIST (Cont.)

ITEM	DATE:									
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
e. Transverse cracks?										
f. Visual depressions or bulges?										
g. Visual settlements?										
h. Is the toe drain dry?										
i. Are the drainage wells flowing?										
j. Are boils present at the toe?										
k. Is seepage present?										
l. Soft or spongy zones present?										
m. Are foundation toe drain pipes:										
(1) Broken, bent, or missing?										
(2) Corroded or rusted?										
(3) Obstructed?										
(4) Is discharge carrying sediment?										
4. ABUTMENT CONTACTS										
a. Any erosion?										
b. Visual differential movement?										
c. Any cracks noted?										
d. Is seepage present?										
5. PRINCIPAL SPILLWAY INLET										
a. Do concrete surfaces show:										
(1) Spalling?										
(2) Cracking?										
(3) Erosion?										
(4) Scaling?										
(5) Exposed rebar?										
b. Do the joints show:										
(1) Displacement or offset?										

DAM INSPECTION CHECKLIST (Cont.)

ITEM	DATE:									
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
(2) Loss of joint material?										
(3) Leakage?										
c. Metal appurtenances:										
(1) Rust present?										
(2) Broken components?										
(3) Anchor system secure?										
d. Trashrack operational?										
6. PRINCIPAL SPILLWAY CONDUIT										
a. Is the conduit concrete?										
b. Do concrete surfaces show:										
(1) Spalling?										
(2) Cracking?										
(3) Erosion?										
(4) Scaling?										
(5) Exposed rebar?										
c. Do the joints show:										
(1) Displacement or offset?										
(2) Loss of joint material?										
(3) Leakage?										
d. Is the conduit metal?										
(1) Rust present?										
(2) Protective coatings adequate?										
(3) Is the conduit misaligned?										
e. Is there seepage around the conduit?										
7. STILLING BASIN										
a. Do concrete surfaces show:										
(1) Spalling?										

DAM INSPECTION CHECKLIST (Cont.)

ITEM	DATE:									
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
(2) Cracking?										
(3) Erosion?										
(4) Scaling?										
(5) Exposed rebar?										
b. Do the joints show:										
(1) Displacement or offset?										
(2) Loss of joint material?										
(3) Leakage?										
c. Do energy dissipaters or riprap areas show:										
(1) Signs of deterioration?										
(2) Accumulated debris?										
d. Is the channel:										
(1) Eroding?										
(2) Sloughing?										
(3) Obstructed?										
e. Is discharged water:										
(1) Undercutting the outlet?										
(2) Eroding the embankment?										
8. EMERGENCY SPILLWAY										
a. Does spillway concrete show:										
(1) Spalling?										
(2) Cracking?										
(3) Erosion?										
(4) Scaling?										
(5) Exposed rebar?										
b. Do the joints show:										
(1) Displacement or offset?										

DAM INSPECTION CHECKLIST (Cont.)

ITEM	DATE:									
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
(2) Loss of joint material?										
(3) Leakage?										
c. Is the spillway in rock or soil? (circle one)										
(1) Are slopes eroding?										
(2) Are slopes sloughing?										
d. Is the discharge channel:										
(1) Eroding or back cutting?										
(2) Obstructed?										
(3) Is vegetative cover adequate?										
e. Has discharged water:										
(1) Eroded the embankment?										
(2) Undercut the outlet?										
f. Is the weir in good condition?										
9. VALVES/GATES										
a. Are the valves/gates:										
(1) Broken or bent?										
(2) Corroded or rusted?										
(3) Periodically maintained?										
(4) Operational?										
b. Is there a low level valve?										
c. Is the low level valve operational?										
10. AREA DOWNSTREAM										
a. Recent downstream development?										
b. Seepage or wetness?										

DAM INSPECTION CHECKLIST (Cont.)

11. OTHER COMMENTS/OBSERVATIONS (Include Date):
