Black Brook Preserve Management Plan

V1: March 2019
V2: Feb 2024

Prepared by Toby Jacobs and Kaitlyn Tuttle

I. Executive Summary

Black Brook Preserve is located north of Windham Center Road in central Windham. This land has been conserved to protect and maintain forested and meadow habitat and to

provide low-impact public access. The forest is varied in species composition and age structure. Black Brook, which runs through the Black Brook Preserve, and its associated wetlands, provide valuable habitat. A trail network of about 2 total miles was built shortly after 2000 and continues to be maintained and improved. 30 acres across Windham Center Road were added to the Preserve in 2024. The goal of stewardship of this Preserve is to maintain meadow and forest habitat, maintain the trail, and engage the community in education and volunteering. *(See Aerial Map, Exhibits Folder #1)*

II. Site Information

Black Brook Preserve (hereafter "the Preserve") consists of two irregularly shaped parcels, totaling about 133 acres, in central Windham. The original and main body of the Preserve is bordered by Route 202 on the west, Route 302 on the east, and Windham Center Road on the south; a 30-acre expansion is across Windham Center Road. It is listed on Town of Windham Tax Map 12, Lot 52.

There are two access points to the Preserve. The main access point is on the north side of Windham Center Road, which includes a parking area that can accommodate about eight cars, and a trailhead marked by a large kiosk containing maps and other information about the Preserve. The secondary access point is off of the east side of Route 202 with parking in a flat field just off the road. Located here is another large kiosk a short distance from the road and the trail network. (*see Tax Map and Survey, Exhibits Folder #2 and #3*)

Acquisition History

The Windham Land Trust (now part of the Presumpscot Regional Land Trust) purchased the two parcels that made up the Black Brook Preserve from the Royal River Development Company for $348,517.90 on December 15, 2000. The transaction is recorded in the Cumberland County Registry of Deeds Plan Book 15910, Page 206. Some of the transaction funds came from the Land for Maine's Future (LMF) program. There is an easement held by the Portland Pipe Line Company for a buried crude oil transport line, which runs north through the western side of the Preserve, below the current snowmobile trail.

The 30-acre expansion was donated by Becky Hagar on March 22, 2024. The transaction is recorded in the Cumberland County Registry of Deeds Plan Book 40663, Page 238.

(*see Deeds, Trail Map Exhibits Folder #4 and #5*)

Surrounding Area and Conservation Connections

The area around the Preserve has moderate intensity suburban development. The surrounding 2-mile radius is over 50% forested, though much of this forest is fragmented by roads and development. West and south of the Preserve are Windham High and Primary School as well as Windham Town Hall, and within 1 mile of the Preserve in other directions are small businesses and homes. The main factor limiting connectivity is the three heavily used roads: Route 302, Route 202, and Windham Center Road. The Preserve represents about half of the land in the triangle formed by these roads and so is an important, albeit isolated, wildlife habitat block. There is little to no threat of development on directly abutting parcels, and there are

potential opportunities to conserve abutting land to the south, though this land would be across a road (Windham Center) from the Preserve.

There are several other PRLT preserves that are near, though separated by roads from, Black Brook Preserve. McGoldrick Preserve (easement) is a half mile to the southeast; Pringle Wildlife Preserve is about 1.5 miles to the northeast; and, River Locks Preserve (easement) is just under 2 miles away. (*see Aerial and Topographic Context Maps, Exhibits Folder #5 and #6*)

III. Natural Context

To date there has been no comprehensive assessment of natural resources on the property. The following summarizes information gathered through several field visits by the Stewardship Manager, Toby Jacobs, and intern, Kaitlyn Tuttle, in Summer 2017 along with existing resources.

Geology and Soils

The terrain is roughly flat throughout the Preserve, with elevation ranging from 202 to 260 feet above sea level. Elevation is higher on the east and west sides of the Preserve and lowest in the center where the brook and associated wetlands run north-south. There are no dramatic hills and the decline from upland to wetland to stream is very gradual.

Aside from a thin strip on the eastern side of the Preserve, which consists of glacially deposited till, surficial geology is classified by the Maine Geological Survey as Glaciomarine Deposits, which typically contains silt, clay, and minor amounts of gravel, characteristic of the Presumpscot Formation.

A variety of soil types are present in the Preserve, roughly split up by elevation. The lowlands running north-south through the center of the Preserve consist of Scantic silt loam. East of the brook, soils are made up of mostly Belgrade very fine sandy loam and Woodbridge fine sandy loam, with smaller areas composed of Lamoine silt loam and Paxton fine sandy loam. West of the brook is mostly Lamoine silt loam with lesser amounts of Belgrade very fine sandy loam, Hartland very fine sandy loam, Hinckley-Suffield complex, Hollis fine sandy loam, and Paxton fine sandy loam. (*see Topography, Surficial Geology, Soil Maps, Exhibits Folder #7, #8, #9*)

Hydrology

The Preserve is part of the Presumpscot River Watershed. Black Brook runs south through the Preserve, with wetlands in all low areas adjacent to it. This brook is a small tributary of the Presumpscot River, beginning as two branches, each about a half mile northeast of the Preserve, and running roughly eight miles to the Presumpscot, which it meets across from the PRLT Hawkes Preserve. Water in the Presumpscot then flows into the ocean in southern Falmouth. Black Brook runs parallel to the Pleasant River, but due to the drainage divide to the east of the Black Brook, they do not meet before the Presumpscot River. Black Brook Preserve is the only conserved land through which Black Brook flows, making this Preserve important for maintaining water quality. (*see Hydrology Map, Exhibits Folder #10*)

According to Maine DEP, Black Brook is a Class B water body and is listed as an impaired stream because it is not currently meeting the designated criteria for Class B waters. DEP has cited both high fecal coliform levels, and low dissolved oxygen levels, as causes for the

impairment listing. The Town of Windham has identified the need for a Watershed Management Plan for Black Brook as a possible next step to address sources of impairment.

Natural Communities

The natural communities within the Preserve are wetlands, meadows, and forest. Wetlands are in the low elevation vertical center of the Preserve, along both sides of the brook. Parts of the northwest and southwest corners of the parcel are meadows, which are maintained by once-annual mowing. The rest of the Preserve consists of mixed forest with each of the following dominant in some areas: white pine, eastern hemlock, red maple, or red oak. The following Maine Natural Areas Program community types (based on the Gawler-Cutko Classification System) are represented in the Preserve: Hemlock Forest (S4), Oak-Pine Forest (S4), White Pine Forest (S4), Red Maple Swamp (S4) Northern Red Oak Forest. The "S4" ranking represents the second-most common communities in Maine (S1 are rarest and S5 are most common). (*see Land Cover Map, Exhibits Folder #11*)

Fauna

The diversity of habitat and relatively large size of the Preserve make it suitable for a variety of species. It is likely more valuable as an isolated wildlife habitat block rather than as part of a corridor or larger contiguous area due to the relatively major roads on all sides. The meadows likely support small mammals and possibly ground-nesting birds. Thicket and edge habitat in the transition zone between meadow and forest can support larger mammals, as well as a different suite of birds. The mature forest, which features a varied age structure with many snags, offers cover and different food sources for wildlife large and small. Furthermore, the wetlands and aquatic environment of the brook offer habitat for a variety of wildlife, especially birds, fish, amphibians, and invertebrates.

Many terrestrial animals have been seen in the Preserve by volunteers and visitors. Sighted mammals include deer, beaver, coyote, fox, porcupines, raccoons, and skunk. Commonly observed birds are wild turkeys, partridge, various owls and egrets. There has been one documented sighting of a snowy owl.

Currently, brook trout occur in the two brooks along with aquatic invertebrates. Additionally, the waters of the Preserve represent potential habitat for Alewife, Blueback Herring, and Shad. However, none occur there presently, mainly due to dams on the Presumpscot blocking passage, but it is likely that all did historically. Protecting upland and aquatic habitat in the Presumpscot River Watershed helps protect the water quality these and other fish rely on during various stages of their life-cycles and is essential to allowing them to successfully re-establish in the future. (*See Habitat Map, Exhibits Folder #12*)

Rare/Endangered species

None of the Preserve has been identified as critical wildlife habitat by the Maine Department of Inland Fisheries & Wildlife or Maine Natural Areas Program, both were contacted by phone by intern Kaitlyn Tuttle in summer of 2017.

Invasive Species

There are many invasive plants scattered throughout the Preserve, though there are no major dense infestations. The most prevalent are Oriental bittersweet and bush honeysuckle, along with patches and individuals of Japanese barberry and multiflora rose.

IV. Human Context

Cultural Resource Inventory

Little is known about the history of the Preserve prior to the 20th century. There are no known historical or archaeological sites within or near the Preserve, based on communications between intern Kaitlyn Tuttle and the Maine Historic Preservation Commission and Windham Historical Society, by phone and in person, respectively in the summer of 2017.

Land Use History

There is ample evidence that the land that makes up the Preserve was historically used for agriculture. Stone walls near the boundaries and Eastern white pine wolf trees (trees with branches spreading widely in all directions, suggesting growth in the open) indicate that much of it was historically pasture-land for livestock, likely from the 19th century on. As some areas were abandoned for forest in the past 50-75 years, fields were still maintained on the west side of the Preserve and were harvested for hay.

A major residential development project was planned on the Preserve parcel. This threat to the land led to the formation of the Windham Land Trust, which was able to purchase the parcel for conservation in 2000.

Recreational & Other Uses

The Preserve is open year round to the public. The primary recreational uses of the Preserve are hiking, hunting, snowshoeing, cross-country skiing and snowmobiling. Permitted uses are low impact, public outdoor recreation including hiking, mountain biking, cross country skiing, horseback riding, nature observation, education and ecological research and snowmobiling on the designated trail. ATVs are not allowed in the Preserve. As the Preserve is an LMF property, hunting, fishing, and trapping are and always will be permitted.

The Preserve is well-established as a popular public trail, which limits issues with visitors. The largest observed current problem is trash in the parking lot. It is hoped that increased usage and updated signage will deter this practice, but it will likely never stop completely. Occasionally, there is evidence of ATV use seen on the snowmobile trails. In dealing with illicit ATV riders in the past, police have been called and they have simply asked that the ATV be removed from the property. At this time ATV use is not a concern.

Poison Ivy has been seen in multiple areas throughout the Preserve.

PRLT Rules for Recreational use of property:

PRLT has restricted recreational use of the property to low impact activities.

1. Dogs must be on leash or under voice control.
2. Motorized vehicle use is prohibited except as needed for mowing/trail maintenance and by snowmobiles on the designated trail.
3. Camping, fires, structures, cutting, and littering are not allowed.
4. The Preserve is only open between dawn and dusk.

V. Management Objectives: The following management objectives, *listed in order of priority,* have been identified to reflect the natural resource and recreational values identified on the property.

1. Promote passive recreation by maintaining the four-season trail system.
2. Protect and preserve wildlife habitat.
3. Actively prevent ATVs anywhere and snowmobiles off marked trail.
4. Monitor and eradicate invasive species.
5. Encourage use of Preserve for education.
6. Protect and maintain aquatic habitat and water quality within Black Brook.
7. Accentuate scenic natural beauty.
8. Build community awareness and partnerships around recreational use and maintenance of trails, including increasing volunteer base.

VI. Implementation Plan

Past Stewardship Actions

Extensive stewardship activity has taken place in the Preserve since its acquisition, much of it around establishing and maintaining trails. The trail system was constructed by Windham Land Trust volunteers, including bog bridges and span bridges of several designs. Volunteers have mowed the meadows almost yearly; David Stover has done this for at least the past six years. Windham Land Trust established a relationship with the snowmobile club to allow them to use part of the Preserve, but also to ensure that riders do not stray into prohibited areas. Several informal work parties have been held at the Preserve each year of its existence to tackle any outstanding stewardship needs/issues. The first official "Spring Clean-Up" event, led by Lead Preserve Steward Dennis Hawkes, was held in Spring 2017.

At the time of acquisition by PRLT, signage on the Preserve was comprehensive. The kiosk was constructed by inmates from the local prison, and a wooden trail map was created by a local Eagle scout. Windham Land Trust volunteers created large signs at the Preserve entrances, posted a trail map and kiosk materials, and blazed trails with paint. All signs were updated with the Presumpscot Regional Land Trust name and logo in 2017.

Flooding of Black Brook from beaver dams has been a major issue in the past. There were up to seven dams at one time, including in the culvert under Windham Center Road.

Beavers have been humanely trapped and relocated twice; this was last done about five years ago. At this time, no beavers are thought to be in the Preserve, though their return seems likely.

Boundaries of the Preserve parcel have not yet been marked in the field (See Future Stewardship table for plan).

Timber Harvesting

No cutting of live or downed timber is planned at this time, except as needed to keep trails clear. The Preserve has been harvested for timber in the past, but not since its acquisition by the Windham Land Trust in 2000. There are some areas where the majority of canopy trees are weak, dying, or dead, but these snags offer valuable bird and mammal habitat and do not require active management (except with respect to blowdowns on the trail). Any financial benefit from harvesting any part of the Preserve would not be sufficient to counteract the detrimental effect on above-identified Objectives 1, 2, and 7.

Future Stewardship Actions *(See Black Brook Trail Map, Exhibits Folder #13)*

What	**Why** ***[Objective #]***	**When**	**Expenses**
Review and update management plan	All	2029 and every 10 years)	Staff Time and Volunteers
Complete monitoring visit and report for both PRLT and LMF (separate forms).	1, 2, 3, 9	Annually	Staff Time and Volunteers
Replace and update trail signage as needed.	1, 2, 3, 9	Ongoing	Staff Time, Volunteers, Materials
Inspect and, if necessary, replace or update kiosk materials.	1, 2, 3	Annually	Staff Time and Volunteers
If beavers return and alter the landscape through flooding, and this has negative effects on habitat value of the land, consider manual removal of dams and/or relocation of beavers. If trails are damaged, but overall habitat is not, consider re-routing trails.	1, 6	If Needed	Volunteers, Time, Contactor
Hold Spring trail clean-up with trail volunteers in May or June.	1, 7, 8	Annually	Staff Time and Volunteers

Perform routine trail maintenance.	1, 7, 8	At least twice annually	Staff Time and Volunteers
Maintain structures (bog bridges, span bridges) and replace when necessary.	1, 8	Ongoing	Staff Time, Volunteers, Materials
Consider closing some trails for ease of navigation and/or to enhance habitat.[1]	1, 8	Ongoing	Staff Time and Volunteers
Mechanically remove poison ivy near trailhead and monitor for re-establishment.	1	Spring 2019 and Ongoing	Staff Time and Volunteers
Create and maintain (water, weed) a pollinator garden near the trailhead	2, 5, 7	2019 and ongoing maintenance	Staff Time and Volunteers
Mow two field areas to maintain meadow habitat; mowing will be after October 1st and as late as possible in fall to avoid affecting nesting birds and to allow native plants to go to seed.[2]	2, 7	At least once every three years	Volunteer or Contractor
Maintain communication with local snowmobile club.	3	Annually	Staff Time
Dedicate the equivalent of one full volunteer work group day to invasive species removal.	4, 7, 8	Annually	Staff Time and Volunteers
Monitor for presence/spread of purple loosestrife; consider management options if found (manual removal, biocontrol with *Galerucella* beetles).	4	Ongoing	Staff Time and Volunteers
Host at least one outreach event at the Preserve annually.	5, 8	Annually	Staff Time and Volunteers
Replace/update/remove interpretive placards when	5	Ongoing	Staff Time and Volunteers

[1] Added 3/19 to enhance habitat value and reduce ongoing stewardship costs.
[2] Was previously mowed twice per year; change prioritizes nesting birds.

conditions change (e.g. a plant that is described on a sign is no longer present in the area or the sign has deteriorated).			
Make Preserve available for visits by school or other educational groups.	5, 8	Ongoing, as opportunities arise	Staff Time and Volunteers
Continue sampling and testing water of Black Brook as part of larger PRLT Water Stewards Program.	6, 2, 8	10 times per season	Staff Time, Water Quality Intern, and Volunteers
Help Town of Windham or an organization contracted by the town to develop a Watershed Management Plan for Black Brook.	6, 2, 8	When initiated by town or other organization and/or when funded as restricted project	Staff Time, Water Quality Intern, and Volunteers
Mark boundaries with PRLT boundary signs in any spots where incursion seems likely.	9	2020 and assess need for update in 2024	Staff Time and Volunteers

Removed 3/19: -

- “Revisit chestnut and elm planting program” because it is not currently a priority of the land trust.
- “Revisit cutting and removal of selected weak pine trees (with machinery or oxen) to enhance habitat” because snags provide their own habitat and there are higher priority habitat tasks planned.