

**Weeks Lot**  
**Stewardship Plan**



Prepared for the  
Durham Conservation Commission

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# Weeks Lot Stewardship Plan

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# Chapter 1 Property Description

## Location and General Description

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The 18.7-acre Weeks Lot is located on the southerly side of Wiswall Road on the west side of the Town of Durham, New Hampshire (Map 1). The parcel has 50 feet of road frontage, located approximately 1,200 feet east of the Wiswall Bridge over the Lamprey River and approximately 750 feet west of the intersection of Wiswall and Packers Falls Roads. The Durham Tax Maps identify this property as Tax Map 17 Lot 11-0.

A steel stake, set near the stone wall, marks each corner of the road frontage. From the road a 50-foot wide strip of land extends in a southeasterly direction for 150 feet on the south and 188 feet on the north; this strip crosses through the edge of a field mowed by an abutter. The property then opens out to the east and west, eventually turns south, and then runs more than 1,000 feet all the way to the Lamprey River. The river frontage is roughly 500+ feet (Map 2).

A utility line runs through the northern section of the property. A walking trail on the property follows along a terrace above the shore of the Lamprey River and leads west to a small town conservation area and parking area at the historic Wiswall Dam. Except for the small field area near the road frontage, the property is entirely forested. A small white pine plantation is located between the utility line and the northern boundary. Pockets of wetlands are found in the northeast, southeast, and northwest corners of the property. An intermittent stream flows from the wetland in the northwest corner southerly to the Lamprey River.

### *Conservation Restrictions*

The Society for the Protection of New Hampshire Forests (Forest Society) conveyed this parcel to the Town of Durham in March 1998. The deed was recorded as Book 1988 Page 737 on March 12, 1998. The Forest Society had received the same property from Sinclair and Mary Weeks in 1994. The property was surveyed and recorded as Plan 57 A in June 1957. The Forest Society conducted a reconnaissance of the boundary in 1995—their notes are included as Attachment A with property deed (Appendix A). The Forest Society noted that the western boundary line needs to be confirmed by survey (I do not think this was ever done).

Before conveying the property to the Town of Durham, the Forest Society placed the following “Conservation Land Use Restrictions” on the property in perpetuity. The following is excerpted from the deed -- see Appendix A for a copy of the deed and the full language of the use restrictions):

Purposes of Restrictions:

- To maintain the property as open space for conservation
- To protect soil productivity for forests, agriculture, and wildlife
- To protect scenic quality
- To protect surface and ground water
- To preserve and protect the designated “River Front Corridor” as an undisturbed habitat and travel way for wildlife and the water quality of the Lamprey River.

Use Limitations:

- No commercial or industrial activity, except forestry or agriculture that are not detrimental to the scenic, recreational and wildlife habitat purposes
- No subdivision of the property
- Some structures are permitted if consistent with the purposes
- No soil disturbance except as necessary to fulfill purposes
- No outdoor advertising signs
- No quarrying or excavation
- No dumping of man-made materials
- In the 150-foot River Front Corridor (beginning at the high water mark) there shall be no timber harvesting or clearing of ground cover; although there are exceptions as noted below

Reserved Rights to the Landowner (i.e., the Town):

- To construct a driveway access off of Wiswall Road and a parking area for up to 10 cars, as shown on the site map (see survey in Appendix A)
- To build a handicap accessible trail from the Wiswall Road to the Lamprey River and within the River Front Corridor
- To erect picnic tables, benches, dock in this corridor
- To clear hazardous trees, to implement selective cutting, and to clear ground cover if necessary to fulfill purposes in the corridor
- The Town must notify the Forest Society at least 30 days in advance of exercising such rights

### **Stewardship Responsibilities**

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Given the conservation purposes described in the property deed from the Forest Society to the Town of Durham, it seems that the entity with the primary responsibility for Weeks Lot is the Conservation Commission. However, given the varying responsibilities for land stewardship in Durham, this is not entirely clear and is addressed in Chapter 3 – Stewardship Recommendations.

Although this is a relatively small conservation area, it is significant for several reasons, and its stewardship deserves some attention. The property has frontage on the Wild & Scenic Lamprey River and it is connected by a trail to the town-owned property at the Wiswall Dam. The Conservation Commission could work with the Department of Public Works, Parks and Recreation Committee, and Lamprey River Advisory Committee to incorporate the Weeks Lot into any educational and interpretive efforts at the historic dam site.

## Purpose of the Stewardship Plan

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The goal of this Stewardship Plan is to understand and appreciate the values of the Weeks Lot and to guide the use and management of these resources over time. This is achieved by identifying the soils, topography, habitats, waters and wetlands, and public uses that occur on the property. An assessment of the environmental health – such as the extent of invasive species -- is included since this can affect management decisions.

The information included in this plan was drawn from field work conducted by the plan preparer and research of town documents and natural resource plans and resources. This Stewardship Plan is a living document that can be amended and updated as new information is gathered and management actions implemented. The text and maps are provided electronically to make this information readily accessible to present and future decision-makers and others interested in this town resource.

The Piscataqua Region Estuaries Partnership (PREP) Community Technical Assistance Program (CTAP) provided a grant to the Town of Durham Conservation Commission to complete this Stewardship Plan. This funding, through PREP, is from the Otto Haas Charitable Trust 2 Fund of the New Hampshire Charitable Foundation. This grant, with some additional funding from the Conservation Commission, is supporting the development of stewardship plans on four town-owned properties – Doe Farm, Wagon Hill Farm, Longmarsh Preserve, and Weeks Lot. PREP and the Conservation Commission contracted with Ibis Wildlife Consulting to prepare the Stewardship Plan.

The Stewardship Plan includes the following chapters and materials:

- ❖ **Chapter 2 -- Ecological and Cultural Features** describes the landscape setting, soils, wetlands, habitats, plant communities, environmental health, trails, and public uses on the Weeks Lot.
- ❖ **Chapter 3 – Stewardship Recommendations** presents potential management actions that can be implemented on the Weeks Lot to sustain and enhance its ecological features, environmental health, and the public benefits.
- ❖ **A set of maps** is included in the plan to further illustrate the ecological, recreation, and cultural features of the Weeks Lot.
- ❖ **Appendices A-B** provides additional background material and documents associated with the Weeks Lot.

## Chapter 2 Ecological and Cultural Features

### Landscape Setting

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The Weeks Lot lies on the north side of the Lamprey River, just one mile upstream of the Doe Farm town land. The river flows more quickly here, just below the Wiswall Dam, as it flows over large rocks and around small islands in the river. The bridge just above the Wiswall Dam is currently being replaced; it had become unsafe following several major flood events in recent years. A fish ladder and historic interpretation are also planned for the historic dam site.

### The Lamprey River

After it passes the Weeks Lot, the Lamprey River flows south into downtown Newmarket before draining into Great Bay. The Lamprey River begins in the Saddleback Mountains of Northwood and meanders 47 miles through eight towns before it reaches the McCallen Dam at the Mills in Newmarket. The Lamprey River drains an increasingly populous watershed of 212 square miles or 135,680 acres; the largest watershed and the longest river of the seven that flow into Great Bay.

Historically the Lamprey River supported large populations of river herring, sea lamprey, American shad, American eel, and Atlantic salmon. Dams constructed for industrial and commercial purposes have long blocked or limited fish passage upstream. The McCallen Dam, site of the first natural falls on the Lamprey, separates the tidal portion of the river from the freshwater portion. A Denil fish ladder on this dam enables alewives, American eels, sea lamprey, and American shad to move upriver. Blueback herring do not use the ladder and have been seen spawning below the dam. Three and a half miles upstream of McCallen is the Wiswall Dam in Durham, originally constructed in 1835. This dam currently has no fish passage creating a barrier to fish movement farther upriver. A third dam at Wadleigh Falls in Lee has been breached, but under typical flow conditions, its remnants still constitute a barrier.

### *Wild and Scenic River Designation*

An 11.5-mile segment of the Lamprey River was officially designated as a recreational Wild and Scenic River on November 12, 1996. This designation extended from the southern Lee town line (bordering Epping) through Lee and Durham to the confluence with the Piscassic River in the vicinity of the Durham-Newmarket town line. This includes the stretch that flows past the Weeks Lot. A recreational river in the National Wild and Scenic Rivers Program (administered by the National Park Service) is one that is readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past. A 12-mile segment of the Lamprey River, from the Lee/Epping town line to the Bunker Pond Dam in Epping, was added to this designation on May 2, 2000, increasing the Wild and Scenic River designation to 23.5 miles. The Lamprey River Advisory Committee, with members from all four towns, has the principle responsibility for development and implementation of a long range River Management Plan and reviews and comments on projects that could impact the river.

The Weeks Lot is bordered by private lands to the east and west and the Wiswall Road to the north. Two undeveloped, forested lots are on the west side, between the Weeks Lot and the Wiswall Dam town park. A small farm lies to the north and a residential home tucked back into the woods lies along the eastern boundary.

## Topography and Soils

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The Weeks Lot has a generally flat topography. The land slopes gently down toward the Lamprey River. A terrace borders the length of this stretch of the river, before the land drops relatively sharply to the river's edge.

This is a primarily upland site, with 92% of the soils being well drained, moderately well drained, or excessively drained. The upland soil types and the existing vegetation indicate a forest that will eventually succeed to a hemlock – beech – oak – pine forest. The northeast quadrant has more of the Hollis-Charlton rocky soils, which is more favorable to red oak. This bears out in the field with more red oak, rocky terrain, and small knolls in this part of the property. The rest of the Weeks Lot is dominated by white pine, primarily on the Windsor soils (See Table 1 and Map 3).

The Buxton soils, of marine origin, can tend toward moister conditions. These soils are primarily north of the utility line, and underlie a red maple wetland in the northwest corner of the property. The poorly drained Scantic soils underlie an herbaceous-shrub wetland in the northeast corner that extends under the power-line. The Suncook loamy sands are found on the terrace near the Lamprey River.

**Table 1. Soil types on the Weeks Lot** (from NRCS Strafford County Soil Survey Data, 2001)

Soil #	Soil Name	Acres	Drainage	Parent Material
WdB	Windsor loamy sand, 3-8% slope	7.3	excessively drained; soils of local importance	glacial outwash
HdC	Hollis-Charlton very rocky fine sandy loams, 8 to 15% slope	5.0	well-drained; soils of local importance	glacial till
BzB	Buxton silt loam, 3 to 8% slope	3.2	moderately well-drained; prime farm soils	marine
Sk	Suncook loamy sand	1.7	excessively drained; soils of local importance	alluvial deposits
ScA	Scantic silt loam, 0 to 3% slope	0.7	poorly drained; farmland soils of local importance	marine
SwA	Swanton fine sandy loam	0.7	poorly drained; soils of local importance	marine
	TOTAL acres	18.6		

## Habitats and Forest Types

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White pine dominates much of the Weeks Lot. The age and appearance of the pine and the associated vegetation indicates the area was pastured perhaps less than 60 years ago. A mix of white pine and red oak, which are relatively shade intolerant, are the typically species to grow on abandoned pasture. A greater mix of hardwoods occurs on the Buxton soils closer to the road, including some sugar maple and shagbark hickory. A white pine plantation of 25-30 years old is in the northeast corner, on these same soils (Map 2).

Red oak is more prominent on the Hollis-Charlton soils in the eastern portion of the property. The understory throughout includes a mix of white pine, red oak, American beech, and hemlock. Over time, without some disturbance, this forest will naturally succeed to a *hemlock – beech – oak – pine forest* community.

Red maple grows along the stream drainage and in the pockets of wetlands. The narrow stream drainage that flows from the northwest corner in a southerly direction to the Lamprey River supports some pockets of a *red maple - elm - ladyfern silt forest* and *alder – dogwood – arrowwood* shrub community. The river frontage supports a mix of shrubs (e.g., silky dogwood, winterberry) and trees (e.g., red maple, black cherry, white pine, and red oak). Plant community names from Sperduto and Nichols (2004).

The riparian area (the shrubs and forest along the river) is important stop-over habitat for migrating songbirds. Beaver, otter, mink, fisher, and other mammals move up and down the river corridor, using both the river edge and the upper terrace. The upland forest supports the typical mix of wildlife species that use oak-pine forests: white-tailed deer, hairy and downy woodpeckers, white-breasted nuthatch, black-capped chickadee, among others.

As the forest naturally ages, more trees or parts of trees will fall, creating “coarse woody debris,” which is important to salamanders, snakes, small mammals, and insects. As with most old pastures, the understory, ground cover, and coarse woody debris are sparse.

Landowners can request from the New Hampshire Natural Heritage Bureau a list of known rare species and exemplary natural communities for their property. However, unless a property has been specifically surveyed for rare and exemplary elements, then such a list may be incomplete. There are currently no known records of exemplary natural communities in the Natural Heritage database for the Weeks Lot (see Appendix B for the report).

## Trails and Public Uses

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A trail meanders along the Lamprey River from the parking lot at the Wiswall Dam across private land to the Weeks Lot and then on to private land that is posted “private property.” The entire trail is popular with anglers, swimmers, and probably dog walkers. There are several places to walk down to the water’s edge, some with sandy beaches. Roughly mid-way along the trail through the Weeks Lot, another trail heads north into the property, roughly following a stream drainage. The trail seems to peter out before it reaches the utility line.

There is no parking on the Weeks Lot and no current plans to build an access and parking, since space is available just down the road at the Wiswall Dam. Hunting is not permitted on town lands, although the Weeks Lot is not posted as such. The abutting lands are also not posted against hunting.



Few other public uses occur on the Weeks Lot. No signs of camping, campfires, or other activities were noted.

## **Environmental Health**

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Environmental health, or *ecological integrity*, can be measured in several ways, such as the quality and quantity of surface waters, degree of erosion and runoff, amount of impervious surface, quality of air, presence of forest pests or invasive species, presence of native species and associated habitat elements. Some environmental stressors, such as mercury deposition, air pollution, extreme weather events and climate change, are large in geographic scope and largely outside the influence of land stewardship decisions on individual ownerships.

The environmental health of the Weeks Lot is relatively good, although some stresses including invasive plants should be addressed. The property remains undeveloped with no impervious surfaces. The undeveloped river frontage on the Weeks Lots and other nearby properties is critical to protecting water quality. Two impacts to environmental health on the Weeks Lot are some soil compaction and erosion from trails and the presence of invasive plant species that degrades native habitats.

## **Invasive Species**

An "invasive species" is defined as a species that is non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (National Invasive Species Council 2001). One report estimates the economic cost of invasive species in the U.S. at \$137 billion every year (Pimentel et al. 2000). Up to 46% of the plants and animals federally listed as endangered species have been negatively impacted by invasive species (Wilcove et al. 1998, National Invasive Species Council 2001).

Invasive species typically have certain traits that give them an advantage over most native species. These traits include producing many offspring, early and rapid development, and being adaptable and highly tolerant of many environmental conditions. Such traits give them an edge over native species. Studies show that invasives can reduce natural diversity, impact endangered or threatened species, diminish wildlife habitat, affect water quality, stress and reduce forest and crop production, damage personal property, and cause health problems.

The New Hampshire Invasive Species Act states that "*no person shall knowingly collect, transport, sell, distribute, propagate or transplant any living or viable portion of any listed prohibited invasive plant species including all of their cultivars, varieties, and specified hybrids.*" Appendix C includes the list of prohibited species referenced in this Act. For more information on New Hampshire's invasive species program see [http://www.nh.gov/agric/divisions/plant\\_industry/plants\\_insects.htm](http://www.nh.gov/agric/divisions/plant_industry/plants_insects.htm) and [http://www.nh.gov/agric/divisions/plant\\_industry/documents/booklet.pdf](http://www.nh.gov/agric/divisions/plant_industry/documents/booklet.pdf).

Invasive plant species are transported by humans and wildlife; many were planted purposefully in the past for wildlife, erosion control, or as landscape plantings. Others came in via international commerce. Many invasive plants appear first in disturbed areas such as along roadsides, trails, and waterways, or edges of fields.

The Weeks Lot has several pockets of invasive plant species (see Table 2). The most common invasive plants on the property are buckthorns. They occur prominently in the understory of the white pine plantation in the northeast corner, in the utility corridor, and along the trail that parallels the Lamprey

River. Oriental bittersweet, Japanese barberry, multiflora rose, and winged euonymous are scattered along the river front and in some of the inland understory.

**Table 2. Invasive plant species on the Weeks Lot.**

<b>Common Name</b>	<b>Scientific Name</b>
Burning bush	<i>Euonymus alatus</i>
Common buckthorn	<i>Rhamnus cathartica</i>
Glossy buckthorn	<i>Frangula alnus</i>
Japanese barberry	<i>Berberis thunbergii</i>
Multiflora rose	<i>Rosa multiflora</i>
Oriental bittersweet	<i>Celastrus orbiculata</i>

### **Trail Erosion, Compaction, and Water Quality**

The trail along the terrace above the Lamprey River appears to receive regular use, although not as much as the earlier sections of the trail that starts at the Wiswall dam. The trail is narrow and is in relatively good condition (except for the invasive plants noted above). Over time it will be important to monitor any potential erosion that and sediment run-off into the river.

## Chapter 4 Stewardship Recommendations

Although a small conservation area, the stewardship of Weeks Lot is a long-term commitment by dedicated community members working together. The following stewardship recommendations were developed by conducting site assessments in summer 2009 and reviewing town documents. The recommendations are not exhaustive but represent the author's ideas for the most significant actions for the town to consider, given the existing site conditions and the capacity of the resources to provide the desired benefits.

- **Boundary Survey and Monitoring**

*Action:* The Weeks Lot has a recorded survey, but the western boundary has no natural features such as a stone wall to delineate that line. Hire a licensed surveyor to survey and monument this line.

*Action:* Immediately after the survey, place small metal signs along the property boundary (on trees) indicating "Durham Public Land" or "Durham Conservation Land" or whatever is appropriate.

*Action:* Annually or periodically walk the entire boundary to re-affirm boundaries and assess conditions. This includes shoreline conditions, unauthorized camping and campfires, and any boundary encroachments.

*Action:* Contact and meet with the abutter to the north to review their "management" of the 50-wide strip of field near Wiswall Road. There should be something in writing that goes in the file, affirming this strip as town land, but that the abutter keeps it cleared, or pastured, or whatever they do, assuming it is consistent with town goals.

- **Trails and Public Uses**

*Action:* Re-affirm with the Town Council and Town Administrator that the Conservation Commission is the entity responsible for stewardship of this parcel.

*Action:* Work with the Public Works Department, Parks and Recreation Committee, Lamprey River Advisory Committee, and others to incorporate information about the Weeks Lot into any interpretive displays, maps, etc that are developed for the Wiswall Dam historic site.

*Action:* Consider creating a loop trail on the Weeks Lot. Extend the existing trail that runs north from the Lamprey River into the property. From where it currently ends south of the utility line, run a course east and then south back to the Lamprey River trail. This would add some variety to the trail along the river. Given the existing parking and trail at the Wiswall Dam, there is no need to create a separate parking area on the Weeks Lot.

*Action:* Annually walk the trails and the property to evaluate trail conditions, erosion, and other site conditions.

- **Habitat Management**

*Action:* Control the invasive plant species on the Weeks Lot, especially those growing along the Lamprey River. The abundance is not so extensive, that repeated physical cutting and removal may be feasible. Consult with the Lamprey River Advisory Committee as they are working on some invasive species control along the river. Also, combine with efforts to control invasive species on other town

properties as recommended in the Stewardship Plans for those sites. Invasive species control is allowed within the 150' River Front Corridor.

**Action:** Invite Charlie Moreno, or other consulting forester, to do a walk through to evaluate the potential to actively manage the forest to improve its health and diversity over time. The deed allows for forest management, including some selective harvesting within the 150' corridor, if linked to the conservation purposes. Any forestry can focus on wildlife habitat and protecting water quality as a goal. Specifically this could include leaving old trees, diversifying forest structure, promoting a mix of native tree species, and retaining mature nut-producing oaks and hickories.

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