



Commission Members: Dory Waxman, Chair, Nathan Robbins, V.Chair, Councilor Brian Batson, Craig Lapine, Cynthia Loebenstein, Meri Lowry, Michael Mertaugh, Chelsea Malacara, Colette Bouchard, Zack Anchors, Amy Segal, Ana Lagunez and Marie Gray.

City of Portland
Parks Commission Agenda
April 4, 2019
5:00 PM
Portland City Hall
389 Congress Street, Council Chambers

*The Mission of the Portland Parks Commission is to advocate for the enhancement and stewardship of our parks and open spaces. Review and propose projects that impact parks and open spaces and recommend action.
Foster collaboration among park users and the City. Promotes public access and enjoyment.
Advocate for public and private funding for parks and open spaces. Enjoy Portland for Life.*

- I. General Citizen Comment Period
- II. Agenda Items
 - a. Acceptance of Meeting Minutes: DATE
 - i. Parks Commission March 7, 2019 Meeting Minutes
 - b. New Business
 - i. Black Hawk Sculpture and Interpretive Sign
 - ii. Boyd Street Update
 - iii. Proposal for Baxter Woods Leash Change in City Ordinance Chapter 5 - *vote to recommend to bring proposal for Baxter Woods Leash Change in City Ordinance Chapter 5 to City Council*
 - c. Communications/Updates
 - i. Subcommittee Updates
 - ii. Parks Update
 - d. Commissioner requests for Agenda Items

City of Portland Commissions are not required to take public comment under FOAA and our Ordinance is silent regarding the duties of the Commission. The Commission has the discretion to not allow or allow public comment during its meetings, including the authority to limit the duration of comments. Since the Commission makes recommendations to the City Council, public comment is available at that level.



CITY OF PORTLAND

Parks Commission

In attendance: Commission Members Chair Dory Waxman, V.Chair Nathan Robbins, Councilor Brian Batson, Craig Lapine, Meri Lowry, Michael Mertaugh, Colette Bouchard, Zack Anchors, Amy Segal, Ana Lagunez and Marie Gray. City Staff Sally DeLuca, Matt Coleman, and Alli Carroll. In addition, Councilor Belinda Ray, Parks Conservancy Executive Director Nan Cumming, Friends of Deering Oaks President Anne Pringle, and member of the public George Rheault

Parks Commission Minutes

March 7, 2019 5:00 PM

Portland City Hall

389 Congress Street, Council Chambers

General Citizen Comment Period

George Rheault shared that the Historic Preservation Board and Friends of Deering Oaks held a workshop the day before at 5:00 PM. He noted the parks history and the Battle of Deering Oaks that occurred there about 250 years ago. Due to its importance, it would be appreciated if public meetings, such as this workshop, were held at a later time for those who leave work later than 5:00 PM.

George continued by explaining that Boyd Street Gardens was a scene of urban renewal. He shared documents of people recreating in the park before it was a park and a book "The Park and the People" by Roy Rosenzweig and Elizabeth Blackmar. With these, he explained the importance of people in the park. A road to no where is a silly idea; a park to no where is a silly idea. If there are no people in the parks, then the park is empty and there is no point.

Anne Pringle, President of the Friends of Deering Oaks Park explained that the workshop last night regarding park improvements was to put together a complete proposal before coming to the Parks Commission. They are expecting public input when it comes to the Commission.

Agenda Items

I. Acceptance of Meeting Minutes: February 7, 2019

Michael moved to accept the meeting minutes of February 7, 2019. Meri seconded. Meri, Zack, Craig and Brian abstained. Motion passed with seven in favor.

II. New Business

a. Boyd Street Community Garden Councilor Belinda Ray

Belinda Ray, Councilor for District 1, presented a packet of her proposal to formalize the boundaries for Boyd Street Gardens. This space is part of Ordinance, Chapter 18 but the actual boundaries are not specified. She went through its history and how it got to be what it is today. She would like the Commission's recommendation to bring the proposal to City Council. Meri explained that the ordinance is sunsetting and an ad hoc committee is working with Michael Goldman of Corporation Counsel to propose changes to it. There was discussion on whether the vote to recommend this proposal should wait until the ordinance goes to

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recreation@portlandmaine.gov • www.portlandprf.com



CITY OF PORTLAND

Parks Commission

Council. The Commissioners would like more time to review the proposal. The recommendation may be placed at next month's meeting.

b. Parks Conservancy

Nan Cumming, the Executive Director of Portland's Parks Conservancy, introduced herself and the Conservancy as a whole. She explained how they were created and that they are still in the process of setting themselves up as a nonprofit. They are still waiting for the 501c3 and are in the midst of creating a logo. She will be focusing on fundraising. There is no process set in place yet for public proposals. They have a max board of twenty-one members but only have thirteen right now but are actively recruiting. Their meetings are not public. Discussion was held regarding the Commission and Conservancy's relationship. Nan assured them they can expect open communication from the Conservancy. The Commission is very excited. They thanked Nan for coming and encouraged her to come to future meetings.

III. Communications/Updates

a. Ordinance Workshop Update

Michael Goldman is working on the ordinance. The ad hoc committee is planning to meet in the next two weeks. Hoping to have something to present to the Commission at the next meeting.

b. Committee Updates

Finance Subcommittee: The Commission discussed a suggestion from the last meeting regarding the purchase of donated craft items through the Love Portland platform. Craig and staff were very concerned with the potential commercialization and complications that could arise from this idea. Outright donation and not some kind of arrangement and could be very commercialized. The Commission discussed different avenues. Finance will schedule a meeting to discuss this further.

Outreach Subcommittee: They met on Monday. Amy shared the potential Green Space Gathering agenda with the Commission. She will schedule a meeting with staff to discuss fine details.

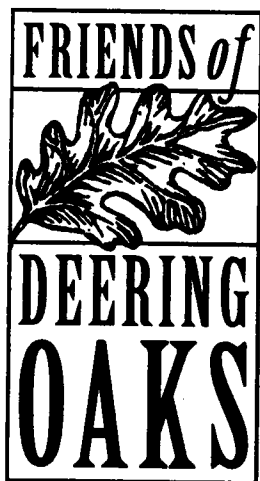
Annual Reporting Subcommittee: It was suggested that the ad hoc committee may want to modify the ordinance by making the annual report language less descriptive so that the Commission isn't tied to doing it annually. The Commission discussed doing an abbreviated report that highlights the last year's recommendations, Green Space Gathering, and ordinance.

c. Parks Updates

Matt shared a document with the Commission regarding projects happening in the Parks Division. He encouraged the Commission to sign up for the free Walk in the Park tour on April 27th, 2019.

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MISSION STATEMENT

The Friends of Deering Oaks is a non-profit citizen organization committed to preserving, protecting and enhancing the physical condition of Portland's historic Deering Oaks Park and promoting its use by residents and visitors. The 1994 Deering Oaks Master Plan will guide the activities of the Friends of Deering Oaks.

Friends of Deering Oaks
P.O. Box 10416
Portland, Maine 04104
(207) 774-0437

March 28, 2019

Parks Commission
City of Portland
389 Congress Street
Portland, ME 04101

Re: Proposed Great Black Hawk Sculpture

Dear Members of the Commission:

I am sorry that I will be away and unable to attend your meeting next week. I offer the following as further explanation of questions that may occur about this project:

I chaired the Deering Oaks Master Plan Committee. New memorials are discouraged. The intent of discouraging new memorials was to avoid more such physical images of people "popping up" in the natural landscape to honor individuals, who might not be well known or recognized by the general public. As Deb noted, we do not see this project as a memorial to an errant bird, but rather as an educational opportunity to explain how a bird that attracted so much attention came so far north and into such an inhospitable climate. There was widespread interest in this bird and we believe there are important lessons to be learned from its brief stay in Deering Oaks.

As you know, we have chosen a realistic life-size sculpture rather than an artistic interpretation of the hawk. As a work of art related to nature, we believe it is in the same realm as two other works of art that prior HPBs have approved: the "Circle of Life" sculpture carved in stones around the reflecting pool in the Ravine and the proposed addition of a dragon sculpture carved into a series of five boulders to be placed in the evergreen grove near the Ravine (the Portland Public Art Committee decided instead to site this sculpture from its collection at the East End Community School).

As you are probably aware, the hawk had a unique affinity for Deering Oaks, to which it returned daily after exploring other areas of the city. For this reason, we believe the park is the right location to recognize it rather than an alternative location like King Middle School. The public associates the hawk with Deering Oaks.

Regarding location, we strongly believe that the modest sculpture should not be a visual draw, but should be encountered with a sense of discovery. I was in the park yesterday and looked at the grove of evergreens near the Ravine where it was often spotted (a favorite tree at the corner of Park and Deering has since been removed because of rot). I think, subject to review by City staff and other stakeholders, that the sculpture and the proposed explanatory sign could be tucked into this area without being visually discordant with the natural landscape, which is always our priority.

As the Commission knows, FoDO has been an active and effective advocate for Deering Oaks for 22 years. We hope our efforts have earned us some credibility in stewarding the integrity of Deering Oaks. I assure you, we would never propose something we did not believe was an appropriate addition to the park. We look forward to your comments on this proposed project.

Very truly yours,

Anne B. Pringle
President

Background

During its chosen weeks in Portland (November 29, 2018-January 20, 2019) the errant Great Black Hawk from South America became not only a local celebrity, but attracted people to Deering Oaks from all over the State and throughout the Country. A juvenile, the bird was appreciated for its stature, beautiful coloring and fierce hunting capabilities, while also raising concerns about its ability to tolerate our cold winters. Though it appeared to initially survive cold snaps and snowstorms, it succumbed to a sleet storm on January 20, was rescued from the ground, and delivered to Avian Haven, where valiant efforts to rehabilitate the bird's severely frost-bitten feet came too late. Frostbite is known for its insidious progression and likely the irreparable damage associated with pain and inability to perch occurred well before the bird was found on the ground on January 20.

The outpouring of love, prayers, good wishes and support during for our vagrant visitor's time in rehab at Avian Haven were significant. This beloved hawk touched the lives of so many and brought people together from all walks of life, leaving a lasting impression and lingering questions that we believe should be recognized in a historical, educational way.

Purpose

Because of the attention and broad-based interest the Hawk attracted to our community (even today), a local collaboration hopes to raise private funds to commission a life-size replica bronze sculpture to honor its presence in our community, to be placed in Deering Oaks on a stable pedestal in a location it frequented, as a gift to the City of Portland. Appropriate signage is simultaneously being created to complement the replica and will address the questions everyone was asking: How did it stray so far from South America? Why did it settle in Deering Oaks? Did it interact with other wildlife in Deering Oaks? Could it survive our cold winters? Should it be captured and relocated? Etc.

Process

Friends of Deering Oaks will take the lead in this project; implementing the approved action plan, selecting a local, qualified sculptor, scheduling necessary approval meetings, coordinating fundraising, and developing an installation schedule. This will also include convening other stakeholders as necessary in the process; Maine Audubon, Inland Fish & Wildlife, Avian Haven to review the model of the GBH replica to ensure ornithological accuracy.

Artist Selection

Friends of Deering Oaks and Avian Haven requested proposals from Maine based wildlife sculptors experienced in both taxidermy and replication in bronze. Considerations for artist selection included:

- [Interest/availability](#)
- [Timeline & Process](#)

- Cost estimate, payment schedule, delivery, mounting/installation
- Preferred mounting medium
- What is necessary to create a life-size replica
- Examples of similar projects
- Experience with community process/approval
- Recommended maintenance plan and cost estimate
- References

David Smus submitted a detailed proposal for this work and was chosen for his extensive experience and reputation for capturing the spirit of nature within his work.

“It’s been my specialty as a full-time sculptor for 35 years. I have a B.S. degree in Wildlife Management from UMO, and years of experience earlier as a taxidermist. I’ve always enjoyed helping educate the public about wildlife and contributing to that cause in any way I could.”

For more details on his accomplishments and installations, please visit his website:
David Smus <http://www.wildlifebronze.com/>

With the artist selected, the proposal will be reviewed by key City staff, a PPAC representative, and other stakeholders. FoDO will present details of the proposed sculpture, including a cast model, to appropriate reviewing bodies to be considered for acceptance as a gift to the City.

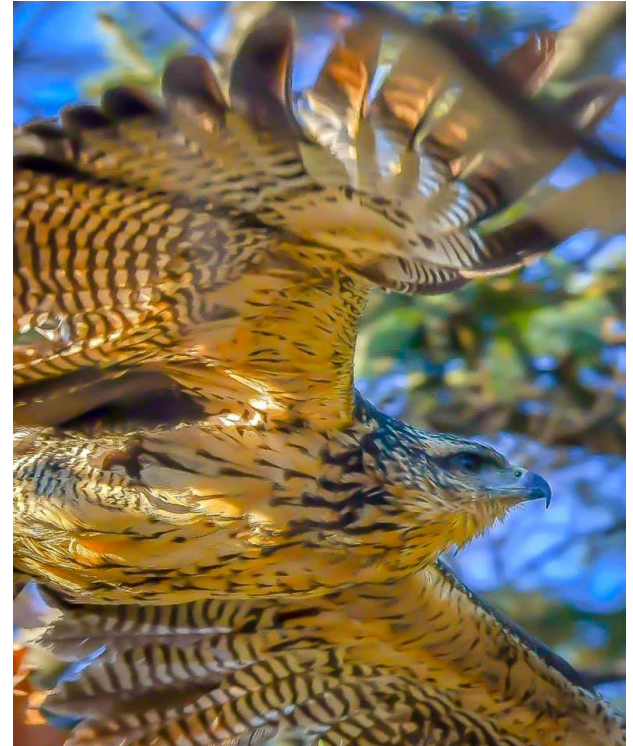
Approval will be secured from:

- FoDO Board – to authorize FoDO’s lead role in the project;
- City of Portland Parks Department – to approve efforts to bring the project forward through the formal approval process;
- Parks Commission – to assure support of the public body overseeing the City’s park assets;
- Historic Preservation Commission – to approve an appropriate location and signage under the Deering Oaks Master Plan;
- Portland Public Art Committee – to review appropriateness, quality design and materials, maintenance requirements, accessibility, compatibility with the public Art Plan and to determine acceptance into the City’s Public Art Collection as an “art work of remembrance”.
- Portland City Council – Accept recommendation of the PPAC.

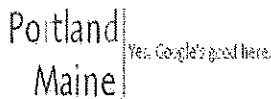
Installation The selected artist will work with the City and chosen contactor on installation.

Dedication FoDO, Avian Haven, and stakeholders will coordinate with the City on the structure and content of a dedication event.

Our Newest "Friend of Deering Oaks"
Juvenile Great Black Hawk, native of Central America
December 2018



Photos courtesy of Karl Ramsdell



Ethan Hipple <ehipple@portlandmaine.gov>

Fwd: Baxter Woods concerns

Ethan Hipple <ehipple@portlandmaine.gov>

Thu, Jan 10, 2019 at 4:39 PM

To: Chelsea Malacara <chelsea.malacara@gmail.com>

Cc: Sally Deluca <sld@portlandmaine.gov>, Ethan Owens <eowens@portlandmaine.gov>, Matthew Coleman <mcoleman@portlandmaine.gov>, Joe Dumais <jdumais@portlandmaine.gov>, Jeff Tarling <jst@portlandmaine.gov>

Hi Chelsea,
Ethan Owens forwarded me your email...

Sorry to hear about your dog encounters at Baxter Woods. We are currently evaluating our leash policy at Baxter Woods. We do have a recommendation from our ecologist consultant that dogs be limited to on-leash so that we can comply with our deed restrictions to maintain Baxter Woods as a bird sanctuary. And anecdotally, we do receive many complaints of aggressive off-leash dogs in Baxter Woods. It is a complicated issue, with many emotions on all sides, so we don't take it lightly.

We will continue to evaluate the effectiveness of our current policy and report out to Parks Commission on any new recommendations. Ultimately, City Council would need to approve any proposed change to Chapter 5 of city code that regulates dogs on public property.

Feel free to let me know if you have any other questions or background info.

Take care,
Ethan

Ethan Hipple
Deputy Director
Parks, Recreation and Facilities Department
City of Portland
212 Canco Rd, Suite A
Portland, Maine 04103
o: 207.808-5400
ehipple@portlandmaine.gov

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----- Forwarded message -----

From: **Ethan Owens** <eowens@portlandmaine.gov>

Date: Wed, Jan 9, 2019 at 10:21 AM

Subject: Fwd: Baxter Woods concerns

To: Ethan Hipple <ehipple@portlandmaine.gov>, Joe Dumais <jdumais@portlandmaine.gov>, Matt Coleman <mcoleman@portlandmaine.gov>, Tarling, Jeff <jst@portlandmaine.gov>

For you guys

----- Forwarded message -----

From: **Chelsea Malacara** <chelsea.malacara@maine.edu>

Date: Wed, Jan 9, 2019 at 9:50 AM

Subject: Baxter Woods concerns

To: <eowens@portlandmaine.gov>

Good Morning,

I wanted to reach out as a member of the Deering Center community and a commissioner on the Portland Parks Commission. Last summer there was talk about monitoring bird activity in Baxter Woods and possibly reevaluating whether or not Baxter Woods should be an off leash park.

As a dog owner myself, I never bring my dog there. The amount of dog bags seems to pile up and of more concern is the number of times myself or my dog has been accosted by other off leash dogs who are not well behaved.

I am currently pregnant and went for a solo walk, without my dog, through the park this morning knowing it wouldn't be busy. While it wasn't busy, I had two scary dog encounters. The first, two dogs came running at me and one jumped high, nearly knocked me over, and scratched my leg. The owner nonchalantly said "yeah the black one still jumps" and kept walking. Then about 5 minutes later, another dog approached me growling, looking like it was ready to bite. Again, another unapologetic owner just said "he's fine."

As someone who is passionate about park preservation, accessibility, wildlife, and dogs, I am curious about what progress or conversations, if any have recently taken place about changing the status of Baxter Woods but also changing rules about off leash dogs and having some type of enforcement. I would be supportive of turning a portion of Baxter Woods into an dog park but as it stands, with such a small footprint and irresponsible dog owner, I don't understand why it's still off leash.

I hope you can shed some light on this matter.

Best,

Chelsea Malacara

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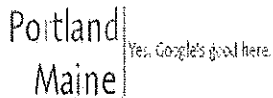
Ethan Owens CPRP, CPSI, AOLCP

Parks Assistant Director, Athletic Facilities and Playground/Courts Manager

City of Portland - Parks, Recreation and Facilities Management Dept.

212 Canco Road Portland, Maine 04103 ~ USA

207-808-5400 eowens@portlandmaine.gov



Ethan Hipple <ehipple@portlandmaine.gov>

Fwd: Baxter Woods

Ethan Hipple <ehipple@portlandmaine.gov>

Tue, Oct 10, 2017 at 5:15 PM

To: jackson.mcmann@maine.edu, Mike Murray <msm@portlandmaine.gov>

Hi Jackson,

Thanks for your inquiry. We have an ongoing city-wide park sign project, and Baxter will receive new signs as well. We developed special language for signs at Baxter to address dogs-at-large issues. They are currently in production at the sign company and will be up within a couple weeks of receiving them from the sign company.

Take care,
Ethan

Ethan Hipple, CPRP
Parks Director
City of Portland
212 Canco Rd.
Portland, Maine 04103
o: 207.808-5400
ehipple@portlandmaine.gov

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From: **Mike Murray** <msm@portlandmaine.gov>
Date: Tue, Oct 10, 2017 at 10:59 AM
Subject: Fwd: Baxter Woods
To: Ethan Hipple <ehipple@portlandmaine.gov>

Can you reach out to Mr. McMann on schedule?

Mike Murray
Assistant to the City Manager
City of Portland
389 Congress Street
Portland, ME 04101
207.756.8288

----- Forwarded message -----

From: **Jackson McMann** <jackson.mcmann@maine.edu>
Date: Sun, Oct 8, 2017 at 6:47 PM
Subject: Re: Baxter Woods
To: Mike Murray <msm@portlandmaine.gov>

Good evening,

Today in Baxter Woods I witnessed a bike that was moving very fast hit a dog. The dog was a little shaken up, but overall both the dog and the biker were okay. There are still no signs up. Signs could have prevented that from happening today. Please let me know if you still plan on putting up signs.

On Mon, Sep 11, 2017 at 1:20 PM, Mike Murray <msm@portlandmaine.gov> wrote:
To All,

Parks staff has recently been meeting on this very subject and will be installing signs at both entrances to Baxter Woods outlining current policy and expectations.

Mike Murray
Assistant to the City Manager
City of Portland
389 Congress Street
Portland, ME 04101
207.756.8288

On Mon, Sep 11, 2017 at 8:28 AM, Ethan Strimling <estrimling@portlandmaine.gov> wrote:
Thanks for the note. I have cc'd staff to have them look into this issue.

On Mon, Sep 11, 2017 at 8:24 AM Jackson McMann <jackson.mcmann@maine.edu> wrote:
Good morning,

My name is Jackson McMann and I have lived in Portland for all 22 years of my life. First, I want to say thank you for your career so far as a public official for our wonderful city. You are representing us well, and many of us appreciate what you have done.

I am emailing you to bring to your attention a problem in the heart of Deering: Baxter Woods. This beautiful community area is full of good people and friendly vibes, but there have been some issues surrounding dogs there. Dogs are allowed off-leash here, yet some still get into disputes over how much "off-leash" is allowed. Many bikers and runners get frustrated with people who are just letting their dogs run around. There are also incidences of small children who do not know how to act around dogs (e.g. running around letting the dogs chase them and then screaming when the dog gets a little excited), thus further causing problems. I have yet to meet an unfriendly dog in this community. What I have met, though, is a woman who is terrified of dogs yet continues to walk through Baxter Woods yelling at dog owners to keep their pets away from her.

Baxter Woods is a convenient area for dogs and their owners to take a stroll through nature in a place that is more known for its city environment. Being dog-friendly is a staple of this neighborhood and part of what makes it such a family-centered community. What I am asking is that a sign gets put at the entrance of the woods. Something that gives a friendly warning about off-leash dogs in the areas. There is also a beautiful, on-leash cemetery across the street with plenty of walking/biking paths for those who do not want any contact with dogs.

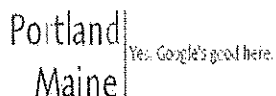
There is no reason that both bikers and off-leash dogs cannot get along. We each have to do our part by being aware of each other and properly training our pets. Either way, thank you for taking the time to read this.

Sincerely,

A Concerned Resident

—
Ethan Strimling
Mayor, Portland
389 Congress Street
Portland, ME 04101
207-874-8941

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.



Ethan Hipple <ehipple@portlandmaine.gov>

February with Parks, Recreation & Facilities

Stacey Dand <swd@portlandmaine.gov>
To: Ethan Hipple <ehipple@portlandmaine.gov>

Thu, Feb 16, 2017 at 3:19 PM

FYI, just a comment on Baxter woods

~~~~~  
Stacey Willis Dand  
Marketing Consultant  
City of Portland -- Public Assembly Facilities Division  
P: 207.808.5436  
E: swd@portlandmaine.gov

----- Forwarded message -----  
From: **Kevin Donoghue** <kjdonoghue@gmail.com>  
Date: Thu, Feb 16, 2017 at 1:36 PM  
Subject: Re: February with Parks, Recreation & Facilities  
To: "Portland Parks, Recreation and Facilities Department" <swd@portlandmaine.gov>

Love the newsletter. I've found Baxter Woods to be pretty poor for skiing with kids as it's essentially become an off-leash dog park.

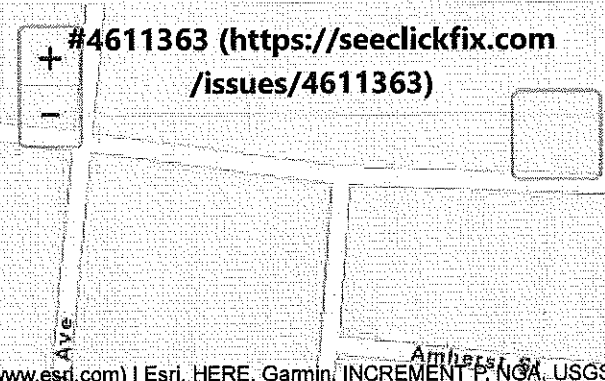
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This email was sent to kjdonoghue@gmail.com  
*why did I get this?*   unsubscribe from this list   update subscription preferences  
Recreation Department, City of Portland, Maine · 134 Congress St · Suite 2 · Portland, Me 04103 · USA

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**#4611363** (<https://seeclickfix.com/issues/4611363>)



www.esri.com) | Esri, HERE, Garmin, INCREMENT P, NOAA, USGS  
43.6726907770178, -70.2883749661866

**Replace Leash Law Signs!**

Created Date: 06/27/2018 1:16 PM

86 Concord Street Portland, Maine

**Details**

Replace Leash Law Signs!: I am a dog owner in Deering Center. I reported this issue last year and received no help. All of the leash law signs are either gone or illegible. Recently there have been several aggressive dogs off leash that have attacked othe...

*This request has no associated secondary questions.*

 1  2

## Comments

All

Public Only

Internal Only

Category:

**Replace Sign**

Recategorize

Status:

**Acknowledged**

Change Status

Assigned to:

**Public Works**

Assign

Due Date:

**07/19/2018**

Change Due Dat

SLA Expires at:

**07/19/2018**

Priority:

**Normal**

Prioritize

 (<https://seeclickfix.com/issues/4611363>)

## Status Log

**Opened:**

06/27/2018 1:16 PM

**Acknowledged:**

06/27/2018 3:17 PM

## Integration Info

**Cityworks AMS****Next poll at:**

in an hour

**Status:**

Succeeded

**Remote ID:**

69152



**Concord St Resident**   
(<https://seeclickfix.com/users/1568725>) | Registered User

Opened

Replace Leash Law Signs!: I am a dog owner in Deering Center. I reported this issue last year and received no help. All of the leash law signs are either gone or illegible. Recently there have been several aggressive dogs off leash that have attacked other dogs, cats, and even children! This is no longer just a Baxter Woods issue, the majority of incidents that I have seen were near Concord/Norwood. Please put up new signs and replace the ones that are unreadable. If not, I fear that you will have a dead dog, cat, or even child on your hands. I'll look forward to seeing swift action. Thank you.

06/27/2018 1:16 PM



**Fix It! Portland**   
(<https://seeclickfix.com/users/873807>) | Verified Official

Assignment

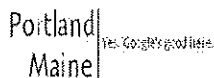
Fix It! Portland assigned this issue to Public Works

06/27/2018 3:17 PM

Check integration

1/11/2019

City of Portland Mail - Fwd: RE: Baxter Woods



Jeff Tarling <jst@portlandmaine.gov>

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**Fwd: RE: Baxter Woods**

1 message

Jeff Tarling <JST@portlandmaine.gov>  
To: jst@gapps.portlandmaine.gov

Fri, Jan 11, 2019 at 11:24 AM

>>> Randy Billings <rbillings@mainetoday.com> 4/15/2014 12:09 PM >>>

Thanks for forward, Jeff. But could you please forward the original emails? I would like to reach out to these people. If you need me to file a formal Freedom of Access Act request, I would be more than happy to do so; just let me know.

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**From:** Jeff Tarling [mailto:JST@portlandmaine.gov]  
**Sent:** Friday, April 11, 2014 12:20 PM  
**To:** Randy Billings  
**Cc:** Joe Dumais; Troy Moon  
**Subject:** Re: Baxter Woods

Hi Randy -

Attached our Mayor Baxter Woods park information, including the dedication plaque, MBW brochure which includes a brief description of the prescribed uses by the donor, Governor Percival Baxter, the 1936 Park map, & a draft of a possible new sign that could help educate visitors to the park (the sign mockup was donated by a frequent visitor to the park and dog owner / sign graphic professional).

Baxter Woods has a variety of uses / visitors including - hiking / walking, mountain biking, nature viewing of trees, flora & fauna; outdoor environmental education, and visitors with dogs. While all uses are up in Baxter Woods as it is in all of Portland's

1/11/2019

City of Portland Mail - Fwd: RE: Baxter Woods

park system, dog use seems to increased exponentially due to popularity. As with any use, for example if the current dog visits where switched with say mountain biking we would likely hear from dog walkers or other groups that there are too much of that activity. Problematic dog visits seem to be limited to small numbers but indicative of the overall use increase.

In the email below also included the requested recent complaints received. In a nutshell - the park has many types of uses and visitors. Mayor Baxter Woods is unique due to donor guidelines or conditions set in the deed to the City by Governor Baxter. "A sanctuary for Wild Birds" was one of the primary uses along with a "held in trust for the people of Portland as a Municipal Forest and Park for public recreational and educational purposes..." kept in a natural state and as a sanctuary for wild birds", the deed mentions use of pedestrians and horses in the use. (see the attached brochure)

I cc'd Troy Moon and Joe Dumais who may have more information on parks & policy etc. More details soon on our proposed public meeting.

Jeff

>>> Randy Billings <rbillings@mainetoday.com> 4/11/2014 9:43 AM >>>

Hi Jeff,

This is a follow-up to our conversation. If you could please send me whatever background material, including the complaints the city has received, about dogs in Baxter Woods, I would greatly appreciate it.

Randy Billings

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-----  
4/2/14

1/11/2019

City of Portland Mail - Fwd: RE: Baxter Woods

Jeff:

I hope the early spring is treating you well. I took my 6th grade students to Baxter Woods this morning and once again encountered the problem of many off-leash dogs. Many of our students who come from immigrant and refugee families are terrified of dogs. Extremely terrified of them. Despite my coaching every time we head to Baxter to stay still if a dog is coming at them, most run in fear and the dog chases them thinking it is a game. Once again, I had a boy in tears today, terrified, hiding behind a tree crying. I asked the seemingly oblivious dog owner to please keep the dog from chasing our students. I did not see any action on his part. There was a small girl walking the woods today with her family, huddling next to her mom scared when she saw a different pair of off-leash dogs in the forest. I saw these same dogs poop in the forest and the dog owner do nothing about it. Actually, he wasn't even watching the dogs as they were running in the direction of the family. Just about every time I take students to the woods we encounter these problems many times throughout the day, particularly with my morning classes. I understand it is difficult balancing the desires of dog owners with the other community uses of the space, however, I am wondering where the conversation is at regarding dogs in the woods. Is there an expectation that dogs need to be on-leash? If so, could we add some signage about this and enforce it? I would really like to use the woods this spring and want to find ways for it to be a positive experience for all of my students. Aside from the dog issues, the students had a blast today and asked to go to the woods for the rest of our science classes for the year.

Any help you could offer is much appreciated.

Thank you,  
6th Grade Science  
Lincoln Middle School

=====

12/15/13

Hoping you can help keep; there's talk in the Deering hood that the schools are attempting to enforce a leash law in Baxter woods. All of the doggy wood hood over here are concerned! These woods are our daily stomping grounds and we want to keep them leash free for our pups to pounce and play.

We've heard it's being sent to the council for a vote...could you message me when you see it up on the council agenda...we plan to organize against this.

Also, wondering if you could help guide me...I'd like to get a copy of Baxter's deed to the city for this patch of wood...how do I go about finding it????

1/11/2019

City of Portland Mail - Fwd: RE: Baxter Woods

9/13/13

Hello,

I obtained your email from Jamie Parker, who was returning a message I left regarding my recent experiences at Baxter Woods park off of Forest Ave. He suggested I forward my comments and concerns to you.

I have been frequenting that park for about two years since moving to Portland. Since spring has arrived however, it has become more and more something of a glorified dog park where various breeds run around unleashed and well beyond the means of their owners reach. I usually visit with my 4 year old who is unfortunately terrified of dogs after having been bitten, yet even if she wasn't afraid, I myself would not like to be caught unawares by the several dogs who inevitably will run up to us while we walk the paths. Owners usually beckon their pets to no avail and they cannot grab them when they are 10-15 feet ahead and quite frequently sometimes show no wish to contain them. I almost always get the supposed reassurance that their dogs 'are really friendly' or that they 'love children'.

I must admit, it's not my desire to please strangers' dogs. For the sake of their happiness and freedom, my particular family, and I believe many others, are negatively affected while visiting what should be a peaceful slice of nature. The dogs eagerly sniff, lick, jump and prod. I am forced to quickly pick up my daughter as she freezes in fear and hides behind me. Sometimes with a drink in my hand or other items, this isn't possible and I shouldn't have to do this. I always immediately inform them my daughter is afraid of dogs and they usually apologize and maybe try to go after their dog, but the damage is done and increasingly my daughter is afraid of who's around the corner and I'm more and more angered, to the point I looked up the park website, obtained the number and left a message that Jamie kindly answered.

The rules of the park clearly state the dog must be leashed OR under voice command, which I take to mean heeding carefully their owner's commands. This is almost never the case. These are animals after all and are eager to explore, and who can blame them when their owners put their needs before other people. I don't believe Gov. Baxter intended these lands to be an animal park. It should be the exception not the norm to see an unleashed dog, especially throughout trails that meander and are sometimes well disguised with summer foliage.

My daughter and I love to identify plants, leaves and wild edibles and we're genuinely on edge to get on our knees and do so, when several dogs in a half hour period will come in contact with us in a way that invades our private time and personal space. It could be a small breed, but we have come across a Great Dane two weeks ago who was unleashed. It is extremely selfish and entirely intentional that owners unleash their dogs; the dogs are almost always leashed entering the park (of course due to traffic), they are then set free to have their fun once under cover of trees. There have been only two occasions where I have been upset enough to vocalize my feelings to the owners themselves and they weren't well received because for some reason it's seen as abnormal to not want to greet every unknown dog with cheer. Not everyone is a dog lover. Humans rights should come before animals. Again, if it was an occasional

1/11/2019

City of Portland Mail - Fwd: RE: Baxter Woods

occurrence I would not think twice, however my daughter has been enrolled in a local preschool, Roots-N-Shoots on nearby Clinton Ave. and part of their curriculum is to regularly visit Baxter Woods. I would be very angered to know that this is still an issue while toddlers are exploring the woods. There are several places in Portland where dog owners may take their pets for their pleasure. Not every natural space should automatically be one. It's not exclusive to Baxter Woods; even the Eastern Promenade is experiencing a lot of unleashed dogs running up and down the hills just adjacent to a children's playground. However, it's more of an issue when as I mentioned the trails and paths are significantly more hidden.

I appreciate your reading these concerns. If you would like to contact me for any reason, please do so here or at 978-489-4982. Thank you again.

Regards,

Yael

Staff writer

Portland Press Herald/Maine Sunday Telegram

Desk: 207-791-6346

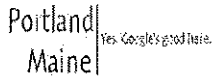
Cell: 207-615-5271

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1/11/2019

City of Portland Mail - Fwd: Re: Yes to dogs in the woods - an idea!



Jeff Tarling <jst@portlandmaine.gov>

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**Fwd: Re: Yes to dogs in the woods - an idea!**

1 message

---

Jeff Tarling <JST@portlandmaine.gov>  
To: jst@gapps.portlandmaine.gov

Fri, Jan 11, 2019 at 11:43 AM

>>> Ben and Shari Shambaugh <shambaugh@gwi.net> 5/5/2014 5:45 PM >>>

Hi Jeff,

As you may have noticed, Baxter woods is looking great these days. Dog owners are listening and they care about their woods, their city, and fellow Portlandians! I have a suggestion, which is to keep the rules as they are (allowing dogs off leash) and enforce them. At \$250 a fine for not picking up after your dog, the city staffer will pay for their summer job many times over -- and if the person shows up at random times and issues fines, people will get the hint. After a few summer months, it will not be needed any more and will not cost the city anything or take valuable city council and citizen involvement time!

At the same time, I would put signs and a trash can at the entrance most used by the neighborhood, the entrance on James Street.

Thanks for listening  
Ben Shambaugh

Feb 11, 2014 02:13:51 PM, shambaugh@gwi.net wrote:

>

Thanks Jeff. I just ran into our mutual friend Norm Buttrick who gave me the gist of what you said. Thank you for your care and oversight of the forests of Portland! I would enjoy a walk through with you some time. Let's try to find a time that works.

>

>

All the best,  
Ben Shambaugh  
761-1569

on Feb 10, 2014, Jeff Tarling <JST@portlandmaine.gov> wrote:

>

>

Hi Ben -

First, thanks for visiting 'Mayor Baxter Woods' so frequently, that is exactly the intent of Percival Baxter

<https://mail.google.com/mail/u/0/?ik=5cb7043df0&view=pt&search=all&permthid=thread-f%3A1622383044896611723&simpl=msg-f%3A1622383044896611723>

1/3

1/11/2019

City of Portland Mail - Fwd: Re: Yes to dogs in the woods - an ideal

and role of having a forest in the city.

In the past few weeks Forestry crews have been removing invasive Norway Maple trees in Baxter Woods. Our top two primary goals in managing the trees at Mayor Baxter Woods is safety and keeping the woods as 'natural' as possible. The tree removal mentioned targeted Norway Maples as they will tend to overtake or out compete the native Red & White Oaks, Yellow Birch and Beech trees. (They likely seeded into the park from trees planted along Stevens Avenue.)

Recently in January the students at McAuley High School began working on a survey for Hemlock Woolly Adelgid another exotic pest from 'away' that threatens our native Hemlock trees which make up the largest tree type in the woods. Unfortunately the pest was found the first day. Thus our work at removing the Norway Maples to remove the seed source to hopefully keep the Norway Maples from spreading into new areas if we loose our Hemlocks.

I would be glad to meet you at the park someday for a walk. Also attached some Baxter maps & information. The first one is the View of Deering from 1886 where you can see the old 'Forest Home', the 1932 map of the woods, 'Forest Home', our recent brochure of the park.

Thanks,

>Jeff Tarling

Info on Norway Maples -  
[http://www.na.fs.fed.us/fhp/invasive\\_plants/weeds/norway-maple.pdf](http://www.na.fs.fed.us/fhp/invasive_plants/weeds/norway-maple.pdf)

>

>>>> Cheryl Leeman <cal4161@yahoo.com> 2/7/2014 7:43 AM >>>

Good morning, Ben. thank you for your thoughtful comments regarding Baxter Woods. It is indeed one of the jewels of the city's park system By copy of this email, I am asking Jeff Tarling, City Arborist to respond to your concerns. Appreciate hearing from you. Best, Cheryl

>

>

On Wednesday, February 5, 2014 6:38 PM, Ben and Shari Shambaugh <shambaugh@gwi.net> wrote:

>

>Dear Cheryl,

Thank you for your continued great work on behalf of all of us!

I am writing with a question about Baxter Woods. Like many in Deering, I am in Baxter Woods not once but several times a day with my dog (walking or today on cross-country skis!). It is a treasure for the neighborhood and the city and for me a place of spiritual solace and connection with nature, neighbors, and new friends. I am pleased that Baxter woods is well cared for, with bridges, paths, and recently sand added when walkways were icy.

1/11/2019

City of Portland Mail - Fwd: Re: Yes to dogs in the woods - an ideal

My question is about a series of tree cutting over the past few weeks. I understand needing to thin for the health of the woods. This, however, seems excessive and contrary to Mayor Baxter's intention for this special place. I have looked and have found no notice or other explanation, only more and more red dots - an ominous portent of more cutting to come. Do you know what is planned? Is there anyway that this could be shared with the users of the park?

Thank you much. Hope to see you around.

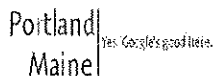
Ben Shambaugh  
147 Clinton Street  
761-1569  
(You may remember me as the dean from St. Luke's Cathedral)

>Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

>  
>

1/11/2019

City of Portland Mail - Fwd: WHAT?!! no dogs off leash in Baxter Woods! What would Gov. Baxter say?



Jeff Tarling <jst@portlandmaine.gov>

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**Fwd: WHAT?!! no dogs off leash in Baxter Woods! What would Gov. Baxter say?**

1 message

Jeff Tarling <JST@portlandmaine.gov>  
To: jst@gapps.portlandmaine.gov

Fri, Jan 11, 2019 at 11:41 AM

>>> Bonnie Washuk <bwashuk@sunjournal.com> 4/23/2014 12:06 PM >>>

Hi Jeff, After reading today's story in the Press Herald I emailed Leslie Bridgers. She gave me your contact email.

Like a lot of people, I take my dog, a black lab named Lucy, to Baxter Woods 3 or 4 times a week. Before I let her off leash I spent many hours training her. She's good with recall now, helped my the fact I always have treats in my pocket. (Lucy loves to eat.)

I do plan to speak or oppose plans to no longer let dogs off leash in Baxter Woods. Remembering how the late Gov. Baxter LOVED dogs, I'm guessing he would not approve of banning off-leash dogs.

I'm usually in and out of there in 20 minutes, quick, but I really love the ability to enjoy nature so close to home. The woods is very well kept, I do my part to keep it that way. (pick up always).

It's a great resource to let Lucy sniff and run free. We both enjoy mingling with other dogs and dog owners. From what I observe, it is a community of responsible dog lovers.

That said, there's always room for improvement. Not everyone picks up after their dog, which is wrong.

One day there was a class from the school, I called Lucy, leashed her until the little ones passed. A few Somali students seemed scared even though Lucy didn't do anything and was on leash. Other students came up and asked if they could pet her, which they did. If it's a culture issue for immigrant students, maybe they could be taught that dogs are pets here.

Anyway, can you keep me informed of when any meetings will be held?

I will probably share my sentiments with Mayor Brennan and councilors.

Many thanks,

Bonnie Washuk Zaccaro and Rick Zaccaro, 22 Aiden Circle, Portland.

Home: 773-3243.

Like Page

Responsible Dog Owners of Baxter Woods Dogs

November 5, 2018 ·

Posting to you all from Sarah Maloney: Good morning RDOOBWD!! Saw your post about german shepard puppies playing...lately I've noticed on several occasions out-of-control dogs who's owners do nothing to control them. I am a dog person, but last week one lunged at me aggressively and attacked my dog, and this AM an owner with two dogs did nothing when his dogs ruthlessly hounded mine when he was headed in opposite direction- he had no voice control over the dogs, and one of them made a point to turn back to attack mine several times- another friend reported she was also scared by an aggressively behaving dog towards her last week...we need to make sure the woods stay safe for all, and being able to be leash free doesn't mean your dog can act all wild and crazy...if I post this I'll be a nag, but maybe you guys could put in a public service announcement for well-controlled and well-behaved dogs in the woods?? Thank you!!!

Liz Miraglia McGranahan Unfortunately that's the risk you take when taking dogs to unleashed dog parks, which Baxter Woods is not, by the way

2

Manage

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· Reply

· 10w

Responsible Dog Owners of Baxter Woods Dogs Liz, Baxter is indeed for unleashed dogs.

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· Reply

· 4w

Write a reply...

Jenny Siler Thank you Sarah Maloney!

Responsible Dog Owners of Baxter Woods Dogs

August 31, 2018

This from Jeremy, a fellow dog walker:

"I don't think there's anything that can be done but I'm noticing a fair amount of unfriendly leashed dogs in Baxter Woods. I appreciate that they're leashed but I'm constantly forced to grab my dog and leash him up so he doesn't get bit by a dog that probably shouldn't be taking walks in an off leash dog park."

[ DEAR WALKERS - I've heard this comment from a few people. First, be glad they're LEASHED. It's the unleashed ones with disagreeable owners that are worrisome. Yelling at them just makes it worse. Maybe first ask them to control their dogs, then asking that they be more considerate. READERS, HOW HAVE YOU HANDLED THIS SUCCESSFULLY?]

Gini Monsell I've heard this said by so many people, but Baxter woods is NOT an 'unleashed dog park'. We are lucky enough to be able to use it as such, but there are stipulations to the rule. Unleashed dogs MUST be within 50 feet of their owner and must be under STRICT voice control. If you are following these rules, one shouldn't have to 'grab my dog and leash him so he doesn't get bit.' Everyone in the neighborhood has the right to use that park. It is not intended for the use of unleashed dog walkers only. It is also for the local schools, walkers, bikers, cross-country skiers, etc. and they all have a right to enjoy it without being disturbed by off leash dogs and their poop. This "It's an unleashed dog park, don't come here if you don't like it" mentality is going to ruin it for us all one day. (I'm sure this comment won't win me any popularity contests in this group but oh well, its the truth lol).

5

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• Reply

• 19w

Judy Ann Haas Yes! My thoughts exactly. Well said.

1

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• Reply

• 19w

Gini Monsell \*\*\*Also: a dog with leash aggression towards a loose dog running up on them, doesn't mean the dog is unfriendly. Furthermore, some people keep their dogs leashed not because the dog is aggressive, but because they dog is a runner. Either way they still have a right to be there.

6

Manage

Like

• Reply

• 19w

Jeremy Conn I understand all these factors they weren't relevant to my experiences however

Manage

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• Reply

• 19w

Paula Gates I no longer live in Portland but when I did I was deeply grateful for a place like Baxter Woods. Having to call my dog in a couple of times during each walk seemed an acceptable price to pay for such a treasure of a place.

I have a pitbull and often called her in simply to allow others who seemed uncomfortable to be comfortable again...who wants to rock such a lovely boat

2

Manage

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• Reply

• 19w

June Delano Many dogs (including mine) only bark aggressively when leashed. Hopefully, people will have patience (and remember that our wonderful pets are also territorial canines.)

1

Manage

Like

• Reply

• 19w

1 Reply

Mike Margate Been going there for years until recently. Went today and saw a sign for leashed dogs. When did that happen?

Manage

Like

• Reply

• 19w

Responsible Dog Owners of Baxter Woods Dogs Mike - Leashed or voice-controlled dogs has always been the rule. The signs are new.

Responsible Dog Owners of Baxter Woods Dogs

January 12, 2018 •

Spooky morning at Baxter! Plus lots of poop to pick up. Please, please pick up any you see, in addition to your own dog's. It's pretty disgusting to be dodging it on the path.

And my two dogs each brought me a dead squirrel within 5 minutes of each other. Thoughtful. They didn't have wounds but I'm thinking they froze to death and fell.

Dogs and hysteria

People, I think it's time to bring it down a notch. And especially, we should not be doing it in this forum. Keep in mind that we two-leggeds do a lot more damage to each other than the dogs

ever do.

We're all grateful for a respite from the world that's offered by Portland's parks. I'm in Baxter Woods frequently and find that HUMANS go there for community, and for their dogs. Over the years I've met a lot of nice people --and dogs-- and have made a few friends. 99% of the time all goes well and often dog owners will gently remind others of the need to pick up or to watch their dogs. Some of us control our dogs too much, others are more generous both with dogs and others. We humans all need to do a better job being responsible. Let's not make this another us-versus-them situation.

26 Feb 17 · 19 neighborhoods in General  
ThankReplyReply

Andrea Gaines  
Andrea Gaines, Deering Center · 26 Feb 17  
Thanks, Dawn. You speak very well to the issue.

Ron Harrity  
Ron Harrity, Deering Center · 26 Feb 17  
Respectfully, I can't think of a better use of this forum than to discuss our shared green spaces.

Robyn Brown  
Robyn Brown, Deering Highlands · 26 Feb 17  
This is the appropriate forum to serve as a reminder that there is a leash law in Portland. It is also required that you pick up after your dog.

Andy Graham  
Andy Graham, Rosemont · 26 Feb 17  
As has been stated before, Baxter Woods and Capisic Pond Park are two of the very, very few places that dogs can be off-leash legally in Portland.. Robyn, while there may be a leash law in Portland, dogs are allowed off-leash while under voice control in both of those places. There are many, many, many acres of public space available for you folks who are timid around dogs - please leave those of us who are responsible dog owners those few spots we have left. Help us police irresponsible dog owners, but don't insist on regulating every public acre in Portland.

Kevin T. Cole  
Kevin T. Cole, Oakdale / USM · 26 Feb 17  
Baxter Woods is a designated off-leash area. We still must pick up after our dogs.

Dawn Leland  
Dawn Leland, Rosemont · 27 Feb 17  
I could have stated my initial comment better -- discussion, yes, but not mean-spirited,

us-vs.-them comments that I felt were not productive.

Lorrie Ferrari

Lorrie Ferrari, Rosemont Triangle-27 Feb 17

I have always lived with dogs and never expected tax payers to provide for them - there are 2 dogs parks (I also don't use them but they do exist) and I don't feel that my dog or myself have the right to limit others enjoyment of public spaces because they are afraid of dogs and packs of dogs. Unfortunately "responsible" doesn't mean the same thing to everyone but I'm sure none of us wants our dog harmed or killed by a responsible dog owners dog

mary emmons

mary emmons, Valley-27 Feb 17

I was walking my 2 little dogs the other day (on leash and poop bags in hand) in the city. as I was walking by a gentlemen he tried to kick my dog which was doing nothing. As I have said portland is becoming very unfriendly to dogs. He is very lucky I just called him alot of vulgar names. As a taxpayer in Portland and paying way too much in taxes etc . I find portland is not a nice place to live anymore. I respect people who dont like dogs but I also would like them to respect me and my dogs. As far as dog parks they are over crowded and dangerous for my little ones. We need more open spaces for our pets. As a TAXPAYER who pays alot I would like a little open space to let my dogs be free if only for a few minutes . I try to get to ocean ave once in awhile but it is hard for me to get there. Sooo respect goes 2 ways

Sarah Maloney

Sarah Maloney, Deering Highlands-27 Feb 17

Hello neighbors, I'm saddened by the comments in this feed and the un-neighborly feel of several of them- As a dog owner I greatly value Baxter Woods for what it offers me: a safe and beautiful space to allow my young dog to run free which aids greatly in his overall demeanor and my ability to own him and have him as a companion.. I also typically go between 6-7 AM or late in the day when no one is really there except the regulars. He is not aggressive towards anyone and ignores humans completely. I do understand however that this is not a DOG park, this is a city park, and perhaps it will become necessary at some point to create dog walking hours similar to Willard Beach and other shared human/dog spaces. One thing that would really help in the park is more containers to dispose of poop, IMO- I try to be hyper vigilant about where he goes and will frequently go off trail to tromp after his toileting to get it picked up- but it is a HUGE problem, agreed. I would hope as this discussion continues that this not become an us versus them between dogs and humans, again, it is a city park and as a dog owner in the neighborhood I thank my lucky stars it exists and would hate for it to go away.

Kevin T. Cole

Kevin T. Cole, Oakdale / USM-27 Feb 17

My sympathy for those with an irrational fear of dogs was destroyed when I was physically assaulted and injured by a person with such a fear. It's really a mental health issue and should be treated as such.

The only reason there is a taxpayer cost for dogs is because our city has decided to have a leash ordinance, which resulted in demand for creation of off-leash areas and dog parks. When I was a child in Portland, neither existed. Dogs roamed free. The biggest issue with that seemed to be that dog poop showed up on lawns--big deal. Now, the only place in Portland where I am allowed both to let my dog run free and to smoke a cigar is the forest behind Evergreen Cemetery.

Portland has changed a lot.

Bringfido.com

Baxter Woods

555 Stevens Ave, Portland, ME, US, 04103-0000

Share

Save

Website

Reviews

Directions

Or call (207) 874-8801 for more information.

Description

Baxter Woods is a forested retreat in the midst of residential neighborhoods where you and your dog can enjoy a stroll along the primary or secondary trails. Dogs must be leashed at all times and humans must clean up after their dogs.

Reviews

BringFido Traveler Rating

Baxter Woods has received a rating of 4.0 out of 5 bones by 1 dog owner on BringFido.

Gwen

More than one year ago.

We like it!

This park has a bunch of trails and an open space for dogs to romp. It is off leash, but make sure dogs are close when there are small children around as kids love running up to try to pet

my dog and I have to tell them not to. During the week it is pretty quiet and that's when I usually go.

Gayl Anglin

December 10, 2018 ·

Dear People that walk your dogs in Baxter Woods:

PLEASE put them on a leash. This morning was the second time in a month that I became part of an improptu dog rescue of someone's baby that took off on a wild run. And while I get that they may "never do this," all it takes is one time for them to get hit by a car. The dog this morning barely missed getting hit, save for me running out into the street to wave my arms frantically at the car who slowed and swerved at the last minute. This is an urban park and your babies need to be on leash.

Signed: Your neighbor and fellow dog lover

1515

7 Comments

Like

Share

Comments

Margie Arnett

Margie Arnett People refusing to use leashes drive me NUTS!

Manage

Like

· 5w

Alicia Hicks Olsen

Alicia Hicks Olsen First rule of owning a dog. Never say never. They will prove you wrong.

Manage

LikeShow more reactions

· 5w

Kayla Cavallaro

Kayla Cavallaro YES. omg YES

Manage

LikeShow more reactions

· 5w

Christine Lashua

Christine Lashua Hi, can you set it up so that I can share this. So important.

1

Manage

LikeShow more reactions

· 5w

Gayl Anglin

Gayl Anglin Yes!

Manage

LikeShow more reactions

· 5w

Penny Von Helmolt

Penny Von Helmolt Good work as usual Gayl. I remember you crawling on the 10 Freeway in LA- rescuing a poor little fellow. Bravo!

1

Manage

LikeShow more reactions

· 5w

Gayl Anglin

Gayl Anglin Ha. Those were the (crazy) days.

Responsible Dog Owners of Baxter Woods Dogs

June 13, 2018 ·

Does anyone know details of a rumored "bike camp" that may include Baxter Woods?

New signs are there at entrances. Oddly they do NOT include any "no smoking" notice. Again today we spotted a young woman smoking and politely said to her that it was not allowed. She kept on walking. What is it about timber and dry leaves that smokers don't get?

Responsible Dog Owners of Baxter Woods Dogs

June 4, 2018 ·

Does a poop bag in COLOR left on the path for a walker's return-trip pickup, more incline you to take it to the trash? Just wondering.

Also, found leash. \*\* Not- purple poop bag was pictured under this post\*\*

my note

Responsible Dog Owners of Baxter Woods Dogs

May 18, 2018 ·

Rochelle sent this 5/15:

This morning we noticed a Maillard duck family with very new tiny ducklings in Baxter pond [near Forest Av.]. They are very vulnerable in that small pond and helpless if dogs go after them. I'm hoping you can post something letting people know about them so they don't allow their dogs to harass them. Last spring, I witnessed people laughing while their dogs swam around chasing ducks in that pond.

I know someone else who witnessed teenage boys throwing things at them early this evening. She has called Maine Audubon about it.

Anyway thanks for listening and I hope you have time to ask people to keep their dogs out of the pond.

5/18: Unfortunately, I think they have already been eaten. We checked on them this morning. Dad was alone and then flew away while we walked around the pond looking for mom and babies.

Responsible Dog Owners of Baxter Woods Dogs What time was it that you saw these critters? Would love to time my walks to see them (dogs on leash of course).

Manage

Like · Reply · 34w

Liam Sullivan

Liam Sullivan I saw the 10 baby ducks tonight around 6pm with the mother duck. They are pretty amazing creatures and we are lucky to have them in our neighborhood

1

Manage

Like · Reply · 34w

Responsible Dog Owners of Baxter Woods Dogs

Responsible Dog Owners of Baxter Woods Dogs Oh good!

Manage

Like · Reply · 34w

Liam Sullivan

Liam Sullivan Update: Asher and I saw the ducklings this morning with what I am assuming are their parents; 1 duck and 1 drake. They look like they are healthy, growing and noticeably a lot more independent, but I only counted 8 ducklings today. Okay; back to work!

Responsible Dog Owners of Baxter Woods Dogs

March 19, 2018 ·

Way too much poop on the path, folks. Watch what your dog is doing!

How much more trouble would it be to just type two letters "th" instead of ' ' ?

Responsible Dog Owners of Baxter Woods Dogs

Responsible Dog Owners of Baxter Woods Dogs Of course the problem is how police are distributed in the community-- dog poop isn't high on the list. The park rangers do come in periodically but there aren't enough of them either to be everywhere, all the time. Just reality in what is not a police state. Luckily, emergency calls (see previous post) do get a quick response.

1

Manage

Like · Reply · 43w

Debra Ann Flynn

Debra Ann Flynn if people truly got fined for not watching their loose dogs, having no control of them in attack mode or for their waste I think all the parks would be better :)

Responsible Dog Owners of Baxter Woods Dogs

March 11, 2018 ·

Someone added a smile to the snowperson! Good idea. Except that another storm is due Tuesday. No smile for that. A few determined daffodils are peeking through the melted areas elsewhere.

A sudden flurry of people occurred, some having forgotten the time changeover. Two girls had to be told (nicely) not to smoke in the woods. Fire's unlikely now but the place is full of pine pitch AND smoking in parks is illegal.

A person came with a small female dog in heat, running loose, causing a brief rumble among the males. A couple people pointed out it's not a great idea to bring her loose like that, both for the dog's safety and to avoid a fight. Owner just ignored it all and walked on.

Responsible Dog Owners of Baxter Woods Dogs

March 10, 2018 ·

Dogs found a newly killed squirrel on the path. They were curious. I took it and stashed it under some logs. Then Joe ran back, dug it out, and went to a new location and dug a new hole, dropped in the squirrel, and covered it, using his nose in lieu of the missing front leg. Then he came back to me. What IS that? Reverence for the dead? Saving for a snack later? A commentary on my choice of burial?

# Complaints rising over unleashed dogs in Portland's Baxter Woods

[pressherald.com/2014/04/23/a\\_controversy\\_unleashed\\_/](http://pressherald.com/2014/04/23/a_controversy_unleashed_/)

By Leslie Bridgers

April 23, 2014

It takes only a short stroll into the trees from the entrance on Stevens Avenue to see who rules Portland's Mayor Baxter Woods.

On Tuesday afternoon, dozens of dogs romped through the park, some sprinting down the trails, a few fetching balls in a field and others ambling by their owners' sides – almost every one without a leash.

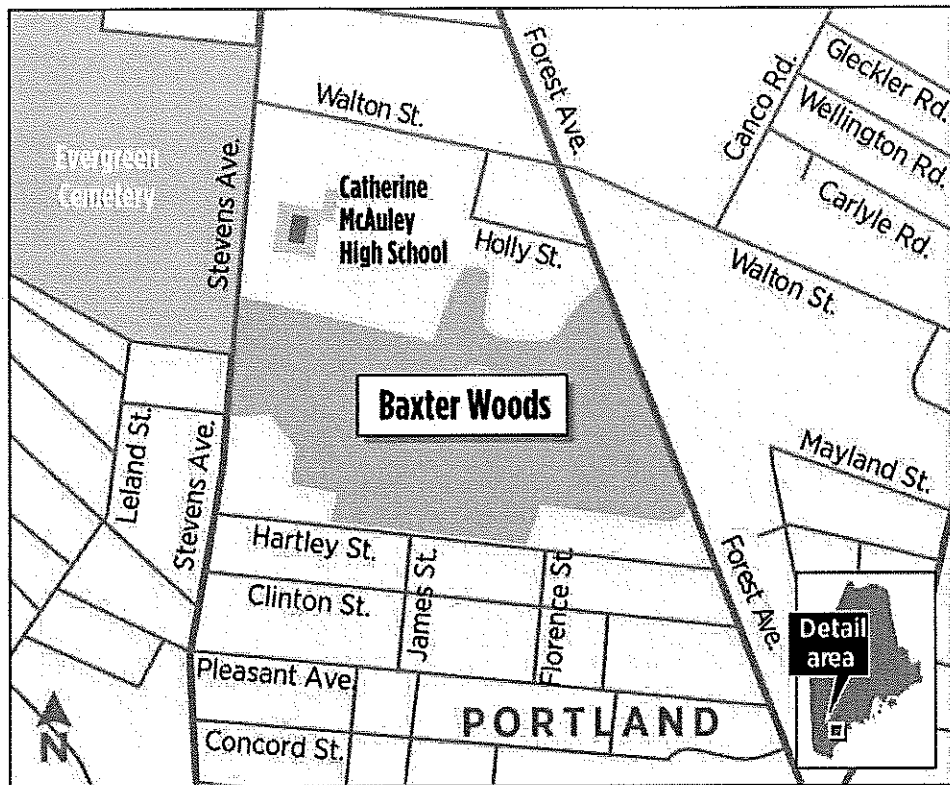
## Additional Photos



Moriah Duval of Portland walks her dog Penelope, center, and a friend's pooch, Kyra, during a visit to Mayor Baxter Woods in Portland on Tuesday. Dogs are allowed off-leash in the park if they're under voice control, but some visitors to the woods complain about the effect loose dogs can have on children and others. Shawn Patrick Ouellette/Staff Photographer



Tammy Riley of Portland walks her dogs Noelle, left, and Sophie off leash during a visit to Baxter Woods on Tuesday. City officials say they want to balance the needs of all of the park's users. Shawn Patrick Ouellette/Staff Photographer



STAFF GRAPHIC | MICHAEL FISHER

Dogs may not rule for long, however.

Complaints that loose dogs have chased and frightened children, among other things, have thrust the popular park into the recurring conflict between dog owners who want their pets to run free and people who, for various reasons, prefer them on a short leash.

The city is about to post signs and hold a meeting to warn dog owners to be respectful of other park users. If those efforts don't work, the signs warn, the city could require leashes in Baxter Woods.

While officials hope to avoid it, similar conflicts have escalated into culture clashes over dogs' access to beaches, parks and other public areas, dividing neighborhoods and communities in southern Maine, including in Portland and South Portland.

Most recently, dog owners in Scarborough forced a special election to overturn leash rules adopted to protect shorebirds such as piping plovers, one of which was killed by an unleashed dog on Pine Point Beach last summer.

The number of dogs in Baxter Woods has been on the rise since Portland banned dogs from Western Cemetery in 2001, the outcome of an early and bitter clash between pet owners and those who felt overwhelmed by loose dogs.

The number of complaints about dogs in Baxter Woods has risen, too, said Jeff Tarling, the city's arborist.

Dogs are allowed off-leash in the park if they're under voice control, Tarling said, but people's definitions of voice control vary. City code says an off-leash dog in Baxter Woods, or any other public area where leashes are not required, must be within 50 feet of its owner and immediately return to the owner's side when called.

Although dogs that use the trails regularly far outnumber the people who are opposed to them running loose, Tarling said, everyone should be able to enjoy the park peacefully.

"We're just looking at this to be so that all visitors have the same experience," he said.

Within the next month, the city plans to post signs at the park's four entrances and hold a public meeting to make dog owners more aware of the effect their animals can have on other people in the park.

That includes Yael Ashtari's 4-year-old daughter, who has been scared of dogs since she was bitten by one.

"The dogs eagerly sniff, lick, jump and prod. I am forced to quickly pick up my daughter as she freezes in fear and hides behind me," Ashtari wrote in a letter to the city in August.

Robin Lea, a sixth-grade science teacher at Lincoln Middle School, wrote to Tarling this month, saying she had taken students to nearby Baxter Woods "and once again encountered the problem of many off-leash dogs."

Lea said her immigrant and refugee students are particularly scared of the dogs – presumably because they're not familiar with them as pets. Many Muslims consider dogs unclean and avoid them.

Despite Lea's instructions for her students to be still, she said, "most run in fear and the dog chases them thinking it is a game."

And that could cause more than tears.

Two years ago, Tarling said, a middle school student who was running through the woods with the cross-country team was bitten by an unleashed dog.

There's no mention of dogs in the terms laid out by Percival Baxter in 1946, when he conveyed the 30-acre park to the city in honor of his father, James Phinney Baxter, a former Portland mayor. Rather, he deemed it a place for recreation and education, as well as a sanctuary for birds.

"There's no question it's probably not a place that birds are going to find inviting right now," Tarling said.

Before requiring leashes for dogs in the woods, he said, the city will try to educate dog owners and balance the needs of the park's various users. He hopes people will start policing themselves.

Baxter Woods is not yet a battleground similar to Scarborough's beaches, but David Victor can see the same thing happening if the city considers a leash requirement.

"People would come out," he said. "It would be like Scarborough."

Victor has been bringing his black Lab, Lily, to Baxter Woods twice a day for 10 years. Because of her taste for other dogs' excrement, he keeps her on a leash. But that doesn't mean he's fine with a leash requirement.

He fears that people who want to let their dogs run loose would stop coming, and the character of the park, as a place for dog owners to meet and mingle, would change completely.

"There's community here," he said.

*Leslie Bridgers can be contacted at 791-6364 or at: [\[email protected\]](#)[\[email protected\]](#)Twitter: [@lesliebridgers@lesliebridgers](#)*

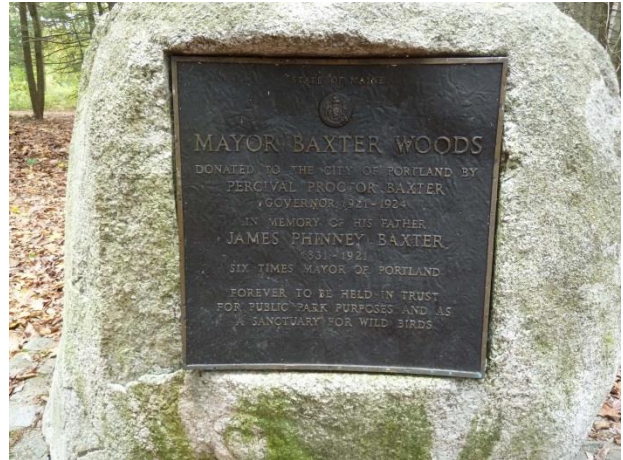
# Forest and Wildlife Habitat Management Plan

*for*

**Mayor Baxter Woods**

**Portland, Maine**

**Plan Date: May 18, 2018**



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*Forest Management, Ecology, and  
Certification*

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# Introduction

Mayor Baxter Woods is a unique late successional forest located in the heart of the City of Portland that was donated to the City by Governor Percival Baxter in 1946 “...for the benefit of the people of Portland public recreational and educational purposes...” that “ shall forever be kept in its natural wild state and as a sanctuary for wild birds...”

At the request of the City of Portland Parks and Recreation Department, Forest Synthesis, LLC has prepared an ecological assessment and management plan based on the principles laid out in Governor Baxter’s deed. Key components of this project include assessment, mapping, of and recommendations for:

1. Natural ecosystems, including wildlife habitats based on forest type, age, structure, as well as non-forest habitats,
2. Other natural features, including wetlands, streams, vernal pools,
3. Forest health concerns, including invasive plants, insects, and disease,
4. Cultural features and human use, including historic features, trails, and a qualitative assessment of impacts associated with recreational use,
5. Protection, restoration and enhancement forest ecosystems and wildlife habitats, and
6. Ecological monitoring.

## Management Goals and Objectives

### **Goals Based on Deed Restrictions**

Based on Governor Baxter’s deed to the City<sup>1</sup>, management goals for Mayor Baxter Woods (referred to hereafter in this report as MBW) include:

1. Use for public recreational and educational purposes, and
2. Keep the property in its natural and wild state and as a sanctuary for wild birds.

Restrictions associated with the deed that affect use and management include:

1. No streets for public conveyances and no cement walks, with only paths and trails for pedestrians,
2. Any trees that shall fall or that may become a menace to life may be removed, but no other trees therein shall be taken down;
3. Use solely by pedestrians; horses, automobiles and other motor vehicles are excluded, except those of the City used solely in caring for the woods.

### **Reconciling Current Uses and Deed Conflicts**

In attempting to identify specific management actions that are compatible with the deed requirements, several issues have been identified.

- The deed requires that MBW be “used by said City in trust for the benefit of the people of Portland as a Municipal Forest and Park and for public recreation and educational purposes” and

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<sup>1</sup> See Appendices for a summary of key deed restrictions

“shall forever be maintained for the sole use of pedestrians.” However, recreational uses conflict with the requirement that the forest be maintained as a “sanctuary for wild birds.” In particular, off-leash dogs are likely having a significant negative impact on ground-nesting and ground-feeding birds as well as those associated shrubs and small trees. A related concern is that the high density of trails and foot traffic adds to wildlife disturbance whether or not dogs are leashed. (see maps).

- Exotic (non-native) plant species identified as “invasive” by the Maine Natural Areas Program (MNAP) are altering the natural character in many places within MBW. The MNAP notes that because these plants can out-compete native species they are a direct threat to Maine’s natural and working landscapes. In addition, some exotic species not formally classified as “invasive” by MNAP are becoming well established in MBW. Because some of the invasive and exotic species are trees, the deed creates an internal conflict between the goal of maintaining the property in a “wild and natural state,” which implies that exotic species should be removed, and the restriction that trees that are a “menace to life may be removed, but no other trees therein shall be taken down.”
- Two species of exotic insect pests are found in the forest, notably elongate hemlock scale and hemlock wooly adelgid. Both insects kill hemlocks. While research into using predatory insects to control hemlock wooly adelgid shows some long-term promise, currently insecticides are the only effective control method to control with hemlock pest. Because of the widespread abundance of hemlock in MBW and in particular the dense hemlock midstory that characterizes much of the forest, maintaining all hemlocks may be impossible without repeated and widespread pesticide use. While tree mortality associated with native insects is a natural forest process, allowing widespread mortality of native tree from an exotic insect is not a “natural.....state” of the forest. Harvesting some of the midstory hemlocks threatened by these exotic insects would allow more light to reach the forest floor and encourage the establishment of other native tree seedlings. In the long run this would result in a more resilient forest of native species, but removing any hemlocks would conflict with the restriction on cutting of trees other than those that are hazardous.

### **Integrated Goals and Objectives**

Clearly identified management goals and objectives are essential to guide management and to provide a framework for evaluating whether or not management outcomes are successful. The plan utilizes the following framework:

**Goals:** Broad generalizations about the future resource conditions that management is designed to culture. Goals are often long-term in nature and may also encompass values of interest to the landowner.

**Objectives:** Detailed descriptions, pertaining to a specific goal, of what the resource will look like or the management approaches necessary to achieve that goal. Objectives are often measureable and often are more short-term in nature than goals.

The goals and objectives below attempt to balance the internal conflicts within the deed by considering the long-term dynamics of the forest and its context within the surrounding cityscape. In addition, forest management goals that are not specifically mentioned in the deed but are considered to be a core

component of ecosystem management consistent with deed requirement that the forest be maintained “in a natural wild state and as a sanctuary for wild birds” are included.

**1. Goal: Promote recreational uses that are consistent with maintaining the property in a wild and natural state and as sanctuary for wild birds**

Objective:

- Reduce disturbance to forest birds from recreational use

Monitoring:

- Number and type of ground-nesting and understory birds using the forest

**2. Goal: Maintain a natural ecosystem based on native plant and wildlife species and natural ecosystem processes**

Objectives:

- Develop and implement a plan to control invasive plants and other non-native plants
- Develop and implement a plan to control non-native insects that currently or could in the foreseeable future threaten forest health (e.g. hemlock wooly adelgid, hemlock scale, browntail moth, winter moth)
- Allow late successional forest conditions, including large trees, canopy gaps, and understory regeneration, to develop naturally over time
- Maintain and enhance shrub and old-field habitat
- Restore degraded areas near property lines and along trails

Monitoring:

- Extent and density of invasive and other exotic plants
- Extent and density of non-native insects that threaten forest health
- Forest species composition, density, and tree size by major vegetation layer
- Extent and condition of shrub and old-field habitat
- Condition of restored areas

**3. Goal: Protect soils and water quality**

Objectives:

- Manage trails to minimize the area of soil compaction from pedestrians
- Minimize concentrated runoff from trails and associated impacts within MBW and lower in the watershed
- Ensure that ditches, culverts, and other components of the drainage system are designed to accommodate the increasingly intense rainfall events associated with climate change

Monitoring

- Condition of ground-layer vegetation adjacent to trails
- Condition and size of drainage structures relative to needs for large storm events
- Erosion and overflow within the drainage system

#### 4. Protect City property from encroachment and inappropriate use

##### Objectives:

- Clearly mark all boundary lines with fencing or other means
- Restore areas where abutters are encroaching on City property
- Discourage unauthorized dumping of brush with appropriate signage

##### Monitoring:

- Condition of boundary lines
- Evidence of encroachment and unauthorized dumping

#### 5. Goal: Promote educational uses consistent with the MBW deed

##### Objective:

- Develop educational programs and materials that emphasize the natural ecosystem and wildlife values of MBW

##### Monitoring:

- Number and type of educational programs and number of different audiences

## Management Plan Summary

### Table of Cover Types and Land Uses

The following table summarizes major cover types (forest/non-forest) and land uses. More detailed cover type information and descriptions are included in later sections of the report.

| Cover Type/Land Use   | Area (acres) |
|-----------------------|--------------|
| Deciduous forest      | 5.57         |
| Coniferous forest     | 1.03         |
| Mixed forest          | 22.98        |
| Meadow/shrub          | 0.87         |
| Shade tree/mown grass | 1.47         |
| Pond                  | 0.22         |
| Parking               | 0.10         |
| Abutter encroachment  | 0.22         |
| <b>Total</b>          | <b>32.46</b> |

### Summary of Past management

| Dates   | Management Activity                                                              |
|---------|----------------------------------------------------------------------------------|
| 1947-48 | Individual risk tree removal to reduce per direction of Percival Baxter          |
| 49-50   | Red pine planted with help of Deering High School students near Forest Avenue    |
| 1989-90 | Some individual tree work (risk tree removal, etc.)                              |
| 2004    | Red pine thinning per direction of Maine Forest Service District Forester Dennis |

|                             |                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------|
| Late 1990's to early 2000's | Brennan                                                                                                             |
| 2000-present                | Removal of large Norway maple along Stevens Ave and near old home site                                              |
|                             | Removal of Norway maple along Hartley Ave and control of Japanese barberry, multiflora rose, and Japanese knotweed. |

## Summary of Management Recommendations - 2016-2025

Following is a summary of activities included in the later sections of the report. Please refer to the Individual Stand Descriptions and Recommendations and other referenced sections for additional details on implementing the recommendations. Management recommendations included in this plan represents the opinion of Forest Synthesis based on the forest ecosystem assessment, restrictions spelled out in the MBW deed, and consultations with City and outside experts.

- Final decisions on which management actions to take and when to implement them will require further consideration by the City.
- Detailed plans for most of the recommended activities should be prepared before implementation, and the results of management should be monitored as needed.
- Recommendations below are prioritized. Priority 1 items are considered to be most important and should be undertaken first.

| Stand or Area | Priority/Timing | Recommendations<br><i>(This is a summary only - see applicable management plan sections for details.)</i>                                                                                                                                                                                                                                                                                                                                              | Management Plan Sections                                                                       |
|---------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| All           | 1               | Develop and implement a plan to control and monitor invasive plants as well as other aggressive non-native plants.                                                                                                                                                                                                                                                                                                                                     | <i>Invasive Plants</i>                                                                         |
| All           | 1               | Develop and implement a plan to protect hemlock, red pine, and oaks from exotic insects and diseases that threaten these species in Maine. Highest short-term priority should be focused on mapping and protecting the old hemlock legacy trees in found throughout the forest.                                                                                                                                                                        | <i>Insects and Disease; Stand Descriptions and Management Recommendations</i>                  |
| 11, F4        | 1               | Many properties on Hartley Street are encroaching onto City property. Where MBW abuts residential properties the City should clearly mark the boundary with fencing or multiple posts and signs and work with abutters to restore degraded city property to a natural condition. Signs should be placed a various points along other boundaries and access points.                                                                                     | <i>Boundary Lines</i>                                                                          |
| All           | 1               | Recreational uses, and in particular unleashed dogs, are likely having and adverse impact on ground-nesting and ground-feeding birds. Because the Baxter deed requires that the City maintain Baxter woods for recreational use and as a sanctuary for wild birds, the city should require that dogs be leashed.<br>The city could consider closing some minor trails to create wider spaces between trails and thus minimize disturbance of wildlife. | <i>Recreational Use</i>                                                                        |
| F1-F4         | 1               | Develop and implement a site planting and maintenance plan that includes a) planting shrubs and wildflowers for wildlife food and cover as described in the <i>Stand Descriptions and Management Recommendations</i> for each area, and b) maintaining the wildlife habitat provided by these existing open/shrub areas by periodic                                                                                                                    | <i>Distribution of Habitat Types and Development Stages; Stand Descriptions and Management</i> |

|          |   |                                                                                                                                                                                                                                                                                                        |                                                                                                 |
|----------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|          |   | brush mowing; cutting encroaching trees would also be beneficial but apparently is not allowed per deed restrictions.                                                                                                                                                                                  | <i>Recommendations</i>                                                                          |
| All      | 1 | The City should have a legal and policy review to decide under what circumstances trees may be cut in MBW.                                                                                                                                                                                             | <i>Reconciling Current Uses and Deed Conflicts</i>                                              |
| All      | 1 | Monitor the results of management actions and make corrective actions as needed. Annually monitor breeding birds, vernal pools, insects and diseases, invasive plants, condition of trails, boundary lines, and recreation use.                                                                        | <i>Monitoring</i>                                                                               |
| 1        | 2 | Thin the red pine plantation and allow natural regeneration to develop. The goal is to promote the best trees, develop understory wildlife habitat, and reduce risk from insect and disease.                                                                                                           | <i>Stand Descriptions and Management Recommendations</i>                                        |
| 10       | 2 | Remove all Norway maple and plant native species in conjunction with drainage improvements near Forest Avenue                                                                                                                                                                                          | <i>Stand Descriptions and Management Recommendations</i>                                        |
| Trails   | 2 | Review all trails and develop and implement a trail management and maintenance plan to minimize erosion, runoff and soil compaction, restore a more natural character, and restore historic landscaping.                                                                                               | <i>Trails</i>                                                                                   |
| All      | 2 | Allow dead, dying trees, and downed trees and limbs to remain in place unless they represent a threat to trail users, and scatter downed limbs that fall on trails within the forest rather than chipping them.                                                                                        | <i>Wildlife Trees, Dead and Downed Wood, and Retention Patches</i>                              |
| 1-10     | 2 | The City has limited options to enhance habitat for birds and other wildlife due to the deed restrictions that do not allow tree cutting. In forest areas, allow late successional forest conditions, including large trees, canopy gaps, and understory regeneration, to develop naturally over time. | <i>Distribution of Habitat Types and Development Stages</i>                                     |
| VP1, VP2 | 3 | Consider enhancing the vernal pools to create more natural contours or a longer period when water is present, as described in the recommendations.                                                                                                                                                     | <i>Vernal Pools</i>                                                                             |
| n/a      | 3 | Compile historical and archaeological information from the Buttrick study and other sources to create a more complete and accurate history and maps of land use at MBW. These could be used for educational purposes and as a record for long-term management.                                         | <i>Historical, Cultural, and Archaeological Sites</i>                                           |
| 5a       | 4 | Removing some of the midstory hemlock in other parts of this stand would proactively reduce risk of hemlock loss while enhancing wildlife habitat by promoting understory and ground cover plant layers. However, this does not appear to be allowable under the deed restrictions.                    | <i>Distribution of Habitat Types and Development Stages ; Stand Descriptions and Management</i> |

# Maps



## Notes:

Base map: Google Terrain

## Forest Synthesis LLC

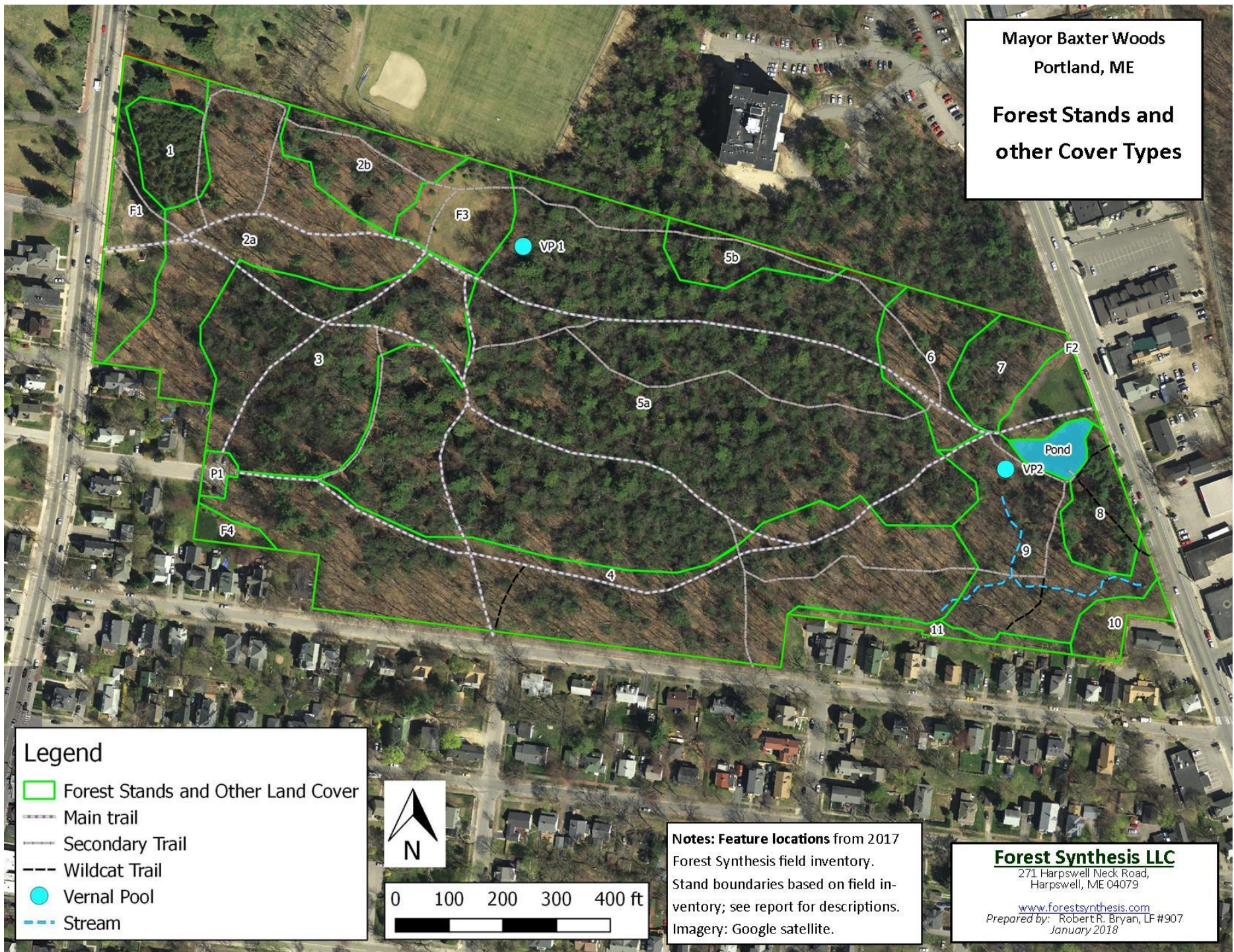
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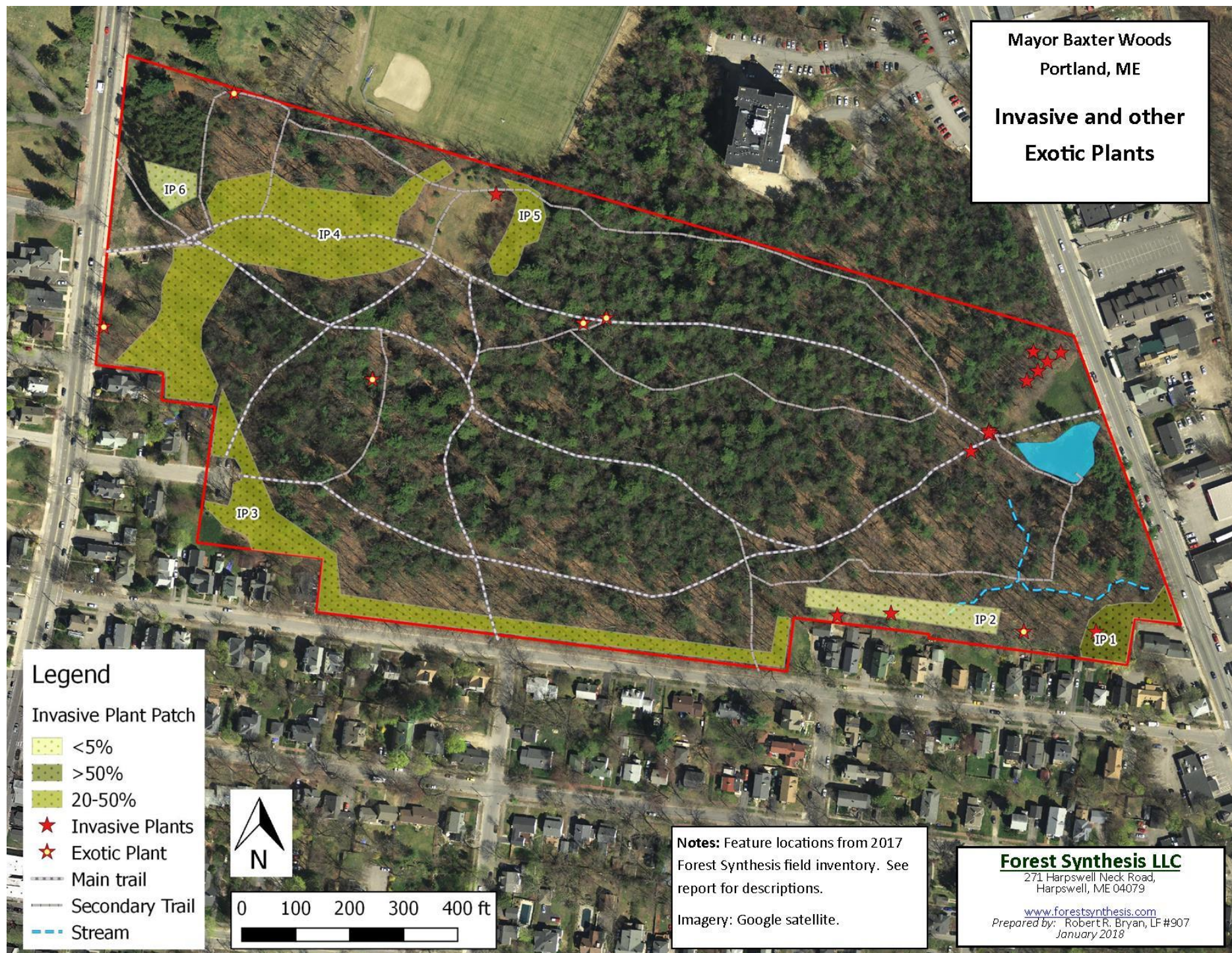
Prepared by: Robert R. Bryan, LF #907  
January 2018

Mayor Baxter Woods  
Portland, ME

## Forest Stands and other Cover Types

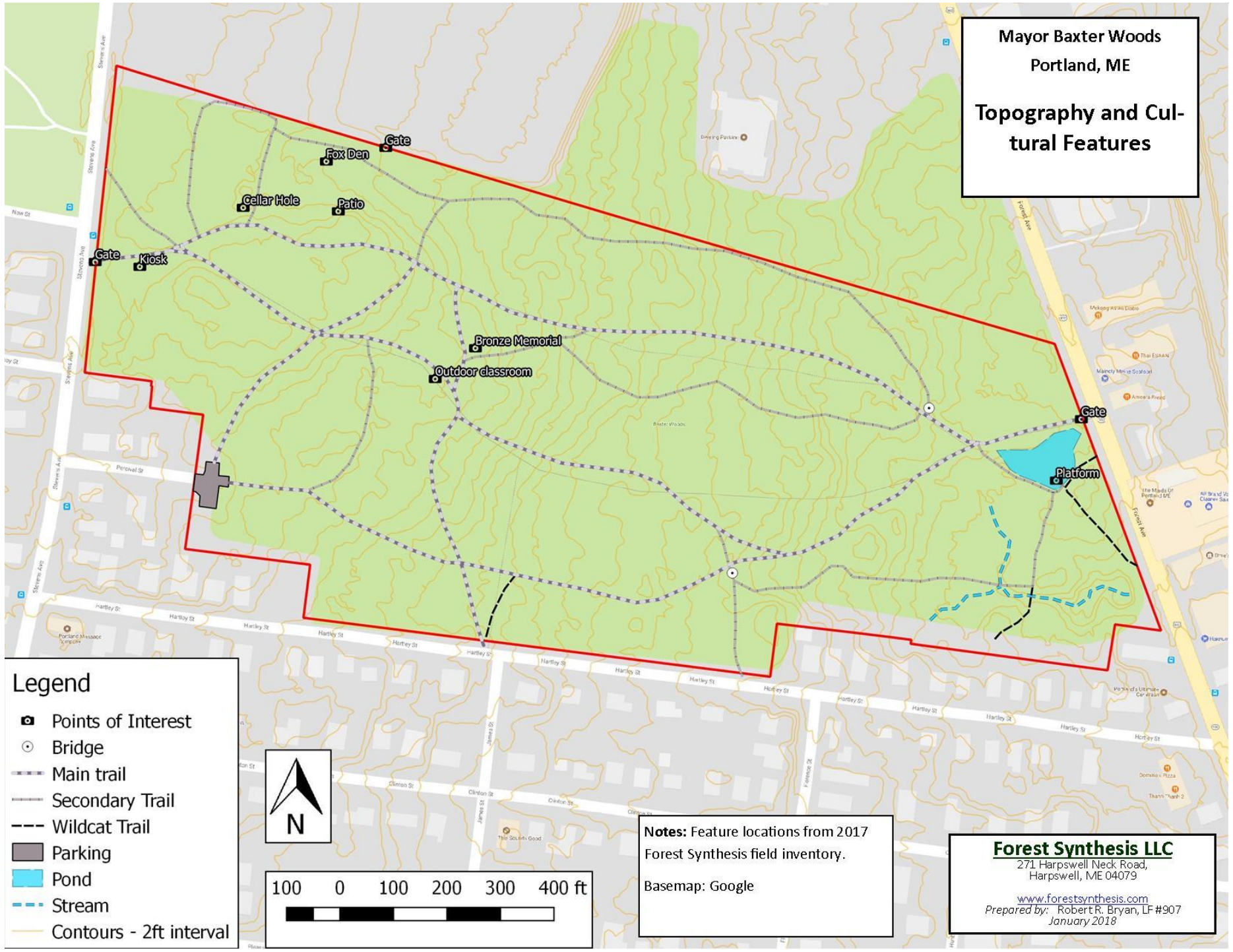


Mayor Baxter Woods  
Portland, ME  
Invasive and other  
Exotic Plants



Mayor Baxter Woods  
Portland, ME

Topography and Cul-  
tural Features



Legend

- Points of Interest
- Bridge
- Main trail
- Secondary Trail
- Wildcat Trail
- Parking
- Pond
- Stream
- Contours - 2ft interval

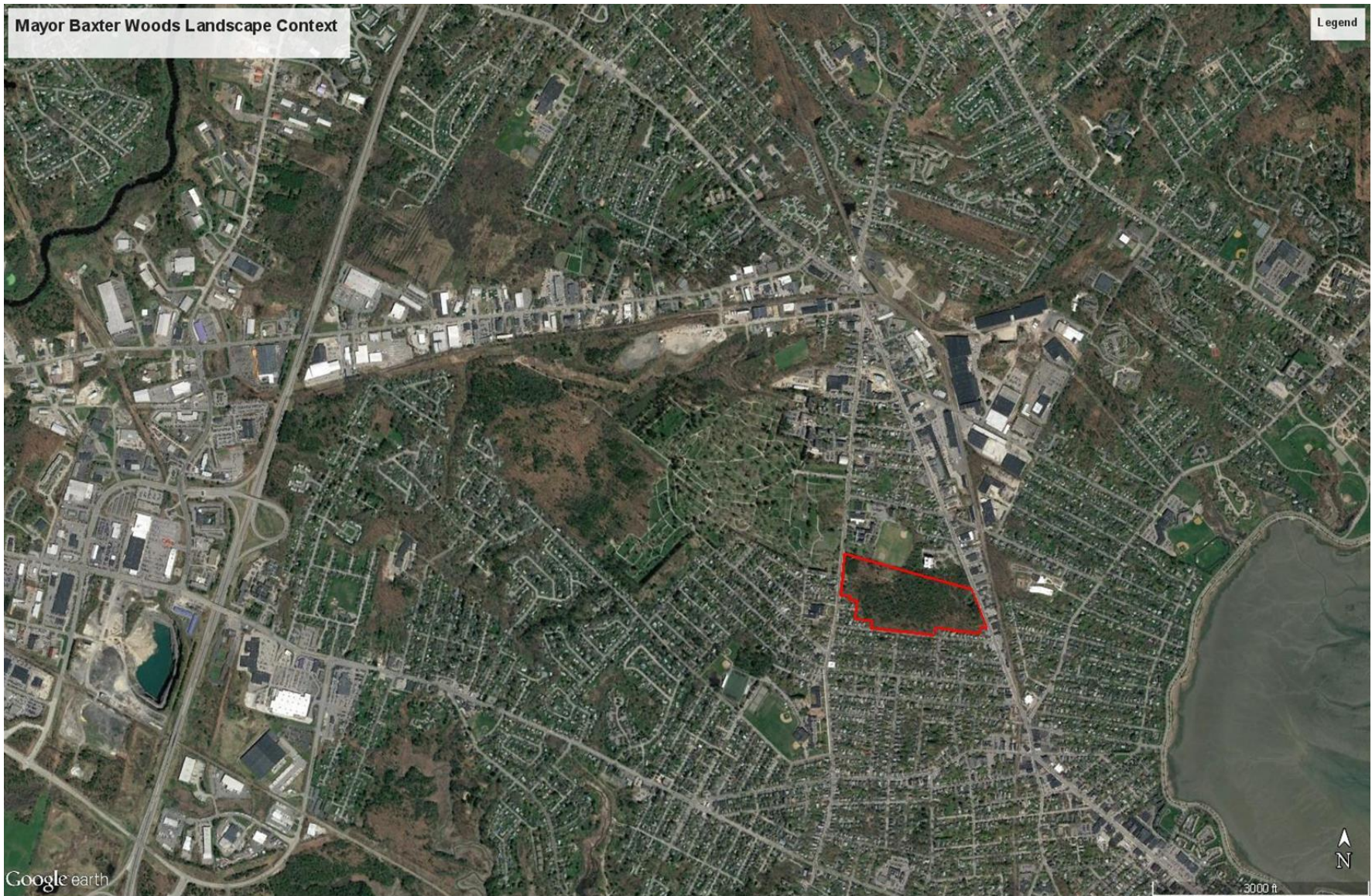


**Notes:** Feature locations from 2017  
Forest Synthesis field inventory.

Basemap: Google

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January 2018



**Notes:**

Imagery source: Google Earth

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[www.forestsynthesis.com](http://www.forestsynthesis.com)

Prepared by: Robert R. Bryan, LF #907  
January 2018

# Property Description

## General Forest Description

Mayor Baxter Woods is located between Forest Avenue and Stevens Avenue in the Deering section of Portland (see Locus Map). The property is predominantly forested and characterized by old stands of red oak, white oak, white pine, hemlock and other species. With dominant canopy trees 180-200 years in age and untouched in over 100 years of age, the average size and age of the trees is extremely rare. As an example of old oak-pine-hemlock forest Baxter Woods may be without par anywhere in Maine.

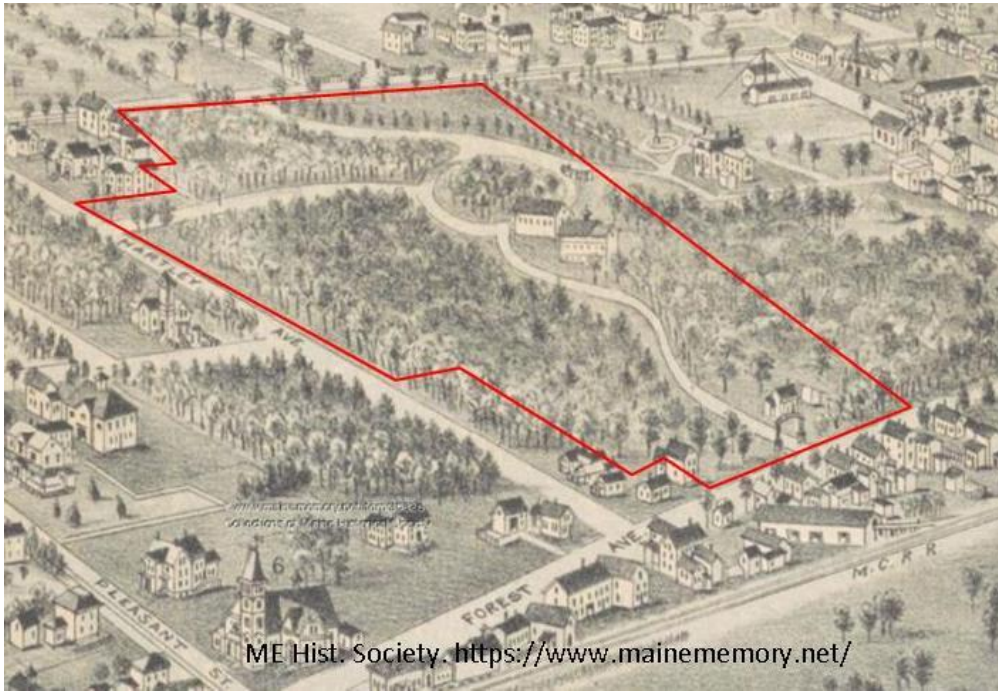
The terrain slopes gently in an easterly direction from Stevens Avenue to Forest Avenue. The soils originated as sandy outwash from glacial streams during the last ice age and range from excessively well-drained sands in the west to moderately well drained with a few somewhat poorly drained and poorly-drained pockets to the east. Intermittent seasonal water coursed and small streams drain to the east.

MBF is located in the Casco Bay watershed and drains to Back Cove, which is located short distance to the east.

## Property History

Woodlands in this region were cleared for farming beginning in the late 1700's after the Revolution and into the 19<sup>th</sup> century, with abandonment of marginal farmland beginning in the latter half of the 19<sup>th</sup> century. Most of what we see as forest today in southern and central Maine was formerly farm field and pasture.

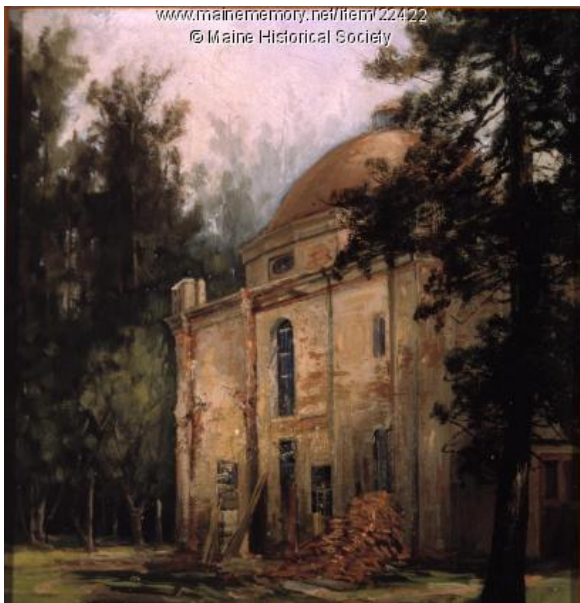
At MBW, smooth soil surfaces in the western third of the woods (Stand Map areas 1, 2a, 2b, 3, F1 and F3) and near Forest Avenue (areas 7, 8, 9 and F2) indicate that these areas were plowed at one time. Pit-and-mound soil topography is found on the remainder of the property. Pit-and-mound (or "pillow-and-cradle") topography develops over hundreds of years as forest trees tip over with age or wind and the root mass decays, leaving a mound where the root mass and uprooted soil were deposited and a shallow depression where the root mass once anchored the tree. Because pit-and-mound topography is smoothed out when former forest soils are plowed, its presence indicates that most of the central part of the property (Stand Map areas 4, 5a, 5b, and 6) was ever plowed, but it could have been partly cleared for pasture and or have been part of a farm woodlot. The presence of very old hemlock in the middle of the property is another sign that this area has always been wooded.



Baxter Woods was once part of the estate of F.O.J Smith, whose mansion “Forest Home” occupied the area near Stand F3 (see Stand Map)<sup>2</sup> from 1836 until the late 1800’s or early 1900’s. The mansion was surrounded by large trees at the time that Harrison Bird Brown painted the scene in 1880-1881<sup>3</sup>. While it is likely that Mr. Smith may have cut some trees for forest health and aesthetics, the size and apparent age of some of the overstory trees suggest that the forested areas were largely undisturbed during his tenure. This is confirmed by

1843 aerial map of Deering with current boundary of Mayor Baxter Woods outlined. “Forest Home” is located approximately where Stand Map area F3 is located today.

the 1886 Birds-eye View of Deering (Maine Historical Society, [www.mainememory.net](http://www.mainememory.net)), which depicts mature forest in the eastern two-thirds of MBW (see image). The same map shows young forest and/or planted trees near Stevens Avenue, which confirms the likelihood that that the western third of the property was cleared and plowed at one time.



This painting of the Forest Home library c. 1839 also confirms that Baxter Woods had many mature trees at that time.

The same hands-off management continued after the estate was sold to James Phinney Baxter in 1878. The Stevens Avenue kiosk notes that oldest tree in Mayor Baxter Woods dates from 1807. One white oak stump observed in 2017 and estimated to have been cut about 5 years previously had approximately 185 annual rings (rough field count), suggesting the tree was established sometime around the 1830’s.

The red pine grove (Stand Map, area 1) was estimated to be planted in 1949 according to a resident who remembered both Baxter Pines and Baxter Woods planted with seedlings that involved Deering High School students and State of Maine plant stock. The stand was thinned in 2004 with advice from Dennis Brennon, the Maine Forest Service District Forester at the time.

<sup>2</sup> See the brochure *Welcome to Baxter Woods* for a more extensive ownership history beginning with F.O.J. Smith.

<sup>3</sup> The estate was sold to James Phinney Baxter in 1878, so presumably the painting was commissioned by the former mayor Baxter as it is owned by the City.

## **Access**

MBW has excellent access from Forest Avenue, Stevens Avenue, and Hartley Street for public recreation and for any management that might occur. The main trails provide a network of interior access. There is currently only one small fence opening on the north boundary, but a new gate is proposed for that area

## **Interaction with Surrounding Properties**

Single family residential homes are located adjacent to the south and southwest. Multi-unit residential properties and playing fields are located to the north, commercial properties across Forest Avenue to the east and Evergreen Cemetery across Stevens Avenue to the west.

## **Legal Obligations**

The principal legal obligations are the Baxter deed described in the introduction. Maine's laws applicable to timber harvesting and water quality protection, pesticide use, as well as municipal ordinances also apply. Because the City has an active urban forestry program and is familiar with legal requirements these will not be described in greater detail in this plan. Prior to any site disturbing activities, check with the City planning department, Maine Forest Service, and Maine DEP, or other applicable agencies (e.g. Maine Board of Pesticide Control) for the most recent applicable regulations.

# Forest Ecosystem Planning and Management

The following sections describe ecological resources of importance and include recommendations to protect their values, Soil and Water Quality Protection, Management for Fish, Wildlife, and other Biodiversity, and Planning for Climate Change. Other management recommendations to achieve specific management objectives are included in later sections of this plan.

## Soil and Water Quality Protection

### Soils

#### Identification and Significance

Soils are critical to the long-term ecological health of the forest and a key factor in determining the species of trees and other plants that may be present. Most soils can be readily damaged by heavy equipment when soils are wet after rains and during the spring and fall mud seasons. Wetter sites may have very short windows for forest management activities and may be limited to either winter operations on frozen ground conditions or to dry periods at other times of the year.

A Natural Resource Conservation Service (NRCS) “Web Soil Survey” report for Baxter Woods was prepared for MBW (see Attachments). The field reconnaissance confirmed that NRCS mapping showing excessively well-drained sands in the west to moderately well drained with a few somewhat poorly drained fine sandy loams and poorly-drained pockets to the east. These soils are excellent for pine, oak and hemlock and are important factor in why these species are so prevalent today.

### Trails

#### Current Conditions

The location of trails is shown several of the maps. Trails were classified into three major for the purposes of this plan:

**Main trails:** Gravel base, 10-15 foot width with culverts and ditching as needed, suitable for vehicular use.

**Secondary trails:** Footpaths 3-5 feet in width, natural soil base, not suitable for vehicular uses

**Wildcat trails:** Non-maintained trails established by customary pedestrian use

Some areas of slight surface erosion were noted on some the main trails, especially in Stand 4. The riprap ditch along the main trail in the eastern half of Stand 4 has been identified by the City as a possible area of improvement to restore a more natural character to the trail. Several of the main trail intersections have become very wide as result of walkers who cut the corner when going from one trail to the next.

#### Recommendations

Review all trails and develop and implement a trail management and maintenance plan with the following components:

- Ensure that the crown on main trails is sufficient to effectively and rapidly shed surface runoff;

- Minimize ditching by using changes in slope, ditch turnouts, and cross-drain culverts as needed to direct water into adjacent forest areas where it will infiltrate into the soil rather than be concentrated in an artificial drainage system;
- Replace and upgrade culverts as needed to ensure that they are capable of handling more intense rainfall occurring as a result of climate change (e.g., historically “50-100 year” storm events);
- Apply other applicable guidelines for roads and trail in **Best Management Practices for Forestry: Protecting Maine’s Water Quality** (“BMPs”; see *References* section) to protect soil and water quality;
- Use appropriate landscaping to minimize soil compaction and widening of the main trail junctions;
- Restore the historic stone work along the main trails;
- Manage secondary trails using the guidelines in the **Recreational Trail** section of the Appendices;
- Close most wildcat trails by placing brush and/or signage as needed;
- Refer to the *Recreation Use* section later in this report for recommendations related to trail management and related impacts on plant and wildlife habitat.



*Lack of defined trail edges is leading to soil compaction and loss of vegetation at main trail junctions*

## **Water Quality**

- Always apply Maine’s **Best Management Practices** for water quality protection when disturbing soils or cutting trees.
- See *Aquatic Habitats and Riparian Zones* for other fish and wildlife habitat protection measures.

# Management for Wildlife, Fish and Other Biodiversity

## Introduction

This plan includes an assessment of current wildlife habitat conditions to use as a baseline against which to measure progress towards its long-term wildlife management goals. The habitat assessment methodology is based on and Maine Audubon's **Foresters for Maine Birds** (publication pending) and information on non-avian species from **Focus Species Forestry, a Guide to Integrating Timber and Biodiversity Management in Maine** (Bryan 2007). While both of these documents are geared towards landowners and managers with an interest in active forest management program, the assessment methodologies are well suited to MBW's goal to maintain the forest in a natural condition as a sanctuary for wild birds.

## Forest Classification

The basic building block used for forest wildlife habitat assessments and management planning is the forest stand, which is an area that is generally similar in terms of vegetation cover type (species mix of dominant vegetation), age-class distribution, and site quality. Some stands may be very uniform in size and species composition (for example a stand of even-aged white pine) while others may be composed of patches of different species and ages (for example, an uneven-aged hemlock-hardwood forest). Stands may vary from a few acres to over 100 acres in size. For this property, aerial photography and field data were used to divide the forest into stands and to create the *Stand Map*.



Forest age, structure and type are key determinants of wildlife habitat. The young forest of shrubs and saplings above at Baxter Woods area F3 may be used by birds such as eastern towhee and chestnut-sided warbler, while older forest areas like this oak-hemlock forest type (Stand 5b) will attract birds such as Blackburnian warbler and black-throated blue warbler.

## Forest Habitat Types

For habitat assessment purposes, common forest types found on the property have been grouped into Forest Habitat Associations, which generally share a common suite of wildlife species in any given region. The **Foresters for Maine Birds** habitat associations are described in the following table.

**Forest Habitat Classification**

| <b>Map Symbol</b> | <b>Forest Habitat Association</b><br><i>(comments in italics)</i>                                                       | <b>Common Forest Types</b>                                                                                                | <b>Baxter Woods</b> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>NHW</b>        | <b>Northern Hardwoods<sup>1</sup></b><br><i>May include up to 25% softwoods</i>                                         | Northern Hardwoods (beech-birch-maple and variants)<br>Aspen-Birch (early successional variant)                           | No                  |
| <b>NMW</b>        | <b>Northern Mixedwoods<sup>2</sup></b><br><i>Neither hardwoods nor softwoods exceed 75% of stocking</i>                 | Northern Hardwood/Hemlock<br>Northern Hardwood/Spruce-Fir<br>Hemlock (in patches)<br>Aspen-Birch (early successional)     | No                  |
| <b>NSW</b>        | <b>Northern Softwoods<sup>3</sup></b><br><i>May include up to 25% hardwoods</i>                                         | Spruce-Fir<br>Spruce-Hemlock<br>White Pine-Mixed Conifer<br>Northern White Cedar<br>Aspen-Birch (early successional)      | No                  |
| <b>OP</b>         | <b>Oak-Pine<sup>4</sup></b><br><i>May range from pure oak-dominated hardwoods to mixed hardwood and softwood stands</i> | Northern Red Oak<br>Red Oak-Mixed Hardwoods<br>Red Oak-White Pine-Red Maple<br>White Pine<br>Hemlock and Hemlock-Oak-Pine | Yes                 |
| <b>MHW</b>        | <b>Mixed Hardwoods</b>                                                                                                  | Oak-Northern Hardwoods<br>Oak-Aspen-Birch                                                                                 | Yes                 |

## Habitat Age Class, Stand Structure Class, and Canopy Cover

Many wildlife species are closely linked to specific forest ages and structures, including tree size, canopy density, and vertical structure (i.e., canopy layering), and timber management options are also age and size related. Stands are classified in terms of general size and combinations of stand structure class (which is related to maturity) and canopy cover as described in the following tables. **Stand Structure Class** is an indication of ecological development, wildlife habitat condition, and commercial forestry potential. **Habitat Age Class** is used to summarize the stand structure classes into broad habitat conditions for assessment and planning.

| Forest Habitat Age and Structure Classes |                                    |                                         |                                                                                                                                                      |
|------------------------------------------|------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Habitat Age Class                        | Stand Structure Class <sup>1</sup> |                                         | Description <sup>2</sup>                                                                                                                             |
| Young                                    | 1                                  | Regeneration                            | 1-10 years old, <1" DBH <sup>4</sup>                                                                                                                 |
|                                          | 2                                  | Sapling                                 | 2-5" DBH, 10-30', <30% overstory <sup>3</sup> cover                                                                                                  |
| Intermediate                             | 3a                                 | Intermediate - Single-aged (Poletimber) | Overstory 5-10" DBH, total canopy cover > 60-70% with midstory component <30%                                                                        |
|                                          | 3b                                 | Intermediate - Two-aged (Poletimber)    | Overstory 5-10" DBH and <60% cover, development of midstory and understory variable depending on time since last harvest or other canopy disturbance |
| Older                                    | 4                                  | Maturing (Small Sawtimber)              | Overstory trees 10-16" DBH dominant, total canopy cover typically >60-70%                                                                            |
|                                          | 5                                  | Older Complex (Large Sawtimber)         | Overstory trees >16" DBH dominant. Multiple canopy layers common with total canopy cover typically >60-70%                                           |

<sup>1</sup>Equivalent forest product classes in parentheses.

<sup>2</sup>These are general descriptions; diameter and canopy cover may vary by species and site. Percent cover of any layer may be less than indicated if there has been recent harvesting (typically within 10-15 years)

<sup>3</sup>See Vegetation Layer table

<sup>4</sup>DBH: diameter at breast height (4.5 ft.)

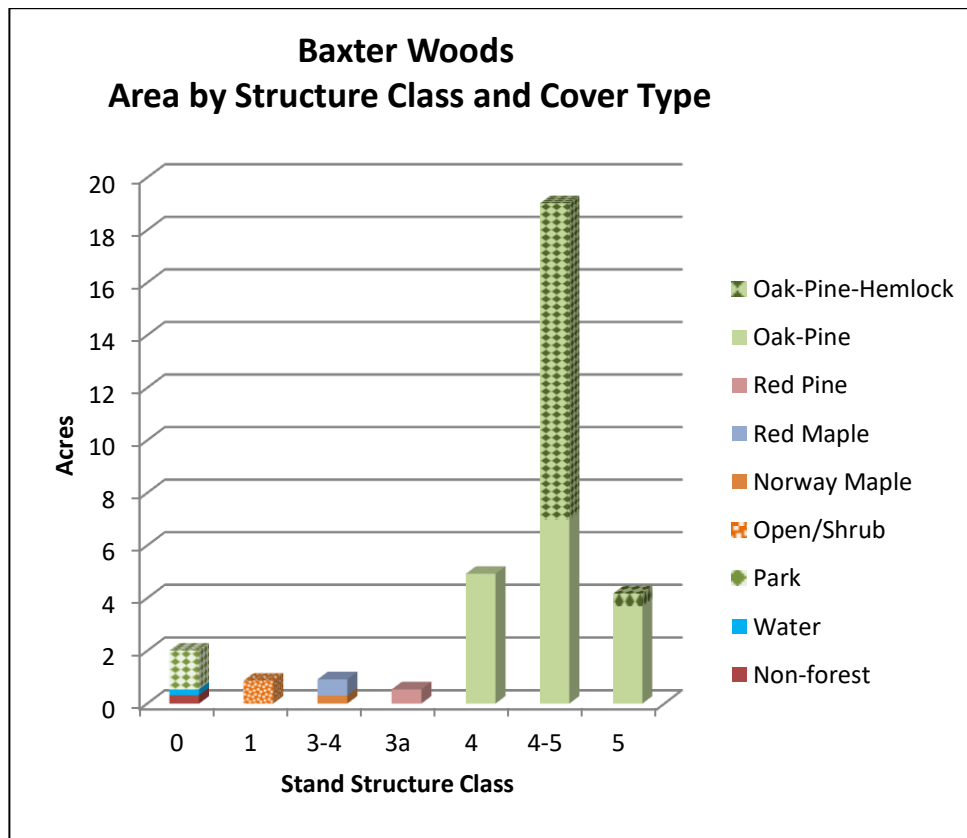
| Vegetation Layer |           | Height (ft.) | Bird Habitat Notes                                                                                                                                                         |
|------------------|-----------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canopy           | Overstory | >30          | Canopy heights of >50-60' are important for many mature forest species, including Black-throated Green Warbler and Blackburnian warbler.                                   |
|                  | Midstory  | 6-30         | Important nesting and foraging stratum for species like Canada Warbler that prefer dense midstory. Other species, such as Eastern Wood-Pewee, prefer a more open midstory. |
| Understory       |           | 1-6          | Important feeding and nesting cover for mature-forest species such as Black-throated Blue Warbler and Veery.                                                               |

#### Canopy Cover Classes

| Cover Class | % Canopy Cover |
|-------------|----------------|
| A           | >80            |
| B           | 60-80          |
| C           | 30-60          |
| D           | 5-30           |
| E           | <5             |

## **Distribution of Habitat Types and Development Stages**

The distribution of forest habitat type and associated development classes as well as other cover types on the property are summarized in the following chart.



| Stand Class | Area (acres) | Percent |
|-------------|--------------|---------|
| 0           | 2.01         | 6.2%    |
| 1           | 0.87         | 2.7%    |
| 3-4         | 0.92         | 2.8%    |
| 3a          | 0.54         | 1.7%    |
| 4           | 4.92         | 15.2%   |
| 4-5         | 19.02        | 58.6%   |
| 5           | 4.18         | 12.9%   |
| TOTAL       | 32.46        | 100.0%  |

| Forest Canopy Layers |                  |                                   |          |            |       |
|----------------------|------------------|-----------------------------------|----------|------------|-------|
| Stand Number         | Type             | Stand Structure Class and % Cover |          |            | Acres |
|                      |                  | Overstory                         | Midstory | Understory |       |
| 1                    | Red Pine         | 3a/B                              | 0        | 1E         | 0.54  |
| 2a                   | Oak-Pine         | 5B                                | 2-3D     | 1B         | 2.85  |
| 2b                   | Oak-Pine         | 4-5B                              | 2C-      | 1-2C       | 0.92  |
| 3                    | Oak-Pine         | 3-5B                              | 3C       | 1E         | 3.12  |
| 4                    | Oak-Pine         | 5A                                | 2C       | 1D, C      | 5.47  |
| 5a                   | Oak-Pine-Hemlock | 5B                                | 2-3B     | 1D,C       | 12.04 |
| 5b                   | Oak-Pine-Hemlock | 5C                                | 2-3C     | 1D         | 0.49  |
| 6                    | Oak-Pine         | 4-5A                              | 2-3C     | 1D         | 0.84  |
| 7                    | Red Maple        | 3-4A                              | 2D       | 1C         | 0.62  |
| 8                    | Oak-Pine         | 4-5A                              | 2C       | 1B         | 0.59  |
| 9                    | Oak-Pine         | 4-5B                              | 2C       | 1C         | 1.80  |
| 10                   | Norway Maple     | 3-4A                              | 2D       | 1C         | 0.30  |

|      |            |      |     |     |       |
|------|------------|------|-----|-----|-------|
| 11   | Non-forest |      |     |     | 0.22  |
| F1   | Park       | 2-4C | 0   | 0   | 1.06  |
| F2   | Park       | 2D   | 0   | 0   | 0.41  |
| F3   | Open/Shrub | n/a  | n/a | n/a | 0.72  |
| F4   | Open/Shrub | n/a  | n/a | n/a | 0.15  |
| Pond | Water      | n/a  | n/a | n/a | 0.22  |
| P1   | Non-forest | n/a  | n/a | n/a | 0.10  |
|      |            |      |     |     | 32.46 |

### Current Conditions

The preceding chart and table show that older stands (Classes 4 and 5) account for over 81% of the forest area, and exceptionally large proportion for any forest in Maine. Nearly all stands have moderate to full canopy cover of mature trees. Midstory is generally moderate, and understory is moderate to low. Extensive area with limited to no understory can be easily observed while walking the trails, especially in the middle third of MBW. To a large extent this is caused by the very dense hemlock midstory in these stands, which limits the light available for forest regeneration. While attractive from a visual perspective, the lack of understory cover limits the habitat for species that nest and forage in the lower canopy layers. Old field, shrub, and young saplings, and important habitat type for some species, represent less than 3% of the area.

### Recommendations

Specific to forest age and structure, the City has limited options to enhance habitat for birds and other wildlife due to the deed restrictions that do not allow tree cutting.

- In all stands except open/shrub areas, allow late successional forest conditions, including large trees, canopy gaps, and understory regeneration, to develop naturally over time. Tree mortality from wind events, ice storms, and native insects and diseases will result in canopy gaps that will allow establishment and development of the understory and ground cover plants and habitat for birds that use these areas. While a systematic plan should be developed and implemented to protect a significant portion of the oldest hemlocks from the exotic hemlock wooly adelgid (HWA) and outbreaks of hemlock scale (see *Insects and Disease* section later in this report), allowing these pests to go untreated in some patches will result in an increase the light reaching the forest floor in those areas and stimulate growth in the understory.

## **Rare, Threatened, and Endangered Species, Natural Communities, and Significant Wildlife Habitat**

Information on known locations of rare, threatened and endangered species, Significant Wildlife Habitats, and rare or exemplary plant communities was provided by the Maine Natural Areas Program (MNAP). Beginning with Habitat (BWH) maps prepared by the Maine Department of Inland Fisheries and Wildlife (MDIFW) in cooperation with the Maine Natural Areas Program (MNAP) were also reviewed.

### **Current Conditions**

The Beginning with Habitat maps and MNAP report do not show any high-value plant and wildlife habitats in or near Baxter Woods. The nearest mapped features are in Back Cove and on the Fore River.

- The Forest Synthesis field assessment did not identify any areas that would be classified as Significant Wildlife Habitats by MDIFW.
- A systematic survey for rare, threatened, or endangered plants and animals was not part of the Forest Synthesis assessment, but given the location and type of habitats present the presence of these species is highly unlikely.
- Forest stands 2, 3, 4, 5, and 6 have dominant canopy trees 180-200 years in age have not been harvested in well over 100 years. However, because Baxter Woods is less than 100 acres in size MNAP reports that none of the forest communities there qualify a “natural community of statewide significance.” Nonetheless, as an example of old-growth oak-pine-hemlock forest Baxter Woods may be without par anywhere in Maine.

### **Recommendations**

- Management of the forest consistent with the MBW deed restrictions would also be consistent with the MNAP guidelines for natural communities and help protect its significance.

## **Vernal Pools**

### **Identification and Ecological Significance**

Vernal pools are small, fishless water bodies that provide breeding habitat for a unique group of amphibians and invertebrates, including (yellow) spotted and blue-spotted salamander, four-toed salamander, wood frog, and fairy shrimp. During most of the year, adult spotted salamanders and wood frogs are found in the nearby forest; spotted salamanders may be found up to several hundred feet from the pools and wood frogs are found up to a quarter mile or more from pools. Vernal pools are best identified in spring when breeding adults and/or eggs are present. By mid or late summer they are frequently dry. Typically, vernal pool species breed in small isolated pools and ponds, but other areas such as forested wetlands and stream floodplain channels are also often used. See ***Focus Species Forestry*** guidebook for more information. More detailed information may be found in **Forestry Habitat Management Guidelines for Vernal Pool Wildlife in Maine** (Calhoun and deMaynadier 2004).

### **Current Conditions**

Two areas with some vernal pool characteristics were observed in MBW (see Stand Map). Informal observations were recorded during an April, 2016 field visit and again in October 2017.

- **VP1.** This is ephemeral pool formed by a small seep near the Forest Home site. A short stone wall at one end of the pool, its location adjacent to the Forest Home site, and the overall configuration suggest that some evidence that this pool may have been enhanced during the Smith estate period of the property to be part of the estate landscaping. The pool is currently 6-8" deep at spring high water and was dry when observed in October 2017. No spotted salamander or wood frog eggs were observed in April 2016 when eggs were found elsewhere in MBW.



*Vernal Pool 1 was probably a landscape feature of the Forest Home Estate and could be enhanced by increasing its depth.*

- **VP2.** VP2 is a small excavated pool in Stand 9, but with water over 12" in depth in April 2016. At that time 12 spotted salamander egg masses and 1 wood frog egg mass were observed in the pool. In October 2017 this pool was dry, but the number of egg masses observed suggests that the pool has a sufficiently long hydroperiod in some years to maintain small population of obligate vernal pool amphibians.
- **Pond.** In April 2016 both spotted salamander and wood frog egg masses were observed in the pond.

### Recommendations

- VP1 could be enhanced to deepening the pool to a depth of 12"-16" to improve its potential value as vernal pool habitat. A short section of PVC pipe extending 2 ft. below the pool bottom could be installed to serve as a water table monitoring well. Water table depth data from this well could then be used to decide whether or not excavating the pool would be effective.
- VP2. This pool was clearly excavated and has steep sides and a small berm of excavated material around the edges. The pool could be visually enhanced by contouring the edges to create a more natural appearance.

## **Aquatic Habitats and Riparian Zones**

### Identification and Ecological Significance

Aquatic habitats at Baxter Woods include the pond near Forest Avenue and the ephemeral stream. Riparian areas are areas that are influenced by, and that influence, aquatic habitats. Species that benefit from aquatic habitats vary greatly with size, depth, vegetation, bottom structure, current, and other factors. Over 60 wildlife species in Maine are dependent on the adjacent riparian habitats for part of their life cycle, and many other species are frequently found in riparian habitats.



**Pond.** Despite its small size and urban location the pond attracts great blue herons, mallards, black ducks, amphibians, and many other species.

**Ephemeral stream.** A small, seasonally intermittent stream and tributary are located in the southeast corner of the property. The stream ends in a storm drain near Forest Avenue. Stream surveys were not part of assessment in this plan, but values presumably include habitat for some insects and other invertebrates, and as a source of naturally filtered water that drains into the Back Cove estuary.

### Recommendations

- Maintain a border of native vegetation around the pond and landscaping as necessary to direct foot traffic to targeted areas where soil compaction and vegetation disturbance would be minimal.
- Maintain the forest adjacent to the stream in a natural condition. Keep the number of trail crossings to minimum. Where crossings cannot be avoided orient trail perpendicular to the stream. Avoid trails that closely parallel the stream (e.g., within 25 feet).

## **Wildlife Trees, Dead and Downed Wood, and Retention Patches**

### Identification and Ecological Significance

**Wildlife trees** include:

- **Snags:** Dead standing trees.
- **Cavity or den trees:** Live trees with nesting cavities or mammal dens.
- **Recruitment trees:** Large live trees that will be permanently retained (i.e., will never be harvested) and will eventually contribute to the snag, cavity tree, and downed woody material for wildlife and other biodiversity benefits. Typically these are large trees with significant decay or other cull defect, or beech with evidence of bear use

**Downed Woody Material:** Fallen tree trunks, branches and leaves.

**Retention Patches:** Areas of live vegetation roughly  $\frac{1}{4}$  acre or more that are retained within larger harvest openings (e.g., >5 acres).

Wildlife trees and downed woody material are recognized for their value to vertebrate wildlife (e.g., woodpeckers, marten, wood ducks, and salamanders), insects, and fungi and for their role in the cycling of nutrients and organic matter in the forest. Standing dead wood and woody debris also provide nesting and hibernation habitat for native bee species. All sizes provide value, but large cavity trees (> 16 inches) are required by species such as barred owl and wood duck. The value of downed woody material also increases with size.

Retention patches are used when harvesting (for certain silvicultural or wildlife habitat management objectives) removes most of the overstory. In these cases retained patches of trees and other vegetation serve as a habitat “lifeboat” for species with low mobility (e.g., understory herbs, lichens, mosses and liverworts) whose habitat would be eliminated by even-aged management practices that clear most vegetation when regenerating the forest. Retention patches over one acre in size have the best temperature, humidity, and light conditions for retaining understory plants.



*Decaying trees provide feeding and nesting habitat for woodpeckers. Excavated nest cavities in turn provide habitat for other species.*

### Observations

- Snags, cavity trees, and large and small woody material are moderately abundant in Baxter Woods.

### Recommendations

- Allow dead, dying trees, and downed trees and limbs to remain in place unless they represent a threat to trail users.
- Scatter downed limbs that fall on trails within the forest rather than chipping them.

## Forest Health

### **Invasive Plants**

#### Identification and Ecological Significance

The Maine Natural Areas Program defines an invasive plant as “a plant that is not native to a particular ecosystem, whose introduction does or is likely to cause economic or environmental harm or harm to human health.” MANP describes invasive plants as “a direct threat to what we value about Maine's natural and working landscapes [and the] second-greatest threat to global biodiversity after loss of habitat. Invading plants out compete native species by hogging sunlight, nutrients, and space. They change animal habitat by eliminating native foods, altering cover, and destroying nesting opportunities” ([MNAP website, 2017](#)). A list of some of the most problematic invasive species commonly found in Maine forests is included in the Appendices.

#### Current Conditions

The location of invasive plants is shown on the Invasive and other Exotic Plants map. Norway maple (classified as “probably invasive” by the Maine Natural Areas Program) is the most abundant exotic species. It dominates one stand (Stand 1) and is exhibiting invasive behavior in many areas of the MBW. Other species observed in mixed patches or as scattered clumps include Asiatic bittersweet, bush honeysuckle, common buckthorn, Japanese barberry, Japanese knotweed, Bishop’s weed (also “probably invasive”). Linden is an exotic species that is not classified as invasive but it is becoming well established in the understory and mid-canopy in many places. Lemon balm, another exotic not “invasive,” was observed in a large patch in Stand 11. Lists of invasive plants are included in the Individual Stand Descriptions and Recommendations.



*Bishop’s weed (goutweed) is an example of an invasive exotic plant that is preventing the growth of native species in Mayor Baxter Woods*

Some invasive plant control has occurred. Larger Norway maples in the vicinity of Hartley street were cut to eliminate seed sources, but where small Norway maples were cut and not treated with chemicals aggressive re-sprouting has occurred.

## Recommendations

- The City should develop a plan and implement a plan to control and monitor invasive plants and other aggressive non-native plants throughout the MBW.
- To prevent introduction of other invasive plants, equipment used in the forest should be pressure-washed before being used on site.
- If mulch is needed, only use weed-free mulch, such as straw or wood chips that do not have any invasive plant seeds.

**General approaches.** Early detection and control is the key to managing invasive species. Small vines and shrubs may be pulled by hand, but treatment with a safe herbicide is the most effective means of controlling larger plants or large areas. Treatment methods are summarized in the Appendices.

**Mechanical Control.** Cutting is not an effective control measure as invasive plants will re-sprout vigorously. With diligence both barberry and smaller honeysuckle plants may be effectively controlled by hand pulling. During the spring when soils are moist is generally the best time. Pull all plants that are not too large. An “Extratigator” or similar brush puller (e.g. “Weed Wrench”) may be used to pull larger plants. To limit the chance of re-sprouting, care should be taken to ensure that as much root material as possible is removed. Any plants that are too large for pulling should be marked with flagging and GPS for follow-up control with chemicals.

**Chemical Control.** Where hand pulling is not effective or feasible, herbicides are generally the only effective treatment option. When properly handled and applied the herbicides glyphosate and triclopyr have been shown to have very low risk for organisms other than plants and they have minimal soil movement and break down rapidly. Other chemicals may be more effective in certain situations. Treatment methods are localized (individual plants and/or cut plant stems) and designed to minimize the amount of chemical use and damage to non-target plants. These chemicals and methods are recommended by The Nature Conservancy and other conservation groups for management of natural areas.

Follow-up monitoring and control 2-3 years after the initial treatment is necessary, regardless of whether mechanical or chemical controls are used.

Herbicide use is regulated by the Maine Board of Pesticide Control and all legal requirements must be followed.

## **Insects and Diseases**

### Current Conditions

**Elongate hemlock scale** (*Fiorina externa*) is a serious exotic pest of eastern hemlock. It also can be found on fir, spruce and other conifers. EHS attacks the surface of the hemlock needle and sucks out the fluid. This process causes the needles to turn yellow and drop prematurely ([Maine Forest Service webpage](#))

accessed 2/8/18). EHS was observed on several plots during the field assessment and is the likely cause of hemlock mortality in Stand 5b.

**Hemlock wooly adelgid** is an invasive aphid-like insect that feeds on hemlocks that has devastated hemlock stands in southern New England and in the Appalachians. HWA has spread north through the Midcoast region of Maine and is causing hemlock decline and mortality throughout this region. In northern New England decline can be slow, and cold winters tend to kill many of the insects. No evidence of hemlock decline caused by HWA – typically a thin, pale-green crown – was observed at MBW during the field reconnaissance, but it has been observed by City Forester Jeff Trarling.

**Red pine** in Maine is threatened by several pests and diseases, including the exotic red pine scale, and *Siroccocus* shoot blight, which is devastating red pine plantations in Maine. There is no evidence that the MBW red pine plantation (Stand 1) is affected yet, but this stand as well as the mature red pine scattered throughout Baxter Woods are at risk.

**Beech-bark disease**, which results from the combined action of exotic insect and an exotic fungus, has devastated American beech stands throughout its range. Beech bark disease was observed at MBW, but the trees are very healthy compared with most areas in Maine. There is no known control for beech bark disease. Dead and dying trees can be removed, but because beech regenerates through root, suckers and mature trees are often connected by root systems, it is impossible to eliminate or slow the disease by cutting.

**Browntail moth, winter moth, and gypsy moth** are exotic insects are serious threats to oak forests, and will also affect some other tree species. None have been observed at MBW to date, but browntail moth and winter moth are common in the Casco Bay region. Personal observations are that the oldest trees are most at risk during winter moth outbreak. Browntail moth seems to result in less tree mortality, but the toxic hairs shed by the developing caterpillars cause significant rashes on most people.

## Recommendations

### **Hemlock Wooly Adelgid and Elongate Hemlock Scale**

- Develop a comprehensive plan to monitor and control hemlock wooly adelgid and elongate hemlock scale.
- Consult with the Maine Forest Service and other experts as needed. Management references are included on the [Maine Forest Service HWA web page](#), and Forest Synthesis can provide contacts at the Nature Conservancy, which has an active program and recommendations to control HWA in key ecological areas.
- Chemical pesticides are generally the only consistent method to control HWA and EHS. However, the Maine Forest Service and US Forest Service are experimenting with biological controls, and the City should ask MFS if they would use Baxter Woods as an experimental site.
- Even if biological controls are used, the city should map and protect individual, old hemlocks with chemical methods. Ground injections of systemic pesticides (e.g., imidacloprid) can provide long lasting control of individual trees (up to 10 years), and studies have shown there is no evidence of chemical movement beyond the treated tree.

### **Red Pine Pests and Diseases**

- To reduce the risk of major loss of red pine from red pine scale, *Sirrococcus*, and other diseases, monitor for these threats and manage the red pine plantation to allow a mixed stand of red pine and other native trees and shrubs to develop over time. See Stand 1 recommendations for details.

#### **Browntail Moth, Winter moth, and Gypsy Moth**

- Develop a contingency control plan for browntail moth, winter moth, and gypsy moth and monitor the forest on a regular basis for the presence of these exotic insect pests.

## **Planning for Climate Change**

Researchers have estimated that Maine's average temperatures will increase at least by 3.5° F by 2100 if climate-warming emissions are significantly reduced and by as much as 12.5° F if emissions are not reduced. By 2100, the optimum climate for spruce and fir is predicted to shift to north of the Canadian border, while the optimum climate for northern hardwoods such as sugar maple and yellow birch is predicted to retreat to the western mountains and northwestern highlands of Maine. The northern limit of optimum climate for oak, which is now best adapted to southwestern Maine, is predicted to shift north to the Canadian border. Trees that are outside of their optimum climate are likely to become stressed, with potential for increased rates of health decline and mortality due to insects and diseases. Disturbances, including harvests and other management actions, can be used to facilitate the response of vegetation types to climate change.

Examples of species that are tolerant of warmer temperatures include white pine, red oak, and red maple. The general recommendations below have been developed by the author for consideration when developing plans for forest management.

#### **Recommendations**

- Landowners and managers can help mitigate climate change by sequestering carbon in soils, the forest floor, and in the canopy. Forest soil carbon loss can be minimized by avoiding clearcutting and other practices that heat the forest floor and increase decay and oxidization of organic matter. Managing for older and larger trees will store more carbon on the stump. Some studies have shown that carbon is also sequestered in long-lived forest products after trees are harvested.
- Consider planting species that are currently at the northern limit of their range and that can tolerate warmer temperatures.
- Increase culvert sizes over those included in BMP guides and otherwise modify water management and stream crossing practices to accommodate increases in storm severity



*Cool-climate species such as sugar maple and yellow birch (shown here) as well as red spruce and other species may decline as the climate warms. Red oak, white pine, and red maple are well adapted to a warming climate.*

# Other Management Considerations

## Historical, Cultural, and Archaeological Sites

Mayor Baxter Woods is well known as the site of the “Forest Home” estate of Francis Ormond Smith. Evidence of the estate remains in the form of cut granite blocks and landscape alteration near the small field in the northwestern part of property (Stand Map, areas 2B and F3). Archaeological studies in 2014 by Norm Buttrick and students from Catherine McCauley High School identified evidence of the estate.

### Recommendations

- Compile information from the Buttrick study and other sources to create a more complete and accurate history and maps of land use at MBW. These could be used for educational purposes and as a record for long-term management.
- Consult with Maine Office of Historic Preservation about possible location of other historical and archeological sites.

## Societal Considerations

Public forest management should include opportunities for members of the public to ask questions about and provide comments on draft plans before they are finalized.

## Boundary Lines

Clearly marked boundaries are necessary to prevent timber trespass and other damage to property, including both protection from abutters and to ensure that you do not encroach on the lands of others. Boundary lines are delineated by roads, stone walls, and shorelines.

### Current Conditions

- Boundaries formed by Forest Avenue, Hartley Street, and Stevens Avenue are clear.
- A chain link fence marks the north boundary.
- The boundary north of residences on Hartley Street (vicinity of Stand Map, area 11) has a few survey pins, but is not marked between the widespread pins. Most residential properties on Hartley Street have encroached onto City property (Stand Map, areas 11 and F4). Examples of encroachment include fencing, paved driveways, lawns, and gardens and brush dumping.
- Cedar post and rail fencing marks most of the boundary behind residences on Steven’s Avenue. However, sheds and equipment from two abutting properties at the south edge Stand 2a encroach several feet onto City property where there is no fence.

### Recommendations

- Where MBW abuts residential properties on Hartley Street and Stevens avenue the City should clearly mark the boundary with fencing or other means (e.g., multiple posts and signs) and work with abutters to restore degraded city property to a natural condition. City Forester Jeff Tarling that surveyors will be working on this line in 2018.
- Signs should be placed at various points along other boundaries and access points



*Example of unmarked property line and encroachment behind residences on Hartley Street.*

## **Recreational Use**

### Current Conditions

- Walking, bike riding, and dog walking are common recreational activities in MBW. See maps for trail locations.

### Recommendations

- As noted elsewhere in this report, recreational uses and in particular unleashed dogs are likely having an adverse impact on ground-nesting and ground-feeding birds. Because the Baxter deed requires that the City maintain Baxter woods for recreational use and as a sanctuary for wild birds, the city should require that dogs be leashed.
- The city could consider closing some minor trails to create wider spaces between trails and thus minimize disturbance of wildlife.

## **Forest Fire Protection**

The property does not present any unusual vulnerability to fire compared with other wooded properties in the region. Forest fire risk is generally low due to Maine's climate. In the unlikely event that fire did occur, the current trail network provides good access to the interior of the forest for fighting fires.

# Monitoring

Periodic monitoring is important to identify trend and issues that may develop and to help provide information for future management decisions. Many monitoring activities could be conducted by qualified volunteers. Recommended monitoring activities are included below.

**Vernal Pools.** Annually monitor depth, hydroperiod, and use by vernal pool species and other wildlife in April-May. See *The Maine Municipal Guide to Mapping and Conserving Vernal Pools* (Morgan and Calhoun 2012).

**Breeding birds.** Annually coordinate a post-migration breeding bird survey with Maine Audubon volunteers (June). Divide the forest into four to six monitoring blocks and identify singing males in each block. Compile data by species and the canopy layer where they are known to nest (see *Forestry for Maine Birds*). Ideally compare results with Evergreen Woods. Bird data from the spring migration period (May) would also be of interest.

**Insects and Diseases.** Monitor hemlock wooly adelgid, elongate hemlocks scale and other insects (see *Insect and Disease* section of this report). Contact the MFS District Forester or the MFS Division of Forest Health Monitoring (207-287-2431) if any concerns arise.

**Invasive Plants.** Monitor results if invasive plant controls and periodically check for new occurrences. Take appropriate action if any are found. See *Invasive Plants* section and Appendices for more information.

**Condition of roads and trails.** Check roads and trails for blocked ditches, culverts, and erosion problems.

**Boundary lines.** Periodically inspect boundary lines to be sure evidence is clearly visible and to check for unwanted encroachment from abutting properties.

**Recreation use.** Use trail cameras or other monitoring methods for fixed periods of time to quantify and describe recreation use and evaluate the potential impact of unleashed dogs on wildlife.

# References and Resources

## **Literature Cited**

Bryan, R.R. 2007. **Focus Species Forestry: A Guide to Integrating Timber and Biodiversity Management in Maine.** Maine Audubon, Falmouth, ME. Download: <http://www.forestsynthesis.com/resources.html>.

Maine Audubon. 2017. **Forestry for Maine Birds.** Maine Audubon, Falmouth, ME

Maine Department of Conservation. **Best Management Practices for Forestry: Protecting Maine's Water Quality.** Maine Forest Service, Augusta, ME. 1-800-367-0223.

Morgan, D.E., and A.J.K. Calhoun. 2012. **The Maine Municipal Guide to Mapping and Conserving Vernal Pools.** University of Maine, Sustainability Solutions Initiative, Orono, ME.

## **Mayor Baxter Woods Resources**

2014 Archaeological Survey. <https://dcna.me/forest-home-of-francis-oj-smith/> (accessed 1/2/2018)

# Appendices

## Mayor Baxter Woods Deed Restrictions

As quoted in the City's **Welcome to Mayor Baxter Woods** brochure, restrictions in the 1946 deed from Governor Percival P. Baxter to the City include:

*"...the above described premises with all the privileges and appurtenances thereto to said City of Portland as trustee as foresaid and its successors in trust and the same shall not be conveyed or encumbered by said City but shall be held forever for the benefit of the people of said Portland subject to the following terms, restriction, reservations and conditions:*

- 1. shall forever be retained and used by said City in trust for the benefit of the people of Portland as a Municipal Forest and Park for public recreational and educational purposes the same forever to be known as "MAYOR BAXTER WOODS";*
- 2. shall forever be kept in its natural wild state and as a sanctuary for wild birds, with no streets for public conveyances and no cement walks therein and with only paths and trails for pedestrians, and any trees that shall fall or that may become a menace to life may be removed, but no other trees therein shall be taken down;*
- 3. shall forever be maintained for the sole use of pedestrians; and horses, automobiles and all motor vehicles, except those of the City used solely in caring for said woods, shall forever be excluded therefrom;*
- 4. that the heavy ornamental gates now in possession of said City shall be erected by said City either at the Forest Avenue or Stevens Avenue entrance within one year of the date of this deed;*
- 5. that said City shall erect within one (1) year after the date of this deed and shall forever maintain on the land hereby conveyed a suitable bronze marker the said marker to recite the conditions of this gift, the same to be attached to a granite boulder located on said land and provided by said City."*

## Assessment Methods

Aerial photography, published maps, and field reconnaissance were used to map the extent of wetlands and the location of streams. Field map data were collected on a hand-held Global Positioning System (GPS) receiver. Base map information was prepared on a Geographic Information System (GIS) using data from the Maine Office of GIS and the field data.

The on-site visit occurred on March 26, 2016. Observations recorded in each forest stand included species composition, canopy closure, understory density, average tree size classes and quality, tree health, forest regeneration, soils and site conditions. There was no systematic timber inventory. Field data collected provides a basis for management recommendations and satisfies the requirements of the Tree Growth Tax Law.

Each stand has a number of the Forest Stand and Cover Type Map. To avoid repetitive text, where appropriate stands that are similar in character have been grouped in the descriptive tables below.

## Individual Stand Descriptions and Recommendations

The following descriptions are based on an analysis of aerial imagery and the field assessment undertaken during October-December 2017. After discussions with the City it was agreed that quantitative, statistically valid forest inventory was not needed to gather the information needed to describe baseline conditions and develop recommendations designed to meet the City's objectives.

Notes on the stand descriptions and recommendations:

- **Wildlife Habitat Values.** Wildlife values are primarily based on the forest type and structure. The small size of the forest and setting in a developed landscape will limit habitat potential for many species, as will the high density of trails and number of unleashed dogs. These issues are discussed elsewhere in the report and are generally not addressed in the individual stand tables below.
- **Management recommendations.** Management recommendations in the stand tables below are generally limited to vegetation management options. Other recommendations, such as those for trails and strategies for multi-stand issues such as control of exotic insects, are addressed elsewhere in the report.

| Stand 1                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   | Map Unit | Acres |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------|-------|
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   | 1        | 0.54  |
| CURRENT CONDITIONS                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |          |       |
| Cover Type                                   | Red (Norway) Pine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Overall Structure Class & % Cover |          | 3B    |
| Principle canopy species:                    | Red Pine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Overstory Class & % Cover         |          | 3a/B  |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Midstory Class and % Cover        |          | 0     |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Understory Class & % Cover        |          | 0     |
| Stand description, age and history:          | This stand was planted in 1949 and has a single canopy layer 6-10” in DBH (diameter at breast height, or 4.5 ft.) and 30-50 ft. in height. The southern and western sides were thinned in 2004 and have a layer of lowbush blueberry, asters, and grasses as well as seedlings and sprouts of red oak and black cherry. Seedlings near the edges have been mown periodically. The smooth soil surface topography in this and nearby stands suggest that the western third Baxter Woods was a field at one point in time. |                                   |          |       |
| Wildlife Habitat Values                      | Wildlife habitat is essentially limited to the overstory canopy layer provides wildlife cover and feed (seed from cone crops) for species that tolerate high levels of human activity.                                                                                                                                                                                                                                                                                                                                   |                                   |          |       |
| Stand stocking:                              | The area that was thinned is well stocked but is nearing the time when another thinning would promote continued growth. The unthinned area is overstocked with trees of small crowns, which severely limits growth potential. Thinning the entire stand would promote the most vigorous trees as well as allowing native species to develop in the under understory, thereby improving                                                                                                                                   |                                   |          |       |
| Soils, Slopes, Site Quality, and Growth Rate | Soils are nearly level and well drained with good site quality. Growth rates estimated to be average.                                                                                                                                                                                                                                                                                                                                                                                                                    |                                   |          |       |
| Forest Health                                | No forest health issues were noted, but the exotic red pine scale insect and <i>Siroccocus</i> shoot blight are devastating red pine plantations in Maine and this stand is at risk.                                                                                                                                                                                                                                                                                                                                     |                                   |          |       |
| Invasive and Exotic Plants                   | Bittersweet and Norway maple, <5% cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |          |       |
| Cultural Features                            | This is a planted stand. A trail passes through the east side of the stand and along the west edge.                                                                                                                                                                                                                                                                                                                                                                                                                      |                                   |          |       |
| Management Objectives and Recommendations    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   |          |       |
| Desired Future Condition                     | Older, mixed species pine-oak forest with multiple canopy layers                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                   |          |       |
| Management Recommendations                   | <ul style="list-style-type: none"><li>Thin the stand to approximately 60% canopy closure to promote regeneration of native trees, which will be aided by jays, squirrels, and other wildlife moving seeds from nearby stands. This will improve wildlife habitat and promote transition to a more natural species mix while reducing impacts should red pine scale or <i>Sirroccus</i> become established.</li></ul>                                                                                                     |                                   |          |       |

|  |                                                                                                                                                                                                                                     |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>Control invasive plants.</li> <li>In approximately 10 year the stand should be thinned again to less than 50% canopy cover of red pine.</li> <li>Stand edges should not be mowed.</li> </ul> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Stand 2a                                     |                                                                                                                                                                                                                                                                                                              | Map Unit                    | Acres |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------|
|                                              |                                                                                                                                                                                                                                                                                                              | 2a                          | 2.85  |
| CURRENT CONDITIONS                           |                                                                                                                                                                                                                                                                                                              | Structure Class and % Cover |       |
| Cover Type                                   | Red Oak                                                                                                                                                                                                                                                                                                      |                             | 5B    |
| Overstory                                    | Red oak (80%), white oak                                                                                                                                                                                                                                                                                     |                             | 5B    |
| Midstory                                     | Red oak, black cherry, hemlock, red maple, linden                                                                                                                                                                                                                                                            |                             | 2-3D  |
| Understory:                                  | Black cherry, red maple.                                                                                                                                                                                                                                                                                     |                             | 70%   |
| Stand description, age and history:          | Overstory of mature red oak 16-30” DBH and 60-80’ in height overtops a low-density midstory of hardwood saplings and small poles with a minor hemlock component. The smooth soil surface topography in this and nearby stands suggests that the western third Baxter Woods was a field at one point in time. |                             |       |
| Wildlife Habitat Values                      | The overstory and midstory provide good nesting and bird foraging habitat and acorns are a valuable food for many species, but species characteristic of larger forest blocks are unlikely to nest here. Large snag and/or canopy trees and downed logs were observed.                                       |                             |       |
| Stand stocking:                              | Well stocked with large trees.                                                                                                                                                                                                                                                                               |                             |       |
| Soils, Slopes, Site Quality, and Growth Rate | Soils are gently sloping and well drained with good site quality. Growth rates estimated to be average to above average.                                                                                                                                                                                     |                             |       |
| Forest Health                                | No issues were noted                                                                                                                                                                                                                                                                                         |                             |       |
| Invasive and Exotic Plants                   | Norway maple, Asiatic bittersweet common buckthorn, and bush honeysuckle, 20-50% cover in patches, found throughout most of the stand.                                                                                                                                                                       |                             |       |
| Cultural Features                            | A large rectangular pit reminiscent of a cellar hole but with no evidence of a foundation is located north of the main carriage trail. Sheds and equipment from tow abutting properties at the south edge of this stand encroach several feet onto City property where there is no fence.                    |                             |       |
| Management Objectives and Recommendations    |                                                                                                                                                                                                                                                                                                              |                             |       |
| Desired Future Condition                     | Older, mixed species deciduous forest with multiple canopy layers                                                                                                                                                                                                                                            |                             |       |
| Management Recommendations                   | <ul style="list-style-type: none"><li>Control invasive plants</li><li>Refer to general recommendations for trails</li><li>Research history of “cellar hole” (see cultural features)</li><li>No other active management recommended at this time.</li></ul>                                                   |                             |       |

| Stand 2b                            |                                                                                                                                                                                                                                                                                                    | Map Unit | Acres                       |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
|                                     |                                                                                                                                                                                                                                                                                                    | 2b       | 0.92                        |
| CURRENT CONDITIONS                  |                                                                                                                                                                                                                                                                                                    |          | Structure Class and % Cover |
| Cover Type                          | Red Oak –White Pine                                                                                                                                                                                                                                                                                |          | 5B                          |
| Overstory                           | Red oak & white oak (80%), plus white pine and red pine                                                                                                                                                                                                                                            |          | 4-5B                        |
| Midstory                            | Red oak, black cherry, red maple                                                                                                                                                                                                                                                                   |          | 2C-                         |
| Understory:                         | Black cherry, alternate-leaved viburnum.                                                                                                                                                                                                                                                           |          | 1-2C                        |
| Stand description, age and history: | Mature hardwoods with a mixed conifer component. The overstory ranges from 12-24" DBH and 50-70' in height. Ground cover species noted include lowbush blueberry, black cherry seedlings, and asters. The smooth soil surface topography in this and nearby stands suggests that the western third |          |                             |

|                                                     |                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                     | Baxter Woods was a field at one point in time.                                                                                                                                                                                                                              |
| <b>Wildlife Habitat Values</b>                      | In addition to species favoring mature hardwoods, pine warblers may nest in this stand, but species characteristic of larger forest blocks are unlikely to nest here.                                                                                                       |
| <b>Stand stocking:</b>                              | Well stocked with mature trees                                                                                                                                                                                                                                              |
| <b>Soils, Slopes, Site Quality, and Growth Rate</b> | Soils are gently sloping and well drained with good site quality. Growth rates estimated to be average to above average.                                                                                                                                                    |
| <b>Forest Health</b>                                | No issues were noted                                                                                                                                                                                                                                                        |
| <b>Invasive and Exotic Plants</b>                   | Norway maple, Asiatic bittersweet common buckthorn, and bush honeysuckle, 20-50% cover in patches, found throughout most of the stand.                                                                                                                                      |
| <b>Cultural Features</b>                            | A level feature reminiscent of a landscape patio bordered by large cut stones is located in the southeast corner of this stand north of the carriage trail.                                                                                                                 |
| <b>Management Objectives and Recommendations</b>    |                                                                                                                                                                                                                                                                             |
| <b>Desired Future Condition</b>                     | Older, mixed species pine-oak forest with multiple canopy layers                                                                                                                                                                                                            |
| <b>Management Recommendations</b>                   | <ul style="list-style-type: none"> <li>Control invasive plants</li> <li>Refer to general recommendations for trails</li> <li>Research and decide on management of the “patio” area described above</li> <li>No other active management recommended at this time.</li> </ul> |

| Stand 3                                   |                                                                                                                                                                                                                                                                                                                                                                                 | Map Unit | Acres                       |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
|                                           |                                                                                                                                                                                                                                                                                                                                                                                 | 3        | 3.12                        |
| CURRENT CONDITIONS                        |                                                                                                                                                                                                                                                                                                                                                                                 |          | Structure Class and % Cover |
| Cover Type                                | White Oak-Red Oak-White Pine                                                                                                                                                                                                                                                                                                                                                    |          | 4B                          |
| Overstory                                 | White oak, red oak, white pine, plus lesser amounts of hemlock and white ash                                                                                                                                                                                                                                                                                                    |          | 3-5B                        |
| Midstory                                  | Hemlock, red maple                                                                                                                                                                                                                                                                                                                                                              |          | 3C                          |
| Understory:                               | Hemlock, red maple                                                                                                                                                                                                                                                                                                                                                              |          | <5%                         |
| Stand description, age and history:       | Mature hardwoods with a mixed conifer component. The largest oaks range from 20-40” DBH, with other species in the 12-20” diameter range. Ground cover species noted include lowbush blueberry, black cherry seedlings, and asters. The smooth soil surface topography in this and nearby stands suggests that the western third Baxter Woods was a field at one point in time. |          |                             |
| Wildlife Habitat Values                   | In addition to species favoring mature hardwoods, pine warblers may nest in this stand, but species characteristic of larger forest blocks are unlikely to nest here.                                                                                                                                                                                                           |          |                             |
| Stand stocking:                           | Well stocked with mature trees.                                                                                                                                                                                                                                                                                                                                                 |          |                             |
| Soils, Slopes, Site Quality, and Growth   | Soils are gently sloping and well drained with good site quality. Growth rates estimated to be average to above average.                                                                                                                                                                                                                                                        |          |                             |
| Forest Health                             | No issues noted. Hemlock wooly adelgid may be present but it was not observed in the understory.                                                                                                                                                                                                                                                                                |          |                             |
| Invasive and Exotic Plants                | Norway maple, Asiatic bittersweet common buckthorn, and bush honeysuckle, 20-50% cover in patches, found throughout most of the stand.                                                                                                                                                                                                                                          |          |                             |
| Cultural Features                         | None noted except trails                                                                                                                                                                                                                                                                                                                                                        |          |                             |
| Management Objectives and Recommendations |                                                                                                                                                                                                                                                                                                                                                                                 |          |                             |
| Desired Future Condition                  | Older, mixed species forest with multiple canopy layers                                                                                                                                                                                                                                                                                                                         |          |                             |
| Management Recommendations                | <ul style="list-style-type: none"><li>Refer to general recommendations for trails</li><li>No other active management recommended at this time</li></ul>                                                                                                                                                                                                                         |          |                             |

| Stand 4                                   |                                                                                                                                                                                                      | Map Unit                    | Acres |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------|
|                                           |                                                                                                                                                                                                      | 4                           | 5.47  |
| CURRENT CONDITIONS                        |                                                                                                                                                                                                      | Structure Class and % Cover |       |
| Cover Type                                | Red Oak                                                                                                                                                                                              |                             | 4-5A  |
| Overstory                                 | Red oak, plus minor component of beech, white oak, white ash, sugar maple, yellow birch and hemlock                                                                                                  |                             | 5A    |
| Midstory                                  | Hemlock, beech, red maple, red oak                                                                                                                                                                   |                             | 2C    |
| Understory:                               | Beech, witch hazel, black cherry, balsam fir                                                                                                                                                         |                             | 5-70% |
| Stand description, age and history:       | This is primarily a hardwood stand with hemlock in small patches. Structure is multi-aged but a mature canopy is dominant, ranging from 12-30" DBH and 60-80' in height.                             |                             |       |
| Wildlife Habitat Values                   | This stand provides habitat values of mature deciduous mixed forest, but species characteristic of larger forest blocks are unlikely to nest here. Scattered snags and cavity trees 12-18" observed. |                             |       |
| Stand stocking:                           | This stand is well stocked with mature trees.                                                                                                                                                        |                             |       |
| Soils, Slopes, Site Quality, and Growth   | Soils are gently sloping and well drained with good site quality. Growth rates estimated to be average to above average.                                                                             |                             |       |
| Forest Health                             | No issues were noted                                                                                                                                                                                 |                             |       |
| Invasive and Exotic Plants                | Norway maple, Asiatic bittersweet common buckthorn, and bush honeysuckle, 20-50% cover in patches, found throughout most of the stand.                                                               |                             |       |
| Cultural Features                         | Carriage trail and footpaths                                                                                                                                                                         |                             |       |
| Management Objectives and Recommendations |                                                                                                                                                                                                      |                             |       |
| Desired Future Condition                  | Older, mixed species forest with multiple canopy layers                                                                                                                                              |                             |       |
| Management Recommendations                | <ul style="list-style-type: none"><li>Control invasive plants</li><li>Refer to general recommendations for trails</li><li>No other active management recommended at this time.</li></ul>             |                             |       |

| Stand 5a                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Map Unit | Acres                       |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5a       | 12.04                       |
| CURRENT CONDITIONS                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | Structure Class and % Cover |
| Cover Type                          | Red Oak-White Pine-Hemlock                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | 4-5A                        |
| Overstory                           | White oak, red oak, white pine; associated include hemlock, red pine, red maple, white ash, beech, and yellow birch                                                                                                                                                                                                                                                                                                                                              |          | 5B                          |
| Midstory                            | Hemlock, plus lesser amounts of red maple, white ash and yellow birch                                                                                                                                                                                                                                                                                                                                                                                            |          | 2-3B                        |
| Understory:                         | Hemlock                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          | 0-30% (average <10%)        |
| Stand description, age and history: | This is a distinctly two-aged stand with a mature hardwood-dominated canopy 16-30" DBH and 60-80' in height over an intermediate conifer layer dominated by hemlock. The presence of scattered large, old (probably over 150 years) hemlock in the overstory suggests that this area may never have been completely cleared. In contrast to the stands nearer to Stevens Avenue, the hummocky soil surface topography indicates that this area was never plowed. |          |                             |
| Wildlife Habitat Values             | This stand provides habitat values of mature mixed hardwood-conifer forest, but has a minimal understory and ground cover layers favored by some species, and species characteristic of larger                                                                                                                                                                                                                                                                   |          |                             |

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | forest blocks are unlikely to nest here.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Stand stocking:</b>                           | Well stocked with mature trees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Soils, Slopes, Site Quality, and Growth</b>   | Soils are gently sloping, moderately well drained on the west to somewhat-poorly drained in lower-lying drainages and seeps downslope to the east. Growth rates estimated to be average.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Forest Health</b>                             | Hemlock scale was observed on two plots; hemlock wooly adelgid (HWA) may be present in small amounts but was not observed. Due to the large amount of hemlock in this stand complete control of HWA may not be feasible and cultural practices to promote species diversity should be considered. No other issues were noted.                                                                                                                                                                                                                                                                                                                               |
| <b>Invasive and Exotic Plants</b>                | A patch dominated by bittersweet is located near the west end of the stand adjacent. Linden, an exotic not technically classified as “invasive” is becoming established in the understory (see map).                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Cultural Features</b>                         | A shallow seasonal pool that appears to have been a landscape feature of the Forest Home estate is located near the western end of this stand (see map VP1). Carriage trails and footpaths cross the stand in a generally east-west direction.                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Management Objectives and Recommendations</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Desired Future Condition</b>                  | Older, mixed species forest with multiple canopy layers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Management Recommendations</b>                | <ul style="list-style-type: none"> <li>Control invasive plants</li> <li>Consider excavating the seasonal pool (VP1) to a high-water depth of 18-28” to enhance habitat values for amphibians</li> <li>Closing the two footpaths within the stand interior would reduce disturbance to wildlife.</li> <li>Refer to general recommendations for trails</li> <li>Removing some of the midstory hemlock in other parts of the stand would proactively reduce risk of hemlock loss while enhancing wildlife habitat by promoting understory and ground cover plant layers. However, this does not appear to be allowable under the deed restrictions.</li> </ul> |

| Stand 5b                                     |                                                                                                                                                                                          | Map Unit                    | Acres |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------|
|                                              |                                                                                                                                                                                          | 5b                          | 0.49  |
| CURRENT CONDITIONS                           |                                                                                                                                                                                          | Structure Class and % Cover |       |
| Cover Type                                   | Hemlock                                                                                                                                                                                  |                             | 5B    |
| Overstory                                    | Hemlock, plus white pine, red oak, and yellow birch                                                                                                                                      |                             | 5C    |
| Midstory                                     | Hemlock, red oak                                                                                                                                                                         |                             | 2-3C  |
| Understory:                                  | Hemlock beech                                                                                                                                                                            |                             | 20%   |
| Stand description, age and history:          | This is a legacy patch of very old (probably over 150 years) hemlock and other species. There is no evidence of cutting.                                                                 |                             |       |
| Wildlife Habitat Values                      | This stand is an inclusion within the larger Stand 5a. Refer to that stand description for details                                                                                       |                             |       |
| Stand stocking:                              | Moderate density due to some loss of overstory hemlock.                                                                                                                                  |                             |       |
| Soils, Slopes, Site Quality, and Growth Rate | Soils are gently sloping, moderately well drained on the west to somewhat-poorly drained in lower-lying drainages and seeps downslope to the east. Growth rates estimated to be average. |                             |       |
| Forest Health                                | Several large hemlocks have died within the past 10 years, possible from hemlock scale.                                                                                                  |                             |       |
| Invasive and Exotic Plants                   | None noted                                                                                                                                                                               |                             |       |
| Cultural Features                            | Footpath                                                                                                                                                                                 |                             |       |
| Management Objectives and Recommendations    |                                                                                                                                                                                          |                             |       |
| Desired Future                               | Older, mixed species forest with multiple canopy layers                                                                                                                                  |                             |       |

|                                   |                                                                                                                                                                                                          |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Condition</b>                  |                                                                                                                                                                                                          |
| <b>Management Recommendations</b> | <ul style="list-style-type: none"> <li>Control elongate hemlock scale and hemlock woolly adelgid (see <i>Insect and Disease</i> section)</li> <li>Refer to general recommendations for trails</li> </ul> |

| Stand 6                                   |                                                                                                                                                                                                                                                                                        | Map Unit                    | Acres |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------|
|                                           |                                                                                                                                                                                                                                                                                        | 6                           | 0.84  |
| CURRENT CONDITIONS                        |                                                                                                                                                                                                                                                                                        | Structure Class and % Cover |       |
| Cover Type                                | Red Oak – White Pine                                                                                                                                                                                                                                                                   |                             | 4-5A  |
| Overstory                                 | Red oak, white pine, plus beech and red pine                                                                                                                                                                                                                                           |                             | 4-5A  |
| Midstory                                  | Hemlock, beech; associates include red maple and yellow birch                                                                                                                                                                                                                          |                             | 2-3C  |
| Understory:                               | Hemlock, beech                                                                                                                                                                                                                                                                         |                             | <30%  |
| Stand description, age and history:       | Mature hardwood-conifer mix with a dense, mature overstory 12-24" DBH and 60-80' in height over a moderate density understory and midstory. This stand is very similar to Stand 4 and has a lower hemlock component than Stand 5. An old fire scar was observed on a white pine stump. |                             |       |
| Wildlife Habitat Values                   | Typical of a mature oak-pine forest, but species characteristic of larger forest blocks are unlikely to live here.                                                                                                                                                                     |                             |       |
| Stand stocking:                           | Well stocked with mature trees.                                                                                                                                                                                                                                                        |                             |       |
| Soils, Slopes, Site Quality, and Growth   | Soils are gently sloping and moderately well drained with apparently average growth rates.                                                                                                                                                                                             |                             |       |
| Forest Health                             | Hemlock scale and beech-bark disease ( <i>Nectria</i> canker) observed                                                                                                                                                                                                                 |                             |       |
| Invasive and Exotic Plants                | None observed                                                                                                                                                                                                                                                                          |                             |       |
| Cultural Features                         | Footpath and carriage trail                                                                                                                                                                                                                                                            |                             |       |
| Management Objectives and Recommendations |                                                                                                                                                                                                                                                                                        |                             |       |
| Desired Future Condition                  | Older, mixed species oak-pine forest with multiple canopy layers                                                                                                                                                                                                                       |                             |       |
| Management Recommendations                | <ul style="list-style-type: none"><li>• Refer to general recommendations for trails</li><li>• No other management activities recommended at this time</li></ul>                                                                                                                        |                             |       |

| <b>Stand 7</b>                                 |                                                                                                                                                                                                                            | <b>Map Unit</b> | <b>Acres</b>                |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|
|                                                |                                                                                                                                                                                                                            | <b>7</b>        | <b>0.62</b>                 |
| <b>CURRENT CONDITIONS</b>                      |                                                                                                                                                                                                                            |                 | Structure Class and % Cover |
| <b>Cover Type</b>                              | Red Maple                                                                                                                                                                                                                  |                 | 3-4A                        |
| <b>Overstory</b>                               | Red maple, plus minor component of red oak and white ash                                                                                                                                                                   |                 | 3-4A                        |
| <b>Midstory</b>                                | Red oak, hemlock, red maple                                                                                                                                                                                                |                 | 2D                          |
| <b>Understory:</b>                             | Winterberry, arrow-wood viburnum, balsam fir, hemlock, yellow birch, white pine                                                                                                                                            |                 | +/- 50%                     |
| <b>Stand description, age and history:</b>     | This is younger, even-aged stand that developed on what was likely an old field. The overstory is 8-12" DBH and 50-70' in height. The smooth soil surface topography in this area was likely a field at one point in time. |                 |                             |
| <b>Wildlife Habitat Values</b>                 | The dense understory provides cover not generally found elsewhere in Baxter Woods.                                                                                                                                         |                 |                             |
| <b>Stand stocking:</b>                         | Well stocked with intermediate-sized trees.                                                                                                                                                                                |                 |                             |
| <b>Soils, Slopes, Site Quality, and Growth</b> | Mostly level, somewhat poorly drained with poorly drained patches. Growth rates estimated to be average to below average where wet.                                                                                        |                 |                             |

|                                                  |                                                                                                                                                                           |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Forest Health</b>                             | No issues were noted                                                                                                                                                      |
| <b>Invasive and Exotic Plants</b>                | Japanese knotweed, barberry, burning bush                                                                                                                                 |
| <b>Cultural Features</b>                         | None observed                                                                                                                                                             |
| <b>Management Objectives and Recommendations</b> |                                                                                                                                                                           |
| <b>Desired Future Condition</b>                  | Older, mixed species pine-oak forest with multiple canopy layers                                                                                                          |
| <b>Management Recommendations</b>                | <ul style="list-style-type: none"> <li>Control invasive plants</li> <li>Allow this stand to develop - no other management activities recommended at this time.</li> </ul> |

| Stand 8                                      |                                                                                                                                                                                                                                                                                                                                                         | Map Unit | Acres                       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
|                                              |                                                                                                                                                                                                                                                                                                                                                         | 8        | 0.59                        |
| CURRENT CONDITIONS                           |                                                                                                                                                                                                                                                                                                                                                         |          | Structure Class and % Cover |
| Cover Type                                   | White Pine – Red Oak – Red Maple                                                                                                                                                                                                                                                                                                                        |          | 4-5A                        |
| Overstory                                    | White pine (60%), plus red oak, white oak, and red pine                                                                                                                                                                                                                                                                                                 |          | 4-5A                        |
| Midstory                                     | Red oak, white oak, yellow birch , beech, white ash                                                                                                                                                                                                                                                                                                     |          | 2C                          |
| Understory:                                  | Red oak, balsam fir, maple-leaved viburnum, hazelnut, huckleberry, lowbush blueberry                                                                                                                                                                                                                                                                    |          | 60-70%                      |
| Stand description, age and history:          | The overstory is 12-24” DBH and 60-80’ in height. This essentially an even-aged stand but with a developing understory. The smooth soil surface topography in this was likely a field at one point in time.                                                                                                                                             |          |                             |
| Wildlife Habitat Values                      | This stand buffers one side of the pond and has better understory habitat that is more robust than in most other parts of the forest. General habitat values are characteristic of older forests but species characteristic of larger forest blocks are unlikely to nest here. Large (>18”) and mid-sized snags and/or cavity trees were observed here. |          |                             |
| Stand stocking:                              | Well stocked with mature trees.                                                                                                                                                                                                                                                                                                                         |          |                             |
| Soils, Slopes, Site Quality, and Growth Rate | Soils are gently sloping and appear to be moderately well drained. Growth rates are estimated to be average.                                                                                                                                                                                                                                            |          |                             |
| Forest Health                                | No issues were noted.                                                                                                                                                                                                                                                                                                                                   |          |                             |
| Invasive and Exotic Plants                   | A single Japanese barberry plant was observed.                                                                                                                                                                                                                                                                                                          |          |                             |
| Cultural Features                            | Two short “wildcat” trails (unauthorized footpaths) lead from the pond area to Forest Avenue                                                                                                                                                                                                                                                            |          |                             |
| Management Objectives and Recommendations    |                                                                                                                                                                                                                                                                                                                                                         |          |                             |
| Desired Future Condition                     | Older, mixed species pine-oak forest with multiple canopy layers                                                                                                                                                                                                                                                                                        |          |                             |
| Management Recommendations                   | <ul style="list-style-type: none"><li>• Control invasive plants</li><li>• Consider blocking the wildcat trails</li><li>• No other management activities recommended at this time.</li></ul>                                                                                                                                                             |          |                             |

| Stand 9                   |                                      | Map Unit | Acres                       |
|---------------------------|--------------------------------------|----------|-----------------------------|
|                           |                                      | 9        | 1.8                         |
| <b>CURRENT CONDITIONS</b> |                                      |          | Structure Class and % Cover |
| <b>Cover Type</b>         | Red Maple-Red Oak                    |          | 4-5B                        |
| <b>Overstory</b>          | Red maple, red oak, white ash, beech |          | 4-5B                        |

|                                                  |                                                                                                                                                                                                                                                                                                    |         |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>Midstory</b>                                  | White ash, yellow birch, hemlock, red maple                                                                                                                                                                                                                                                        | 2C      |
| <b>Understory:</b>                               | Balsam fir, beech, hemlock, yellow birch, winterberry                                                                                                                                                                                                                                              | +/- 40% |
| <b>Stand description, age and history:</b>       | This is maturing hardwood stand in a low-lying area with stream channels. The overstory is 10-18" DBH and 60-80' in height over a low-density midstory with trees 2-4" DBH.                                                                                                                        |         |
| <b>Wildlife Habitat Values</b>                   | A moderately dense understory in the north half of the stand provides good wildlife cover. Several snags and downed trees were observed. A small excavate pool (VP2) was observed in this stand. Twelve spotted salamander egg masses and one wood frog egg mass were observed here in April 2016. |         |
| <b>Stand stocking:</b>                           | Well stocked with mixed hardwoods                                                                                                                                                                                                                                                                  |         |
| <b>Soils, Slopes, Site Quality, and Growth</b>   | Soils are nearly level with steeper slopes immediately adjacent to the lower section of the stream. Soils vary from moderately well drained to somewhat poorly drained in lower lying areas. Growth appears to be average for the site.                                                            |         |
| <b>Forest Health</b>                             | No issues were noted.                                                                                                                                                                                                                                                                              |         |
| <b>Invasive and Exotic Plants</b>                | One Japanese barberry was observed near the carriage trail.                                                                                                                                                                                                                                        |         |
| <b>Cultural Features</b>                         | Footpaths and storm drain                                                                                                                                                                                                                                                                          |         |
| <b>Management Objectives and Recommendations</b> |                                                                                                                                                                                                                                                                                                    |         |
| <b>Desired Future Condition</b>                  | Older, mixed species forest with multiple canopy layers                                                                                                                                                                                                                                            |         |
| <b>Management Recommendations</b>                | <ul style="list-style-type: none"><li>• Control invasive plants</li><li>• No other management activities recommended at this time.</li></ul>                                                                                                                                                       |         |

| Stand 10                                  |                                                                                                                                                                                                                         | Map Unit | Acres                       |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------|
|                                           |                                                                                                                                                                                                                         | 10       | 0.3                         |
| CURRENT CONDITIONS                        |                                                                                                                                                                                                                         |          | Structure Class and % Cover |
| Cover Type                                | Norway Maple                                                                                                                                                                                                            |          | 3-4A                        |
| Overstory                                 | Norway maple (75%), white ash (25%)                                                                                                                                                                                     |          | 3-4A                        |
| Midstory                                  | Red oak, hemlock, red maple                                                                                                                                                                                             |          | 2D                          |
| Understory:                               | Winterberry, balsam fir, hemlock, yellow birch, arrow-wood viburnum                                                                                                                                                     |          | +/- 50%                     |
| Stand description, age and history:       | This intermediate-aged stand has developed on a site that was a field at one point in time. The dominant Norway maple overstory 1-16” DBH and 60-80’ in height developed from seed sources in nearby residential areas. |          |                             |
| Wildlife Habitat Values                   | A moderately dense provides good wildlife cover in parts of the stand, but other areas are very open. There snags or cavity trees and little downed wood.                                                               |          |                             |
| Stand stocking:                           | Well stocked                                                                                                                                                                                                            |          |                             |
| Soils, Slopes, Site Quality, and Growth   | Soils are moderately well drained to somewhat poorly drained and slope toward the stream and storm drain near Forest Avenue. Overall site quality and growth rates are good.                                            |          |                             |
| Forest Health                             | No insect or disease issues were noted.                                                                                                                                                                                 |          |                             |
| Invasive and Exotic Plants                | Norway maple dominates the stand. One burning bush plant was also observed.                                                                                                                                             |          |                             |
| Cultural Features                         | None                                                                                                                                                                                                                    |          |                             |
| Management Objectives and Recommendations |                                                                                                                                                                                                                         |          |                             |
| Desired Future Condition                  | Restored forest dominated by native species                                                                                                                                                                             |          |                             |

|                                   |                                                                                                                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Management Recommendations</b> | <ul style="list-style-type: none"> <li>Remove all Norway maple and plant native species in conjunction with drainage improvements near Forest Avenue</li> </ul> |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **Area 11. Encroachment Zone 0.22 acres**

### **Description**

This narrow strip along the property boundary north of Hartley Street has been encroached upon by the back yards of residences in that area. Small lawns, gardens, and furniture are found on the Baxter Woods property in this area. A slackline has been attached two trees on city property in the woods behind one of the homes. Brush dumping is also evident. Invasive plants include bush honeysuckle, Japanese barberry, Bishop's weed, and Lemon balm.

### **Recommendations.**

- Clearly establish the property line with a fence or other permanent markers with signage.
- Restore the area to more natural conditions by removing all landscaping features, controlling invasive plants, and planting native trees and shrubs.

## **Area F1 Stevens Avenue Entrance - 1.06 acres**

### **Description**

This area is being managed like a typical city park with scattered trees and mown grass. Overstory trees 10-18" DBH and 60-60 ft. in height cover approximately 15% of the area; species included linden, Norway spruce, sugar maple, and white pine . A patch of recently planted sugar maple 2-3" DBH and 10-20 ft. in height accounts another 15%. Shrubs and understory trees are absent. Wildlife use would be primarily limited canopy species tolerant of edges and human activity. This area provides a transition from the urban environment to the natural forest that characterizes most of Baxter Woods.

### **Recommendations**

- Plant patches of native shrubs with wildlife food and cover value away from the areas of greatest human activity.
- After the City has adopted an action plan for the forest the kiosk could be updated with additional information on the unique ecological values of Baxter Woods and goals for management.

## **Area F2 Forest Avenue Entrance - 0.41 acres**

### **Description**

This area is being managed like a typical city park with scattered planted trees (larch, paper birch, tupelo) and a large white pine and red maple. The entire area between and under the trees is mowed. Wildlife use would be primarily limited canopy species tolerant open-scattered trees and human activity. This area provides a transition from the urban environment to the natural forest that characterizes most of Baxter Woods.

### **Recommendations**

- Plant a border of native shrubs with wildlife food and cover value along the north edge of the mown area and along the pond edge, leaving one or two openings for vistas and pond access.

## **Area F3 North Meadow 0.72 acres**

### **Description**

This area has a diversity of open/edge habitat, including mown grass, old field edges with grasses, goldenrods, raspberries, staghorn sumac, and apple that is unique in Baxter Woods. Invasive plants include common buckthorn along the west edge and bittersweet on the east.

### **Recommendations**

- Control invasive plants.
- Develop a site planting and mowing plan to include:
  - a) Increasing the area in old field habitat by allowing encroachment into the frequently mown area, or purposefully planting patches to native wildflowers that will benefit butterflies and other insect pollinators.
  - b) Planting patches of natives shrubs that provide wildlife food and cover.
  - c) Maintaining the habitat type by mowing old field areas on a 3-5-year cycle so that both old field and shrub patches will always be present, and cut trees that are encroaching on this area if allowed by deed.

## **F4 Lawn and Shrub - 0.15 acres**

### **Description**

Residences near the West end of Hartley Street are encroaching onto City property. The MBW south boundary is unmarked and encroachment appears to extends 20 ft. to 50 ft. past the property line, including includes mown lawn, raised-bed garden, and leaf dumping. The remaining area includes a mix of goldenrods, asters, raspberries and planted white pine and white spruce saplings. Invasive plants include Norway maple and Japanese knotweed.

### **Recommendations**

- Control invasive plants.
- Fence or otherwise clearly mark the entire boundary line and work with abutters to maintain the area in a natural condition. Maintaining a mix of shrubs and old-field herbaceous plants would provide habitat conditions that are under-represented on the MBW.

## Maine Audubon Priority Forest Birds

| Species, Region <sup>1</sup> and Habitat Age Class | Preferred Stand Condition                                                                     | Habitat Preference<br>1: Preferred; 2: Utilized; 0: Not used |                   |                     |                    |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------|---------------------|--------------------|
|                                                    |                                                                                               | Oak Pine                                                     | Northern Hardwood | Northern Mixedwoods | Northern Softwoods |
| Young Forest                                       |                                                                                               |                                                              |                   |                     |                    |
| American Woodcock                                  | Young forest and shrub patches with clearings for singing grounds and roosting                | 2                                                            | 2                 | 2                   | 0                  |
| Chestnut-sided Warbler                             | Young forest patches typically 5-15 years old                                                 | 0                                                            | 1                 | 2                   | 0                  |
| Mourning Warbler (N/C)                             | Young forest with dense understory 2-10 years after harvest                                   | 2                                                            | 1                 | 2                   | 2                  |
| Magnolia Warbler                                   | Young of multi-aged forest with dense young conifers                                          | 0                                                            | 0                 | 1                   | 1                  |
| Intermediate & Older Forests                       |                                                                                               |                                                              |                   |                     |                    |
| Black-throated Blue Warbler                        | Intermediate and older forests with dense understory and saplings, large forest blocks        | 2                                                            | 1                 | 1                   | 0                  |
| Yellow-bellied Sapsucker                           | Intermediate and older forests with snags or decaying trees and shade-intolerant tree species | 2                                                            | 1                 | 2                   | 0                  |
| Eastern Wood-Pewee                                 | Intermediate or older forest with gaps                                                        | 2                                                            | 2                 | 2                   | 0                  |
| Black-throated Green Warbler                       | Intermediate to older forest with hemlock or other conifers, large forest blocks              | 0                                                            | 0                 | 2                   | 1                  |
| Older Forests                                      |                                                                                               |                                                              |                   |                     |                    |
| Bay-breasted Warbler                               | Older – multi story                                                                           | 0                                                            | 0                 | 2                   | 1                  |
| Blackburnian Warbler                               | Older conifer and mixed interior forest                                                       | 2                                                            | 0                 | 1                   | 1                  |
| Northern Parula                                    | Older conifer or mixed moist forests, large patches                                           | 0                                                            | 2                 | 2                   | 1                  |
| Scarlet Tanager                                    | Older forest with oak, large forest blocks                                                    | 1                                                            | 1                 | 2                   |                    |
| Ovenbird                                           | Older forest, large forest blocks                                                             | 1                                                            | 1                 | 1                   | 2                  |
| Wood Thrush                                        | Older forest, larger forest blocks                                                            | 1                                                            | 1                 | 2                   |                    |
| Young to Older Forests                             |                                                                                               |                                                              |                   |                     |                    |
| Veery                                              | Riparian forest and other moist forests with dense understory                                 | 2                                                            | 1                 | 2                   | 2                  |
| Black-backed Woodpecker (N)                        | Variable aged forests with abundant dead/dying conifers                                       | 0                                                            | 0                 | 0                   | 1                  |
| Boreal Chickadee                                   | Variable aged forests with cavity or decaying trees                                           | 0                                                            | 0                 | 0                   | 1                  |
| Canada Warbler                                     | Variable aged, moist forests with dense understory; riparian areas, swamps                    | 0                                                            | 2                 | 1                   | 2                  |
| Northern Flicker                                   | Variable forest ages, snags or decay trees >12" preferred for nesting                         | 1                                                            | 1                 | 2                   | 2                  |
| Olive-sided Flycatcher                             | Variable, peatlands, riparian areas, young forest, and gaps with snags                        | 0                                                            | 0                 | 0                   | 1                  |

<sup>1</sup> Region: N – North, C – Central, S – South. No letter indicates statewide occurrence

Source: **Forestry for Maine Birds: A Forester's Guide.** Maine Audubon, Falmouth, ME. Publication pending 2016

## **Maine Audubon Priority Species known to breed at HRF or nearby:**

Source: noted by J. Witham 2016

### Breeding Birds

American Woodcock – breed here on a couple of occasions

Chestnut-sided Warbler – was one male around for a couple of years post-harvest, gaps just not big enough for them

Black-throated Blue Warbler – present in most years, most prevalent when red maple stump sprouts were at their peak

Eastern Wood-Pewee – increased following harvest, numbers down now

Black-throated Green Warbler – most common breeder with Ovenbird

Blackburnian Warbler – third most common

Northern Parula – one or two males every year

Scarlet Tanager – consistent breeder in low numbers

Ovenbird - most common breeder with BTG

Veery – numbers have dwindled to 0-1

Canada Warbler – one male for many years in red maple swamp

Northern Flicker – always around, few observations every year, never found a nest

### Migration only

Magnolia Warbler

Yellow-bellied Sapsucker

Olive-sided Flycatcher

Mourning Warbler

Other species never observed at HRF

## Harvest Guidelines for Retaining Wildlife Trees and Woody Biomass

### General Guidelines for all Managed Stands

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dead Snags</b>                              | <ul style="list-style-type: none"> <li>All dead snags should be considered for retention.</li> <li>Under conditions where hand crews are operating, snags that represent a hazard should be felled at the logging contractor's discretion as needed to comply with safety guidelines.</li> <li>Felled snags should be left in place.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Live Cavity Trees and Recruitment Trees</b> | <ul style="list-style-type: none"> <li>The general guideline is: <ul style="list-style-type: none"> <li><b>Four trees per acre &gt;12" dbh, including one &gt;18" dbh.</b></li> </ul> </li> <li>Select cavity trees first, if present, and then use recruitment trees to meet the guideline as needed. Retain a mix of species characteristic of the stand.</li> <li>All live cavity trees with evidence of advanced decay and signs of use by wildlife should be considered for retention. However, cavity trees (&lt;12" dbh) may be removed from the stand for silvicultural purposes unless there are not enough larger trees to meet the objective.</li> <li>Trees suitable for consideration as recruitment trees include live pulpwood-quality trees of large diameter (&gt;14" dbh) with evidence of interior defect and decay. Yellow birch and aspen with broken tops and maples with dead limbs in the lower crown are good candidates for consideration. Larger is better.</li> <li>When possible, avoid timber harvesting from April through mid July to avoid disrupting nesting birds and denning animals.</li> </ul> |
| <b>Downed and Dead Woody Debris</b>            | <ul style="list-style-type: none"> <li>Avoid damaging existing downed woody material during harvesting, especially large (12"+) logs and stumps.</li> <li>Attempt to leave large (&gt;12 inch dbh and &gt; 6 feet long) cull logs on site. Culls bucked out at the landing should be hauled back in the woods.</li> <li>If whole-tree harvesting, retain and scatter tops, limbs and smaller trees from 20% of the trees harvested.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### Retention of Live Trees in Even-aged Regeneration Harvests

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Harvest block &lt;10 ac.</b> | <ul style="list-style-type: none"> <li>Leave the amount specified in the <i>General Guidelines for All Managed Stands</i></li> <li>Additional overstory retention may not be needed if adjacent stands are in long-term uneven-aged management.</li> <li>Retain understory vegetation on ≥20% of the area.</li> </ul>                                                                                                      |
| <b>Harvest block &gt;10 ac.</b> | <ul style="list-style-type: none"> <li>Leave the amount specified in the <i>General Guidelines for All Managed Stands</i>.</li> <li>Leave representative uncut overstory in patches on ≥5% of the area. Larger patches (≥1 ac.) are preferred to protect forest understory vegetation. Identify retention patches prior to initial shelterwood cuts.</li> <li>Retain understory vegetation on ≥20% of the area.</li> </ul> |

#### Notes:

- Diameter targets for standing trees and downed logs will vary with forest type and site.
- Where trees of sufficient diameter to meeting the targets are not present, retain the largest trees present and attempt to achieve a similar basal area in retained trees.
- Not all stands can meet targets for numbers of wildlife trees at all times, and small scale variability (e.g., on any given acre) may be significant. Therefore, it may be appropriate to attempt to meet targets across several stands.
- Avoid or minimize biomass harvests in riparian zones, rare plant and wildlife habitats, and on low productivity sites and other sensitive areas. Avoid repeated biomass harvests on the same site.
- CAUTION! Dead and decaying trees are very dangerous, and loggers may need to fell them to comply with safety policies. If so, they should be left on the ground to provide habitat.**

**Source:** Developed by Maine Audubon (May 2008) based on *Biodiversity in the Forests of Maine* (C.A. Elliott, ed., U. Maine Coop. Extension 1999), other wildlife tree recommendations from multiple northeastern wildlife authors and researchers, and *Biomass Harvesting Guidelines for Forestlands, Brushlands, and Open Lands* (Minnesota Forest Resources Council, December 2007). The 20% understory retention guidelines for even-aged harvest is not included in the above but is recommended by Maine Audubon to help ensure that understory plant species and structure will become a significant part of the future stand.

## Recreational Trail Planning Considerations

Well used recreation trails have the potential to disturb some wildlife species. Disturbance will vary with species, usage level and type, and season. Following are some general considerations for ecologically friendly trails that may be used by a wide range of public and private ownerships. Not all the uses discussed below are applicable to all landowners or appropriate in all situations.

| Considerations for Recreation Trail Design and Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Trail Design and Layout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <ul style="list-style-type: none"> <li>✓ Well used recreation trails have the potential to disturb some wildlife species. Disturbance will vary with species, the usage level, type, and season.</li> <li>✓ To minimize disturbance to wildlife, create wildlife security areas consisting of large patches of habitat without trails, rather than crossing all sections of a woodlot with trails.</li> <li>✓ To minimize disturbance to aquatic wildlife, trails should not run parallel with the shore of water bodies and open wetlands for any distance. Rather, approach water bodies with spur trails to a screened viewpoint or have loop trails only approach the shoreline for short distances. See Maine Audubon's <a href="#">Conserving Wildlife in Maine's Shoreland Habitats</a>.</li> <li>✓ Poorly designed and built hiking trails can cause soil compaction, erosion, and degradation of water quality. American Trails has a number of excellent on-line resources on trail building and design (download: <a href="http://www.americantrails.org/resources/trailbuilding/index.html">http://www.americantrails.org/resources/trailbuilding/index.html</a>). The US Forest Service Trail Construction and Maintenance Handbook is also a helpful resource (download: <a href="http://www.fhwa.dot.gov/environment/fspubs/07232806/index.htm">http://www.fhwa.dot.gov/environment/fspubs/07232806/index.htm</a>).</li> </ul> |  |
| Mechanized Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| <ul style="list-style-type: none"> <li>✓ Mountain bikes increase the potential for permanent soil damage, off-trail use, and conflicts with other users. However, studies have generally shown that mountain bikes have no more impact on wildlife than pedestrians.</li> <li>✓ ATV use can cause severe soil damage, impact water quality, and affect forest values for other users of the area. Where ATV use is an objective, trails should follow the general design and layout principles above and use appropriate techniques to minimize damage to soils and water quality. Stream crossings and associated approaches, wet sites, and erosion on steep trails should be primary considerations.</li> <li>✓ Trails should avoid sensitive winter habitats such as deer wintering areas and be planned to minimize conflicts with non-mechanized users.</li> <li>✓ Consult trail design guidelines applicable to the type and amount of use anticipated.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Pets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <ul style="list-style-type: none"> <li>✓ Dogs should be leashed during the nesting season of ground-nesting birds (April to end of July). Examples of ground nesting birds that might be disturbed by dogs include woodcock, hermit thrush, and ovenbird. Dogs should also be leashed during winter when snow restricts animal movement and cold temperatures require energy conservation for survival.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |

## Widespread Invasive Forest Plants in Maine

The following table lists some of the most frequently encountered invasive plants in Maine forests. This is not intended to be a complete list – forest owners and managers should consult sources of information such as the Maine Natural Areas Program for more complete information.

| Widespread Invasive Forest Plants in Maine      |                             |                           |
|-------------------------------------------------|-----------------------------|---------------------------|
| Common Name                                     | Scientific Name             | Habitat                   |
| Barberry, Japanese                              | <i>Berberis thunbergii</i>  | Forest understory         |
| Buckthorn, common                               | <i>Rhamnus cathartica</i>   | Forest understory         |
| Buckthorn, glossy                               | <i>Frangula alnus</i>       | Forest understory         |
| Honeysuckle, bush                               | <i>Lonicera morrowii</i>    | Forest understory         |
| Honeysuckle, Japanese                           | <i>Lonicera japonica</i>    | Forest understory         |
| Honeysuckle, Tatarian                           | <i>Lonicera tatarica</i>    | Forest understory         |
| Japanese knotweed                               | <i>Fallopia japonica</i>    | Edges                     |
| Bittersweet, Asiatic                            | <i>Celastris orbiculata</i> | Edges, forest canopy vine |
| Loosestrife, purple                             | <i>Lythrum salicaria</i>    | Wetlands                  |
| Rose, multiflora                                | <i>Rosa multiflora</i>      | Old field, edges          |
| <b>Source:</b> Maine Natural Areas Program 2006 |                             |                           |

## Control of Invasive Terrestrial Plants in Maine

| Common Name                                                                 | Scientific Name                                             | Habitat                                  | Control                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Autumn Olive &amp; Russian Olive</a>                            | <i>Eleagnus umbellata</i> ,<br><i>Eleagnus angustifolia</i> | Edges and open areas                     | <b>Mechanical:</b> Pull smaller plants, followed by mowing or pulling sprouts as needed.<br><b>Chemical:</b> Glyphosate on cut stumps. (1)                                                                                                                                                                                                                       |
| <a href="#">Barberry, Japanese</a>                                          | <i>Berberis thunbergii</i>                                  | Forest understory                        | <b>Mechanical:</b> Pull shrubs, followed by mowing or pulling sprouts. Flame torch to lower stem may also be effective.<br><b>Chemical:</b> Glyphosate or triclopyr on cut stumps. (1, 2)                                                                                                                                                                        |
| <a href="#">Bittersweet, Asiatic</a>                                        | <i>Celastris orbiculata</i>                                 | Edges, forest canopy vine                | <b>Mechanical:</b> Repeated cutting or pulling plants.<br><b>Chemical:</b> Glyphosate or triclopyr on cut stems.<br>Seed bank may necessitate treatments repeated for several years. The flowers and fruit of Asiatic bittersweet grow from the joints where leaves join the vine, whereas American bittersweet's flowers are in terminal clusters. (1)          |
| <a href="#">Buckthorn, common &amp; glossy</a>                              | <i>Rhamnus cathartica</i><br><i>Frangula alnus</i>          | Forest understory                        | <b>Mechanical:</b> Flame torch stems <42 inches diameter. If cutting, repeated treatment is required.<br><b>Chemical:</b> Glyphosate or triclopyr cut stem or foliar treatment. Treat in fall when green leaves persist after native trees and shrubs have lost their leaves.<br>Resprouting may occur and seed bank may last 3 years. (1, 2)                    |
| <a href="#">Honeysuckle, bush</a><br><a href="#">Honeysuckle, Tartarian</a> | <i>Lonicera morrowii</i><br><i>Lonicera tatarica</i>        | Forest understory                        | <b>Mechanical:</b> Cutting, burning. Repeated treatments may be required.<br><b>Chemical:</b> Glyphosate or triclopyr on leaves or cut stumps. (1, 2)<br>Note: all non-native shrub honeysuckles have a hollow pith that is usually brown.                                                                                                                       |
| <a href="#">Honeysuckle, Japanese</a>                                       | <i>Lonicera japonica</i>                                    | Forest understory                        | <b>Mechanical:</b> Pull shrubs and roots when soil is moist (repeated treatment likely required).<br><b>Chemical:</b> Glyphosate or triclopyr on leaves or stems.<br>A vine that is distinguished from Maine's rare native vine honeysuckles by the separate leaves at the tip of the stem (on natives, a single fused terminal leaf wraps around the stem). (1) |
| <a href="#">Knotweed, Japanese</a>                                          | <i>Fallopia japonica</i>                                    | Edges                                    | <b>Mechanical:</b> Repeated cutting (3 or more times/season).<br><b>Chemical:</b> Cutting followed by glyphosate (repeat may be necessary). (1)                                                                                                                                                                                                                  |
| <a href="#">Mustard, garlic</a>                                             | <i>Alliaria petiolata</i>                                   | Forest understory, esp. moist/rich soils | <b>Mechanical:</b> Hand pulling in early season.<br><b>Chemical:</b> Glyphosate foliar or dormant season basal spray. (1)                                                                                                                                                                                                                                        |
| <a href="#">Loosestrife, purple</a>                                         | <i>Lythrum salicaria</i>                                    | Wetlands                                 | <b>Mechanical:</b> Pulling individual plants.<br><b>Chemical:</b> Glyphosate foliar spray or cut stem treatments.<br><b>Biological:</b> Release of beetles that feed exclusively on loosestrife has been effective on large infestations. (1)                                                                                                                    |
| <a href="#">Rose, multiflora</a>                                            | <i>Rosa multiflora</i>                                      | Old field, edges                         | <b>Mechanical:</b> Repeated mowing (up to six time per year for 2 years).<br><b>Chemical:</b> Glyphosate or triclopyr on cut stems. (1, 2)                                                                                                                                                                                                                       |

### Notes:

- This table is intended to provide a broad overview of problematic forest invasive species and methods to control them. Consult the sources below and other experts (e.g., an ecologist and/or forester and a licensed herbicide applicator) to develop and implement an invasive species control plan.
- Herbicides used on areas open to the public must be applied under the supervision of a licensed applicator, or for terrestrial application only if applied by an employee or volunteer and the area is closed for 7 days. Other legal requirement of the Maine Board of Pesticide Control apply but are not included in this overview.
- Both glyphosate ("Roundup," Rodeo," "Accord" etc.) and triclopyr ("Garlon," "Pathfinder," "Remedy," "Renovate," "Tahoe," etc.) may be used on forests certified by the Forest Stewardship Council if the [FSC Pesticide Policy](#) is followed (as of 2007).

### References:

- [University of Maine Invasive Plant Fact Sheets](#)
- [Wisconsin Manual For the Control of Ecologically Invasive Plants](#)

### Other Sources of Information:

[Weed Control Methods Handbook: Tools and Techniques for Use in Natural Areas](#) (The Nature Conservancy; mechanical and chemical control methods)  
[The Nature Conservancy - Wildlands Invasive Species Program](#) (information, links, workshops, on-line forums, etc)  
[Weeds Gone Wild: Alien Plant Invaders of Natural Areas](#) (lists, species fact sheets, and other information)

# Glossary of Forestry Terms

The following glossary was adapted from the Massachusetts Department of Conservation Forest Stewardship guidelines.

**Acceptable Growing Stock (AGS)** - See **Management Potential**.

**Aesthetics** - forest value rooted in beauty and visual appreciation

**Allowable Harvest** - the calculation of the amount of forest products that may be harvested, annually or periodically, from a specified area over a stated period, in accordance with the objectives of management.

**Aspect** - the orientation of a slope with respect to the compass; the direction toward which a slope faces. North facing slopes are generally cooler than south facing slopes, which often results in different plant communities.

**Basal area** - a measurement of the cross-sectional area of a tree trunk, in square feet, at breast height. Basal area (BA) of a forest stand is the sum of the basal areas of the individual trees, and is reported as BA per acre. Basal area is used an indicator of total stand stocking (occupancy of a site).

**Biological diversity** - the variety of plants and animals, the communities they form, and the ecological functions they perform at the genetic, stand, landscape, and regional levels.

**Biological legacy** - an organism, a reproductive portion of an organism, or a biologically derived structure or pattern inherited from a previous ecosystem—Note: biological legacies often include large trees, snags, and down logs left after harvesting to provide refuge and to structurally enrich the new stand.

**Biological maturity** - the point in the life cycle of a tree at which there is no net biomass accumulation; the stage before decline when annual growth is offset by breakage and decay. See **Financial Maturity**

**Biomass** – 1) the total weight of all organisms in a particular population, sample, or area; biomass production may be used as an expression of site quality; 2) tree tops or entire trees that are harvested and chipped as a source of fuel.

**BMP** - Abbrev. *Best Management Practices*.

**Board foot** - See **Volume, tree**

**Bole** - the main trunk of a tree.

**Broad-based dip** - an erosion control structure similar to and having the same purpose as a waterbar. Structurally, broad-based dips differ in that they are generally longer, less abrupt, often are paved with stone and are more appropriately used on truck roads. See **Waterbar**.

**Browse** - portions of woody plants including twigs, shoots, and leaves used as food by such animals as deer.

**Buffer Strip** - a forest area of light cutting used to protect sensitive sites or vistas.

**Canopy** - the upper level of a forest, consisting of branches and leaves of taller trees.

**Catastrophic Disturbance** – Natural disturbances that result in substantial tree mortality, such as wildfire, hurricanes, tornadoes, or major insect outbreaks

**Cleaning** - See **Intermediate Cuttings**.

**Coarse Woody Debris (CWD)** - Dead and down woody material that is generally greater than 3” in diameter. Also referred to as Downed Woody Material (DWM). See **Biological Legacy**

**Cord** - See **Volume, tree**.

**Compartment** - a subdivision of a forest property for administrative convenience and record keeping purposes

**Community** - a collection of living organisms in a defined area that function together in an organized system through which energy, nutrients, and water cycle.

**Conservation** - the wise use and management of natural resources.

**Coppice Cutting** - See **Regeneration Cutting**.

**-Corridor** - a strip of wildlife habitat unique from the landscape on either side of it that links one isolated ecosystem “island” (e.g., forest fragment) to another. Corridors allow certain species access to isolated habitat areas, which consequently contributes to the genetic health of the populations involved.

**Critical habitat** - Uncommon habitat of great value to wildlife such as abandoned fields, orchards, aspen stands, blueberry barrens, cliffs, talus, caves, etc.

**Crop tree** - a term traditionally reserved to describe a tree of a commercially desirable species, with the potential to grow straight, tall, and vigorously. However, a crop tree can be one selected for non-timber purposes (varying with landowner objectives), such as mast production or den tree potential. See **Management Potential**

**Crown class** - an evaluation of an individual tree’s crown in relation to its position in the canopy and the amount of full sunlight it receives. The four recognized categories are: dominant (D), codominant (C), intermediate (I), and overtopped or suppressed (S).

**Cull Tree** - a live tree of commercial species that contains less than 50% usable material.

*Rough cull:* a tree whose primary cause of cull is crook, sweep, etc.

*Rotten cull:* a tree whose primary cause of cull is rot.

**Danger tree** - A standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stems or limbs, and the direction and lean of the tree. OSHA 1910.266, Logging Operations

**Daylight** - verb; to cut vegetation adjacent to a road or other open area to increase solar insulation to its surface. Daylighting is often used to speed the time for roads to dry after a period of wet weather.

**DBH** - abbrev. *diameter at breast height*; the diameter at breast height of a standing tree measured at 4.5' above the ground.

**Den Tree**-living hollow trees that are used for shelter by mammals or birds. Syn.; cavity tree.

**Diameter-limit cut** - a timber harvesting treatment in which all trees over a specified diameter may be cut. See **High Grading**.

**Disturbance** - a natural or human-induced environmental change that alters one or more of the floral, faunal, and microbial communities within an ecosystem. Timber harvesting is the most common human disturbance. Windstorms and fire are examples of natural disturbance.

**Ecology** - the study of interactions between living organisms and their environment.

**Economic Maturity** - See **Financial Maturity**

**Ecosystem** - a natural unit comprised of living organisms and their interactions with their environment, including the circulation, transformation, and accumulation of energy and matter.

**Ecosystem management** - Forest management that is applied with emphases on 1.) maintaining biodiversity, 2.) addressing societal or social needs, and 3.) being adaptive. See **Forest Management**.

**Ecotype** - a genetic subdivision of a species resulting from the selective action of a particular environment and showing adaptation to that environment. Ecotypes may be geographic, climatic, elevational, or soil-related.

**Edge** - the boundary between open land and woodland or between any two distinct ecological communities. This transition area between environments provides valuable wildlife habitat for some species, but can be problematic for some species, due to increased predation and parasitism. Syn.: ecotone

**Endangered species** - See **Rare Species**

**Even-aged stand** - See **Stand Structure**.

**Featured Resource** - the resource that is the primary focus of management activities.

**Financial maturity** - the point in the life cycle of a tree or stand when harvesting can be most profitable, i.e., when the rate of value increase of an individual tree or stand falls below a desired alternative rate of return. Syn.: Economic Maturity

**Forest land** - Land that is at least 10% stocked with trees.

**Forest interior dependent species** - animal species that depend upon extensive areas of continuous, unbroken forest habitat to live and reproduce, and are susceptible to higher rates of predation and population decline when interior forest habitat is fragmented or disturbed. See **Fragmentation**.

**Forest management** - the practical application of biological, physical, quantitative, managerial, economic, social and policy principles to the regeneration, management, utilization and conservation of forests to meet specified goals and objectives while maintaining the productivity of the forest.

**Forest Road** - A road owned by and under the jurisdiction of the Department of Conservation and Recreation, Division of Parks and Recreation.

**Forest type** - aggregations of tree species that commonly occur because of similar ecological requirements. Examples of major northeastern forest types include northern hardwoods, white pine, oak-pine, and spruce-fir. Syn. forest association.

**Filter Strip** - an area of forest land, adjoining the bank of a water body, where forest vegetation and undisturbed soils are retained to filter surface runoff..

**Fragmentation, forest** - the segmentation of a large tract or contiguous tracts of forest to smaller patches, often isolated from each other by non-forest habitat. Results from the collective impact of residential and commercial development, highway and utility construction, and other piecemeal land use changes. Indiscriminant heavy forest harvesting may also result in fragmentation of mature forest habitat.

**Ford** - a stream crossing using a stable stream bottom as the roadbed.

**Fuel management** - the act or practice of controlling flammability and resistance to control of wildland fuels through mechanical, chemical, biological or manual means, or by fire in support of land management objectives.

**Girdling** - a method of killing unwanted trees by cutting through the living tissues around the bole. Can be used instead of cutting to prevent felling damage to nearby trees. Girdled trees can provide cavities and dead wood for wildlife and insects.

**GIS** - Geographic Information System. A computer-based system for collecting, storing, updating, manipulating, displaying and analyzing geographically referenced data.

**GPS** - Global Positioning System. A satellite-based navigation system.

**Grade** - the angle of an inclined surface as expressed in terms of percent slope: vertical rise per 100' of horizontal run.

**Grade, tree** - A classification system for standing trees that is based on their potential for yielding high value lumber.

**Growing Stock** - For inventory purposes, all live trees that are between 5.0" dbh to 10.9" dbh and are greater than 50% sound. See **Management Potential**

**Growth, net** - The average annual net increase in the volume of trees expressed either as a per acre value or total value for a given unit of land. Mathematically it is expressed as follows: {[growth of the existing trees at the beginning of the period]+[ingrowth the volume of trees that have reached merchantability during the period]} – {(the volume of trees that have died during the period) + (the volume of trees that have become cull during the period).

**Habitat** - the geographically defined area where environmental conditions (e.g., climate, topography, etc.) meet the life needs (e.g., food, shelter, etc.) of an organism, population, or community.

**High-grading** - a type of timber harvesting in which larger trees of commercially valuable species are removed with little regard for the quality, quantity, or distribution of trees and regeneration left on the site; often results when a diameter limit harvest is imposed. See **Diameter Limit Cutting**.

**Herbaceous** - A class of vegetation dominated by non-woody plants known as herbs; [graminoids (grass), forbs and ferns].

**Incidental taking** - the taking of a rare species that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

**Intermediate Cuttings** - Operations conducted in a stand during its development from regeneration stage to maturity. These are carried out to improve the quality of the existing stand, increase its growth and provide for earlier financial returns, without any effort directed at regeneration.

*Cleaning*: a cutting made in a stand, not past the sapling stage, to free the best trees from undesirable individuals of the same age that overtop them or are likely to do so. See *weeding*.

*Thinning*: a cutting whose purpose is to control the growth of stands by adjusting stand density.

*Salvage Cutting*: a harvest whose primary purpose is to remove trees that have been or are in imminent danger of being killed or damaged by injurious agencies.

*Weeding*: a cutting made in a stand not past the sapling stage that eliminates or suppresses undesirable vegetation regardless of crown position. See *Cleaning*.

**Landing** - any place where round timber is assembled for further transport, commonly with a change in method. Generally, a cleared area where log trucks are loaded.

**Legacy tree** - a tree, usually mature or old-growth, that is retained on a site after harvesting or naturally disturbance to provide a biological legacy. See **Biological Legacy**

**Management plan** - a document prepared by natural resource professionals to guide and direct the use and management of a forest property. It consists of inventory data and prescribed activities designed to meet ownership objectives.

**Management potential** - For forest inventory purposes, a classification method in which a tree is rated based on the likelihood that it will develop into a tree that will be structurally sound, vigorous and yield products of high value. The three classes are as follows:

*Preferred Crop Tree*: the highest class; a tree with a dominant crown and no or minimal sweep or crook and no or few limbs in the butt 16' log.

*Acceptable Growing Stock*: a tree of codominant or greater crown class with moderate sweep or crook and a moderate number of limbs in the butt 16' log.

*Unacceptable Growing Stock*: Any tree not meeting the above criteria.

Also, see **Growing stock**

**Mast** - Seed produced by woody-stemmed, perennial plants, generally referring to soft (fruit) or hard (nut) mast.

**Matrix, forest** - The most extensive and connected landscape element that plays the dominant role in landscape functioning.

**MBF** - Abbrev. Thousands of board feet. See **Tree Volume**

**Merchantable** - of trees, crops or stands, of a size, quality and condition suitable for marketing under given economic conditions even if so situated as not to be immediately accessible for logging. See **Operable**.

**Multiple use and value** - a conceptual basis for managing a forest area to yield more than one use or value simultaneously. Common uses and values include aesthetics, water, wildlife, recreation, and timber.

**Niche** - the physical and functional location of an organism within an ecosystem; where a living thing is found and what it does there.

**Old growth stand** - A stand that has been formally designated as an old growth stand. These areas must meet a preponderance of the following four criteria: 1.) Be of a size that is large enough to be self sustaining. 2.) Show no evidence of significant post-European disturbance. 3.) Should have a component of trees that are greater than 50% of the maximum longevity for that species. 4.) Shall be a makeup that is self-perpetuating.

**Old growth attributes** - attributes often associated with old growth forests such as large amounts of coarse woody debris, large trees, etc. that are achieved through deliberate actions in a managed forest. See **Biological legacy**

**Operable** - trees, crops or stands that are both merchantable and accessible for harvesting. See **Merchantable**.

**Patch** - a small area of a particular ecological community surrounded by distinctly different ecological communities, such as a forest stand surrounded by agricultural lands or a small opening surrounded by forestland.

**Poletimber** - See **Size Class**.

**Population** - a group of individuals of one plant or animal taxon (species, subspecies, or variety).

**Preservation** - a management philosophy or goal which seeks to protect indigenous ecosystem structure, function, and integrity from human impacts. Management activities are generally excluded from "preserved" forests.

**Raptor** - A bird of prey.

**Rare species** - A collective term used to describe species that are uncommon, including

*Endangered*: native species which are in danger of extinction throughout all or part of their range (e.g., within state), or which are in danger of extirpation from Massachusetts, as documented by biological research and inventory.

*Threatened*: native species which are likely to become endangered in the foreseeable future, or which are declining or rare as determined by biological research and inventory.

*Special concern*: native species which have been documented by biological research or inventory to have suffered a decline that could threaten the species if allowed to continue unchecked, or which occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened.

These definitions may vary depending on jurisdiction (e.g federal or state definitions).

**Regeneration** - the renewal of a tree crop, whether by natural or artificial means - may be broken down into those treatments that produce stands originating from seed (high forest) or from vegetative regeneration (coppice or sprouts) and create even-aged or uneven-aged stands. Syn. reproduction.

**Regeneration Cutting** - Any removal of trees intended to assist regeneration already present or to make regeneration possible. The operation creates either an even-aged stand or an uneven-aged stand. See **Even-aged stand** and **Uneven-aged stand**

*Clearcutting*; (even-aged) removal of the entire stand in one cutting with reproduction obtained artificially or by natural seeding from adjacent stands or from trees cut in the clearing operation.

*Seed-tree*: (even-aged) removal of the old stand in one cutting, except for a small number of seed trees left singly or in groups.

*Shelterwood*: (even-aged) removal of the old stand in a series of cuttings, which extend over a relatively short portion of the rotation, by means of which the establishment of essentially even-aged reproduction under the partial shelter of seed trees is encouraged.

*Selection:* (uneven-aged) removal of trees, throughout all size classes, either as single scattered individuals or in small groups at relatively short intervals, repeated indefinitely, by means of which the continuous establishment of reproduction is encouraged and an uneven-aged stand is maintained.

*Coppice:* (even-aged or uneven-aged) any type of cutting in which dependence is placed mainly on vegetative reproduction.

**Release** - removal of overtopping trees to allow understory or overtopped trees to grow in response to increased light.

**Reserve tree** - a tree, pole-sized or larger, retained in either a dispersed or aggregated manner after the regeneration period under the clearcutting, seed tree, shelterwood, group selection or coppice methods. Syn. Standard, legacy tree

**Residual stand** - trees remaining following any silvicultural operation.

**Riparian Area** - an area in close proximity to a watercourse, lake, swamp or spring.

**Rotation** - the planned number of years between the formation or regeneration of a crop or stand and its final harvest at a specified stage of maturity.

**Rotation, extended** - a rotation longer than necessary to grown timber crops to financial maturity or size and generally used to provide habitat or nontimber values.

**Salvage Cutting** - See **Intermediate cutting**

**Sapling** - See **Size Class**

**Sawtimber** - See **Size Class**.

**Seed Tree Cutting** - See **Regeneration Cutting**.

**Seedling** - See **Size Class**.

**Seep (Seepage)** - Groundwater (as opposed to surface flow) escaping through or emerging from the ground along an extensive line or surface, as contrasted with a spring where water emerges from a localized spot..

**Selection cutting** - See **Regeneration Cutting**.

**Selective cutting** - a cutting that removes only a portion of trees in a stand. Note: selective cutting is a loose term that should not be confused with cutting done in accordance with the selection method, is not a recognized silvicultural system and is often synonymous with or associated with High Grading.

**Shelterwood Cutting** - See **Regeneration Cutting**.

**Silviculture** - the theory and practice of controlling forest establishment, composition, structure and growth.

**Silvicultural prescription** - a detailed, quantitative plan, at the stand level of resolution, for conducting a silvicultural operation.

**Silvicultural System** - a program for the treatment of a stand throughout a rotation. An even-aged system deals with stands in which the trees have no or relatively little difference in age. An uneven-aged system deals with stands in which the trees differ markedly in age.

**Site** - the combination of biotic, climatic, topographic, and soil conditions of an area; the environment at a location.

**Site index** – See **Site Quality**.

**Site preparation** - Hand or mechanized manipulation of a site designed to enhance the success of regeneration.

**Site quality** - the inherent productive capacity of a specific location (site) in the forest affected by available growth factors (light, heat, water, nutrients, anchorage); often expressed as site index – the height of the average tree in an even-aged stand at a given age. In New England 50 years is generally used as the base age.

#### **Size Class:**

*Seedling:* a young tree, less than sapling size of seed origin.

*Sapling:* a tree greater than 1" dbh and less than 4.9" dbh.

*Poletimber:* a tree greater than 4.9" dbh and less than sawtimber size.

*Sawtimber:* a tree greater than 11.0" dbh having at least 8' of usable length and less than 50% cull.

**Slash** - tops, branches, slabs, sawdust or debris resulting from logging or land clearing operations.

**Slope, steep** - An area where the average, sustained slope is greater than 50%. See **Grade**.

**Snag** - a standing dead tree, greater than 20' tall, which has decayed to the point where most of its limbs have fallen; if less than 20' tall it is referred to as a *stub*. A hard snag is composed primarily of sound wood, generally merchantable and a soft snag is composed primarily of wood in advanced stages of decay and deterioration. See **Biological legacy**.

**Special concern, Species of** - see **Rare species**

**Stand** - a community of trees possessing sufficient uniformity as regards composition, constitution, age, spatial arrangement or condition to be distinguishable from adjacent communities, so forming a silvicultural or management entity.

**Stand Structure** - A description of the distribution and representation of tree age and size classes within a stand.

*Even-aged, single-storied*: Theoretically, stands in which all trees are one age. In actual practice, these stands are marked by an even canopy of uniform height characterized by intimate competition between trees of approximately the same size. The greatest number of stems are in a diameter class represented by the average of the stand. The ages of the trees usually do not differ by more than 20 years.

*Even-aged, two-storied*: Stands composed of two distinct canopy layers, such as, an overstory and understory sapling layer possibly from seed tree and shelterwood operations. This may also be true in older plantations where tolerant hardwoods may become established as management intensity decreases (burning and other means of understory control). Two relatively even canopy levels can be recognized in the stand. Both canopy levels tend to be uniformly distributed across the stand. The average age of each level differs significantly from the other.

*Uneven-aged (sized)*: Theoretically, these stands contain trees of every age on a continuum from seedlings to mature canopy trees. In practice, uneven-aged stands are characterized by a broken or uneven canopy layer. The largest number of trees is in the smaller diameter classes. As trees increase in diameter, their numbers diminish throughout the stand. Generally, a stand with 3 or more structural layers may be considered as uneven-aged.

*Mosaic*: At least two distinct size classes are represented and these are not uniformly distributed, but are grouped in small repeating aggregations, or occur as stringers less than 120 feet wide, throughout the stand. Each size class aggregation is too small to be recognized and mapped as an individual stand. The aggregations may or may not be even-aged.

**Stocking** - the degree of occupancy of an area by trees. In even-aged stands, stocking levels are expressed as different levels (A, B and C) based upon stocking guides that use tree diameter, basal area and number of trees per acre. The A level represents the density of undisturbed even-aged stands. The B level represents the minimum density for maximum basal area and cubic foot growth. The C level represents both the minimum stocking of acceptable growing stock to make a stand suitable for management for timber products and represents 10 years growth below the B level.

*Overstocked*: stands above the "A" level of stocking for their forest type, tree density and size class.

*Fully stocked*: stands between the "A" and "C" levels of stocking for their forest type, tree density and size class.

*Understocked*: stands below the "C" level of stocking for their forest type, tree density and size class.

In uneven-aged stands, stocking is based on residual basal area, maximum tree size and a ratio known as "Q" which is a mathematical expression of the desired diameter distribution.

**Structure, horizontal** - the spatial arrangement of plant communities; a complex horizontal structure is characterized by diverse plant communities within a given geographic unit.

**Structure, vertical** - the arrangement of plants in a given community from the ground (herbaceous and woody shrubs) into the main forest canopy; a complex vertical structure is characterized by lush undergrowth and successive layers of woody vegetation extending into the crowns of dominant and co-dominant trees. (See *crown class*.)

**Stumpage value** - the commercial value of standing trees.

**Succession** - the natural series of replacements of one plant community (and the associated fauna) by another over time and in the absence of disturbance.

**Sustained yield** - historically, a timber management concept in which the volume of wood removed is equal to growth within the total forest. The concept is applicable to nontimber forest values as well.

**Thinning** - See **Intermediate cuttings**.

**Threatened species** - See **Rare species**.

**Tolerance** - a characteristic of trees that describes the relative ability to thrive with respect to the growth factors (light, heat, water nutrients, anchorage). Usually used to describe shade tolerance: the ability of a species to thrive at low light levels.

**T.S.I.** - timber stand improvement; a loose term comprising all intermediate cuttings made to improve the composition, constitution, condition and increment of a timber stand. The practice may be commercial; yielding net revenues or precommercial or noncommercial; where the cost of accomplishing the work exceeds the value of the products removed.

**Unacceptable Growing Stock (UGS)** - See **Management Potential**.

**Understory** - the smaller vegetation (shrubs, seedlings, saplings, small trees) within a forest stand, occupying the vertical area between the overstory and the herbaceous plants of the forest floor.

**Uneven-aged stand** - See **Stand Structure**

**Vernal or autumnal ponds** - a class of wetland characterized by small, shallow, temporary pools of fresh water present in spring and fall, which typically do not support fish but are very important breeding grounds for many species of amphibians. Some species are totally dependent upon such ponds; examples are spring peepers and mole salamanders.

**Volume, tree** - the contents of the merchantable portion of a tree, expressed either as 1.) Board foot volume, where a board foot is equivalent to a piece of wood 12" x 12" x 1" thick, excluding the waste inherent in processing; 2.) Cubic foot volume with no waste attributed to processing; 3.) Cord volume, where 80 cubic feet of solid wood are equivalent to one cord. One cord of wood contains 128 cubic feet of air, bark and wood or 4.) Tons of oven-dry wood.

**Water Bar** - a shallow depression, 12" to 36" wide, cut across a dirt road or skid trail at approximately a 30 degree angle to its alignment, for the purpose of diverting the overland flow of water from the surface of the road. See **Broad-based dip**.

**Wildlife tree** - a live or dead tree designated for wildlife habitat or retained to become future wildlife habitat.

# Attachments

The following components of the management plan are included as separate documents:

**Baxter Woods Soil Report, Natural Resource Conservation Service.**

**Maine Natural Areas Program & Department of Inland Fisheries and Wildlife Report**

Baxter  
to  
Port-  
land  
City of  
Deed

KNOW ALL MEN BY THESE PRESENTS, That I, Percival Proctor Baxter of Portland, County of Cumberland, State of Maine, in consideration of one (\$1.00) dollar and other valuable considerations paid by the CITY OF PORTLAND, a Municipal Corporation incorporated under the laws of the State of Maine and a body politic located in said County of Cumberland, the receipt whereof I do hereby acknowledge, and in furtherance of my desire to convey and donate to the CITY OF PORTLAND an area of land in the Deering District of said Portland, to be held forever by said CITY as TRUSTEE IN TRUST for the benefit of the people of Portland do hereby remise, release, sell, convey and forever quit-claim unto the said CITY OF PORTLAND and its successors to be forever held in trust the following described land located in said CITY, bounded and described as follows -

All my right title and interest in and to a certain tract or parcel of land with the buildings thereon situated between Forest and Stevens Avenues, Hartley Street and Baxter Road, so called in the City of Portland, State of Maine and located and described as follows:

Beginning on the westerly side of Forest Avenue at the northeast corner of the lot of land conveyed by Francis O. J. Smith to Owen Durgin by deed dated August 1875 and recorded in Cumberland County Registry of Deeds in Book 418, Page 501; thence northerly by the westerly side of Forest Avenue 523.0 feet more or less to the southeast corner of the lot of land conveyed by James P. Baxter to Saint Elizabeth's Roman Catholic Asylum by deed dated March 10, 1908, and recorded in said Registry in Book 821, Page 58; thence westerly by land of said Saint Elizabeth's Roman Catholic Asylum and by the lot of land conveyed by James P. Baxter to Roman Catholic Bishop Corporation Sole by deed dated March 10, 1908, and recorded in said Registry in Book 821, Page 59, a distance of 1850.81 feet to the easterly side of Stevens Avenue; thence southerly by the easterly side of Stevens Avenue 253.15 feet to a stone monument marking an angle in said easterly side of Stevens Avenue; thence southerly by said easterly side of Stevens Avenue 290.84 feet to the lot of land conveyed by James P. Baxter to John H. Fogg by deed dated June 14, 1899, and recorded in said Registry in Book 680, Page 31; thence easterly by land formerly of said Fogg 125 feet to a point; thence southerly by land formerly of said Fogg 10 feet to the lot of land conveyed by James P. Baxter to Charles Rich by deed dated July 7, 1879, and recorded in said Registry in Book 461, Page 117; thence easterly by land formerly of said Rich 2.0 feet to the northeasterly corner of said Rich lot; thence southerly by the land formerly owned by said Rich 39.7 feet more or less to the lot of land conveyed by James P. Baxter to Mark F. Fogg by deed dated June 13, 1900, and recorded in said Registry in Book 692, Page 53; thence easterly by land formerly of said Fogg and by the lot of land conveyed by James P. Baxter to Arthur D. Parkhurst by deed dated July 20, 1914, and recorded in said Registry in Book 934, Page 287, a distance of 99.44 feet to the northeast corner of said Parkhurst lot; thence southerly by the easterly line of land now or formerly of said Parkhurst and its continuation across the easterly end of Percival Street and its continuation southerly by other land of said

Grantor a distance of 250 feet to the northerly line of the lot of land conveyed by James P. Baxter to Alvin E. Plummer by deed dated April 13, 1885 and recorded in said Registry in Book 517, Page 372, said point being distant 100 feet from the northerly side of Hartley Street; thence easterly on a line parallel with and distant 100 feet from said northerly line of Hartley Street and by the rear line of lot formerly owned by said Plummer and by the lot of land conveyed by James P. Baxter to Charles E. Spear on October 27, 1899, recorded in said Registry in Book 682, Page 153, and by the lot of land conveyed by James P. Baxter to Fred P. Freeman and William L. Turner by deed dated May 18, 1885, recorded in said Registry in Book 517, Page 479, and by other land of said Grantor and by the lot of land conveyed by James P. Baxter to Alvin E. Plummer by deed dated June 15, 1885, and recorded in said Registry in Book 520, Page 117 a distance of 235.14 feet to the northeasterly corner of the lot formerly owned by said Plummer; thence southerly by the easterly line of land formerly owned by said Plummer 100 feet to the northerly side of Hartley Street; thence easterly by said northerly side of Hartley Street 878.23 feet to the southwesterly corner of the lot of land conveyed by Percival P. Baxter to George I. Geer by deed dated August 19, 1944, and recorded in said Registry in Book 1757, Page 109; thence northerly by the westerly line of land of said Geer 100 feet to the northwest corner of said Geer lot; thence easterly on a line parallel with said northerly side of Hartley Street and by land of said Geer and by the lot of land conveyed by James P. Baxter to Albert F. Mann by deed dated May 10, 1888, recorded in said Registry in Book 546, Page 141, and by the lot of land conveyed by James P. Baxter to Abram H. Milliken and George A. Lovell by deed dated December 7, 1897, recorded in said Registry in Book 660, Page 10 and by the lot of land conveyed by James P. Baxter to Ebenezer M. Gay and John Archibald by deed dated August 6, 1894, recorded in said Registry in Book 613, Page 456, and by the lot of land conveyed by James P. Baxter to the Delano Planing Mill Company by deed dated August 21, 1895, recorded in said Registry in Book 629, Page 117 a distance of 245.4 feet to the northeast corner of said Delano Planing Mill Company lot; thence southerly by land formerly of said Delano Planing Mill Company 8.15 feet to the lot of land conveyed by Martha A. Gray to Mary E. Gray by deed dated July 19, 1894 and recorded in said Registry in Book 615, Page 280; thence easterly by land formerly of said Mary E. Gray and by the lot of land conveyed by Martha A. Gray to Mary E. Gray by deed dated August 31, 1900, recorded in said Registry in Book 692, Page 423, and by the lot of land conveyed by Martha A. Gray to Margaret O'Connor by deed dated April 8, 1903, and recorded in said Registry in Book 733, Page 31 and by the lot of land conveyed by Martha A. Gray to Lillie B. Rowe by deed dated December 16, 1892 recorded in said Registry in Book 604, Page 217 and by the lot of land conveyed by Martha A. Gray to Lillie B. Rowe by deed dated June 30, 1891 recorded in said Registry in Book 582, Page 15 and by the lot of land conveyed by Martha A. Gray to Alvah E. Plummer by deed dated April 30, 1885 recorded in said Registry in Book 517, Page 464 a distance of 387.85 feet to the southwesterly corner of the Owen Durgin lot above mentioned; thence northerly by

the westerly line of the lot formerly owned by said Durgin 75 feet to an iron stake; thence easterly by land formerly owned by said Durgin 86.78 feet to said westerly side of Forest Avenue and the point of beginning.

Together with a right of way 33 feet in width in common with others from Forest Avenue to Stevens Avenue over land of said Saint Elizabeth's Roman Catholic Asylum and land of Roman Catholic Bishop Corporation Sole adjoining the northerly line of the lot above described lot and subject however to a right of way 33 feet in width from Forest Avenue to Stevens Avenue over said above described lot and adjoining the northerly side line of the above described lot.

Said above two strips each 33 feet in width are to be used together for street purposes and were conveyed and reserved in the deeds from James P. Baxter to Saint Elizabeth's Roman Catholic Asylum and to Roman Catholic Bishop Corporation Sole dated March 10, 1908, and recorded in said Registry in Book 821, Pages 58 and 59.

TO HAVE AND TO HOLD the above described premises with all the privileges and appurtenances thereto to said CITY OF PORTLAND as TRUSTEE as aforesaid and its successors in trust and the same shall not be conveyed or encumbered by said City but shall be held forever for the benefit of the people of said Portland

subject to the following terms, restrictions, reservations and conditions

- 1 - shall forever be retained and used by said City in trust for the benefit of the people of Portland as a Municipal Forest and Park and for public recreational and educational purposes the same forever to be known as "MAYOR BAXTER WOODS";
- 2 - shall forever be kept in its natural wild state and as a sanctuary for wild birds, with no streets for public conveyances and no cement walks therein and with only paths and trails for pedestrians, and any trees that shall fall or that may become a menace to life may be removed, but no other trees therein shall be taken down;
- 3 - shall forever be maintained for the sole use of pedestrians; and horses, automobiles and all motor vehicles, except those of the City used solely in caring for said woods, shall forever be excluded therefrom;
- 4 - that the heavy ornamental iron gates now in possession of said City shall be erected by said City either at the Forest Avenue or Stevens Avenue entrance within one year after the date of this deed;
- 5 - that said City shall erect within one (1) year after the date of this deed and shall forever maintain on the land hereby conveyed a suitable bronze marker the said marker to recite the conditions of this gift, the same to be attached to a granite boulder located on said land and provided by said City;

This conveyance is made subject to all of the above mentioned terms, restrictions, reservations and conditions, and I the said PERCIVAL PROCTOR BAXTER COVENANT with the said CITY OF PORTLAND as such Trustee and its successors in trust that I will WARRANT and DEFEND the said premises to the said City and its successors in trust against the lawful claims and demands of all persons claiming by through or under me.

IN WITNESS WHEREOF, I the said PERCIVAL PROCTOR BAXTER being unmarried hereby set my hand and seal this eighth day of April in the year of our Lord one thousand nine hundred and forty-six.

Signed and Sealed in the Presence of

Alice M. Gurney .

Percival Proctor Baxter Seal

STATE OF MAINE :  
SS.  
CUMBERLAND. :

Portland, April 8, 1946

Personally appeared the above named PERCIVAL PROCTOR BAXTER and acknowledged the above instrument to be his free act and deed.

Before me, Alice M. Gurney

Notary Public Notarial Seal

Received April 17, 1946, at 10h 25m A. M., and recorded according to the original

MAINE  
FULL DISCHARGE  
FORM 21-117  
Me. 10-206

Federal  
Ld.Bk.  
of  
Spf'g.  
to  
Larrabee  
&  
Disch.

KNOW ALL MEN BY THESE PRESENTS, That THE FEDERAL LAND BANK OF SPRINGFIELD, 310 State Street, Springfield, Massachusetts, owner of a certain mortgage given by Joseph S. Larrabee and Susan E. Larrabee to the said THE FEDERAL LAND BANK OF SPRINGFIELD, dated December 31, 1925, and recorded in Cumberland County Registry of Deeds, in Book 1220 at Page 105, does hereby acknowledge that it has received full payment and satisfaction of the same and of the debt thereby secured, and in consideration thereof it does hereby cancel and discharge said mortgage and releases unto the said Joseph S. Larrabee and Susan E. Larrabee and their heirs and assigns forever the premises therein described.

IN WITNESS WHEREOF the said THE FEDERAL LAND BANK OF SPRINGFIELD has caused its corporate seal to be hereto affixed and these presents to be signed, acknowledged and delivered in its name and behalf by Edward M. Whitaker, its Assistant Treasurer, this 3rd day of April 1946.

THE FEDERAL LAND BANK OF SPRINGFIELD CORPORATE  
SEAL  
By Edward M. Whitaker

Assistant Treasurer

Signed and Sealed in Presence of

I. B. Welch

COMMONWEALTH OF MASSACHUSETTS COUNTY OF HAMPDEN, SS.

On this 3rd day of April 1946, before me personally appeared Edward M. Whitaker to me personally known, who, being by me duly sworn, did say that he is the Assistant Treasurer of THE FEDERAL LAND BANK OF SPRINGFIELD and that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that the said instrument was signed and sealed in behalf of said corporation by authority of its board of directors, and the said Edward M. Whitaker acknowledged said instrument to be the free act and deed of said corporation and his own free act and deed.

dms Before me, Allyn K. Talmadge Notary Public Notarial Seal

Received April 17, 1946, at 11h 50m A. M., and recorded according to the original



Sally L. DeLuca  
Director

Department of Parks, Recreation & Facilities

Ethan Hipple  
Deputy Director

Department of Parks, Recreation & Facilities

3/18/2019

To the Portland Parks Commission,

I am writing to provide information on proposed changes to off-leash dog policy in Baxter Woods.

Baxter Woods was donated to the City of Portland by Governor Percival Baxter in 1946. Among the many conditions in the deed are the following:

- *"shall forever be retained and used by said City in trust for the benefit of the people of Portland as a Municipal Forest and Park and for public recreational and educational purposes..."*
- *"shall forever be kept in its natural wild state and as a bird sanctuary for wild birds...."*

Chapter 5 of Portland City code currently allows for dogs to run off-leash in Baxter Woods, but within voice-command of the owner. Baxter Woods is used heavily by dog-owners and staff regularly receive verbal and written comments from the public about the current policy: primarily the comments are opposed to the off-leash policy, with a smaller number in favor. Many of the comments opposed to the current off-leash policy list safety as a primary concern. Dog owners have told us that they do not bring their dog to Baxter Woods for fear of their dog being harassed or attacked by other unruly dogs, and some parents have told us that they prefer not to bring their children there for the same reason. Some of those written comments are attached to this memo.

In 2018, staff contracted with Forest Ecologist Rob Ryan to conduct an ecological assessment of Baxter Woods. The study looked at current conditions, soil and water quality protection, forest health, and wildlife conservation (attached to this memo).

One finding of the report was that the off-leash dog activity was having a negative impact on ground-nesting and ground-feeding birds. Baxter Woods in its present day condition with dogs running off leash at all hours would not qualify as a "sanctuary for wild birds". The report recommends enforcing an on-leash dog policy at Baxter Woods.

As stewards of this property that was donated to the city in 1946, and to comply with the deed restrictions, staff recommend the following:

- **Dogs are to be leashed on a 25 foot leash at all times in Baxter Woods.**

With many nearby open spaces that allow off leash dogs (Evergreen Woods, Canco Woods), as well as dedicated dog parks that also allow off leash dogs (Quarry Run, Valley Street), staff believe that the public will still have ample access to high-quality open spaces for their dogs to run free in a more appropriate location.

Portland, Maine



Yes. Life's good here.

Sally L. DeLuca  
Director

Department of Parks, Recreation & Facilities

Ethan Hipple  
Deputy Director

Department of Parks, Recreation & Facilities

Staff recommend that the Parks Commission take public comment on this issue and then take an advisory vote on the off-leash question at Baxter Woods. Staff will then bring the Parks Commission's advisory recommendation to the City Council for the final change to relevant ordinance, Chapter 5.

Thank you very much,

Ethan H

**Ethan Hipple**

Deputy Director  
Parks, Recreation and Facilities Department  
City of Portland  
212 Canco Rd, Suite A  
Portland, Maine 04103  
o: 207.808-5400  
ehipple@portlandmaine.gov