The Natural History of the Protectorate

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2012



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Acknowledgements

Firstly, I thank Mr. Thomas A. Cox whose donation of the Protectorate to College of the Atlantic made my senior project possible. As a member of the COA community I feel very lucky to have been given such a beautiful piece of property.



Mr. Cox on the ridge top (courtesy of Mr. Cox).

I thank my volunteer field assistants Kevin Adderer, Hank Ainley, Janoah Bailin, Corinne Boet-Whittaker, Marina Garland, Erica Georgaklis, Kaija Klauder, Maggie Mansfield, and Philip Walter for exploring and surveying the property with me. Their contagious enthusiasm and curiosity enriched my senior project.

I thank the students who offered their artwork for this project: Lucy Atkins, Jordan Chalfant, Chalese Carlson, Erica Georgaklis, Lindsey Nielsen, Robin Owings, Caitlin Thurrell, and Philip Walter.

I thank the COA community who helped create and support this project: Lucy Atkins my hardworking editor, Ken Cline and his Human Ecology of Wilderness Class, Darron Collins, Millard Dority, Andy Griffiths, Lloyd Irland, Franklin Jacoby, Todd Little-Siebold, Gordon Longsworth, Sarah Luke, Sarah McDaniel, Jay McNally, Lindsey Nielsen my supportive student advisor, Scott Swann, Justin Waskiewicz, and especially my patient and dedicated project advisor, John Anderson. I look forward to hearing how they and their students use the land in the future. I also thank the W.H. Drury Fund, which helped me accomplish my senior project.

I thank those who took the time to share the history of Mill Brook (Del Gray Brook), Northeast Creek (King's Creek), and the Emery District. Their information was invaluable and it was a pleasure to get to speak with them all. I especially thank Doug and Eileen Chapman, Deb Dyer, Tim Garrity, Brad Gray, Percy Harding and his family, Deb Loftis, Glen Manring, Harry and Cindy Owens, Raymond Strout, and Everret White.

Lastly, I thank my family for teaching me to love being outdoors and to appreciate a landscape, its history, and the species living there.

Introduction

I stood completely exposed to the full force of the April sleet storm on the top of the bare, granite ridge. The surrounding pines, oaks, and birches were too stunted to offer any barrier against the weather. I tried to put my hood up for some protection but found it a futile effort against the wind. So I stood there on the ridge top looking at no view in particular, because the thick gray clouds covered the surrounding mountains, while my clothing became saturated with slush. I probably should have felt cold or discomfort as I stood on the ridge top— instead I was grinning. There was something about this property that even a sleet storm could not render ugly or uninspiring.

Until I reached the ridge top I knew little and wondered less about the Protectorate, only that I needed a senior project and the school would appreciate an ecological assessment of this newly acquired land. I had done such an assessment with the Maine Coast Heritage Trust on an island in Frenchman Bay the previous fall that I had really enjoyed. I felt that working on the Protectorate would be a good opportunity to improve my surveying methods and skills. But after experiencing the ridge top and the surrounding oak forests, my mind was already racing with questions and thoughts of exploring. While walking down from the ridge top I realized that my curiosity would not allow me to settle for just a survey or management plan. Perhaps it was my predilection as a Human Ecologist or the quality of the land itself, but I knew I wanted to know this land, not just study it objectively.

During the following months I spent as much time as I could on the Protectorate. When I was not on the land I was usually talking to people about the area, researching its history, or writing about it. I began naming places and landmarks, navigating using natural features, understanding the landscape in connection to its history, and noticing discrete changes over time**.**

While exploring I started to associate places and landmarks with my own stories; Mill Brook stream is where Steve Ressel and I found about a dozen two-lined salamanders in a few minutes; the nearby waterfalls is where I would go swimming after a day of work; Mill Brook wetland is where Maggie and I paddled, poled, dragged, and walked our way through its channels; the southern edge of the wetland is where Corinne taught me the song "Northwest Passage" so I would remember the orientation of my plots; the granite outcrops along the northwestern boundary are where Ken Cline and I found a milk snake; Lost Swamp along the western boundary is where I continually got lost, wet, and frustrated; the ridge top is where John surprised me with Morning Glory taste treats on my last day of field work; Porcupine Hill is where Erica and I found six porcupine dens lining the hillside; the red pine stand is where Kaija, Phil, and I caught and marveled over a Wood Frog. The more familiar I became with the entire property, the more I appreciated it all. I became increasingly attracted to the less appealing or accessible sites like the Mill Brook wetland, the red pine stand, and Porcupine Hill. By the end of the summer I even learned to love Lost Swamp.

Because of my familiarity with the Protectorate I had the honor of introducing COA's students, faculty, staff, trustees, and president to it. Most of them have only seen the ridge top or the waterfalls because these areas are easily accessible and seem to be the aesthetic highlights of the property. When I brought people to the ridgeline I saw that same grin on their faces that I know was on mine the first day I was introduced to the land. The view of Mount Desert Island's surrounding mountains and bays is stunning,

and the location gives a sense of solitude and exhilaration that permeates through the rest of the Protectorate if you take the time to explore it.

It becomes obvious to anyone who goes to the ridge top that the Protectorate is a very special place. Its uniqueness and diversity becomes even more evident as one explores the other less conspicuous locations. This document is meant to be an introduction to the property. Like the ridge top, I want my work to draw people in and inspire them to explore and get to know the rest of the place. For some people, just seeing the ridge top may be enough but my senior project is, at its core, for those who wish to explore further and really want to get to know this place.

My Project

It is very difficult to define this project because there are so many facets that came together to create the final product. My intent is to create a truly interdisciplinary document that ties together human history, landscape, policy, outreach, mapping, biology, ecology, art, and natural history. I could not help but delve into all of these elements: without each I would not be able to do justice to the story of the property. Because of the breadth of my senior project, this document is broken up into different sections including human history, a formal vegetation survey, natural history observations, a full exploration of the property, and management suggestions. These are then brought together to give a picture of the property's past, present, and possible futures.

Methods

Human History

I began researching the human history of the Protectorate at the Mount Desert Island (MDI) Historical Society in Northeast Harbor, Maine. There I found the Peters map of 1790, the Walling map of 1860, and the Colby Stuart maps of 1880 and 1881, which show past landowners and property boundaries on MDI. In conjunction with the census records from 1790 to1860, that are archived at the MDI Historical Society, I got a sense of who lived where and when until 1881. I researched landowners' names in books, old documents, and on the internet to understand who they were and what they may have done with the property. The Bar Harbor Town Assessor's Office had tax maps and records, which were helpful in researching recent (within the last 40 years) land use and ownership. The Hancock County Registry of Deeds in Ellsworth, Maine was also helpful in understanding the recent history, but because the Protectorate was broken up into so many parcels in the past it was difficult to follow the deeds past the mid-1900s.

As part of the historical research I also conducted personal interviews with locals who grew up in the district where the Protectorate is located or knew the area's history. The Bar Harbor Historical Society offered names of locals to contact and those people led me to others. I would not have been able to achieve the depth of knowledge I did without integrating personal interviews with maps, deeds, books, and census records.

Vegetation Survey

In the summer of 2011, I spent nearly every day of June and July conducting a vegetation survey on the Protectorate. With the help of nine field assistants, I set up 25 10x10 meter vegetation plots. I created six transect lines running north-south across the land. The first line was along the western boundary with each successive line beginning 100 meters to the east of the previous one. These transect lines varied in length because of the shape of the Protectorate and also because of obstacles in the landscape, such as the Mill Brook wetland. I placed a plot every 200 meters along each line beginning at the northern boundary, except along the fourth transect because which had plots every 100 meters.

In each plot we collected coordinates with a Garmin 76sc WAAIS enabled GPS, calculated canopy cover in the northwest corner of the plots with a Model-C Spherical Densiometer, measured diameter at breast height (DBH)— for trees over 3.8 cm (1.5 in) in diameter— with a Forest Supply DBH tape, and measured slope and aspect with a

Brunton Pocket Transit. In addition, we counted the number of saplings and seedlings in each plot, estimated percent cover for each species and the tallest tree height, and recorded general natural history notes**.**

To determine percent cover I used increments of ten percent (10, 20 30, etc.), but also included a one percent measurement for areas containing physically small species and/or a few individuals. For percent cover I measured the amount the canopy that was covering the forest floor. I considered a seedling to be below knee height (about 50cm), and saplings were above knee height (about 50cm-100cm) with a DBH lower than 1.5 inches (3.8cm). Adult trees were greater than 1.5 inches (3.8cm) in diameter and above about 100 cm. Each plots' coordinates refer to the northwest corner. I took a picture facing inwards at the middle of the northern, eastern, southern, and western boundary lines of each plot. In the plots along transect five I also took a picture facing the Mill Brook wetland.

In addition, I cored three randomly selected trees in each plot to assess the age distribution of the vegetation. I also collected about two cups of soil (about 0.75 cup from each corner) from each plot, which I sent to the Analytical Laboratory and Maine Soil Testing Service at University of Maine Orono. I attempted to collect the soil below the layer of duff, at least 16 cm down, but because the terrain and bedrock depth was inconsistent across the Protectorate I was not able to do so in each plot.

Between each plot I placed three observation points 50 meters apart. At each observation point I recorded the coordinates, the percent cover of dominant, codominant, intermediate, and forest floor vegetation, and general natural history notes. I took pictures from each point facing north and south along the transect line. Being categorized as a dominant individual means that sun was hitting that tree from all sides (generally the tallest trees); codominant means the tree was partially shaded (generally the second tallest trees shaded by dominants); and intermediate means the tree was entirely or almost entirely shaded (generally the shortest trees).

Currently there are 0.75 m tall reinforcing bars marking the northwest corner of each plot. The top of each rebar is painted orange and has a metal tag attached which denotes the plot number. The observation points are not marked.

Though I did not include the Mill Brook wetland in the formal vegetation survey, Maggie Mansfield and I explored it in whitewater kayaks. Paddling, poling, and dragging ourselves through small channels running through the extremely dense vegetation, we recorded vegetation changes and points of interest.

Natural History Records

While exploring and conducting the vegetation survey I took notes on species I observed and interesting features in the landscape. I did not conduct a formal survey for mammals, birds, herptiles, or insects but because I recorded observations of these species throughout the summer I included them in the species accounts.

Through out the summer I set out game cameras along the path to the ridge in five different locations to observe what mammals use the land.

Exploring the Property

Throughout the spring, summer, and fall of 2011 I explored the Protectorate at least one to two times a week (in addition to the vegetation survey) during which time I covered at least 80% of the land. Though this wandering was not part of the formal survey, the extra

free time on the property allowed me to observe more species, ponder over curious landforms, and notice subtle changes in the landscape over time. I would not have been able to notice all of these different facets of the land without taking the time to explore and I feel these observations truly enriched my understanding of the property.

Management

When writing the management section I took into account Mr. Cox's wishes, the college's wishes and needs, and Bar Harbor's regulations that would prohibit some uses. I found land use ordinances for the Emery District at Bar Harbor's town offices and online at http://www.barharbormaine.gov/xhtml/124/ViewDefault/ under "Land Use Information." I spoke with Mr. Cox and read his manifesto, which explains his wishes for the Protectorate. Though I did not conduct a formal survey of what people at COA hope for the property, I did take into account conversations with some students, professors, trustees and the president.

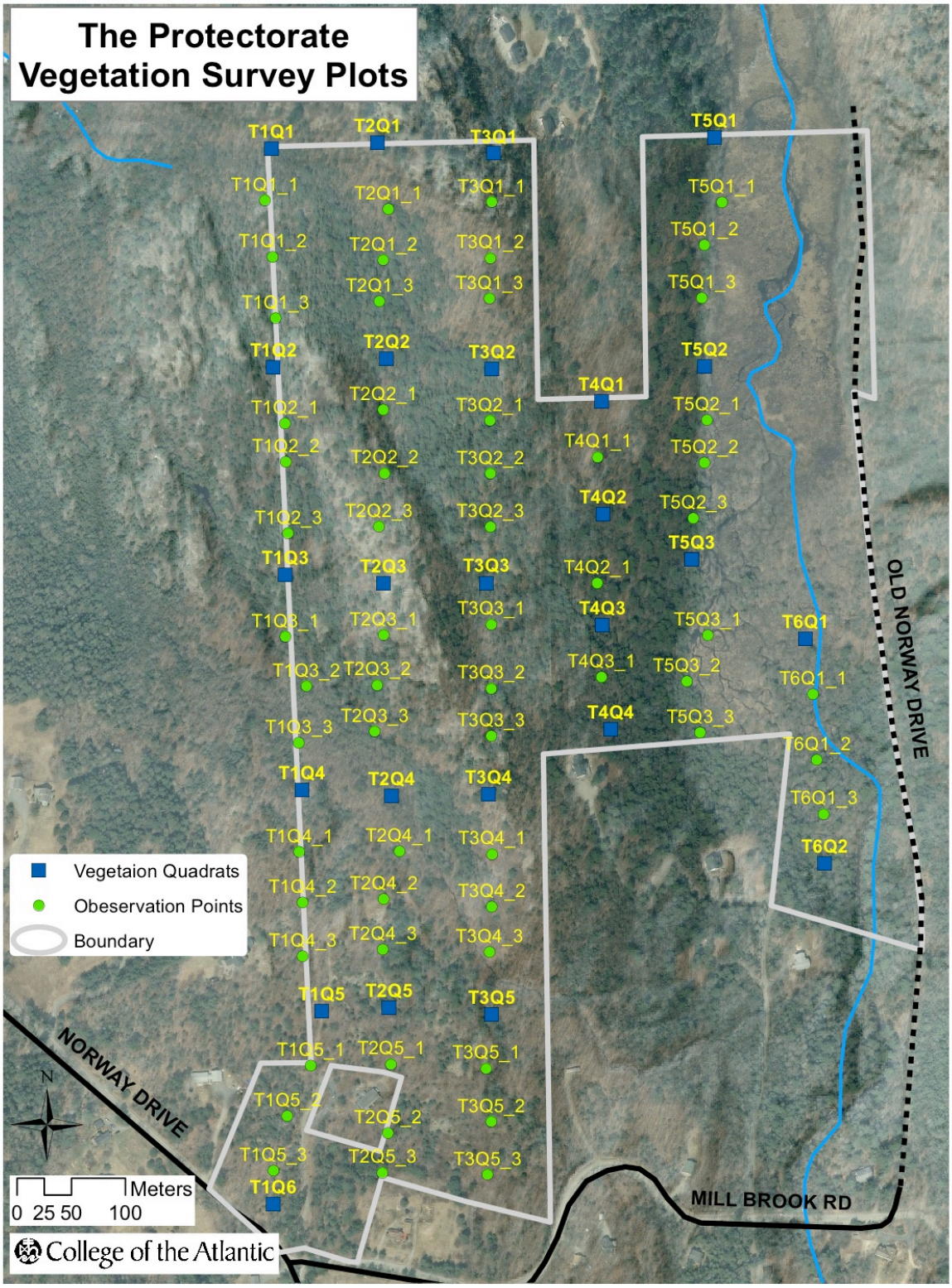


Figure 1: Map of vegetation quadrats and observation points. The number following "T" indicates the transect number and the number following "Q" represents the number quadrat along the transect.

Vegetation Quadrat GPS Points

Plot ID	Date	Y Coordinates	X Coordinates
T1Q1	11-JUL-11 9:14:48AM	4917441.33500398	556237.10949964
T1Q2	12-JUL-11 3:39:08PM	4917237.75877461	556239.16663193
T1Q3	13-JUL-11 1:59:33PM	4917045.02421881	556250.21399002
T1Q4	10-JUL-11 3:28:38PM	4916844.95105781	556265.45668333
T1Q5	10-JUL-11 4:53:36PM	4916639.08489689	556283.65376709
T1Q6	09-JUL-11 2:55:36PM	4916459.72991103	556238.61449511
T2Q1	28-JUN-11 11:23:42AM	4917447.0560723	556335.68804809
T2Q2	28-JUN-11 9:49:19AM	4917245.54435597	556343.98384458
T2Q3	27-JUN-11 2:23:57PM	4917037.02697225	556340.87967896
T2Q4	27-JUN-11 12:01:30PM	4916839.31731538	556348.34899574
T2Q5	27-JUN-11 10:36:58AM	4916642.25859409	556346.03975992
T3Q1	03-JUL-11 9:17:55AM	4917436.61659231	556443.20294467
T3Q2	15-JUN-11 1:27:28PM	4917236.40756302	556441.57193526
T3Q3	04-JUL-11 8:24:44AM	4917037.46155229	556436.33905195
T3Q4	04-JUL-11 11:03:56AM	4916840.7933271	556438.22136017
T3Q5	05-JUL-11 4:53:03PM	4916636.20137887	556441.2409577
T4Q1	30-JUN-11 9:30:36AM	4917206.33622381	556542.87991737
T4Q2	30-JUN-11 11:55:21AM	4917100.96770712	556544.46744224
T4Q3	30-JUN-11 2:46:21PM	4916997.76669765	556543.52053398
T4Q4	15-JUN-11 4:19:05PM	4916900.77705887	556551.35681613
T5Q1	07-JUL-11 9:14:51AM	4917451.59869917	556647.23608076
T5Q2	07-JUL-11 12:45:20PM	4917238.63425333	556638.25356803
T5Q3		4916990	556641
T6Q1	01-JUL-11 12:35:28PM	4916985.35757431	556731.38508703
T6Q2	01-JUL-11 3:34:47PM	4916776.61265291	556749.40189406

Table 1: GPS coordinates for the vegetation quadrats.

Observation Point GPS Points

Plot ID	Date	Y Coordinates	X Coordinates
T1Q1_1	12-JUL-11 3:22:34PM	4917393.31225286	556231.06345273
T1Q1_2	12-JUL-11 3:27:39PM	4917340.81724628	556238.53800183
T1Q1_3	12-JUL-11 3:33:28PM	4917283.95606365	556240.92371716
T1Q2_1	12-JUL-11 4:12:21PM	4917185.76508697	556249.76738946
T1Q2_2		556251	4917151
T1Q2_3	12-JUL-11 4:19:07PM	4917083.85473181	556252.78239780
T1Q3_1	13-JUL-11 1:30:58PM	4916987.39898897	556250.30342046
T1Q3_2	13-JUL-11 1:16:55PM	4916941.55223456	556269.72925731
T1Q3_3	13-JUL-11 12:49:41PM	4916888.76237823	556262.59559280
T1Q4_1	10-JUL-11 4:08:01PM	4916787.37943666	556263.00294609
T1Q4_2	10-JUL-11 4:17:44PM	4916740.44280732	556266.31868589
T1Q4_3	10-JUL-11 4:24:40PM	4916690.11681852	556266.26556936
T1Q5_1		556274	4916589
T1Q5_2		556252	4916542
T1Q5_3		556239	4916491
T2Q1_1	28-JUN-11 10:40:01AM	4917384.85792204	556345.34309682
T2Q1_2	28-JUN-11 10:19:49AM	4917337.59445258	556340.91885428
T2Q1_3	28-JUN-11 10:10:13AM	4917299.37936423	556337.33130105
T2Q2_1	28-JUN-11 8:59:24AM	4917198.77597899	556340.80381595
T2Q2_2	28-JUN-11 8:40:56AM	4917139.27234523	556342.18522624
T2Q2_3	28-JUN-11 8:29:31AM	4917089.85750214	556336.63899416
T2Q3_1	27-JUN-11 1:36:33PM	4916989.31956358	556341.12549826
T2Q3_2	27-JUN-11 1:26:49PM	4916942.57530643	556335.33464165
T2Q3_3	27-JUN-11 1:14:04PM	4916899.30308672	556332.70468155
T2Q4_1	27-JUN-11 11:28:06AM	4916788.01251249	556355.73429032
T2Q4_2	27-JUN-11 11:11:41AM	4916743.57637992	556341.30663589
T2Q4_3	27-JUN-11 10:55:16AM	4916696.52049835	556340.33071541
T2Q5_1		556348	4916590
T2Q5_2		556345	4916526
T2Q5_3		556340	4916489
T3Q1_1	03-JUL-11 10:52:02AM	4917391.77456808	556440.94749973
T3Q1_2	03-JUL-11 10:59:26AM	4917339.23433561	556440.09485018
T3Q1_3	03-JUL-11 11:08:26AM	4917301.70394585	556439.25795726
T3Q2_1	03-JUL-11 12:19:17PM	4917188.53349657	556439.76387344
T3Q2_2	03-JUL-11 12:25:12PM	4917138.96357354	556439.92622640
T3Q2_3	03-JUL-11 12:28:39PM	4917089.42961320	556440.00783130
T3Q3_1	04-JUL-11 10:33:34AM	4916999.09231656	556440.74286366
T3Q3_2	04-JUL-11 10:40:38AM	4916939.25002620	556440.72733644
T3Q3_3	04-JUL-11 10:52:14AM	4916895.28356177	556440.67391364
T3Q4_1	04-JUL-11 12:12:59PM	4916785.14974021	556441.38037925
T3Q4_2	04-JUL-11 12:21:25PM	4916736.35788635	556441.08120998
T3Q4_3	04-JUL-11 12:30:30PM	4916694.21039555	556439.29023851
T3Q5_1	09-JUL-11 4:39:19PM	4916585.93471104	556436.23589989
T3Q5_2	09-JUL-11 4:51:38PM	4916536.53095044	556440.57458085
T3Q5_3	09-JUL-11 4:59:57PM	4916487.43200122	556437.13460041

T4Q1_1	30-JUN-11 11:41:53AM	4917154.51744119	556539.39788769
T4Q2_1	30-JUN-11 2:12:18PM	4917037.28054359	556539.04646410
T4Q3_1		556542	4916950
T5Q1_1	07-JUL-11 11:22:26AM	4917391.42938810	556654.46609566
T5Q1_2		556638	4917352
T5Q1_3	07-JUL-11 11:47:24AM	4917302.49793326	556635.97634345
T5Q2_1	07-JUL-11 1:26:42PM	4917189.17373940	556640.27190905
T5Q2_2	07-JUL-11 1:37:06PM	4917148.90387827	556638.14519537
T5Q2_3	07-JUL-11 1:50:52PM	4917097.55657078	556627.69110693
T5Q3_1	07-JUL-11 3:39:26PM	4916988.82655010	556641.03133913
T5Q3_2	07-JUL-11 3:55:36PM	4916946.03530264	556621.91883873
T5Q3_3	07-JUL-11 3:58:48PM	4916898.41381261	556634.23389371
T6Q1_1	01-JUL-11 2:51:49PM	4916934.26870851	556738.90517874
T6Q1_2	01-JUL-11 3:08:32PM	4916872.68559373	556742.19806685
T6Q1_3	01-JUL-11 3:18:04PM	4916822.63219525	556748.84130221

Table 2: GPS coordinates for the observation points.

The Present: Topography

The Protectorate consists of 101.3 acres of woods, ridgeline, wetland, and streams located in Bar Harbor, Maine within the Emery District. One entrance to the property is through Doug and Eileen Chapman's driveway located along Norway Drive, a few miles south of the Peggy Rockefeller Farm, and the other is Old Norway Drive, an abandoned road which has become a popular walking path. The middle of Old Norway Drive is the eastern boundary of the property. Figure three shows some prominent features and vegetation changes on the property.

The topography is described as though you are walking through the Protectorate along the transect lines (in a zigzag pattern, walking north along transect one then south along transect two then north again on transect three) which I set up for my vegetation survey. Figure one shows the vegetation plots. I chose to do this because these are the areas I knew best, and it gives a good impression of the changes in the landscape. In addition, I describe the path up to the ridge top because that is a popular destination.

Path to the Ridge Top

The property is roughly shaped like a capital "H." The southwest boundary runs along Norway Drive. The western boundary is a straight line except for a bulge on the southwestern end which is an extra parcel bought by the previous owners, Cor Christi. Their intention was to use it to build a right of way necessary for developing the rest of the land. Fortunately, Cor Christi could not afford to develop the property.

This area contains mixed forest; some patches of young, dense White and Red Spruce (*Picea glauca, Picea rubens*) mixed with large White Pine (*Pinus strobus*) and Red Oak (*Quercus rubra*). There is also a power line running parallel to the gravel driveway which leads from Norway Drive to Doug and Eileen Chapman's home. Their lot is surrounded by the Protectorate, but is *not* owned by the college. They have a viewshed easement in which they are allowed to cut down trees to maintain a view to the surrounding area. After they no longer have the land this easement will be given to COA, but the house will remain with the Chapmans.

From the end of the Chapman's parking lot there is a trail leading up to the ridge top on the western side of the property. The path, which I named Blueberry Path (shown on Figures three and eight), first goes through mixed forest— mostly dominated by Red Oaks and White Pines— and passes the old Manring house site. This house was torn down in 2004 but patches of Sweetfern (*Comptonia peregrina*) and other plants that grow in disturbed sites clearly mark the house and garage site. Across from the house site is what looks to be an old garden.

Past the house site along the path you travel downhill to a streambed with a wooden footbridge. This stream originates in Lost Swamp (a wetland along the western boundary) and then flows into Mill Brook. After the bridge you climb back uphill through a copse of Witch Hazel (*Hamamelis virginiana*) which opens up into a field of Lowbush Blueberries (*Vaccinium angustifolium*). As you continue up the path from here you pass the beginning of a stand of red pines (*Pinus resinosa*) to the west, which extends north all the way to the ridge top. The path becomes a bit steeper from this blueberry patch. Granite ledges and boulders appear along the trail, becoming larger and more frequent as you near the top. Red Oaks and pines become more stunted (no more than four meters); spruce and Red Pine are more prominent as you continue up the path.

Finally, you reach the ridge top. From the ridge you can see Frenchman Bay to the northeast; Schoodic Mountain to the northwest; Cadillac, Sargent, Dorr, and Champlain mountains to the south; and Youngs and McFarland's mountains to the southeast (see Figure five for a drawing of the view). This is a very discreet ridge top: it is not well known yet it offers an amazing view of the island and its surroundings.

Transect 1

The western boundary of the property, which serves as the first transect line (T1), is well marked by survey tape and painted trees. If you begin walking north from where the bulge meets the straight boundary line, you walk through Red Oak and Red Maple (*Acer rubrum*) dominated forests with some White Pine and spruce. Where the canopy is sparse there are patches of very dense Black Huckleberry (*Gaylussacia baccata*) which extend for five by five meters or so. Where the canopy is thicker, there are few or no huckleberry patches.

Soon after T1Q3 you arrive at the southern edge of Lost Swamp, a muddy wetland almost entirely (about 95%) covered with dense Winterberry (*Ilex verticillata*) and alder (*Alnus spp.*) trees. It is named so because I consistently lost the survey markers in this area, as if the trees were trying to grow in the most inconvenient ways possible. It was only at the end of summer, after I discovered the discreetly painted trees through the swamp and re-marked them with blue survey tape, that I stopped resenting having to travel through it. I would suggest either rubber boots or careful footing when walking through this wetland.

After you make your way through Lost Swamp, hopefully without falling into the water, you travel through cedar dominated woods for about ten meters until you go up a short, rocky uphill (which only lasts about three meters), and pass a copse of witch hazel. After this uphill you return to Red Oak dominated forests, with patches of Gray, White, and/or Yellow birches (*Betula populifolia, Betula papyrifera, Betula alleghaniensis*) and spruce dominated woods where the soil is wetter than with the oaks. Black Huckleberry flourishes in some patches of rocky areas where there is little canopy cover. Close to the northern end of the western boundary you pass by a few pools of water and wetland areas which could be potential vernal pools. The northwest corner of the property is in a muddy area with some potential vernal pools.

Transect 2

One hundred meters to the east of T1Q1 brings you to the first quadrat in the second transect line (T2Q1) which is located on an elevated granite outcrop. This northwestern part of the property is mostly covered in granite ledges and stunted oaks, birches, spruces and White Pines. Walking southward down T2 you quickly leave the granite ledges and enter back into Red Oak dominated woods. About 100 meters south a wetland crosses the transect line. Roughly 20 meters across east-west and 10 meters north-south, it is usually more mud than water. It can be easily crossed as it is covered only about 40% in alders and Winterberry.

On the other side you again walk through Red Oak dominated woods, but with more White Pines and spruce and with a more compact canopy than the forest to the north of the wetland. As you walk closer to the ridge there are more snags and spruce in the oak forest. To the north of the ridge you climb up a steep, rocky, moss-covered slope to a granite ledge thick with stunted white pines and patches of meter tall Black

Huckleberries. After struggling through the huckleberries you find yourself at T2Q3, about five meters to the west from the summit of the ridge. Here it is very open with barely any trees above three meters.

From this point you descend down the rocky, but dry, edge of the ridge top and into the large Red Pine stand (shown on Figure three). The Red Pine stand transitions into a mixed forest and then abruptly meets the edge of Lost Swamp. Fortunately this area has fewer Winterberry and alders (only about 30% cover) and more larger, less entwined trees like Northern White Cedar (*Thuja occidentalis*), birch, Red Maple and spruce. Though it is still very muddy, these trees create larger islands to step on, making it less likely for you to be swallowed up by the mud. After the edge of the swamp you ascend through mixed woods and cross the Blueberry Path by the old Manring house site. After crossing the Blueberry Path you enter into patches of dense White Pines between one to three meters tall, interrupted by thick patches of Black Huckleberry, Lowbush Blueberry, and some bare granite. Bill Booth, who lived in a house abutting the southern end of the property from the 1960s to 1980s, remarked that there were no pine trees when he lived there; it was all bare granite outcrops. Following T2 over these outcrops and through the pines and huckleberry bushes, you find yourself in the Chapman's viewshed easement.

Transect 3

At this point if you travel 100 meters to the east you will find yourself on the southern end of the third transect line (T3). The southern most observation point along the property is located in a large, flat, open blueberry field. Walking north from here you enter Red Oak and White Pine dominated woods, with lots of shorter spruce. Then, facing east, you begin walking along a rocky hillside that descends to the stream originating from Lost Swamp. After crossing the stream and walking up the other side of the gulley, you find yourself parallel to the Blueberry Path and follow it for a few meters. At this point Red Pines are more frequent.

Diverging from the Blueberry Path, you move into the oak and spruce dominated woods. You scrabble down a set of boulders into Red Oak and Red Maple dominated forest with some spruce snags. Porcupine Hill begins about where the snags start to grow. There are other ways to reach Porcupine Hill besides following the transect line and climbing over mossy boulders; there is a survey line that is a continuation of the inner boundary line of the southwest leg which brings you to the hillside which the transect follows. After scrambling down the boulders you continue through the forest that alternates from open oak forests to being cluttered with snags. There are patches of Lowbush Blueberry and some Black Huckleberries where granite ledges prevent tree growth and canopy cover to obscure sunlight for the berries to grow.

Past T3Q2 the forest becomes rockier and is interrupted by more granite ledges. The trees become more stunted (up to three to four meters tall) and the terrain is more uneven. T3Q1 is located on a rocky ledge. The northeast corner pin of the western leg of the property is located very close to a home currently owned by the Collier family.

Transect 4

The fourth transect line (T4) begins in the middle of the crosspiece of the "H." There is a decline in elevation from T3 to T4 and an even steeper one from T4 to T5. The fourth transect line is located on what I call Porcupine Hill because of the porcupine dens Erica Georgaklis and I found in the rocky areas across the hillside. T4Q1 is located along an

obvious trail that extends north from the Protectorate onto the Collier's property. The boundary between the properties is marked very clearly with orange tape and blazed trees, in addition to a large white sign near the plot claiming, "Stay off Private Property. Beware of Dog." T4Q1 is located in an open Red Oak forest with a forest floor covered by leaf litter and bare of vegetation.

Walking south from T4Q1, you continue through open Red Oak forests until T4Q2_1. At this point blow downs and snags begin to appear, and undergrowth and intermediate trees, mostly spruce, become more abundant. South from this point the terrain becomes rockier and more blow downs and snags impede walking. More coniferous trees grow here. Dispersed among areas with a thick canopy of spruces and White Pines are patches of particularly rocky areas without any canopy. The farther south you walk the steeper the land declines to the east. The southern most plot, T4Q4, is close to a house located at the very end of Mill Brook Road.

Transect 5

To reach the fifth transect (T5) from here it is easiest to travel directly down the steep, rocky, leaf litter-covered hill. Once you reach T5, which borders the Mill Brook wetland, the land flattens out and the soil becomes more moist. There are far fewer rocks than on the hill. The forest is dominated by cedars and spruce with some White Pines. There are more grasses and ferns here than in other areas because due to the proximity of the wetland.

Traveling north from T5Q3_3 you walk along the western boundary of the Mill Brook wetland. There is a wall of alders along the boundary of the wetland which extends almost the entire length of the transect, though these trees become less numerous the farther south you travel. To the west is a steep hillside with mostly White Pine, Northern White Cedar, spruce, Eastern Hemlock (*Tsuga canadensis*), and some Red Oak and Red Maple. There are a few patches of American Beech (*Fagus grandifolia*) as well. The DBH of some of these pines, cedars, and hemlocks exceeds 75cm (30 inches), impressive for a tree on the eastern side of the island where the Bar Harbor fire of 1947 destroyed many forests. Judging by counting their rings and their large size I am certain that some of these trees by the wetland escaped the 1947 fire.

To get off the property from T5Q1 you would travel west along the northern boundary, ascending a hill and passing large white pines (DBHs sometimes exceeding 75cm or 30 inches) mixed with spruce blow downs and snags. This boundary is well marked with orange survey tape and cut trees. The northwest corner of the northeast leg ends close to the Collier house: you can see it over the crest of the hill.

From the crest of the hill, to continue off the property, walk south along the survey line marking the inside of the northeastern leg of the property, which is conspicuous with survey tape, paint, and cut trees. The DBH of the trees decreases and they grow more closely together. This forest is a mix of spruce, aspen (*Populus spp.*), Red Oak, White Pine, small conifers, and some patches of American Beech. The trees' DBH increases again as you walk south until you reach the cross piece of the "H." Once you reach the survey line marking the cross piece of the "H" you can follow the survey line north until you reach the T4 and walk southwest from there until you reach the Blueberry Path.

Transect 6

The sixth transect line (T6) is best accessed through Old Norway Drive which makes up the eastern boundary of the property. You park at the southern entrance of Old Norway Drive and walk along it until you come to a dump site filled with rusty pails, glass, tires and all manner of things that could give you tetanus. You walk west carefully through the dump site and through the wetland for a few meters. There are alders and Winterberry, but not so many that they hinder your walking. The area is muddy and fiercely buggy in the summer. Once you reach T6Q1, there are cedars, Red Maples, birches, and spruce growing over a forest floor covered with grasses and ferns.

From here you walk south. Soon the soil becomes drier and tall birches, cedars, maples and some spruce surrounded by tall graminoids and ferns replace the Winterberry and alders. Close to T6Q2 the thick graminoids subside. Continuing south you cross many rivulets where you surprise frogs with almost every step. Crossing the rivulets sometimes requires jumping over them and thus slipping in and getting your feet wet. At the southern end of T6 the trees (mostly cedars and Red Maples) have a DBH of about 50cm (20 inches) or greater. At this point the rivulets join to form Mill Brook. From T6Q2 you can travel east about 20 meters and walk upstream along Mill Brook towards the southern boundary. Red Maples, spruces, cedars, and Red Oaks grow along Mill Brook with some grass and ferns.

If you follow the stream about 60 meters you will reach a pool of water known to the locals as “Deep Pool” with two waterfalls above it. The southern boundary of the property runs right through the pool, so the waterfalls are not on the property.

Old Norway Drive is a lovely walking path which runs along Mill Brook. It passes mixed forests on its eastern side. The northern boundary of the Protectorate is not well marked along the Old Norway Dive. Private land owners and Acadia National Park are the neighbors to the east.

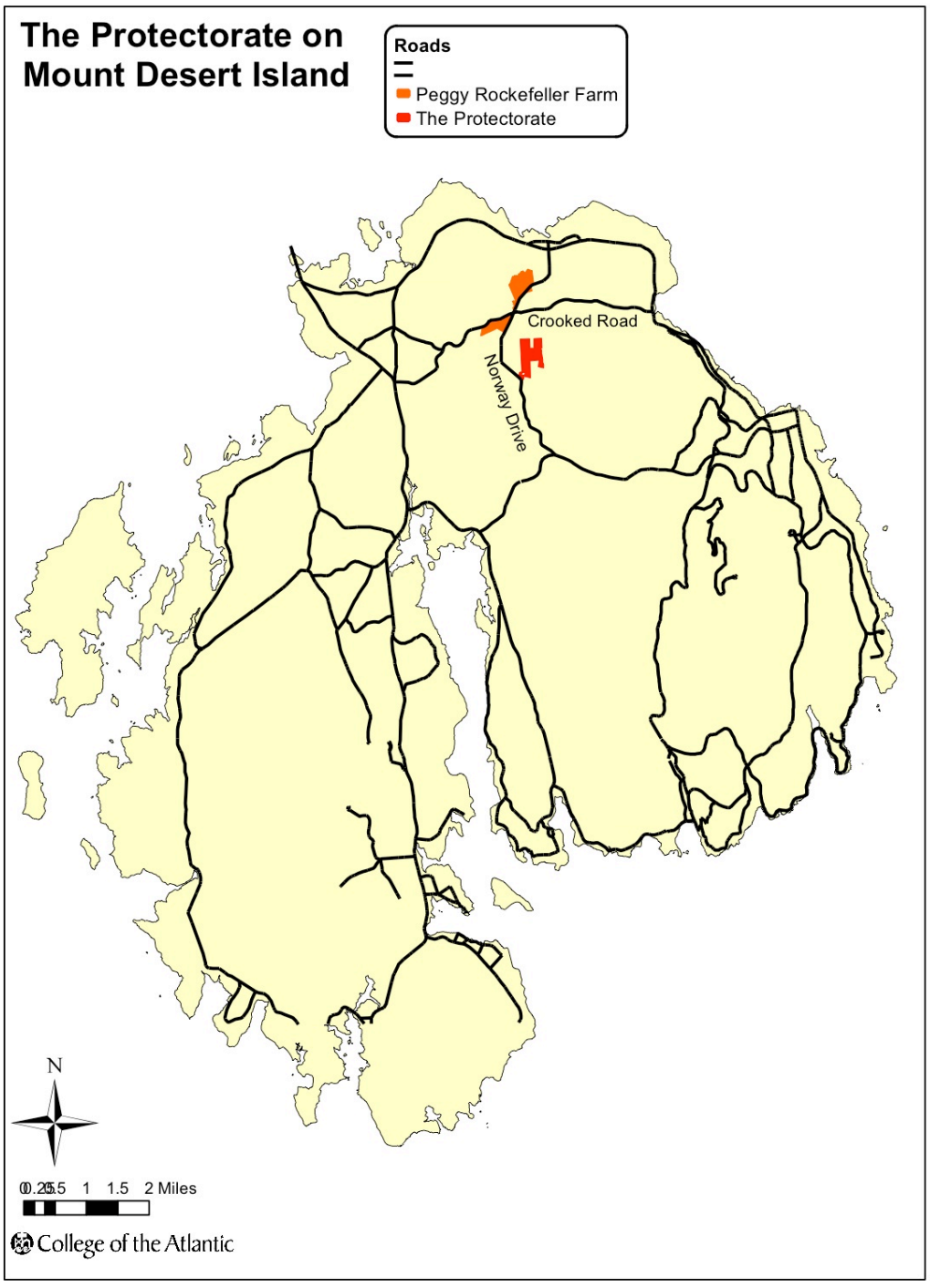


Figure 2: Map showing the location of the Protectorate on MDI in relation to another COA property, the Peggy Rockefeller Farm.

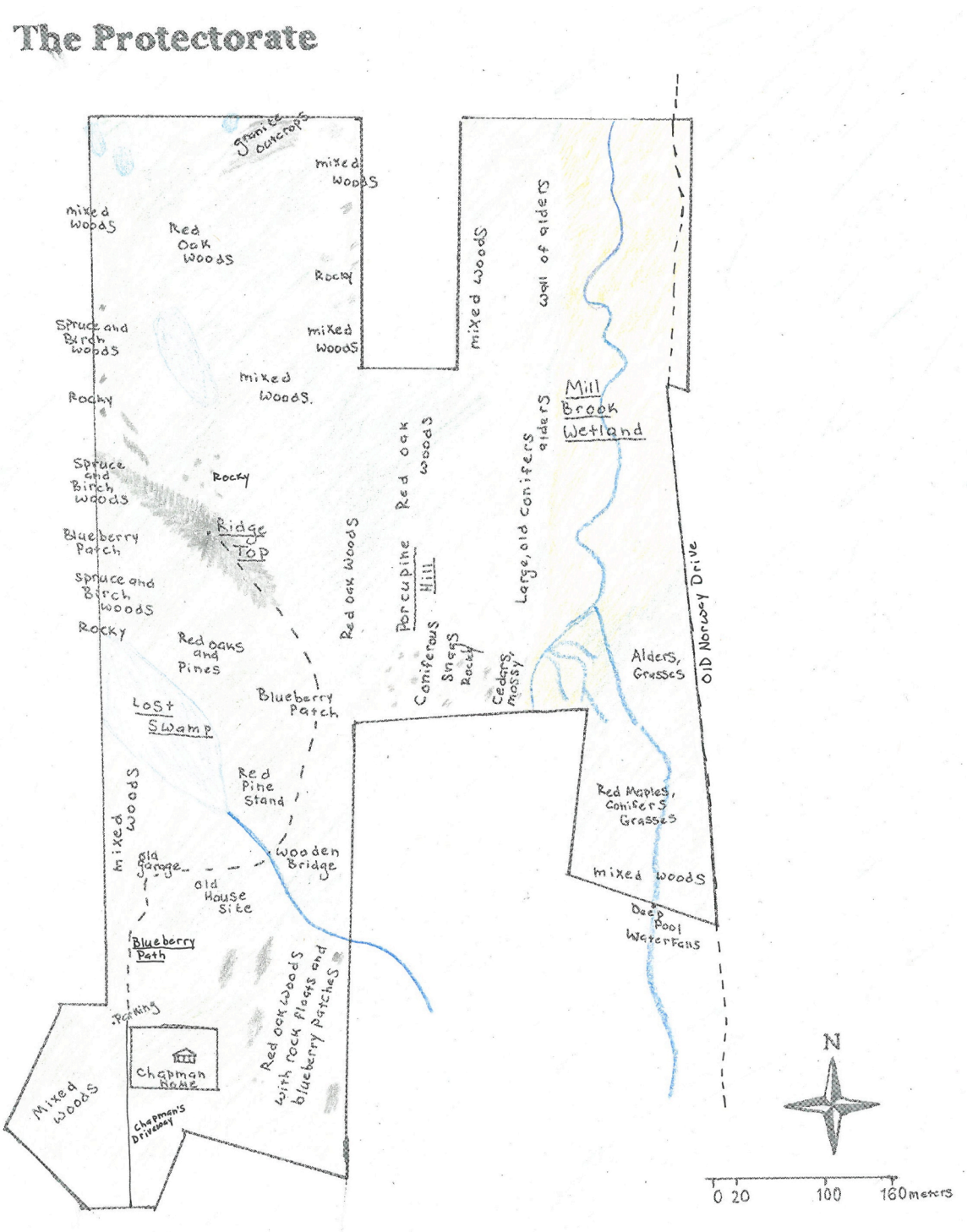


Figure 3: Hand drawn map of the Protectorate showing vegetation patterns, place names, and prominent features on the landscape.

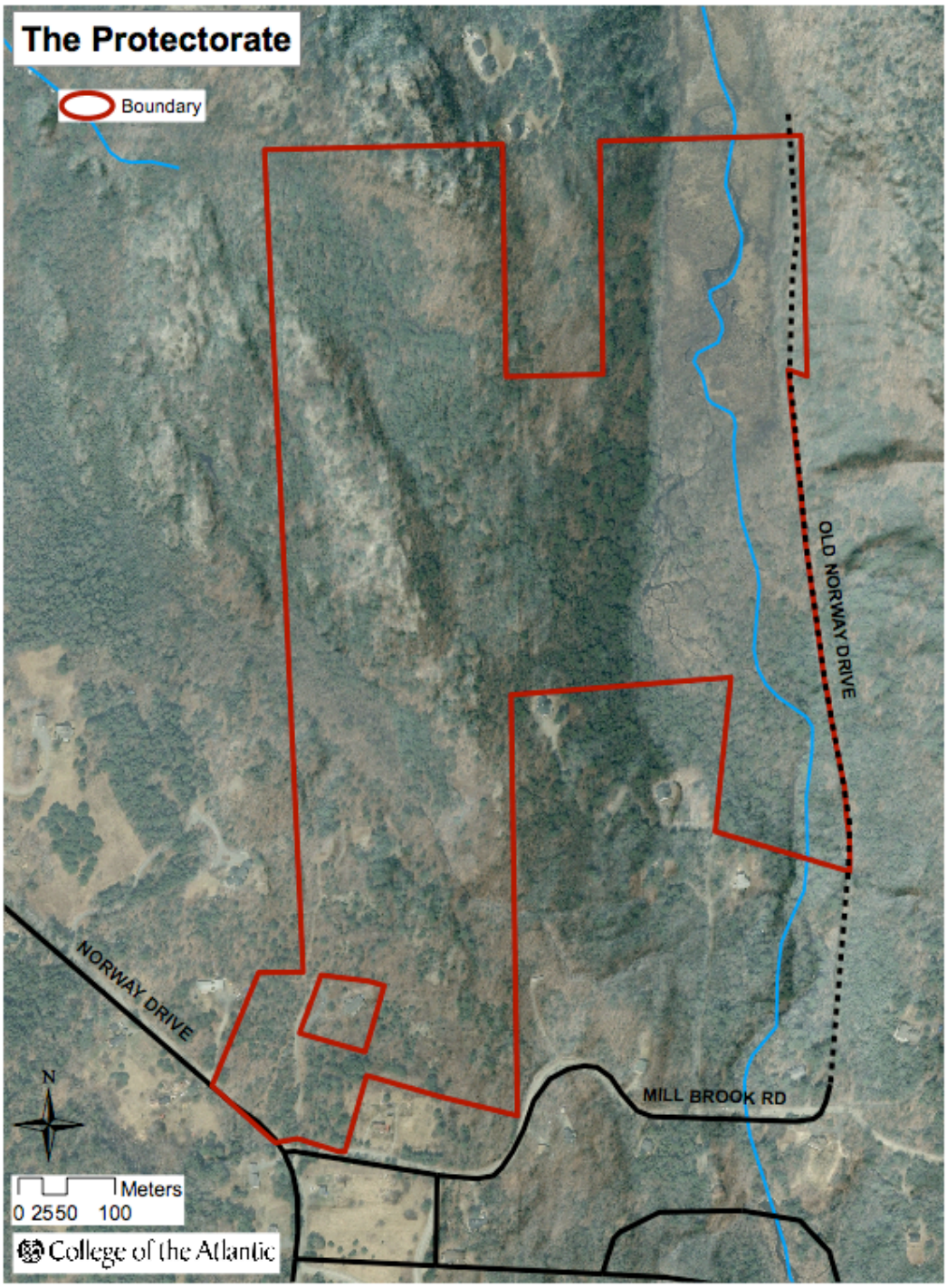


Figure 4: Aerial photograph of the property overlaid on a LIDAR image.

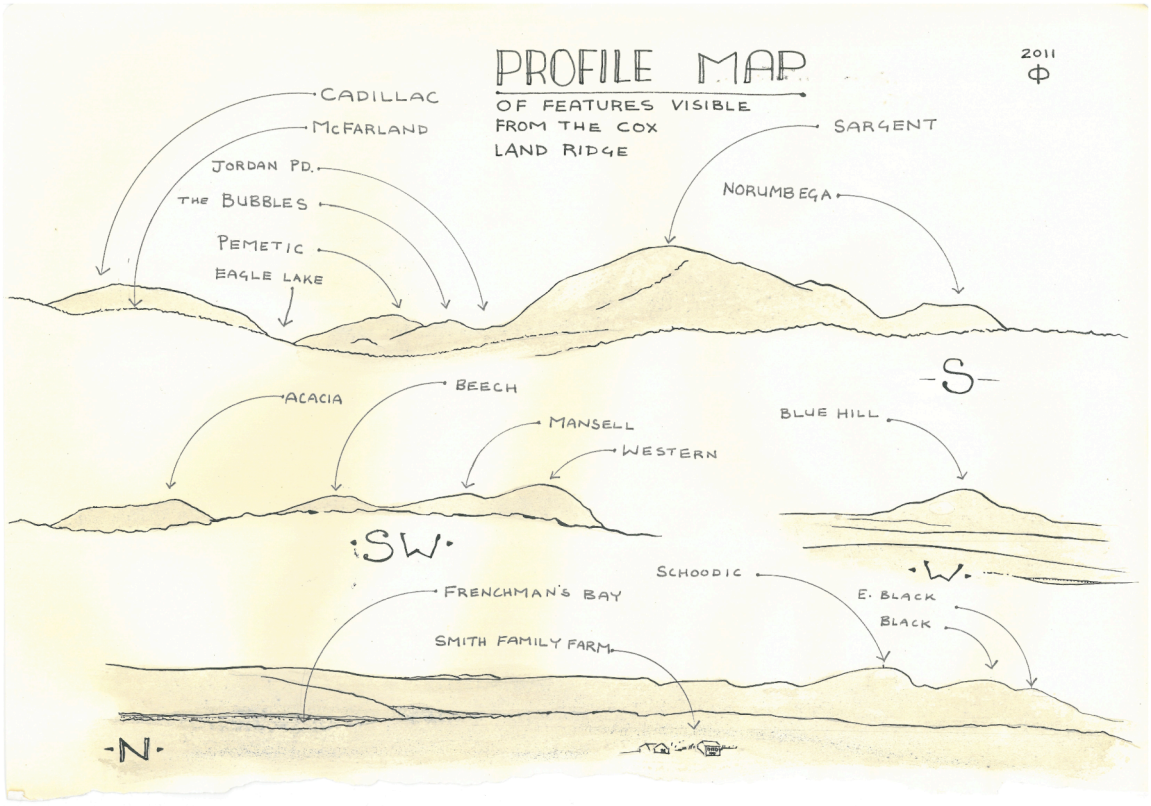


Figure 5: Drawings of the views from the ridge top (courtesy of Phil Walter).

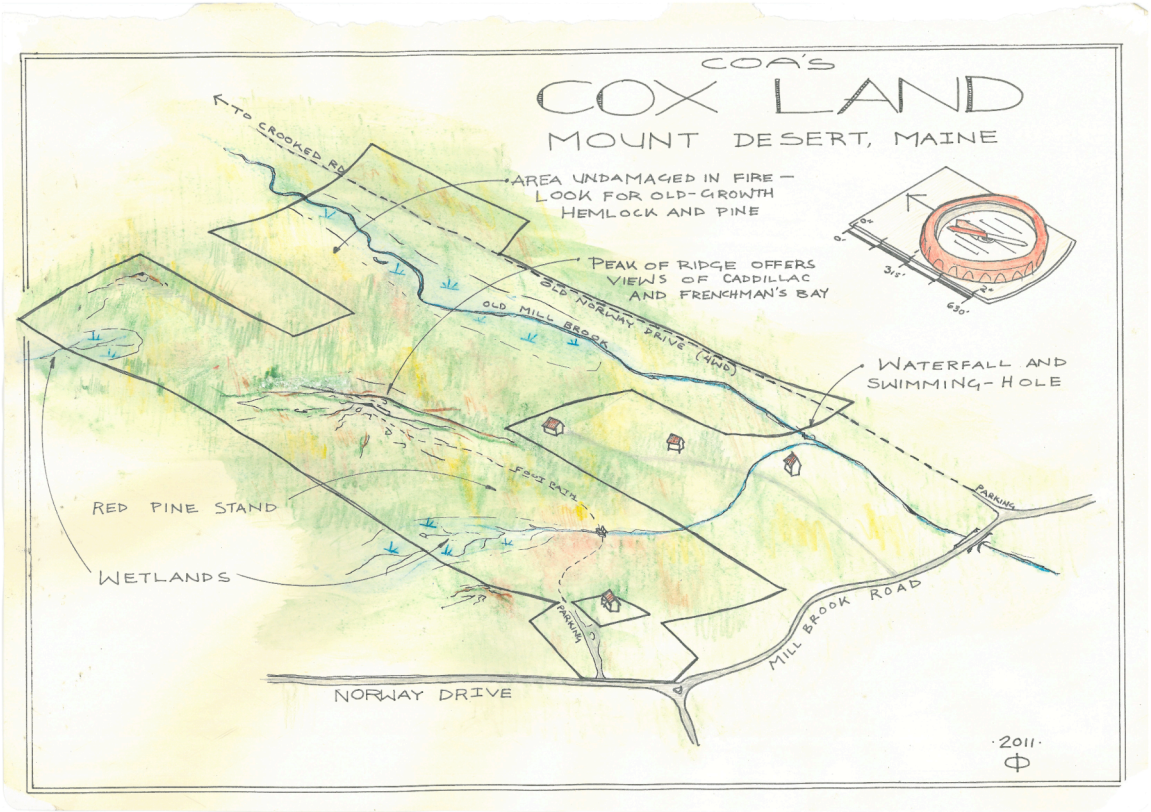


Figure 6: Hand drawn map of the Protectorate (courtesy of Phil Walter).

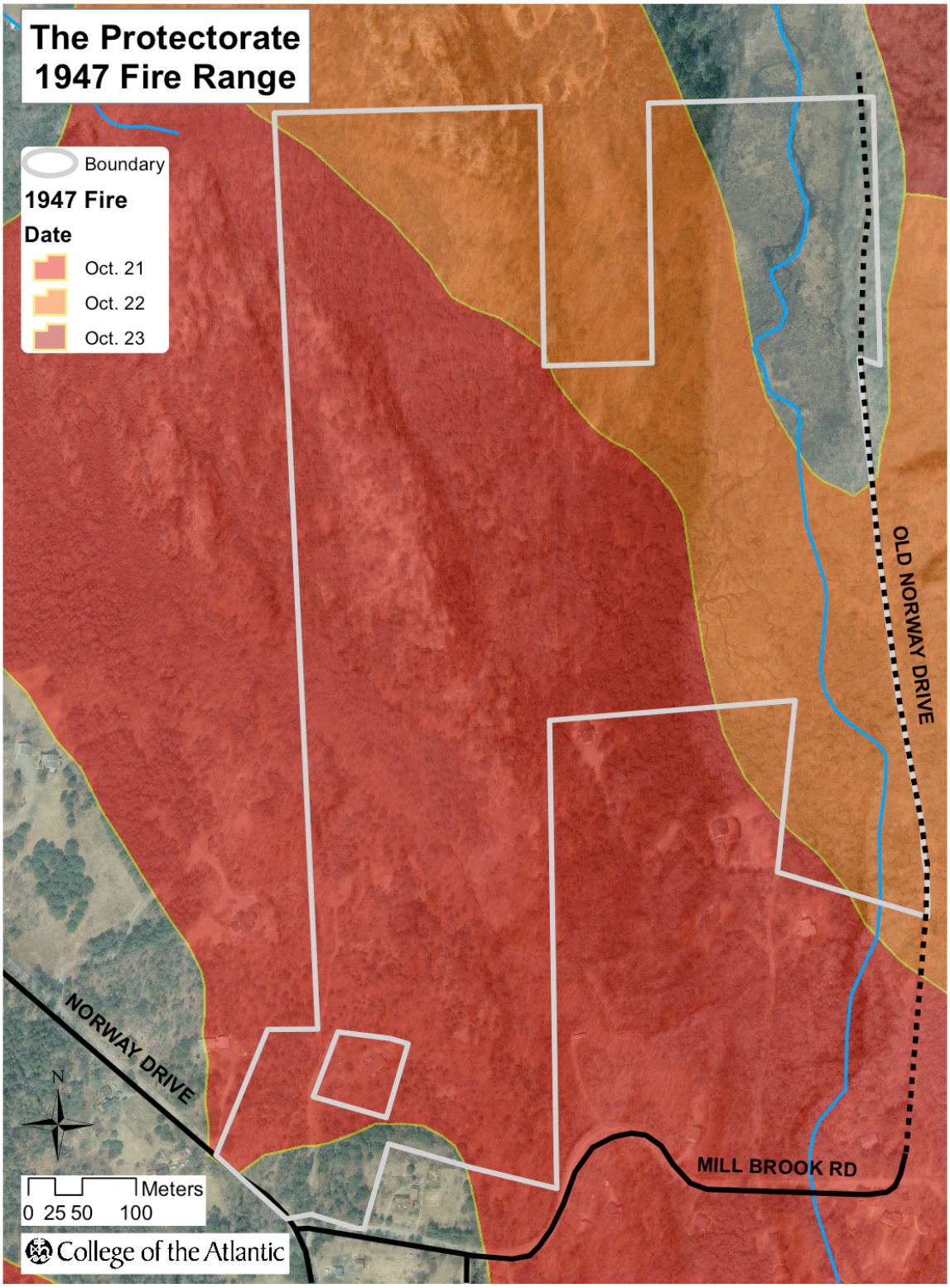


Figure 7: Map of the approximate burn patterns of the 1947 Bar Harbor fire.

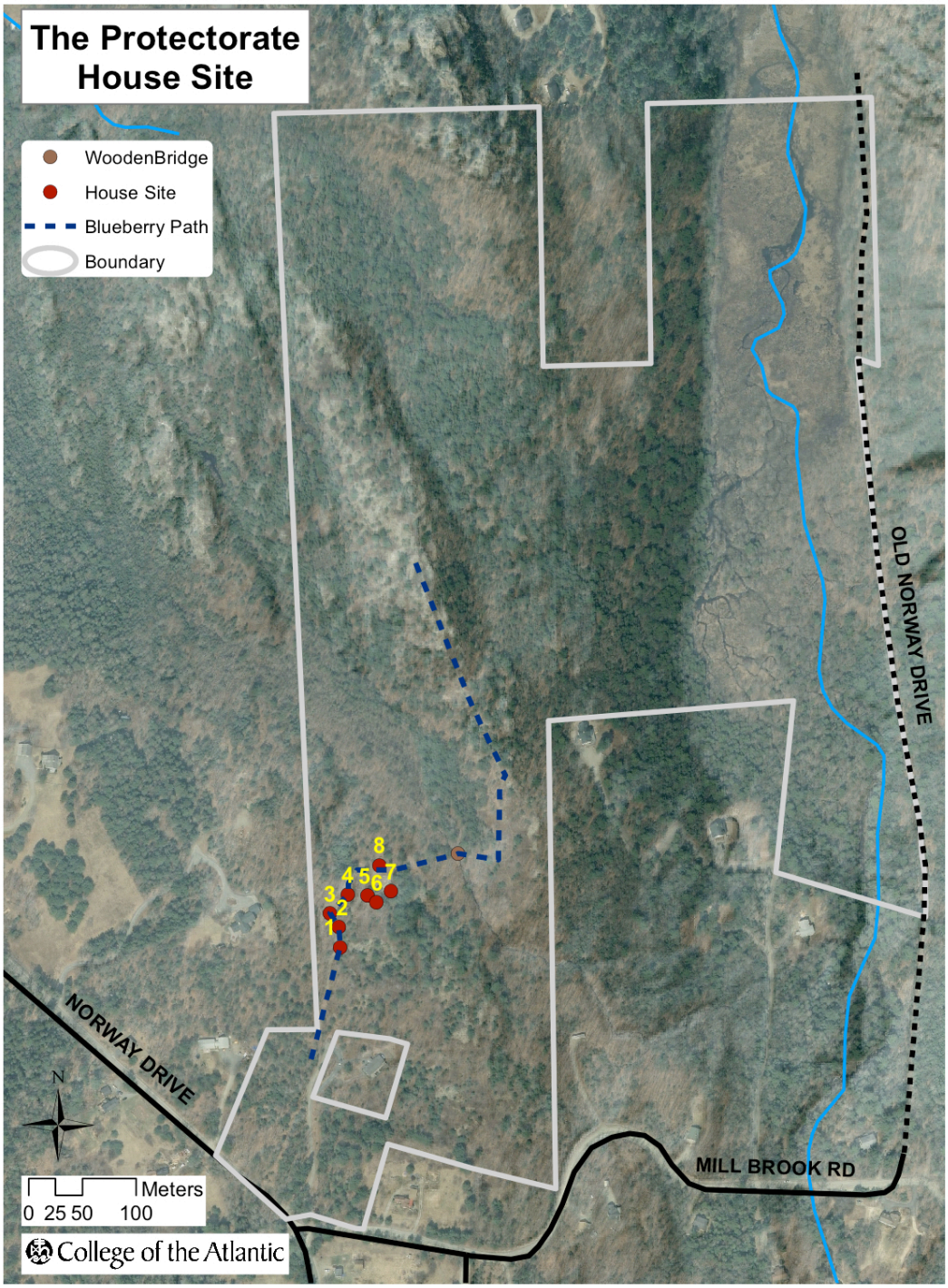


Figure 8: Map of the old Manring house site and surrounding accessories.

House Site Map GPS Coordinates

Number	Date	Notes	Y Coordinates	X Coordinates
1	14-JUL-11 10:26:12AM	3x2 meter gravel mound	4916667.6193772	556295.14293469
2	14-JUL-11 10:28:11AM	Electrical box	4916686.28609248	556293.87322
3	14-JUL-11 10:28:53AM	Well head	4916699.37075506	556285.51696294
4	14-JUL-11 10:34:37AM	Sweetfern patch (old garage site)	4916716.65832036	556302.44917508
5	14-JUL-11 10:39:43AM	One meter long rock wall, beginning of ditch	4916715.69676387	556320.5073107
6	14-JUL-11 10:40:36AM	Tiles in woods	4916709.64421057	556329.0433769
7	14-JUL-11 10:41:49AM	End of ditch in the woods (for wiring or pipes?)	4916719.6469976	556342.24765723
8	14-JUL-11 10:44:21AM	Sweetfern patch (old house site)	4916743.94979752	556331.68403981

Table 3: GPS coordinates for the old house site. Blueberry Path, the path to the ridge top, runs within meters of the house site.

The Waterways

The Protectorate is located in the middle of the Northeast Creek watershed, the largest watershed on Mount Desert Island. Mill Brook, also known as Old Mill Brook or Del Gray Brook, flows through the property before joining Northeast Creek. Figure 9 shows the Protectorate's location within the watershed.

Mill Brook flows parallel and to the west of Old Norway Drive, the eastern boundary of the Protectorate. The southern boundary of the property runs through the middle of a pool below a set of two waterfalls (see Figure 11). Locals call it "Deep Pool," "Nirvana," or "The Grotto." (Chapman pers. comm.; Cox pers. comm.; Harding, pers. comm.). From the pool, Mill Brook runs almost directly north. It forms a single flowing stream until 556689, 4916936 where it starts to branch off into smaller rivulets.

At this point the forest begins to change from thick, dry, mixed woods to an area covered with meter tall graminoids and ferns, speckled with red maples, cedars, and birches. It is difficult to take a step in this area without surprising a frog. At 556704, 4916971 little rivulets flow before forming the Mill Brook wetland on the other side.

The wetland covers an area approximately 590 meters running north-south and 140 meters running east-west and extends past the northern border of the property. The southern end of the wetland is covered approximately 30% by scattered red maples. Towards the northern end of the wetland trees become scarcer: about half way through there are no trees at all. Apart from trees, the wetland's area is covered about 90% by dense clusters of Sweet Gale (*Myrica gale*), 30% by graminoids (particularly around the edges), 5% by cattails (*Typha spp.*), and 7% by water channels.

These channels flow out of the wetland and off the property, continuing until they widen and converge to form the Barcelona, the body of water across the road from the Peggy Rockefeller Farm (see Figure 9). This wet area is called the Barcelona on maps dating back to at least the late 1800s. I am unsure where the name comes from. Locals used the area for ice skating and building bonfires (Harding pers. comm.; Owens pers. comm.). At the four-way intersection between Norway Drive and Crooked Road, Mill Brook flows under the road and immediately becomes Northeast Creek. The place where the roads intersect is marked as the "Beaver Dam" on maps dating back to at least 1896. To this day beavers maintain a dam there, often causing flooding on both roads.

Northeast Creek is well known for recreational paddling and access to cranberry picking in the fall. Percy Harding (pers. comm.) remembers when he was young (about the 1950s) being one of three or four fur trappers on Northeast Creek so that he could earn money for his school clothes. One winter while poling down the creek he accidentally fell in the water and then had to bike to his home on the Crooked Road! Northeast Creek releases into the ocean at Thomas Bay next to Four Foot Farm, owned by COA trustee Jay McNally.

On August 31, 2011 Maggie Mansfield and I paddled, poled, and dragged ourselves in whitewater kayaks through the Mill Brook wetland. Figure 10 shows our route. We entered the wetland where we found a break in the thick Sweet Gale and we were able to drag ourselves through the graminoids until we reached a channel in the middle of the wetland. We turned around when the channel became too narrow to follow. Maggie described the trip accurately by saying, "This is to kayaking as mud walking is to swimming." We found that the water never exceeded 1.5 meters in depth.

The area is filled with wildlife. In Mill Brook, by Deep Pool, Steve Ressel and I found almost a dozen two-lined salamanders (*Eurycea bislineata*). I witnessed a white-tailed deer (*Odocoileus virginianus*) splash across the southern end of the wetland, where Maggie and I could not reach in our kayaks. There is a beaver (*Castor canadensis*) dam along the western side of the wetland, but it looks at least a year old and is probably abandoned. There are also birds including ducks (*Anas spp.*), sparrows, warblers, and woodcocks (*Scolopax minor*) in the wetland and surrounding area.

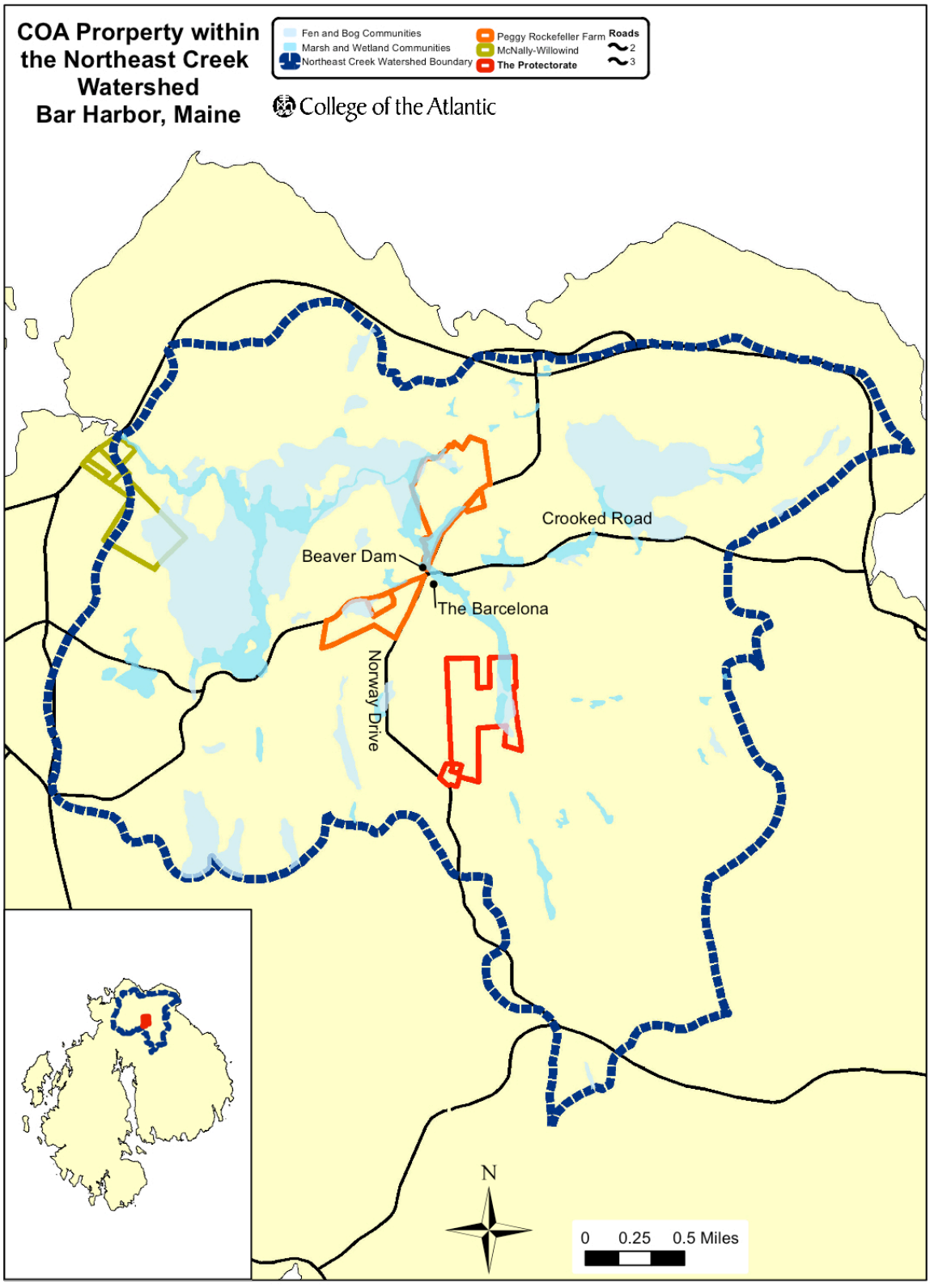


Figure 9: COA's properties within the Northeast Creek Watershed.

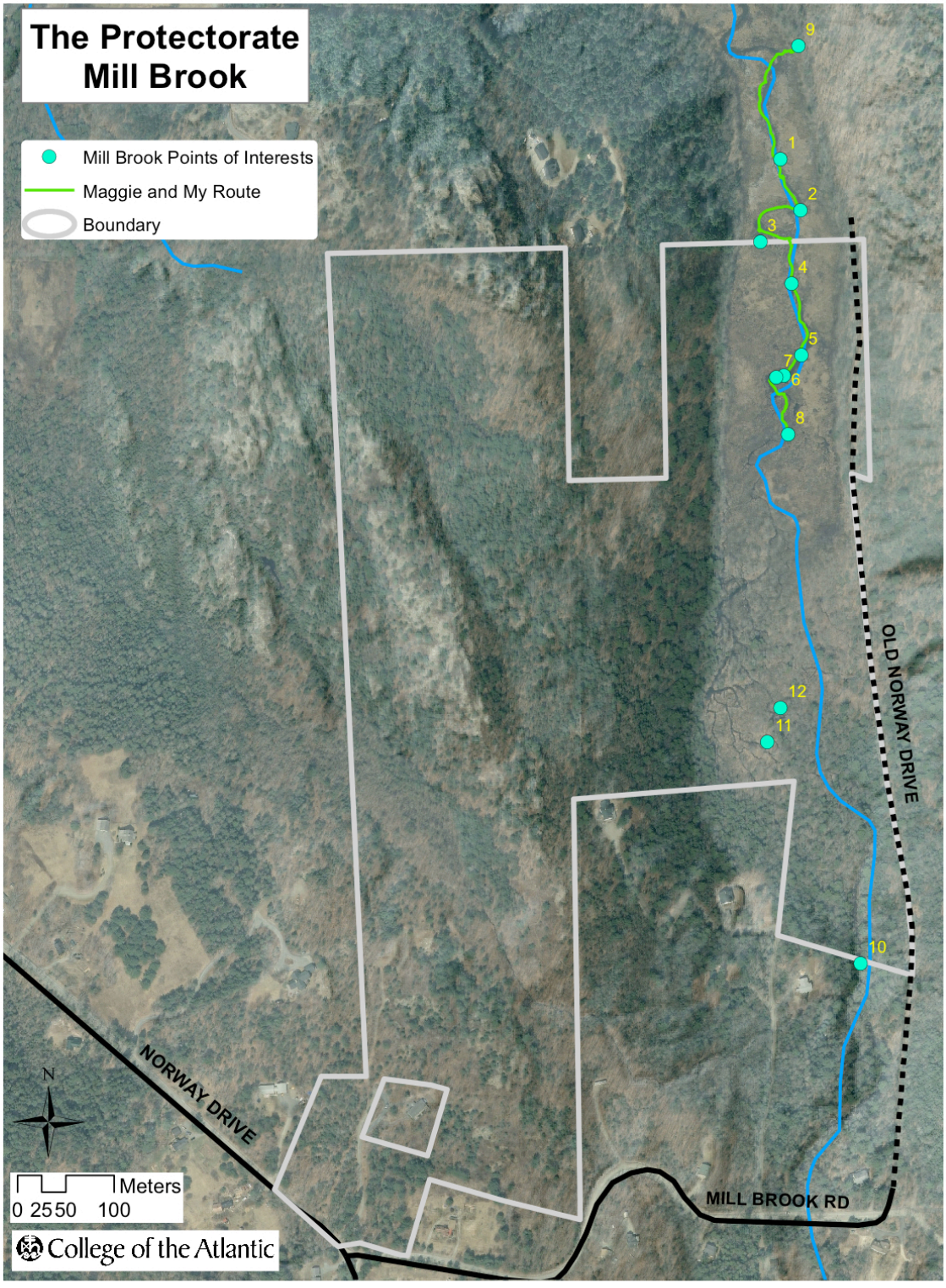


Figure 10: Map of Mill Brook in the Protectorate and the route Maggie and I took in the wetland.

Mill Brook Map GPS Points

Number	Date	Notes	Y Coordinates	X Coordinates
1	08/31/2011	Channel in middle of wetland running north-south	4917541.30067227	556702.84722163
2	08/31/2011	Water depth about one meter	4917488.1952086	556723.73297256
3	08/31/2011	In a pool about 5x5 meters large	4917455.32866588	556682.09690181
4	08/31/2011	Found another channel going south	4917411.87448131	556714.25868036
5	08/31/2011	Algae forming in water. Water depth about one meter	4917337.96681191	556724.22552353
6	08/31/2011	Many lily pads in this part of the channel	4917316.60203012	556706.48425585
7	08/31/2011	Patch of cattail to the west about 16meters long	4917315.69480002	556698.47576767
8	08/31/2011	Place where we turned around in wetland	4917256.37064414	556710.91246468
9	08/31/2011	Where we took out along Old Norway Drive. The edges are very grassy	4917658.52767235	556721.32319522
10	08/31/2011	Waterfalls and Deep Pool	4916708.60513394	556785.69297423
11	08/31/2011	The area becomes very grassy instead of forested	4916936.82203808	556689.93616339
12	08/31/2011	Southern end of the wall of alders before the Mill Brook wetland	4916971.88725062	556704.92349118

Table 4: GPS coordinates for interesting areas along Mill Brook.



Figure 11: Waterfalls and Deep Pool.



Figure 12: Mill Brook flowing downstream from the waterfalls.



Figure 13: Grassy area to the south of Mill Brook wetland.



Figure 14: Wall of alders along the southern boundary of Mill Brook wetland.



Figure 15: Looking north over Mill Brook wetland.

Species Accounts

"You never need apologize for being excited about natural phenomena."
– Kaija Klauder, after catching a Wood Frog while helping me on the Protectorate.

*Invasive

Vegetation

American Beech *Fagus grandifolia*
There were patches of American Beech along the western side of Mill Brook wetland and along the western boundary line of the northeast leg. The patches ranged from about 3x3 meters to 6x18 meters. Other than those areas beech were infrequent or absent.

Asters
Asters were relatively common in all habitats on the property. I was unfortunately not able to identify all of the different species.

Balsam Fir *Abies balsamea*
This tree was very common all over the property. Though there were many adult firs, we mostly found seedlings or saplings. The seedlings were particularly invasive and were found in almost every plot and observation point.

Beaked Hazelnut *Corylus cornuta*
I identified one individual along Old Norway Drive.

Big-tooth Aspen *Populus grandidentata*
This was a relatively rare species on the property. I only recorded this species in plots T4Q1 and T2Q1.

*Bittersweet Nightshade *Solanum dulcamara*
On June 13 I saw it growing sparsely along the northern end of Old Norway Drive on the eastern side.

Black Huckleberry *Gaylussacia baccata*
This was a very common species on the property and was found in almost every plot. It grew less densely on Porcupine Hill but was very common to the north, south, and west of the ridgeline. Along T1 and T2 there were often waist high patches of huckleberries up to 18 meters long and 6 meters wide. I first noted them flowering on the western part of the ridge top on June 15.

Black Locust *Robinia pseudoacacia*
I possibly found one adult specimen in T2Q5_3.

Bracken Fern *Pteridium spp.*
This was a relatively common species on the property and was found in many of the plots. It grew most densely in open areas like in blueberry or huckleberry fields.

Bristly Sarsaparilla *Aralia hispida*
I found one specimen growing in plot T3Q3_2, a rocky area filled with snags and blown down trees.

Bunchberry *Cornus candensis*
A common plant that was in many of the plots. Usually the percent cover was 10% or less.

Canada Mayflower *Maianthemum canadense*
A common plant that was in many of the plots. Usually the percent cover was 10% or less.

Cattails *Typha latifolia*
In the Mill Brook wetland this plant made up about 15% cover and also grew in a large clump along the western side. It also grew in some of the wet areas in the northwestern corner of the property.

Christmas Fern *Polystichum acrostichoides*
I found this occasionally in the wet area south of the Mill Brook wetland.

Cinnamon Fern *Osmundastrum cinnamomeum*
This was an occasional plant. It usually grew in open and wet areas such as the wet area along the northwestern boundary, Lost Swamp, and around the boundaries of the Mill Brook wetland.

Clover *Trifolium spp.*
This was an occasional species that I only found near the disturbed old house site. There its percent cover was about 10%.

Common Juniper *Juniperus communis*
This plant was common on the ridge top and on granite outcrops in the northwestern portion of the property.

Common Yarrow *Achillea millefolium*
Found growing along the Blueberry Path between the parking area and the stream. Through it was most prevalent around the parking area, it still only made up about 10% of the cover on the path between this area and the stream.

*Cow Vetch *Vicia cracca*
Grew at the disturbed house site. The percent cover was 10% or less.

Cow-wheat *Melampyrum lineare*
This was an occasional plant found in rocky, disturbed soil such as along the Blueberry Path and in T2Q2.

Cranberry (either small or large) *Vaccinium spp.*

Found in the wet area near T1Q2_1 that begins about 5 meters east of the trail. It was also in the other wet areas in the northwest corner of the property.

Creeping Buttercup *Ranunculus repens*
I found this occasional species in the south of the Mill Brook wetland and along the Old Norway Drive.

Crowfoot *Ranunculus spp.*
Occasionally I found *Ranunculus* species around the Mill Brook wetland and Lost Swamp.

Dwarf Enchantress'-nightshade *Circaea alpina*
I found one specimen in T6Q1_3.

Dwarf Raspberry *Rubus pubescens*
I located one individual along the banks of Lost Swamp.

Eastern Hemlock *Tsuga canadensis*
This species was most prevalent along Porcupine Hill and along the Mill Brook wetland. Along the western border of the wetland there were at least 20 Eastern Hemlocks with a DBH of 75cm or 30 inches or more. The tree cores and the large size strongly suggest that some hemlocks survived the 1947 Bar Harbor Fire.

False Solomon Seal *Maianthemum racemosum*
An occasional species. Though it was mostly found in areas with moist soil on the eastern side of the property near the wetland, it was also occasionally found in the drier woods.

Flat-topped Aster *Dolellingeria umbellata*
Occasional species located in T5Q1 and T6Q1. It probably occurred more times than I was able to identify it.

Goldenrod *Salidago spp.*
This occasional plant grew in disturbed or rocky soil particularly around the old house site.

Goldthread *Coptis trifolia*
This plant was occasionally found on the property.

Graminoids
They were extremely common particularly in wet areas. Because they are generally difficult to identify I did not attempt to decipher any species.

Gray Birch *Betula populifolia*
This was a common species particularly in wet areas and bordering the Mill Brook wetland.

Green Alder *Alnus viridus*

There was a mix of Green and Speckled Alder in Lost Swamp, the southern part of Mill Brook wetland, and the wet areas in the northwest corner of the property.

Hawthorn *Crataegus spp*.
I found only five hawthorn trees on the property. There was one adult tree about 3 meters tall along the Blueberry Path near the house site, three seedlings along the Blueberry Path by the stream, and one seedling in T5Q1.

Horsetail *Equisetum spp.*
Occasionally grew in the wet areas in the northwestern corner of the property, along the Mill Brook wetland, and in the southeastern leg of the property.

*Indian Paintbrush *Hieracium aurantiacum*
Grew along disturbed portions of Blueberry Path and on the old house site. First observed flowering on June 15.

Indian Pipe *Monotropa uniflora*
This was a rare plant and only found on Porcupine Hill. I only found about three to four specimens.

Jack-in-the-Pulpit *Arisaema triphyllum*
Occasional. Grew in wet areas in the northwestern and southeastern legs of the property.

*Japanese Barberry *Berberis thunbergii*
Grew in some areas along Old Norway Drive particularly near T6Q1.

Larch *Larix laricina*
Grew in Lost Swamp, occasionally in the wet areas in the northwestern leg and along the Mill Brook wetland borders. It did not grow outside of the wet areas.

Large-leaved Aster *Eurybia macrophylla*
I found this species in T5Q3.

Larger Blue Flag *Iris versicolor*
In the wet areas in the northwestern leg of the property and along the western edge of the Mill Brook wetland.

Lily of the Valley *Convallaria majalis*
I may have seen one specimen west of the Chapman home along T3.

Lowbush Blueberry *Vaccinium angustifolium*
Found sparsely in the woods along Old Norway Drive and on the property west of the wetland. There were large patches of blueberries along the Blueberry Path (hence the name), on the ridge top, and along the northern edge of the western border. (They often served as a delicious distraction during the survey in the summer). I first noted ripe berries on June 15 on top of the ridge.

Low Hop Clover *Trifolium campestre*
I found a few specimens growing on the old house site.

Mad-dog Skullcap *Scutellaria lateriflora*
This occasional species is located in wet areas particularly around the Mill Brook wetland.

Marginal Woodfern *Dryopteris marginalis*
Found only in T4Q3 with a percent cover of 10% growing on rocky substrate.

Marsh Skullcap *Scutellaria galericulata L.*
A few plants were possibly identified along the western boundary of the Mill Brook wetland in T5Q1.



Lowbush Blueberry (courtesy of Jordan Chalfant).

White Meadowsweet *Spirea alba*
This common plant was located in wet areas along the Mill Brook wetland and occasionally in Lost Swamp.

Mint spp. *Mentha spp.*
There was an unidentifiable species of mint growing in the disturbed area of the old Manring house site. It could have been a cultivated mint from the old garden about six meters away from the house.

Mountain Maple *Acer spicatum*
One sapling was growing in T4Q3 on rocky substrate.

Nantucket Shadbush *Amelanchier nantucketensis*
One was located at 0556433, 4916530. There are also possible Nantucket Shadbushes on the top of the ridge.

Northern Bayberry *Myrica pensylvanica*
Bayberry was an occasional plant on the property. It often grew with Black Huckleberry and was occasional in the Mill Brook wetland.



Northern White Cedar (courtesy of Lucy Atkins).

Northern Bugleweed *Lycopus uniflorus*
This rare species was found in the wet area south of the Mill Brook wetland.

Northern White Cedar *Thuja occidentalis*
Grew along the western, southern, and eastern boundaries of the Mill Brook wetland, in Lost Swamp, and in the wet areas in the northwest corner of the property. Some of the cedar trees by Mill Brook wetland have a very large DBH some exceeding 75cm or 30 inches. Like the Eastern Hemlock, their size and age suggests that some of the cedars by Mill Brook wetland survived the 1947 Bar Harbor fire. Cedars do not grow outside of the wet areas.

Ox-eye Daisy *Leucanthemum vulgare*
First observed flowering on June 15. Many grew by the old house site along with other unidentified asters.

Partridgeberry *Mitchella repens*
This was an occasional species found in plots T1Q6, T2Q2, T4Q1, and T5Q1 with a percent cover not exceeding 10%.

Pearly Everlasting *Anaphalis margaritacea*
Grew at the old house site. Made up about 10% of ground cover.

Pink Lady's Slipper *Cypripedium acaule*
I only found one on the property between T3Q1 and T3Q2.

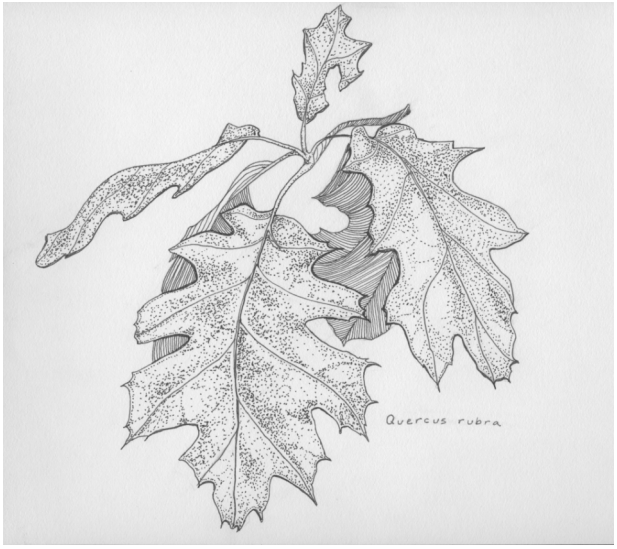
*Plantains spp. *Plantago spp*.
Some plants grew near the parking area near the Chapman's driveway.

Purple Chokeberry *Aronia prunifolia*
This rare species was located T2Q4_3 and T2Q5.

Quaking Aspen *Populus tremuloides*
These were uncommon and found in the northeastern leg of the property and along Porcupine Hill.

Rabbit-Foot Clover *Trifolium arvense*
I only observed this species growing on the disturbed house site, along the beginning of Blueberry Path, and in the old garden.

Red Maple *Acer rubrum*
This was a very prominent species. It was usually codominant except in the wet areas where it is often dominant. In addition to finding many adults we also found many seedlings.



Red Oak (courtesy of Robin Owings).

Red Oak *Quercus rubra*
This was perhaps the most prominent tree species on the property. Most of the woods were red oak dominant or at least had them in the area. The ridge top had stunted Red Oaks on it. There were fewer of them along the boundary of the wetland and in the southeastern leg where the ground is wet, but other than that this species was very prominent. In addition to finding many adults we also found many seedlings.

Red Pine *Pinus resinosa*
There was a stand of Red Pines along the western side of the Blueberry Path just north of the stream. The stand extends almost all the way to the ridge top. Other than this prominent stand they were only scattered around the ridgeline and other rocky areas on along the western edge of the property.

Red Spruce *Picea rubens*
This was a very common species and occurred in many of the plots.

Rock Polypody *Polypodium virginianum*
It was occasional on the property but was found commonly on the rock outcrops and floats especially on Porcupine Hill.

Rose *Rosa spp.*
There were a few different types of roses along the property which I had difficulty identifying. Most of them were along the Mill Brook wetland.

Royal Fern *Osmunda regalis*
Grew in the wet borders around the Mill Brook wetland, in Lost Swamp, and in the wet areas in the northeast leg of the property.

Sassafras *Sassafras albidum*
I found one individual in T5Q1_1.

*Self-heal *Prunella vulgaris*
I only observed this growing in the old house site. It made up about 5% cover of the house site.

Sensitive Fern *Onoclea sensibilis*
Grew along the boundary of the Mill Brook wetland and other wet areas. The percent cover in the plots never exceeded 10%.

Shadbush *Amelanchier spp*.
These were occasionally found in different habitats around the property. Because they are difficult to identify I was not able to decipher their species.

Sheep Laurel *Kalmia angustifolia*
This was a common species on the property and mostly grew along the Blueberry Path, on top of the ridge, and the granite outcrops along the northwestern and southwestern legs of the property. I noted the first flowering plant on the top of the ridge on June 21.

Showy Mountain Ash *Sorbus decora*
I found one specimen on a mossy rock by T2Q1.

Skunk Currant *Ribes glandulosum*
Found only in T4Q3 growing on rocky substrate. The percent cover was only 10%.

Speckled Alder *Alnus incana*
There was a mix of Speckled and Green Alder in Lost Swamp, the southern end of the Mill Brook wetland, and the wetland in the northwest corner of the property.

Spreading Dogbane *Apocynum androsaemifolium*
This occasional species was usually found in dry, rocky areas or disturbed sites. It was in plots T3Q4 and by the old house site.

Striped Maple *Acer pensylvanicum*
A relatively common species that was usually found in plots with dry soils. We mostly observed it as a seedling or a sapling.

Starflower *Lysumachia borealis*
Very common in any of the habitat types except for the very wet areas.

Steeplebush *Spirea tomentosa*
Located in wet areas along T6.

Swamp Candle *Lysimachia terrestris*
I found one specimen in T6Q1.

Swamp Dewberry *Rubus hispidus*
This occasional species grew along the banks of the Mill Brook wetland and in Lost Swamp.

Sweet Gale *Myrica gale*
This was extremely common in the Mill Brook wetland, forming extremely thick, dense clusters around the thin channels. It covered at least 80% of the wetland.

Sweetfern *Comptonia peregrina*
Along the beginning of the Blueberry Path there were two patches of Sweetfern that marked the old house and garage site, each of which was about 10x10 meters. It was also common along the Blueberry Path and on top of the granite outcrops but less frequent in the woods.



Sweetfern (courtesy of Caitlin Thurrell).

Tall Meadow-rue *Thalictrum pubescens*
I found this occasionally in the wet area south of the Mill Brook wetland.

Three-toothed Cinquefoil *Sibbaldiopsis tridentate*
Only observed on the ridge top and other granite outcrops.

Vaccinium spp.
In T2Q5_1 there was an unidentifiable vaccinium plant.

Velvet-leaved Blueberry *Vaccinium myrtilloides*
It was rare. I only found two individuals in dry rocky soils in plots T3Q5 and T4Q4.

Violet *Viola spp*.
An unidentified species of violet was rare in the Mill Brook wetland and in Lost Swamp.

Wall-lettuce *Mycelis muralis*
Grew by in the disturbed areas of the old house site and Old Norway Drive.

White Ash *Fraxinus americana*
An occasional species which we found in both dry and wet soils.

White Birch *Betula papyrifera*
Commonly found in dry soils particularly on Porcupine Hill.

White Pine *Pinus Strobus*
A common species on almost all of the property. It was commonly found as a seedling, sapling, and adult. Bill Booth commented that the granite ridges near the Chapman house had become overgrown with white pine saplings since he lived in the area in the 1980s. There were especially large (75cm or more for DBH) white pines growing along the western edge of the Mill Brook wetland which further suggests that that area escaped the 1947 Bar Harbor Fire.

White Spruce *Picea glauca*
An occasional species more common on the ridge top, open areas, and along the Mill Brook wetland. Red Spruce seemed more common than White Spruce.

Whorled Loosestrife *Lysimachia quadrifolia*
I found one specimen at T3Q4_1 along the Blueberry Path in the disturbed soil.

Wild Raisin *Viburnum nudum*
This was a common species and was often found in the plots. It grew in a variety of habitats.

Wild Raspberry *Rubus idaeus*
A few plants grew near the Chapman's driveway.

Wild Sarsaparilla *Aralia nudicaulis*
A common species that occurred in most plots.

Wild Strawberry *Fragaria virginiana*
Near parking area near the Chapman's home.

Willow *Salix spp.*
I found one willow seedling in T2Q3.

Winterberry *Ilex verticillata*
This species was obnoxiously dense (along with alders) in Lost Swamp, making it the primary difficulty for getting through the swamp. It also grew in the wet areas in the northwestern leg of the property as well as along the western, southern, and eastern edges of the Mill Brook wetland.

Wintergreen *Gaultheria procumbens*
This was a common species on the property. It was most common on dry soil, but could also be found in wetter soil by the wetland, or (less commonly) in the dry gravely soil on the ridgeline.

Witch Hazel *Hamamelis virginiana*
Clumps of Witch Hazel grew on the side and top of the hill just after the wooden bridge along Blueberry Path; it took up an area of about 18 meters running east-west and 8 meters running north-south. This was the largest concentration of Witch Hazel, but it was also scattered infrequently throughout the property. There was also a small cluster close to T1Q3_1.

Yellow Birch *Betula alleghaniensis*
An occasional species, most often found as an adult.

Yellow Pond Lily *Nuphar variegata*
This species covered much of the water in the Mill Brook wetland which is not already grown over with graminoids and Sweet Gale. While graminoids and Sweet Gale made up about 80% of the wetland cover, lily pads covered about 12% of the area, and open water is about 8%. I first noted the lilies' blooming yellow flowers on June 20.

Mammals

American Beaver *Castor Canadensis* (evidence)
Walking along the western side of the Mill Brook wetland Erica Georgaklis and I observed a beaver dam and at least five trees chewed by beavers. Judging from the state of the stumps we guessed that the chews were from at least a year ago if not longer.

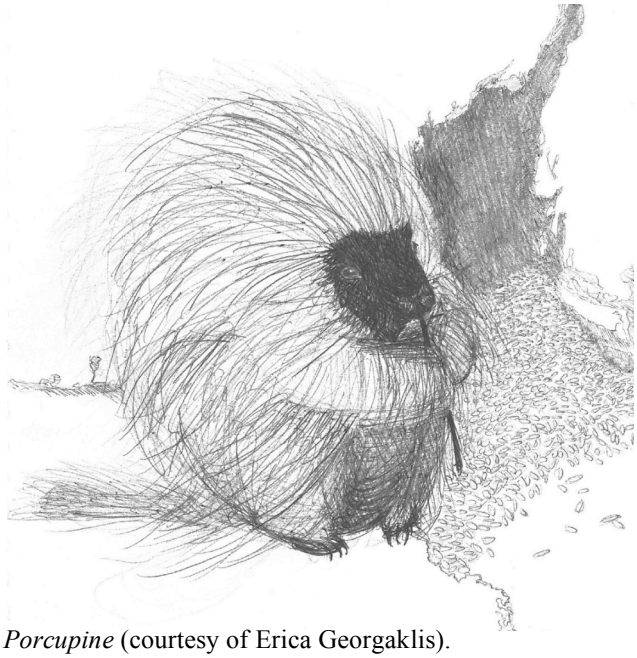
Bats
Observed one bat fly over my head near the old house site along Blueberry Path on June 21 at 04:15.

Eastern Cottontail *Sylvilagus floridanus*
I observed one rabbit running into Lost Swamp on September 2 at 09:45.

Eastern Coyote *Canis latrans*
On June 20 while walking I sighted a coyote crossing the Winding Brook Road, close to the intersection with Mill Brook Road. It crossed the road and ran immediately into the woods.

Gray Squirrel *Sciurus carolinensis*
An occasional creature, mostly seen in the oak woods. Red squirrels were far more common.

Muskrat *Ondatra zibethicus* (evidence)
On July 7 Erica Georgaklis and I saw what we thought to be Muskrat tracks in the mud along Mill Brook wetland about 30 meters north of T5Q3.



Porcupine (courtesy of Erica Georgaklis).

North American Porcupine *Erethizon dorsatum* (evidence)
Erica Georgaklis and I found four to six porcupine dens (and topped Eastern Hemlocks surrounding the dens) along Porcupine Hill. I do not know how old they were, but there was still scat in some of the dens, though it was not fresh. Bill Booth remembers porcupines eating apples from his apple tree while he was living in the house abutting the property in the 1980s.

Raccoon *Procyon lotor* (evidence)
Maggie Mansfield and I observed Raccoon tracks in the mud by the Mill Brook wetland on August 31.

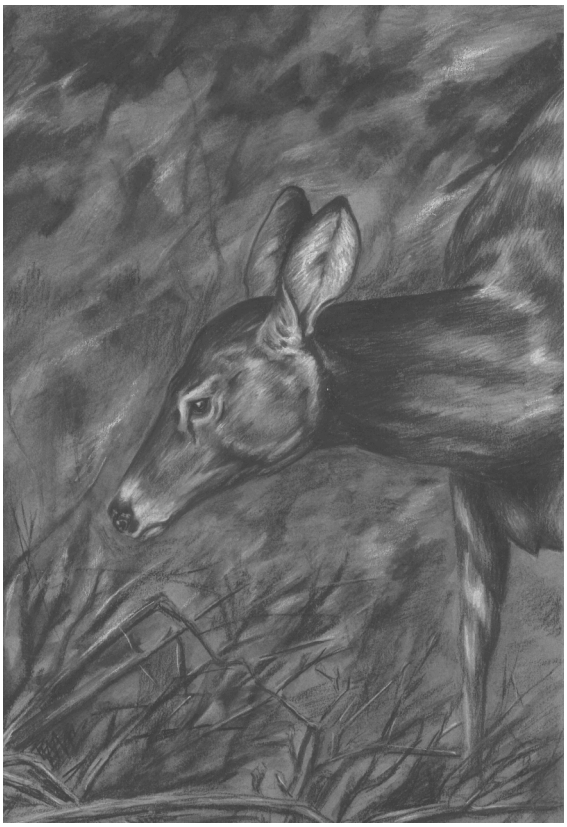
Red Fox *Vulpes vulpes*
The game camera located near the top of the ridgeline caught pictures of a fox on August 20, 23, and 24. I also frequently found fox scat along the Blueberry Path especially past the stream towards the ridge top.



Red Fox (courtesy of Lindsey Nielson).

Red Squirrel *Sciurus vulgaris*
These were frequently seen in the woods, especially the Red Oak woods. I saw or heard Red Squirrels at least two or three a day.

White-tailed Deer *Odocoileus virginianus*
I saw at least one deer almost every day I went out to the property. They were very common and I saw them in all parts of the property, even in the Mill Brook wetland. Erica Georgaklis and I found a possible deer yard under a group of large Eastern Hemlocks about 30 meters north of T5Q3.



*White-tailed Deer (*courtesy of Lindsey Nielsen).

Birds

American Crow *Corvus brachyrhynchos*
A very common species. I heard them almost every day and saw them in every part of the property.

American Goldfinch *Spinus tristis*
First observed on June 23 at T1Q3 at 10:18. An occasional species that I heard or saw every few days.

American Robin *Turdus migratorius*
Seen on June 23 near the Chapman's driveway.

American Woodcock *Scolopax minor*
On August 31 Maggie Mansfield and I surprised three woodcocks from the tall grass just south of the Mill Brook wetland. We cannot be sure that each incidence was the same bird or not because we came upon one at 14:21, 14:23, and 14:24. Each time we came upon one it flew away.

Barred Owl *Strix varia*
Whenever Erica Georgaklis and I were working in plots near the southern end of T4, T5, and T6 we consistently heard at least one Barred Owl calling. I first recorded hearing it call on June 30 and heard it throughout the summer. On August 30 while walking near T6Q2 I saw a large squat bird with a light underside fly over me. Because the bird was in the area I has heard the owls before I believe it was a Barred Owl.



Barred Owl (courtesy of Erica Georgaklis).

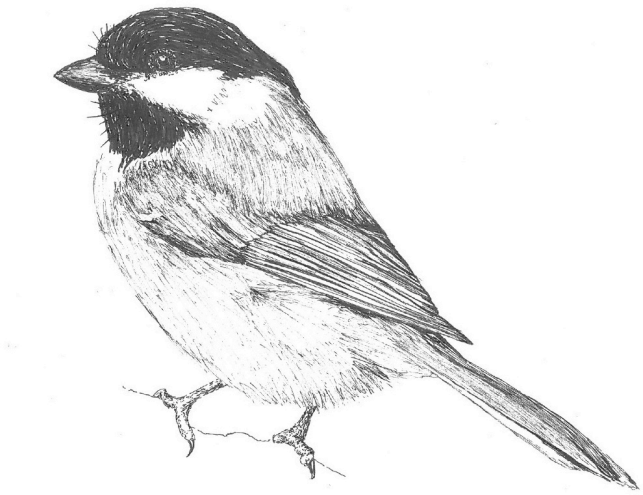
Black-and-white Warbler *Mniotilta varia*
Heard on June 30 by T4Q3.

Black-capped Chickadee *Poecile atricapillus*
A very common species which I saw at least

two to three times a day in every habitat.

Black-throated Green Warbler *Dendroica virens*
A commonly heard species, though I hardly ever saw one. I heard one at least once a day in all of the different habitats on the property.

Blue Jay *Cyanocitta cristata*
On June 15 I saw a Blue Jay sitting on the forest floor close to the stream that runs along the Blueberry Path. As I approached it flew away.



Black-capped Chickadee (courtesy of Jordan Chalfant).

Broad-winged Hawk *Buteo platypterus*
On April 30 at 18:01 I am almost positive that I heard and saw two hawks fly over me on the top of the ridge. On July 7 Erica Georgaklis and I heard what could have been a Broad-winged Hawk.

Cedar Waxwing *Bombycilla cedrorum*
Observed one on August 30 at 10:41 near T5Q1_2. It seemed that there was an unusual amount of active birds that day.

Chipping Sparrow *Spizella paserina*
A common species. I observed one at least once a day in every habitat.

Common Raven *Corvus corax*
I heard or saw this species at least one to three times a week in a variety of habitats.

Common Yellowthroat *Geothlypis trichas*
Observed on May 23 in the Mill Brook wetland and again on June 13 sitting and calling in a patch of alders along the wetland. I saw another on July 7 along the western edge of the wetland.

Dark-eyed Junco *Junco hyemalis*
First observed on May 5. A very common bird on the property. I would hear or see them at least once a day in all the different habitat types on the property, especially on the ridge top and along the Blueberry Path.

Downy Woodpecker *Picoides pubescens*
The first one I observed was on April 30 in Lost Swamp. I observed another on August 30. It seemed that there was an unusual amount of active birds that day.

Eastern Wood-peewee *Contopus virens*
On July 7, 2011 I heard one calling near T3Q5.

Hermit Thrush *Catharus guttatus*
First seen on May 23 in the woods to the west of the Mill Brook wetland. They were a common species which I observed once every one to two days.

Mallard *Anas Playrhynchos*
Saw one female Mallard fly from Mill Brook wetland on June 13.

Mourning Dove *Zenaida macroura*
First heard one on May 1. I occasionally (on average about every other day) heard and saw them throughout the summer in different habitats on the property.

Northern Parula *Parula americana*
I thought I observed this bird on June 15 near T2Q2_3.

Ovenbird *Seiurus aurocapillus*
First seen on May 23. I heard them about once a day through out the summer.



Ovenbird (courtesy of Erica Georgaklis).

Palm Warbler *Setophaga palmarum*
Observed one on May 1.

Pine Warbler *Setophaga pinus*
First seen in Lost Swamp on April 30 at 19:02. Seen again on June 15 on the top of the ridge.

Red-breasted Nuthatch *Sitta canadensis*
Commonly heard in all types of habitats on the property. I would hear them at least once almost every day.

Ruby-crowned Kinglet *Regulus calendula*
Seen on May 23 with Anna Stunkel along Porcupine Hill.

Ruby-throated Hummingbird *Archilochus colubris*
I observed one of them on August 30 at 10:41 by T5Q1_2. It seemed that there was an unusual amount of active birds that day.

Ruffed Grouse *Bonasa umbellus*
I only saw and heard these while exploring the property in the spring, before June. The first time I heard one was on April 30 at 14:17 in the northwest leg of the property. I subsequently heard or saw them two to three more times.

Swamp Sparrow *Melospiza georgiana*
Observed with Anna Stunkel in the Mill Brook wetland on May 23.

Veery *Catharus fuscescens*
Observed on June 30 along the Blueberry Path by the large open patch of blueberries north of the stream.

White-breasted Nuthatch *Sitta carolinensis*
I occasionally heard this species throughout the summer. I would guess that I heard them three to four times a week, but it was sometime difficult to distinguish them from Red-breasted Nuthatches.

White-throated Sparrow *Zonotrichia albacollis*
A very common bird on the property. I heard or saw them almost every day particularly on the ridge top, other granite outcrops on the western side of the property, and in the fruit bushes along the Blueberry Path.

Wild Turkey *Meleagris gallopavo*
I surprised two wild turkeys walking along Blueberry Path by the old house site on the morning of July 11.

Yellow-rumped Warbler *Setophaga coronata*
Seen on May 1 in the Mill Brook wetland.

Herptiles
Note: Most of the frogs I found were in the rivulets south of the Mill Brook wetland.

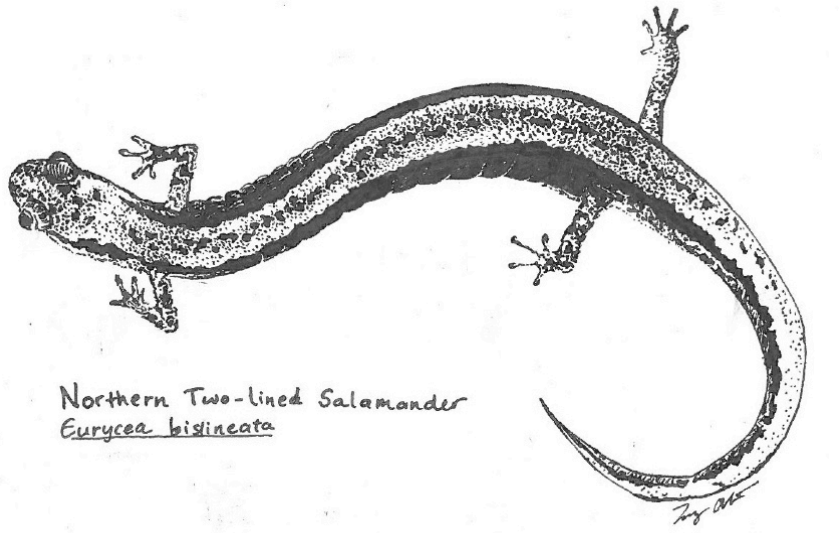
American Bullfrog *Rana catesbeiana*
Heard them in the spring and early summer in the Mill Brook wetland. I last recorded hearing them on July 7. Most of the sightings were in spring and early summer. While walking along Old Norway Drive or in the southeastern leg of the property I would sometimes see them jumping into little rivulets.

Eastern Garter Snake *Thamnophis sirtalis sirtalis*
An occasional species, mostly observed basking on rocky outcrops and in the Red Oak woods. I spotted them at least five times.

Green Frog *Rana clamitans*
I saw two Green Frogs in the rivulets south of Mill Brook wetland on June 13.

Eastern Milk Snake *Lampropeltis triangulum triangulum*
Seen with Ken Cline on the northern end of the property basking on a granite outcrop on July 1.

Northern Two-lined Salamander *Eurycea bislineata*
Seen on July with Steve Ressel. We were overturning rocks by Deep Pool and in about two minutes we found about six of them.



Northern Two-lined Salamander (courtesy of Lucy Atkins).

Painted Turtle *Chrysemys picta*
Saw one on August 20 crossing Mill Brook Road over the culvert. Fortunately there was couple standing in the road in front of the turtle making sure no one hit it as it crossed the road.

Pickerel Frog *Rana palustris*
Seen on August 29 near the Mill Brook wetland in the southeastern leg of the property. It jumped into a little rivulet as I passed by. Seen at T3Q5_3.

Spring Peeper *Pseudacris crucifer*
I heard them in May and early June in the wet areas along the western edge of the property and in the Mill Brook wetland. I also saw them along Old Norway Drive or in the little rivulets south of the Mill Brook wetland later in the summer, though less frequently.

Wood Frog *Rana sylvatica*
I spotted them in all different sorts of habitat; primarily near the Mill Brook wetland, Old Norway Drive, and wet areas in the woods, but also less frequently in the middle of the woods away from any water source. I heard them calling in spring and early summer.

Insects

Monarch Butterfly *Danaus plexipus*
Seen from early to late June pollinating flowers. I most often saw them on top of the ridge. During that time in June, I would see three to four each week, singly or in small groups up to three.

Dragonfly
These were common in the beginning of June especially on top of the ridge and by Mill Brook and the wetland. I would see at least one a day until late June.

Black Flies *Simulium spp.*
First recorded their presence on April 30. My assistants and I suffered them for the rest of the summer.

Bumblebee *Bombus spp.*
I observed them about four times a week flying from flower to flower from early to late June. I most often saw them on the ridge top or pollinating flowers along the Blueberry Path.

The Past: A History of the Property and Surrounding Area

This is a copy of the first deed,
Written 200 years ago,
In graceful and beautiful handwriting of that time.
It is the heavy language of law
But it leaves no loopholes,
And it speaks for itself now,
As if a single bell-note, struck so long ago,
Had sounded through the centuries
Unchanged.

- Ruth Moore, "To Have but not to Hold"

History of the Land

The Protectorate is located in the Emery District, Mount Desert Island, Maine. The Emery District was first created as one of six school districts in Eden (an old name for Bar Harbor) in 1796. Because Joel Emery owned about 75% of the area, it acquired his name (Hill, 1996). This district (particularly the area where Norway Drive and Crooked Road intersect) is also known as "Wickedville." Some say the name is due to the wicked things that people did at the dances at the old Neighborhood House, others say it is because of rough and grouchy residents that were in the area (Owens, pers. comm.). For much of the 19th and early 20th centuries the district was covered in dairy and vegetable farms, which supplied food to locals. There are records of being able to see the bay at Hull's Cove from Town Hill because of the cleared land (McNally, pers. comm.). This area is particularly fertile compared to the rest of the island because the rolling hills trapped pockets of soil during the last glaciation. However, many of the farms are no longer present (Hill, 1996).

There is no evidence of American Indians using the Protectorate. Downstream from Mill Brook, along Northeast Creek, archeological digs have uncovered evidence of Indian inhabitants. It is assumed that the Wabanaki, who inhabited the island, used Northeast Creek for transportation and cranberry picking in the autumn (Hill, 1996).

The first known owner of the area that now includes the Protectorate was Madame DeGregoire, who owned the entire eastern lobe of the Mount Desert Island (Morrison, 1960). DeGregoire was the granddaughter of Monsieur De La Mothe Cadillac (the namesake of Cadillac Mountain) who was granted Mount Desert Island by the governor of Canada in 1688. After the Revolutionary War George Washington was going to give sections of the island to veterans, but Madame DeGregoire claimed that because she was Cadillac's heir she had right to it. DeGregoire received the eastern half of the island while George Washington deeded the western half of the island to the Bernard family as payment for their support in the Revolutionary War (Morrison, 1960).

DeGregoire quickly sold off her side the island in small portions. The Peter's 1790 map, which can be found at the Mount Desert Island Historical Society, identifies the buyers. The map suggests that Lot #40, a 114 acre (128 rod) parcel, contained some if not all of the Protectorate and was first given to an A. Leland and then deeded to John Stevens. I was not able to find any information on Stevens. The Lelands are an old family on MDI. Both Amariah (presumably A. Leland) and his father, Ebenezer Leland are recorded in the 1800 census of Eden (census records are archived at the MDI Historical

Society). An abutting 100-acre parcel to the west of A. Leland's property, which may or may not have contained part of the Protectorate, was owned by an Ebenezer, probably the same Ebenezer Leland as above. This 100 acres was then sold to Cornelius Thompson. Many of the Thompsons are buried in the cemetery at COA's Peggy Rockefeller Farm at the intersection of Crooked Road and Old Norway Drive.

The next known owners are shown on Walling's 1860 map. Because there are no property boundaries shown it is difficult to tell precisely who owns what. It appears as though a T. Payne (Thomas or Theodore Paine) and a D. Payne (almost certainly David Paine) may have owned the northern part, S. Thompson (perhaps Solomon Thompson, Cornelius's son) may have owned part of the western section, and Smith and Hopkins almost definitely owned at least the southern part of what is now the Protectorate. Smith and Hopkins may have had a house on the property though I have not seen evidence of a foundation or cellar hole from their time. I do not have any information on Smith and Hopkins.

The Eden (Bar Harbor) census records show that the Paines are an old family on the island, many of whom lived on the Crooked Road or Norway Drive. Some are buried in the Peggy Rockefeller cemetery and in the Paine cemetery behind Deb Loftis's home along Norway Drive. The first records of the Paines on MDI are from the 1810 census, which shows Sarah Paine as the head of the household and one male aged between 16 and 26. Sarah Paine's homestead currently belongs to Harry and Cindy Owens. Figure 16 shows her standing in front of her home (Owens pers. comm.). The well known landmark the Stone Barn, that is located next to the old Paine home, was built by the Shay brothers in the early 1900s. They collected rocks while plowing the fields and built up walls until their work became the present structure (Owens, pers. comm.).

Sarah Paine had three children: Salley, Hannah, and a son named Thomas who could be the T. Paine in the 1860 map. Thomas Paine owned the land and built a homestead where Deb Loftis now lives (Loftis, pers. comm.). He gave that land and home to his son Theodore Paine (who could also be T. Paine), shown in Figure 17 (Gray, pers. comm.). In the 1960s Thomas and Theodore Paine's homestead was burned down for firefighting practice. Though the home is gone, the Paine Cemetery is still in the woods behind Deb Lofits's home (Loftis, pers. comm.)

Deb Loftis's home, which is on the site of T. Paine's homestead, is the old Neighborhood House for the Emery district where people would go for social events. In 1964 the Gray family moved the Neighborhood House from the bottom of the hill in front of the Barcelona (where Norway Drive and Crooked Road intersect) to up the hill where the T. Paine homestead once stood; here they made it into their home. (Gray, pers. comm.). When it was located in front of the Barcelona, the Grays also owned a general store next to the Neighborhood House that sold things such as gas, molasses, cookies, and penny candy. The general store was moved across the street where the Elk family currently resides. Figure 18 and 19 show these old buildings.

The 1880 Colby Stuart Map shows the lot #40 previously owned by Leland was then owned by a D. Paine (again most likely David Paine). I am not sure of David's relationship to the other Paines. The map shows he had a building along the eastern side of Mill Brook, but no structures on what would become the Protectorate.

The Colby Stuart 1881 map shows that D. Paine still owned the same lot. An abutter recorded as S. Thompson may or may not have owned part of the Protectorate as well: it is difficult to tell where the border actually was. In the 1860 census David H.

Paine (presumably the same D. Paine) was recorded as a farmer, but he only owned 42 acres of personal property. His neighbor, Solomon Thompson (sometimes referred to as Sole), the son of Cornelius Thompson, was also a farmer and had 300 acres of personal property, so it could be that both Thompson and Paine owned parts of the Protectorate. Though both men were recorded as farmers there is very little evidence of agricultural practices on the Protectorate. I found a small sledge, a wheel, and barbed wire (shown in Figure 24) on the property that suggests some activity, but the property's rockiness and steep slopes make the land un-conducive to farming, grazing, or logging. It is most likely that the families who owned the property cut some wood and perhaps used the wetlands to collect hay for livestock, but mostly left the rest of the land alone. Deeds show that after David Paine's death in 1908 his land was sold to various people. Between 1908 and the 1950s it is difficult to decipher what happened to the property.

In 1957 Mervyn Manring and Glen Manring (Mervyn's uncle) purchased a dairy farm from Howard Russell and his wife. The property ran along Norway Drive from where Deb Loftis now lives all the way up to the Protectorate (Mervyn Manring, pers. comm.). The Manrings owned about 62 acres of the western side of the Protectorate. Though much of their property was cleared for their three cows, the Protectorate remained wooded and was used to collect firewood, which they harvested with their work horse, Jack. Mervyn Manring helped build a house for his son in the 1970s on the property. Mr. Cox later tore down the house and garage in 2004 after he bought the land because they were in very bad condition.

The deeds show that the Manrings sold the property in 1999 to a group called Cor Christi who intended to develop the land. An employee from Cor Christi lived in the Manring home, though abutter Bill Booth said that they were not around very often. Bill would often walk around the Protectorate and the surrounding area and remembers the ridgeline or "nubble" as he called it (Booth, pers. comm.). Cor Christi acquired around another 20 acres, raising their total land to about 80 acres. In about 2002 Cor Christi ran out of funds to develop the land and wanted to sell their 80 acres. Because part of their property ran along Mill Brook, the Maine Coast Heritage Trust wanted to preserve the land. Because they did not have the funds to purchase the entire parcel they sent out advertisements for the property encouraging their supporters to do so. COA's former trustee, Mr. Cox, purchased the property in 2003 (Cox, pers. comm.). He acquired more land in the vicinity and increased the parcel to 101.3 acres. Apart from tearing down the Manring house, he left the property untouched. In December 2010 Mr. Cox donated the Protectorate to COA.

History of Mill Brook

Mill Brook (also known as Old Mill Brook or Del Gray Brook) flows through the eastern side of the property along Old Norway Drive (Figure 10 shows Mill Brook flowing through the property). On the left side of the Barcelona, along Crooked Road, the Hall Brothers' Sawmill stood from 1909 to 1949. It was torn down in 1949 after the two brothers, Lou and George Hall, died. George was the sawyer and Lou was more of the engineer/designer. The brothers came from north of Bangor. People would cut the logs along Mill Brook and float them down to the sawmill which produced lumber and shingles for the Emery District. The Halls powered their mill with a steam engine that used the sawdust from their operation for fuel. Any extra energy that the mill created was sent to the Sargent and Whitney Farm (currently the Peggy Rockefeller farm), where it

would power lights and a mechanical milk pumper (Gray, pers. comm.). The mill had a whistle that would be blown to inform the local children that they needed help. Brad Gray, who worked on the Russell farm up the hill from the mill, remembers cleaning the boilers for 25 cents as a child. (See Figure 25, the newspaper article explaining more about the mill).

Northeast Creek empties out into Thomas Bay, which in turn connects to Frenchman Bay. At the opening of the bay Walter King also had a sawmill that has also been torn down (Harding, pers. comm.). Because of the presence of King's mill, Northeast Creek is also called King's Creek by locals.



Figure 16: Sarah Paine in front of her home circa 1810 (courtesy of Harry and Cindy Owens who currently live in this very house).



Figure 17: Theodore Paine (presumably the same from the 1860 census records and Walling's 1860 map) and wife Elizabeth in front of their home along Norway Drive on July 15, 1906 (courtesy of Harry and Cindy Owens).



Figure 18: Gray's Gas Station (left) and the Neighborhood House (right) located in front of the Barcelona by the intersection of Crooked Road and Norway Drive (courtesy of the Elk family who currently live in the building that was the old gas station).



Figure 19: Gray's Gas Station at the intersection of Norway Drive and Crooked Road (courtesy of the Elk family).

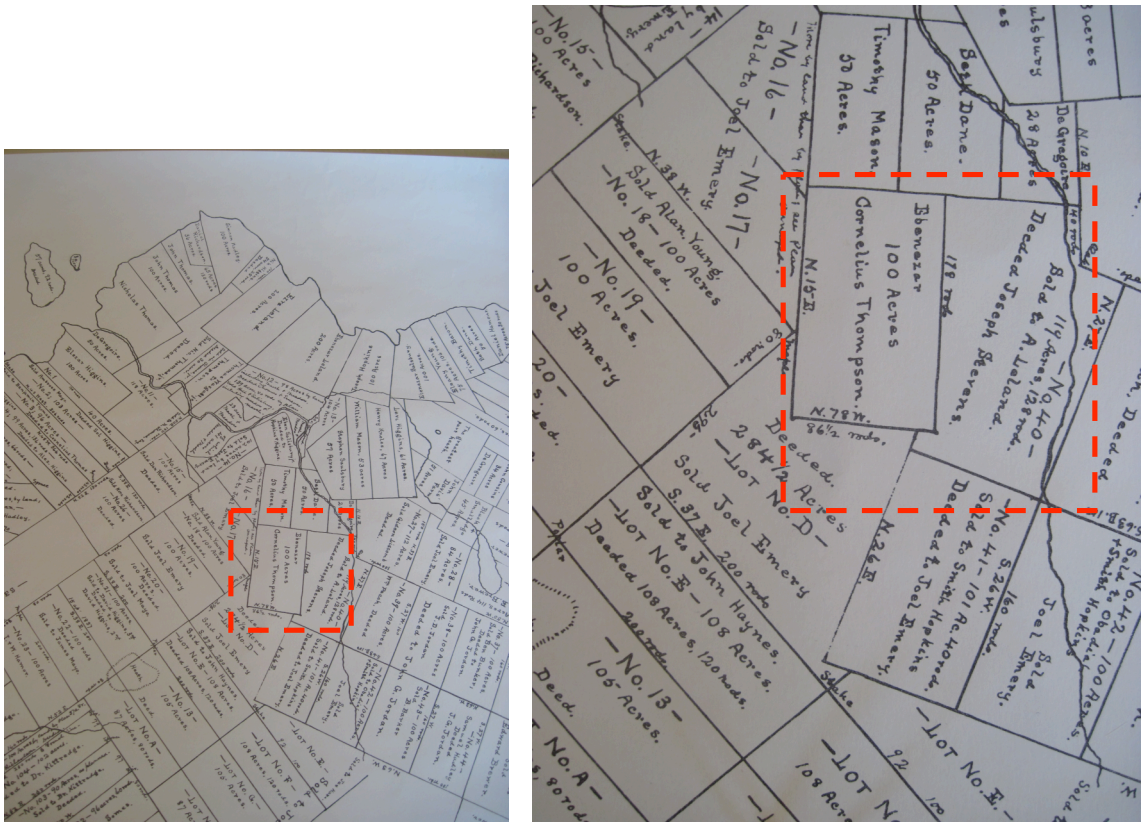


Figure 20: To the left, the Peter's 1790 map. The stream through the middle of the map is presumably Mill Brook. To the right, a close up of the map shows in more detail the properties owned by Cornelius Thompson and A. Leland. The red box shows the approximate location of where the Protectorate is now (courtesy of the Mount Desert Island Historical Society).

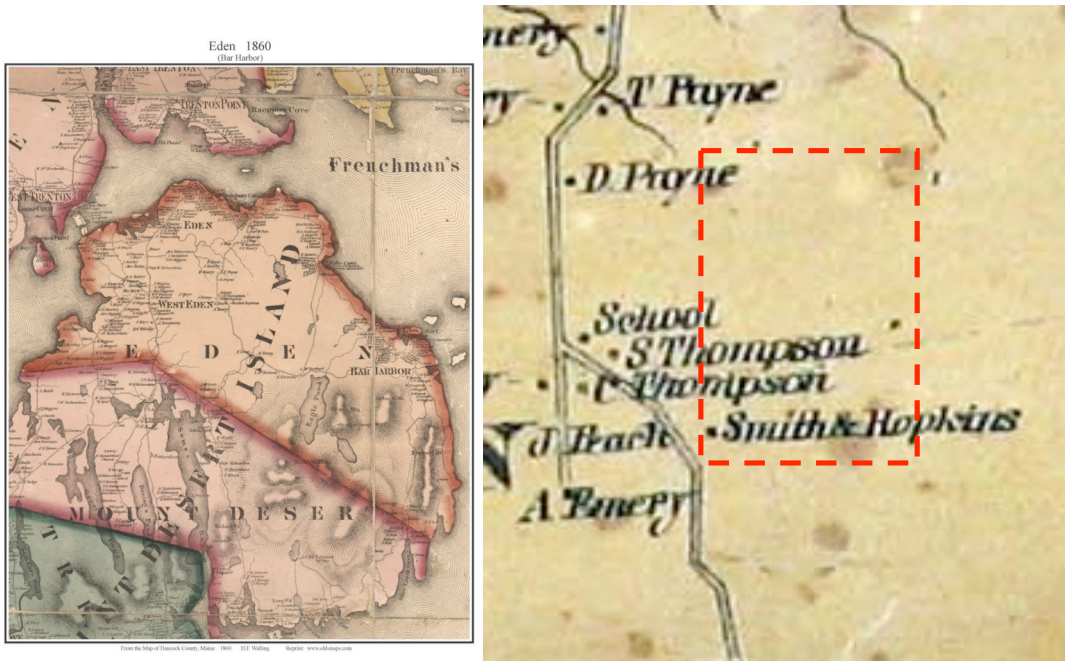


Figure 21: To the left, Walling's 1860 map of MDI. To the right, a close up of the Protectorate indicating that T. and D. Payne (presumably Paine) may have owned some of the area around and in the Protectorate. The 1860 census indicates that the Paines owned 224 acres. If the Paines owned land close to the Protectorate it is feasible that some of the 100-acres of our current property was included in their property. The red box shows the approximate location of where the Protectorate is now (courtesy of Todd Little-Siebold).



Figure 22: To the left, Colby Stuart's 1880 Map. To the right, close up of the Protectorate from the same map. The numbers on this map correspond with the owners' names. The red box shows the approximate location of where the Protectorate is now (courtesy of Acadia National Park's—ANP— Archives).

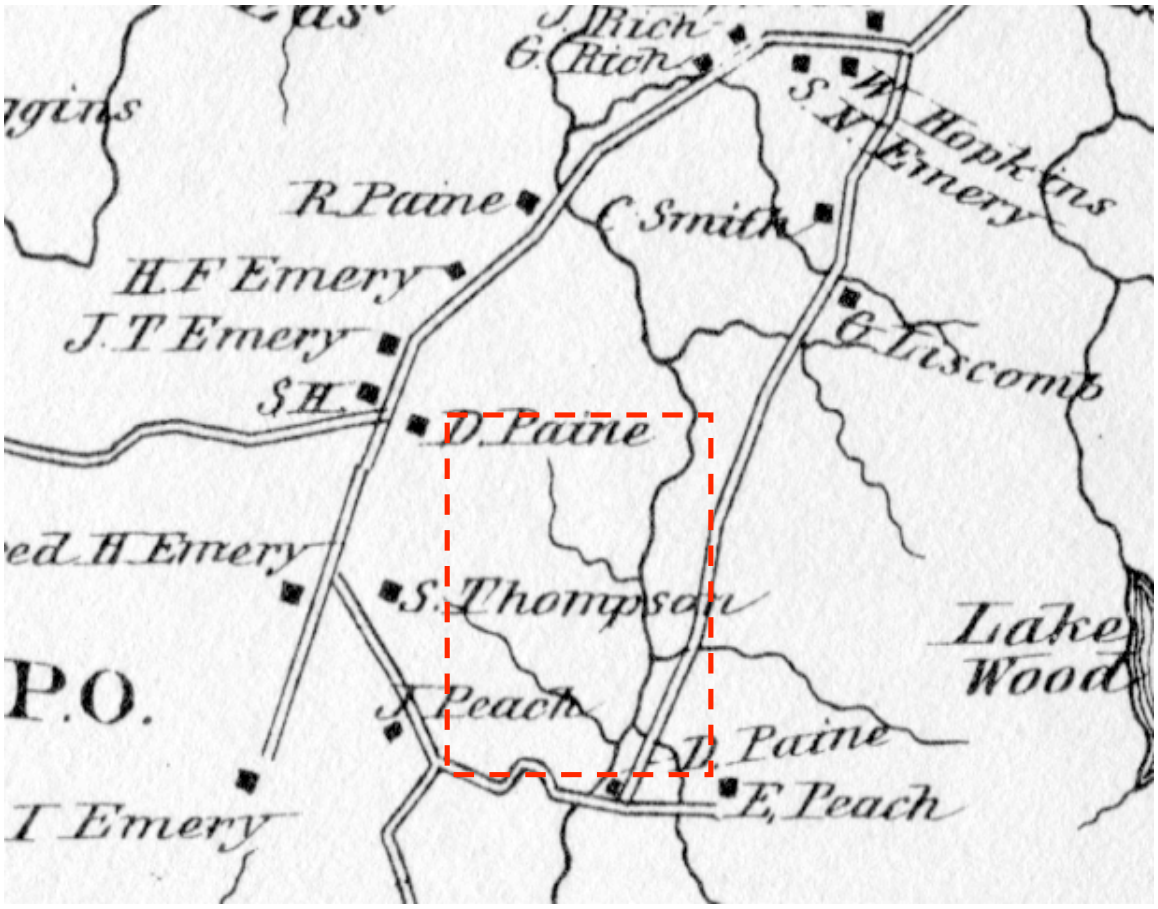


Figure 23: Colby Stuart's 1881 map taken from the Hancock County Atlas. This shows D. Paine and S. Thompson owning part of the Protectorate. The red box shows the approximate location of where the Protectorate is now (courtesy of Todd Little-Siebold).

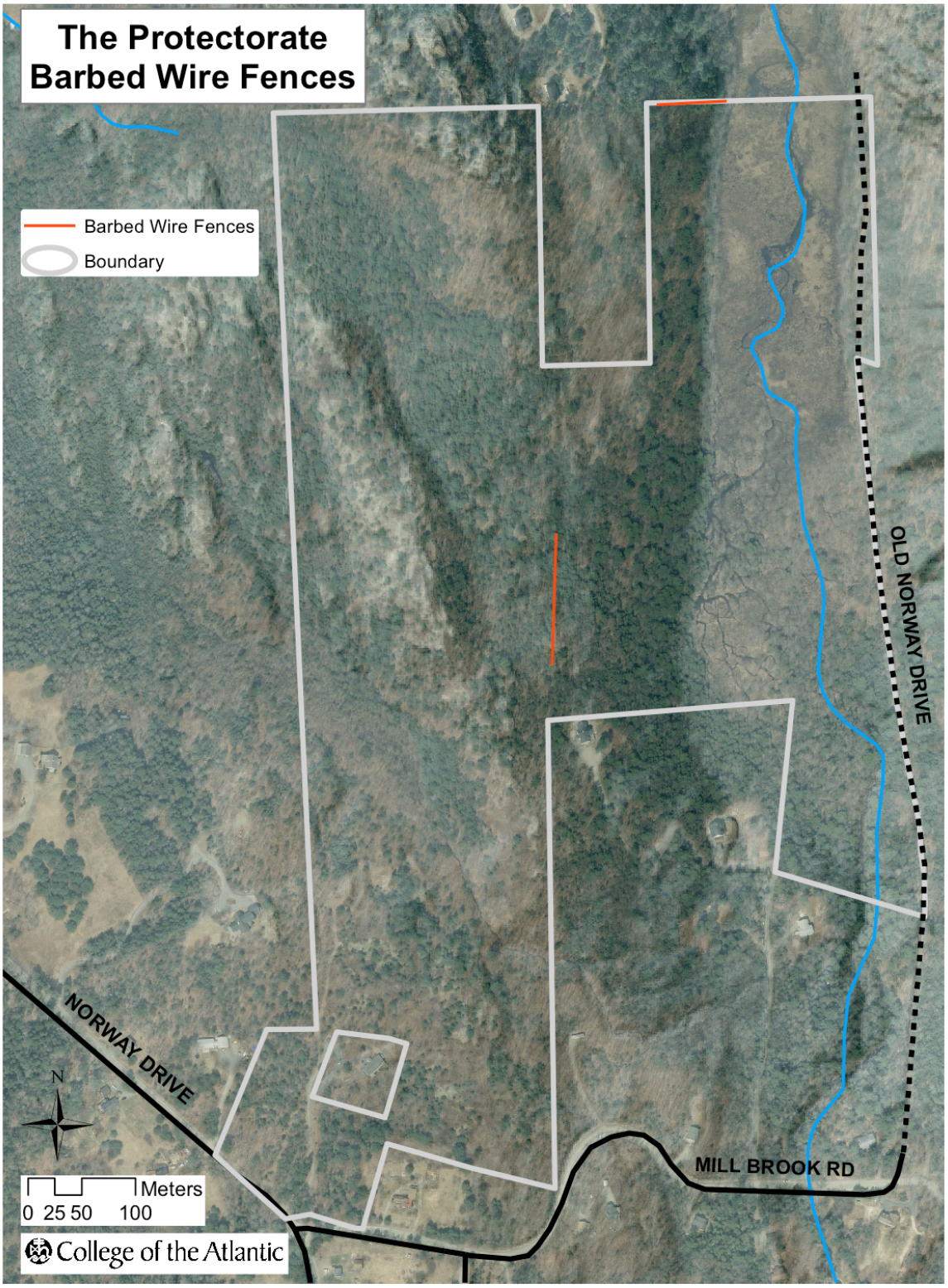
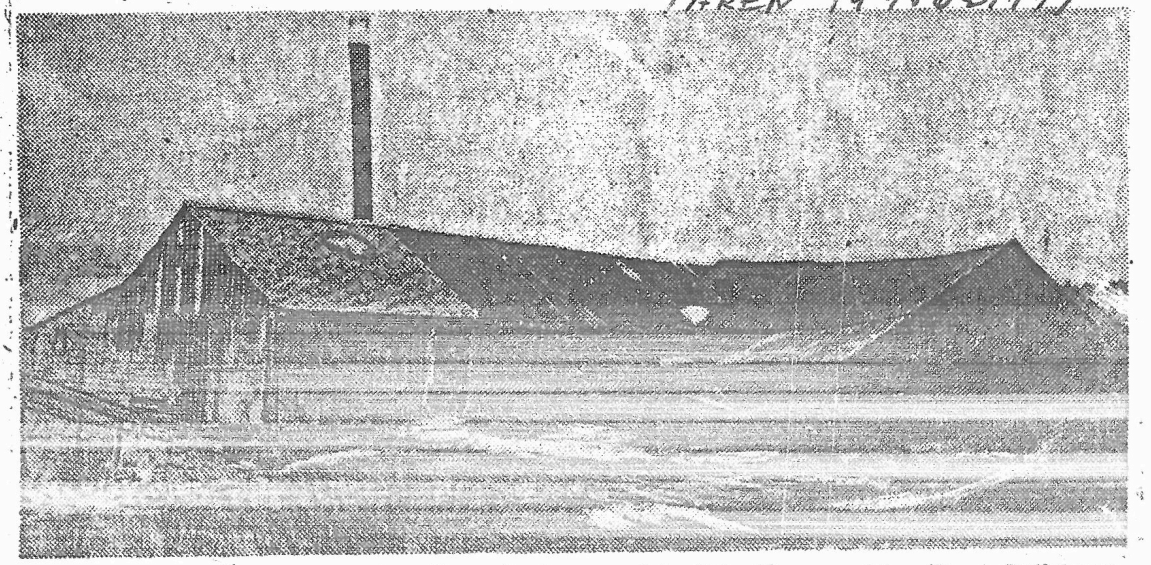


Figure 24: Map showing barbed wire on the property. These could have served as old boundary markers.

THE BANGOR DAILY NEWS, BANGOR, MAINE, FRIDAY, MAR

TAKEN 1945 OR 1949



HISTORIC MILL TO GO—Soon to be razed is this 40-year-old mill at Salisbury, the only steam-powered sawmill in Maine. The owner reported it was "not easy" to find someone to fire the huge steam boiler used to run the mill. (Corthell photo.)

Razing To Silence 'Singing Saws' Of 40-Year-Old Mill At Salisbury

By ROBERT F. CORTHELL

SALISBURY, March 17—A landmark of 40 years' standing in the Emery district of this community, the only steam-powered sawmill in the state, will soon be razed and no longer will the hum of "singing saws" be heard in the area.

HISTORIC MILL

The mill was owned and operated by George Hall and his brother, Lewis, until the latter's death. The Hall brothers built the now historic mill and much of the lumber was sawed out by means of a six horse-power gasoline engine, the machinery being purchased from a mill in Aurora.

Last fall the owner sawed out some 15,000 to 16,000 feet of lumber and then decided to stop all further operations of the mill. It is "not easy," he said, to find someone to fire the huge steam boiler used for power to run the saws.

Sawdust, a by-product of the sawing, was used for fuel, both as an economy measure, and as a fire precaution in that no great pile of sawdust is stored on the premises.

But even with the disappearance of the mill from its familiar spot, few residents will ever forget that it was once there because of the homes throughout the area that were built from lumber sawed here. Even the clapboards and shingles were manufactured at the mill, where at one time ~~67~~ 60 2 7 persons were employed.

Hall and his brother built a special rotary log carriage 36 feet long and the logs were hauled into the mill with a small trolley on rails by a windlass. The boiler of the mill was enclosed in a two-foot thick brick wall, the bricks being made in a kiln on Norway drive in Bar Harbor many years ago.

Soon to disappear also from the skyline will be the tall smokestack, made of twenty-seven 50-gallon oil drums welded together. The present stack is the third in 40 years.

Figure 25: Newspaper article on the Hall Brother's Mill (courtesy of Percy Hall and his family).

The Future: Management Suggestions

When Mr. Cox donated the Protectorate to College of the Atlantic he gave the land to us completely unencumbered because he trusted us to protect it and use it respectfully. At the time of the gift he wrote a manifesto that explains what he wished the land to be used for (see Figures 26-28 for a copy of this statement). He wished that the land be called "the Protectorate of the College of the Atlantic" because he felt that the name embodied the purpose of the gift: to provide the college community with a hands-on way to protect the environment.

In his manifesto, Mr. Cox wrote that we could either use part of the property to build faculty houses or a home for COA's president, but that he hoped that we would use part or all of the property as an "an open-air classroom" for student work and classes. There are many possibilities for how COA could use the Protectorate, some of which I have listed below. These suggestions take into account Mr. Cox's wishes, COA community members' existing feelings about the property, Emery district zoning (which can be found online at http://www.barharbormaine.gov/xhtml/124/ViewDefault/), and the desire to preserve valuable aspects of the land such as aesthetics and educational resources.

Additional information about management suggestions and possible uses of the Protectorate can be found in a document produced by the 2011 Human Ecology of Wilderness class, available in the Thorndike Library. Some of my scenarios overlap theirs because 1) they are suggestions which make a lot of sense in terms of land use, the college's needs, and education and 2) they are things which would benefit the college.

Possible Uses

Do not use the property at all

COA could choose not to have any set goals or purposes for the land. The fear of not using the property is that we could lose the tax exemption that only applies to educational resources. Currently Mr. Cox is paying the taxes for the land but if this were to change and the land became taxable, then it would be a significant financial blow that could cause us to lose the property itself. Losing the property would not only be a dishonor to the donor, but also a great loss to the college.

Pros

- No damage to the land

Cons

- We would be responsible for taxes
- We would not be taking advantage of an amazing educational resource

Faculty or Presidential Housing

On the southwestern part of the property near Doug Chapman's home there are about 15 acres that can be built upon with relative ease (see Figures 29- 30 to see the buildable areas on the Protectorate). The remainder of the property is extremely rocky, with a slope not conducive to building, or is undevelopable wetlands.

Construction of alternate access points along Mill Brook Road is possible, but might require right-of-way negotiations with neighbors or the construction of steep, invasive trails that may be expensive.

Pros
- Would be honoring Mr. Cox's potential suggestions
- Would address the presidential/faculty housing situation

Cons
- Would restrict educational uses
- A house along the path would restrict others from using Blueberry Path and accessing a large portion of the property
- Would destroy the "remote" feeling of the property
- Would be expensive
- If the land were used for presidential housing, the president would not be close to campus

Foraging

The property could be used as an area for gathering wild edibles and resources for primitive skills. The property has Black Huckleberries, Lowbush Blueberries, and edible mushrooms that are accessible along the path up to the ridge.

Pros
- Foraging would be a good way to learn about local vegetation and its natural history
- There is limited legal foraging in ANP; this would allow a type of activity not otherwise closely available for students
- People would not have to go far off the path to collect edibles, therefore they may not damage the land

Cons
- Too much gathering could damage or alter the landscape
- It would be difficult to monitor how many people are collecting and how much

Collecting Botanical Specimens

Collecting fresh botanical specimens is an important part of many popular classes such as Trees and Shrubs of MDI and Ecology Natural History.

Pros
- Gives students a place to gather specimens that they would otherwise not be able to collect because of ANP regulations
- The land would be serving an educational purpose if students were collecting for a class

Cons
- Too much gathering could damage or alter the landscape
- Could be difficult to monitor how many people were collecting and how much

Outdoor Classroom

Because this land is privately owned and not subject to ANP regulations, a broader range of educational uses are possible than on much of MDI. Classes often go on day and overnight field trips off island, requiring extensive travel time and transportation costs; The Protectorate could offer a closer and less expensive option. As the time students spend on the land increases, their understanding of and passion for local natural history

and conservation would also increase. This is a strong component of COA's mission to educate students about their relationship to the environment.

The "outdoor classroom" could take many forms:

Outdoor Classroom Scenario #1: Build Nothing
Classes would just visit for a lab, class period, or field trip.

Pros
- Less impact on the land
- Would not cost anything

Cons
- Not up to the fullest potential of using the property as an "open-air classroom"

Outdoor Classroom #2: Build a Gear Shed
A gear shed could store things such as art supplies, surveying materials, binoculars, and measuring tapes. It could also contain a desk and a small library of natural history books and field guides. We could build this modest shed along the path or by the road for easy access.

Pros
- People could store gear
- Would increase the educational use of the property

Cons
- May have to worry about gear being stolen
- Would have to be maintained and kept safe
- Only addresses gear needs not other educational needs

Outdoor Classroom #3: Build a Primitive Shelter
We could build a primitive shelter (such as a lean-to) by the old house site for day and overnight use, which would require some sort of outhouse as well.

Pros
- Classes could spend the night
- Classes could go out in all weather
- People could store gear
- Could enhance the co-curricular outdoor program by making the property more easily used as a training site
- Because it is not a permanent residence, it would not restrict others from using the property
- Would maintain the remote feeling one feels on the land
- Would be a close and inexpensive option for camping, which would make more overnight trips for classes feasible
- Though COA is located very close to ANP, legal campsites are expensive and not very private; this would offer an alternative

Cons
- Structure would have to be maintained
- Would have to get a permit from Bar Harbor to build a "campsite"
- Would require monitoring to prevent vandalism or misuse

Outdoor Classroom #4: Build a Classroom
We could build a small cabin to use as a classroom (perhaps in addition to the shelter) There could be a small library and desk for art and research. This could be built near the old house site or by the road. There is a well and an electrical box by the old house site that the classroom could use.

Pros
- Would increase educational use of the property
- Classes could go out in all weather
- Would provide more of a traditional classroom setting than a shelter, allowing for a wider range of class work

Cons
- Building would have to be maintained
- Construction may be expensive

Recommendations

As a student who has done work on the property I strongly support one of the above scenarios that benefits students and classes. I think that building a shelter for classes to use would be an ideal situation. There are a variety of ways to monitor its use (such as through a point person or professors), so that does not need to be an obstacle. COA should prioritize educational use for the shelter. It should be built near the old Manring home site so that it feels somewhat remote yet still has a low impact on the land.

Ideally COA should build no houses on the property. There are other properties or homes COA could use that would be cheaper and provide more appropriate sites for presidential or faculty housing. In order to build a large, sustainable home on the Protectorate, one would have to clear much of the forest in the buildable area; this would be expensive and destructive. In addition, the soil is extremely rocky and may be difficult to excavate.

I feel very strongly that it would be a wasted opportunity if students could not use the Protectorate. How often does COA receive a 101 acre piece of property with ridgelines, potential vernal pools, wetlands, forests, and a stream integral to the island's largest watershed? There will always be places to build houses, but we may never receive a piece of property like this again. Mr. Cox gave COA something very special and unique and it should be treated as such. Even if a house did not interfere with access to the rest of the property, it would restrict the COA community's use of the land. The people living on the Protectorate may feel their backyard is being invaded and visitors may feel they are intruding. Faculty, students, and staff should be excited and eager to use this property, and building a permanent residence would not allow that.

If COA were to build a house on the property, the best location would be in the woods on the other side of the road from the Chapman home, before the path to the ridge begins. This location may still allow others to access Blueberry Path and the remainder of the property so that it could be used as an "open-air classroom."

Guidelines

Current Guidelines

At this time no one is the point person to set rules and guidelines for the property. Currently Darron Collins asks that there is no camping on the property.

COA students, faculty, staff, alumni, and trustees should have the opportunity to be consulted or involved in making decisions about the guidelines for the Protectorate. I hope that the more people who know about the property and become involved and invested in it, the more likely they are to respect the land and use it responsibly of their own accord.

Potential Issues and Suggestions

Parking

One method to limit the number of people visiting the Protectorate is to regulate and control parking. At present we share a driveway with Doug Chapman, though COA owns most of it. Inevitably our activities impact the driveway and excessive numbers of parked vehicles may impinge on his property. It would seem fair that the college offer to share in drive maintenance and plowing and ensure that the drive is not blocked by large numbers of vehicles. We should not increase the number of cars that can fit in the parking area, though perhaps we need to change the size or shape to decrease wear on the Chapman's driveway. Any expansion would inevitably be inward, impinging on the old house site, and potentially reducing its value for a future field station/workspace. The area we can currently park in allows for two cars or a 14 passenger van and a car. Space for that many people should allow for most COA classes to visit. In the current configuration the cars are parked linearly so that one blocks the other which is not ideal. It is important to keep in mind that ANP already caters to large groups of people. The Protectorate should not have to cater to large groups of people at the cost of its aesthetics.

Social Trails and Erosion

People using the property should primarily stick to trails or survey lines to avoid creating "social trails" that disturb wildlife and increase erosion, unless they have permission from the point person to go off trail**.** Classes and other people using the property should use Leave No Trace principles.

Fires

Abutting neighbors have voiced concern about fires on the Protectorate and suggested that we do not have them at all. If COA allows fires on the property we would need to be extremely respectful to our neighbors. Whoever makes fires should get permission from the point person, and perhaps the Director of Public Safety, as well as procure a Bar Harbor fire permit. Any fires should be extremely well monitored and regulated. One way to increase safety would be to have one or two fire pits by the shelter or classroom (if we decide to build either).

Extracurricular Camping

I think it makes sense to give preference to camping for educational purposes and for the outdoor program. Though, I think that recreational camping should be allowed it should be closely monitored to discourage reckless or disrespectful people from using the land.

Point Person

It may make sense to make a professor the point person because Mr. Cox wanted the property to be used for educational purposes. I believe that students, faculty, staff, alumni, and trustees should have the opportunity to give input on decisions for the land if they wish, but for organizational purposes it would help to have one point person to regulate the use of the property.

Registry Book on the Property

A register on the property, similar to that found along some of the trails in the park, could be located right by the parking area by the Chapman's driveway. This could not only increase safety but it would also be a survey for who is using the property and how often. In order for the Protectorate to remain tax-free we must be able to show that we are using the property for educational use. This book would be evidence of how many people are using it and for what sort of educational purposes. It would also be an interesting thing to archive.

Signs on the Property

In addition to a registry book we could have a sign, on whatever post and box that holds the book, telling people, "Please stay on the path." This will act as a deterrent for people to not wander and possibly damage parts of the property. In addition it may be nice to have a map of the land or even a short history of the land at this station. It would be good to have to apply for permission to go off trail through the point person. I am not sure what the criteria should be to go off the path or how strict the rules should be.

Suggested Guidelines

- No fires unless you have permission from the point person and you get a town fire permit.
- Can collect vegetation for consumption (unless it would damage the property).
- Cannot collect other vegetation without permission from the point person and a professor.
- No student shoulder housing or camping. Camping should only be done with permission from the point person.
- Do not go off trail unless you have permission from the point person.

Dec. 7. 2010 11:01AM T. A. Cox Seal Harbor, ME No. 5976 P. 1

FACSIMILE TRANSMITTAL

PAGE 1 OF (including cover) 3

T. A. COX
THE COX OFFICE

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Seal Harbor, ME 04675
(207) 276 – 4275
Fax: (207) 276 – 3934
All Mail To:
P.O. Box 65
Seal Harbor, ME 04675 – 0065

To: Andrew Griffiths
COA

Date: 7 Dec 2010 Time: 1045

MESSAGE: re: Mill Brook

Yesterday I talked with Bill Faulke about some changes to the Manifesto I have written to record my thoughts on Mill Brook.

I have incorporated these modifications into the enclosed document. Any drafts of previous thoughts are superceded.

Tom

Figure 26: First page of Mr. Cox's manifesto.

A Manifesto to Myself
The Mill Brook Property

About eight years ago, I purchased approximately 70 acres of undeveloped property in Bar Harbor. Its attributes were obvious to those few who knew it. My intention was to protect it from development. Wishing to complete important goals in my lifetime, I have decided to transfer the property, along with subsequent contiguous purchases, to College of the Atlantic, to whose Trustees I transfer the power and responsibility of protecting the properties.

The transfer is unconditional and without restrictions. But, in the process of making the decision to transfer, I have obviously thought about many things. These I address below for my own historical reference as well for others who may be interested.

The properties should have a name – I believe The Protectorate of College of the Atlantic would express the goals.

What is being protected? From the original purchase, the bed along the Mill Brook itself, the ridge line with its 360° vista and ground cover untouched since the Bar Harbor fire. The Mill Brook corridor could be supervised by an independent conservation organization, such as the Down East Audubon Society and integrated with the management of the Northeast Creek Watershed.

How should the properties be used? The site divides itself naturally into two parts. The upland part, including the ridgeline, should remain undeveloped to be an open-air classroom providing education and research opportunities consistent with COA's mission, extending the principles of COA education to its situs.

Figure 27: Second page of Mr. Cox's manifesto.

The Mill Brook Property

The flat area, which is made up of approximately 15 acres adjacent to Mill Brook Road and Norway Drive, should be available for the creation of faculty and staff housing, not including student housing, according to a master plan created by Sam Coplon, in which cluster housing is encouraged. A residence for the College President might be envisioned.

Land for housing could be made available to appropriate individuals. Housing development should be structured to be made affordable for future COA personnel.

What if COA decided the properties were no longer consistent with its needs? COA could then use its judgment to find an institution of appropriate stature to fulfill the objectives of the Protectorate.

T.A. Cox
Seal Harbor, Maine
December 2010

Figure 28: Third and final page of Mr. Cox's manifesto

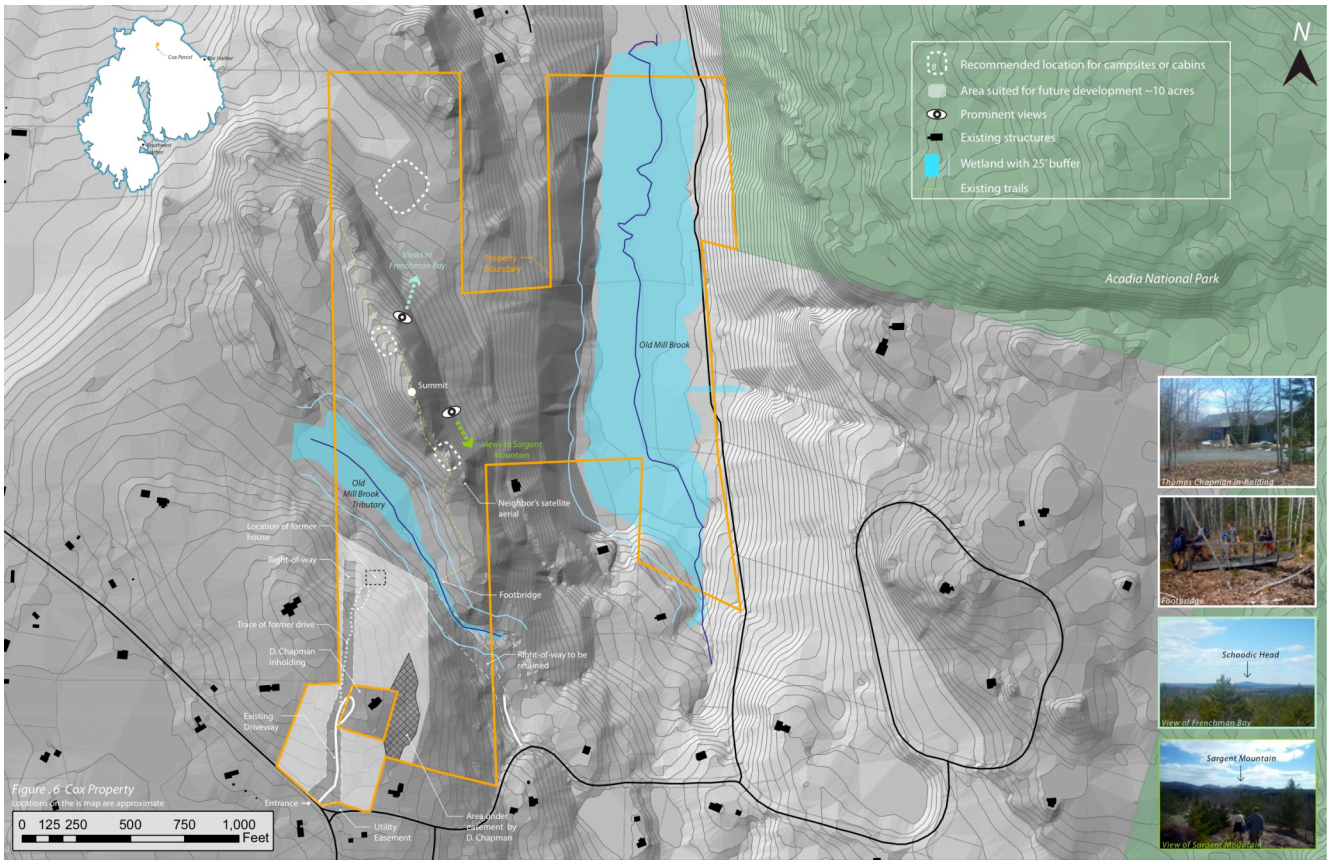


Figure 29: Map showing buildable areas on the Protectorate (courtesy of Andrew Louw).

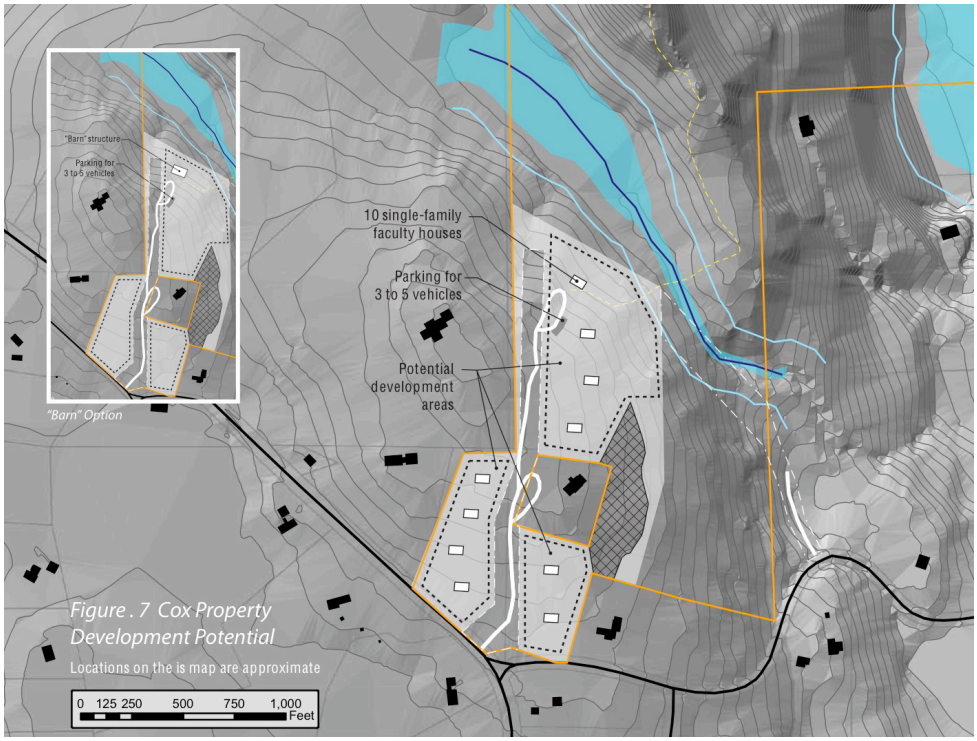


Figure 30: Detail of buildable area (courtesy of Andrew Louw).

Project Suggestions

Studies within the Northeast Creek watershed
COA owns or is associated with three properties within the Northeast Creek watershed: the two Peggy Rockefeller Farms, the Protectorate, and Jay McNally's Four Foot Farm. Because of the watershed's ecological, historical, and aesthetic value there is a lot of potential of student work. In addition there is potential for collaborative work with ANP, the Maine Audubon Society, and the Maine Coast Heritage Trust who also own property within the watershed. It would be great if there were more biological surveys, historical research, or artwork about the natural history of the watershed.

Herptile Surveys
There were many frogs along Old Norway Drive and the area surrounding the Mill Brook wetland, particularly the southern end. Steve Ressel and I also found about a dozen two-lined salamanders (*Eurycea bislineata*) in Mill Brook.

Mycology Studies
Little is currently known of the fungi on the Protectorate.

Bird Surveys
The path up to the ridge, Old Norway Drive, or a route along the western side of the Mill Brook wetland may be good places to conduct point counts.

Small Mammal Surveys
Little is currently known about the small mammal population on the Protectorate.

Dendrochronology
There is a lot of potential to study the diversity of tree ages across the property. It would be especially interesting because there are trees by the Mill Brook wetland that were not burned in the 1947 fire. One could do a project analyzing the tree core data I collected from my vegetation plots which can be found in Tables A1-A3.

Trail Maintenance
The path up to the ridge could be made more defined or the sides could be blocked off to avoid erosion. This may be a good group study and could possibly be done with an organization such as the Maine Coast Heritage Trust or ANP. I do not think that more than a few new trails should be added if at all; the property is relatively small and too many trails would completely overtake it. Perhaps existing survey lines could be maintained as trails. This would help accentuate the boundaries so people do not accidentally trespass or get lost.

Art Projects
This would not only be an accessible and beautiful place for people to do art projects, but it would also be great to use a bunch of different media to record how the landscape changes over time. It would be amazing if someone were to draw or paint a panoramic

view from the ridge top. Already there has been artwork inspired by the property as seen in the species accounts section.

Historical Research
There is still a lot more to learn about the past owners of the property that students could research.

Conclusion

It has been a full year since I first walked up to the ridge top in a sleet storm and began my exploration of the Protectorate. I am working on the final edits for this document and anticipate being done in about two weeks. In five weeks I will be graduating and in five weeks and two days I will be working for Acadia National Park for the summer. Ending this project represents a lot to me: the end of my time as a student at COA, the end of studying and exploring the property, and the beginning of testing and experimenting with everything I learned at COA.

I would like to graduate and leave COA knowing that future students will have a similar journey of exploring, researching, and getting to know the Protectorate. I hope that this project will aid them in their adventures. Just getting through the bulk and detail of this document is a journey unto itself, but hopefully they will use this to begin their time on the land itself.

In the future when people are making decisions about the property's use, I ask them to consider the academic and recreational potential that the whole property offers to COA students, faculty, and staff. In addition, it is important to realize that aesthetics are just as important as any delicate physical feature like the wetland, potential vernal pools, or forests. The beauty and solitude of the land should be preserved, guarded, and treasured along with the many other resources that the land offers.

—E.H.M., April 2012

Annotated Bibliography

Hill, Ruth Ann. 1996. *Discovering old Bar Harbor and Acadia National Park: an Unconventional History and Guide*. Down East Books. Camden, Maine.

This book had a lot of obscure and specific history on particular families and areas of the island, while being a good overview of the island's history. It was chronologically cohesive and entertaining. It had many pictures of old Bar Harbor and surrounding towns which are interesting comparisons to how these places look today. It is available in the Thorndike Library.

Morrison, Samuel Eliot. 1960. *The Story of Mount Desert Island, Maine*. Little Brown. Boston, Massachusetts.

This book had extremely obscure information about particular people on the island. Had I not done so much research on particular families and their members, many of the names would have meant nothing to me. Though this book gives a lot of detail it is also a really great overview of the history of the island with some fun stories throughout. It is available in the Thorndike Library.

Vining, Thomas F. 2000. *Cemeteries of Cranberry Isles and the Towns of Mount Desert Island*. V.F. Thomas Co. Bar Harbor, Maine.

This book records the names and dates of the gravestones in the cemeteries on Mount Desert Island and Cranberry Island. It is extremely helpful when trying to assess a family's lineage and location. The Mount Desert Island Historical Society has copies of the book.

Stantec Consulting. 2009. *Ecological Characterization Report TAC Revocable Management Trust Parcel*.

In December 2009 Mr. Cox hired Stantec Consulting to do an ecological assessment of the Protectorate. This document records their findings in their one-day long field survey. Though the research was done quickly it gives a good overview of the property and shares some highlights, such as where they found porcupine dens and the rare plant Nantucket Shadbush.

Appendix

Tree Core Data- Page 79
Soil Testing Results- Page 82
Wildlife Camera Results- Page 83
Vegetation Survey Data Sheets- Page 88
Pictures of Plots and Observation Points- Page 173

Table A1: First page of tree core data.

Tree Core Data

Plot	Date Cored	Species	DBH (Inches)	Number of Rings	Notes
T1Q1	7/11/11	White Birch	4.5	63	
T1Q1	7/11/11	Red Oak	10.85	Could not Count	There was an old axe scar. There was a second trunk of similar size. I missed the pith.
T1Q1	7/11/11	Red Maple	9.48	46	Two trunks with smaller DBH.
T1Q2	7/12/11	White Birch	3.44	38	
T1Q2	7/12/11	White Spruce	7.53	41	
T1Q2	7/12/11	Balsam Fir	5.19	39	
T1Q3	7/13/11	White Pine	14.25	45	A large blemish on the core which blocks some of the rings. There was a small critter's hole in the root system.
T1Q3	7/13/11	Red Oak	Not Recorded	55	Tree is one foot south of plot. It leaked yellow fluid when we took borer out.
T1Q3	7/13/11	Red Pine	8.21	57	Tree is located about six meters north of the plot. There are about three red pines surrounding this tree.
T1Q4	7/10/11	Red Spruce	3.7	39	
T1Q4	7/10/11	Red Oak	6.7	41	
T1Q4	7/10/11	White Birch	5	50	
T1Q5	7/10/11	White Spruce	2	20	Counted 14 whorls.
T1Q5	7/10/11	Red Maple	3.2	Broken	
T1Q5	7/10/11	Red Oak	7	57	
T1Q6	7/9/11	Red Maple	8.1	66	
T1Q6	7/9/11	Red Spruce	7.86	40	
T1Q6	7/9/11	White Pine	10.14	53	
T2Q1	6/28/11	White Pine	17.73	45	Wolf tree.
T2Q1	6/28/11	White Spruce	4.71	46	
T2Q1	7/6/11	Red Oak	4.81	Could Not Count	Tree is just a few inches north of plot.
T2Q2	7/6/11	Red Spruce	5.38	45	
T2Q2	6/28/11	Red Maple	6.65	35	Multiple Trunks.
T2Q2	6/28/11	White Pine	12	46	
T2Q2	6/28/11	Red Oak	8.01	43	I missed the pith.
T2Q3	7/6/11	Red Oak	4.08	Could Not Count	The tree was a few inches north of the plot by a few inches. There was an eight in scar on the trunk.
T2Q3	7/6/11	White Pine	7.2	60	The tree was a few inches south of plot.

Tree Core Data

T2Q3	7/6/11	White Pine	6	17	
T2Q4	7/6/11	Red Maple	9	59	Seven trunks.
T2Q4	7/6/11	White Cedar	8.75	106	
T2Q4	7/6/11	White Cedar	7.25	98	Two trunks.
T2Q5	6/27/11	Red Maple	6.69	Could Not Count	I missed the pith.
T2Q5	7/6/11	Grey Birch	3.8	90	Two trunks. I missed the pith.
T2Q5	6/27/11	Grey Birch	Not Recorded	56	
T2Q5	6/27/11	White Pine	7.35	21	
T3Q1	7/3/11	White Pine	11.2	43	
T3Q1	7/3/11	White Pine	2.5	Could Not Count	
T3Q1	7/3/11	White Pine	12.8	54	
T3Q2	7/3/11	Balsam Fir	5.1	46	
T3Q2	7/3/11	Red Oak	8.3	97	Three trunks, two dead trunks.
T3Q2	7/3/11	Red Spruce	5.3	56	
T3Q3	7/4/11	Balsam Fir	3.5	51	
T3Q3	7/4/11	Red Oak	5.93	49	Two trunks. The other trunk is dead.
T3Q3	7/4/11	White Pine	10.53	40	
T3Q4	7/4/11	Red Oak	5.32	66	Two trunks. The other trunk is dead
T3Q4	7/4/11	Red Pine	9.39	57	
T3Q4	7/4/11	Red Spruce	8.05	45	
T3Q5	7/5/11	White Ash	5.08	64	
T3Q5	7/5/11	Balsam Fir	5.34	50	
T3Q5	7/5/11	Red Oak	11.6	63	
T4Q1	6/30/11	Red Maple	3.32	50	
T4Q1	6/30/11	Big Tooth Aspe	6.24	53	Tree had survey mark gashes.
T4Q1	6/30/11	Red Oak	10.64	58	
T4Q2	6/30/11	Red Oak	7.34	77	Four foot tall scar from the base of trunk. Two trunks.
T4Q2	6/30/11	Hemlock	13.55	85	
T4Q2	6/30/11	Balsam Fir	8.7	51	The rings are very close
T4Q3	6/30/11	White Birch	3.2	24	Scar runs up two feet up from base of trunk.
T4Q3	6/30/11	White Spruce	6	40	
T4Q3	6/30/11	Red Maple	6.5	55	Four trunks.
T4Q4	7/5/11	Red Spruce	11.12	67	
T4Q4	7/5/11	Red Maple	5.33	60	
T4Q4	7/5/11	Balsam Fir	5.52	40	I missed the pith.

Table A2: Second page of tree core data.

Table A3: Third and final page of the tree core data.

Tree Core Data

T5Q1	7/7/11	Balsam Fir	6.19	44	The core was missing a small section so I added four rings.
T5Q1	7/7/11	Red Oak	14.82	98	
T5Q1	7/7/11	White Pine	12.82	72	I missed the pith.
T5Q2	7/7/11	White Pine	34.07	106	Just north of Plot. I missed the pith.
T5Q2	7/7/11	Balsam Fir	5.54	47	Basal Scar. No Pith.
T5Q2	7/7/11	White Cedar	14.08	109	
T5Q2	7/7/11	Red Maple	8.56	39	Multiple trunks. The core broke very easily.
T5Q2	7/7/11	White Birch	11.47	95	Trunk had a large basal scar. Tree is just north of plot.
T5Q3	7/7/11	Eastern Hemloc	17.05	84	I added a few rings because pith was off center.
T5Q3	7/7/11	Red Spruce	10.59	82	Topped at 35 feet. I added two rings because pith was off center.
T5Q3	7/7/11	Red Maple	8.5	Could Not Count	Scars on trunk caused by beavers.
T5Q3	7/7/11	White Cedar	8.6	83	Basal scar on trunk.
T6Q1	7/1/11	White Birch	5.17	66	
T6Q1	7/1/11	White Ash	2.42	43	
T6Q1	7/1/11	Red Maple	9.76	Could Not Count	Three foot tall scar at base. Three Trunks.
T6Q2	7/1/11	White Cedar	16.62	128	I added three rings because the pith was off center.
T6Q2	7/1/11	Red Maple	11.05	59	
T6Q2	7/1/11	Hemlock	18.7	75	I missed the pith. Some sections of the core are missing.

Table A4: Data from soil samples collected from each plot.

12-Oct-11

Hale Morrell
COA
105 Eden St
Bar Harbor ME 04609

received: 09/30/11

Sample type - soil
Analysis - Routine Field Soil Test

Job # 3014

Sample ID	soil pH	buffer pH	% LOI	lb/A P	lb/A K	lb/A Mg	lb/A Ca	mg/kg Al	mg/kg B	mg/kg Cu	mg/kg Fe	mg/kg Mn	mg/kg Na	mg/kg S	mg/kg Zn	me/100 gm ECEC
T1Q1	4.8	5.08	77.9	16.4	289	1590	9108	94	0.72	0.48	28	59	147	41	4.6	33.8
T1Q2	4.4	4.56	20.2	5.1	244	94	263	883	0.38	0.19	98	1.8	41	37	1.6	6.6
T1Q3	4.3	4.83	10.5	3.0	158	86	272	392	0.29	0.14	92	2.2	42	30	0.9	5.9
T1Q4	4.3	4.57	14.8	5.6	233	78	311	406	0.29	0.19	88	19	34	36	1.5	6.7
T1Q5	4.8	5.16	12.0	3.6	110	47	236	665	0.31	0.16	38	3.8	37	111	1.2	4.3
T1Q6	3.7	4.33	10.3	5.2	220	160	360	236	0.30	0.20	30	10	41	12	3.2	8.3
T2Q1	4.1	4.50	8.4	2.8	111	69	250	392	0.28	0.21	81	3.3	29	24	1.3	6.6
T2Q2	3.8	4.55	11.5	5.8	192	80	272	107	0.24	0.16	26	7.1	25	10	0.8	7.0
T2Q3	4.2	4.50	13.2	3.9	163	98	261	322	0.24	0.08	73	6.0	32	22	3.3	6.8
T2Q4	3.9	3.84	29.4	10.3	361	258	516	455	0.39	0.26	49	17	74	25	5.5	10.4
T2Q5	4.5	4.87	12.2	2.6	139	108	525	483	0.46	0.15	144	14	65	22	2.5	6.4
T3Q1	4.3	4.53	13.4	3.9	181	106	392	495	0.38	0.15	70	8.2	29	39	1.7	7.0
T3Q2	5.0	5.18	10.6	2.8	117	91	557	497	0.32	0.19	130	53	25	12	2.6	5.0
T3Q3	4.0	4.39	13.7	4.9	201	117	301	367	0.42	0.17	138	9.3	38	26	1.3	7.5
T3Q4	4.7	5.25	9.7	3.5	144	52	288	559	0.33	0.20	103	9.4	23	28	1.4	4.3
T3Q5	4.0	4.55	39.8	10.6	595	264	628	443	0.66	0.17	51	14	127	30	5.1	9.4
T4Q1	4.2	4.59	12.1	3.1	161	117	263	358	0.29	0.15	51	2.0	31	42	1.4	6.6
T4Q2	4.5	4.60	15.7	4.1	197	106	364	495	0.68	0.15	481	10	36	16	2.3	6.6
T4Q3	4.4	4.69	39.1	7.7	333	128	410	978	0.51	0.26	25	6.3	69	36	1.2	7.0
T4Q4	3.7	4.09	15.0	6.0	265	124	336	222	0.35	0.18	30	5.0	45	13	2.3	8.7
T5Q1	3.7	3.87	29.5	10.6	353	259	800	148	0.47	0.24	24	39	58	19	9.5	11.1
T5Q2	3.8	4.30	18.6	7.8	230	153	593	91	0.38	0.19	45	35	42	12	5.1	8.8
T5Q3	4.0	4.55	8.2	3.0	78	208	417	117	0.33	0.13	75	3.3	51	10	2.0	7.7
T6Q1	4.2	4.67	64.1	37.2	791	1302	4465	63	0.93	0.47	14	25	274	56	10.0	23.7
T6Q2	4.8	4.82	20.4	4.7	201	291	1050	504	0.45	0.22	41	23	74	22	2.8	8.5

Check Soil SS11

	soil pH	buffer pH	% LOI	P	K	Mg	Ca	Al	B	Cu	Fe	Mn	Na	S	Zn
measured ->	6.5	6.08	7.2	33.4	810	665	3740	44	0.30	1.21	2.7	16.3	16	91	0.6
normal ->	*6.4-6.6*	*6.06-6.10*	*7.0-7.5*	*32.2-34.2*	*780-810*	*655-675*	*3600-3700*	*44-48*	*0.29-0.33*	*1.2-1.3*	*2.3-2.9*	*15.0-16.4*	*12-17*	*87-93*	*0.5-0.7*

Soil pH was measured in distilled water and in Mehlich lime buffer. Organic matter was measured by loss on ignition (LOI) at 375 C. All nutrients were extracted in pH 4.8 ammonium acetate (modified Morgan extract). P was determined colorimetrically by Ion Analyzer. All others were determined by Inductively-Coupled Plasma Optical Emission Spectroscopy (ICP-OES). Effective Cation Exchange Capacity (ECEC) is calculated by summation of milliequivalent levels of Ca, K, Mg, Na, and exchangeable acidity. Acidity was calculated from soil pH/lime buffer pH measurements. Extractable nutrient levels are reported either as pounds per acre or milligrams/kilogram (ppm) in the dry soil. Divide lb/A levels by 2 to get mg/kg amounts.

Bruce Hoskins
Assistant Scientist

Game Camera Results

Jun 23 - June 27, Location #1:
No photographs.

Location #2:
No photographs.

June 27 - June 30, Location #3:
Only photographs of people.

June 30 - July 7, Location #4:
One White-tailed Deer (*Odocoileus virginianus*) on June 30 at 08:30.
One male White-tailed Deer on June 30 at 20:17.

July 7 - July 16, Location #5:
One White-tailed Deer on July 7 at 20:29.

August 20- 26, Location #6:
One Red Fox (*Vulpes vulpes*) on August 20 at 22:09.
One Red Fox on August 22 at 02:50.
One female White-tailed Deer on August 23 at 07:49.
One female White-tailed Deer on August 23 at 07:59 (perhaps same deer as before).
One Red Fox on August 23 at 09:03.
One Red Fox on August 24 at 03:07.

Game Camera Photographs



Figure A1: White-tailed Deer from game camera.



Figure A2: Red Fox from game camera.



Figure A3: Red Fox from the game camera.

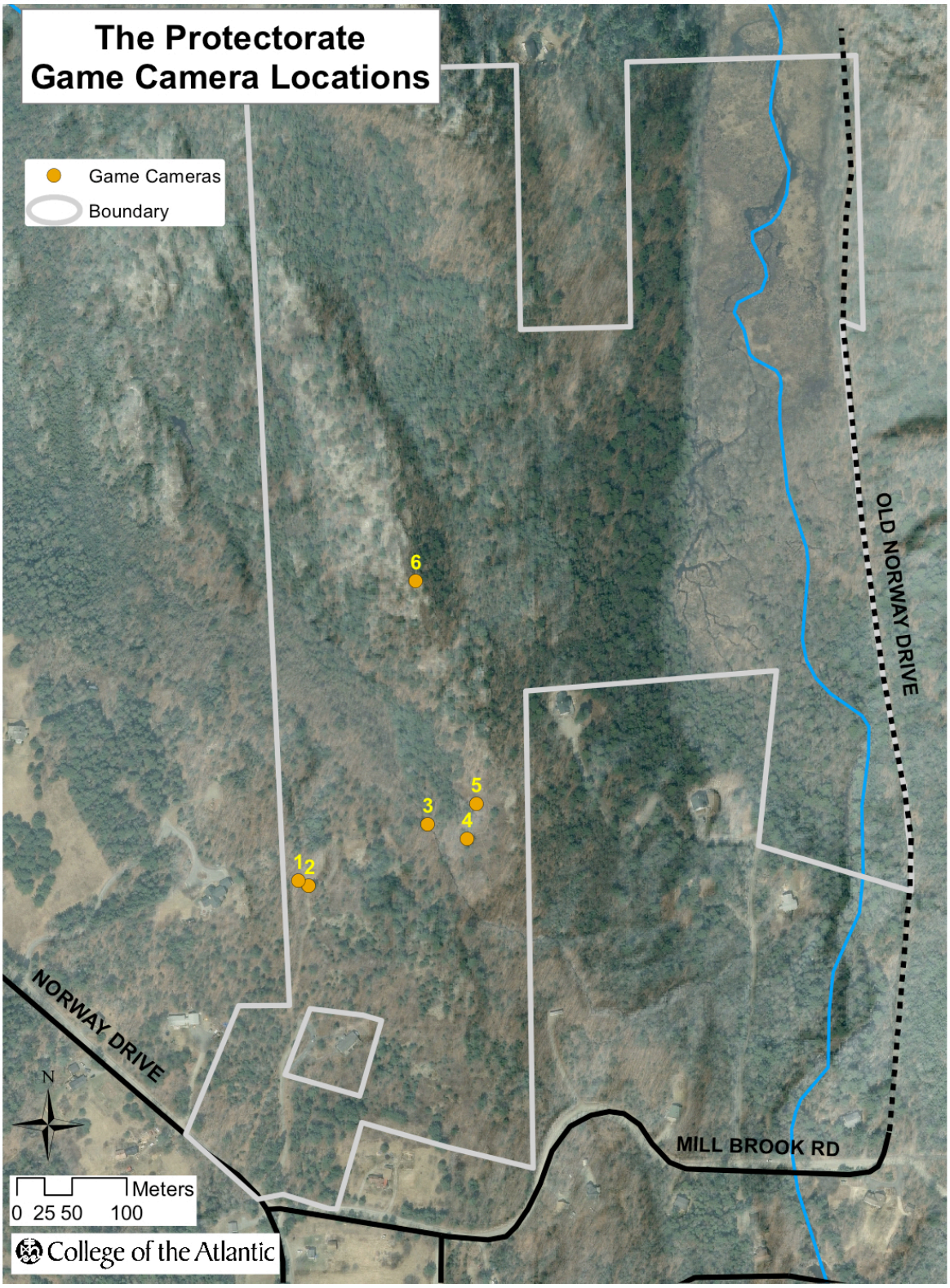


Figure A4: Map of game camera locations.

Game Camera Location GPS Points

Number	Dates	Notes	Y Coordinates	X Coordinates
1	6/23/2011	Game Camera #1 location along Blueberry Path	4916700.59424721	556291.36056538
2	6/23/2011	Game Camera #2 location along Blueberry Path	4916705.61345156	556281.75833582
3	6/26/2011	Game Camera #1 location along Blueberry Path	4916756.81903266	556399.67920828
4	6/26/2011	Game Camera #1 location along Blueberry Path	4916743.3299267	556435.48050241
5	7/7/2011	Game Camera #1 location along Blueberry Path	4916775.71201598	556443.94514768
6	8/20/2011	Game Camera #1 location along Blueberry Path	4916978.55004776	556388.93701328

Table A5: GPS coordinates for different game camera locations.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Kevin Adderer, Janoah Bailin, Corinne Boet-Whitaker, Erica Georgaklis, EHM
Coordinates: 556237, 4917442
Date: 7/11/11
Time: 09:17
Quadrat ID: T1Q1
Slope: 8°, very slight
Aspect: West
Canopy Cover: 25%

Species (Percent Cover):
White Spruce adults: 20%
Red Oak adults: 50%
Red Oak seedlings: 10%
Red Maple adults: 40%
Red Maple seedlings: 10%
Balsam Fir adults: 30%
Balsam Fir sapling: 30%
Balsam Fir seedlings: not recorded
White Birch adults: 20%
White Pine seedlings: 10%
White Spruce sapling: 10%
Larch seedlings: 1% (only 1 seedling)
Amelanchier spp.: 1%
Wintergreen: 20%
Wild Raisin: 10%
Lowbush Blueberry: 30%
Starflower: 10%
Bracken Fern: 20%
Bunchberry: 10%
Canada Mayflower: 10%
False Solomon Seal: 10%
Wild Sarsaparilla: 10%
Graminoids: 10%
Moss: 20%
Standing Dead: 20%
Leaf Litter: 100%
Down Woody Debris: 30%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Oak: 10.85 (scar at breast height), 7.48 (2 coppiced trunks), 4.99, 6.19, 9.36, 4.60, 1.54 (2 coppiced trunks)
White Spruce: 2.26, 3.41, 3.05
White Birch: 4.50
Red Maple: 7.50 (2 coppiced trunks but the other trunk is broken), 5.25, 3.30 (large scar at breast height and the measurement was taken just above the scar)

Number of Saplings:
Balsam Fir: 4
White Spruce: 1
White Pine: 1

Number of Seedlings:
Balsam Fir: 32
Red Oak: 37
Red Maple: 22
White Spruce: 11

Tallest Tree Heights:
50-60 feet; Red Maple and Red Oak

Notes:
There is a wet area a few meters to the south. Possible vernal pool?
Most of the standing dead was Red Oak and White Birch.
The northern line runs along the northern boundary line.
Soil collecting: SW corner is very muddy.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/12/11
Time: 15:39- 16:46
Quadrat ID: T1Q2

Coordinates: Point 556237, 4917235
Slope: 6°
Aspect: West
Canopy Cover: 38%

Species (Percent Cover):
Red Oak seedlings: 10%
Red Maple seedlings: 10%
White Birch adults: 30%
White Birch saplings: 10%
Red Spruce adults: 50%
Red Spruce seedlings: 20%
Balsam Fir adults: 20%
GrayBirch saplings: 10%
GrayBirch seedlings: 10%
Black Huckleberry: 90%
Lowbush Blueberry: 20%
Wild Raisin: 10%
Starflower: 10%
Bunchberry: 10%
Bracken Fern: 30%
Lichen: 20%
Moss: 30%
Standing Dead: 20%
Down Woody Debris: 30%
Leaf Litter: 100%
Rock Outcrop: 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Gray Birch: 2.37, 1.47
White Spruce: 5.16 (wolf tree), 7.53, 4.84, 3.87 (2 trunks and a wolf tree)
Balsam Fir: 5.19, .72
Red Maple: 1.57
White Birch: 3.44 (healthy), 2.30 (scar 3 feet up on trunk)

Number of Saplings:
Gray Birch: 3 (.47 (very crooked), 1.23, .76)
White Spruce: 1, (.18)
Balsam Fir: 1 (.72)

Number of Seedlings:
Balsam Fir: 37
Red Oak: 3
Red Maple: 1
White Spruce: 7

Tallest Tree Heights:
About 10 meter Red Spruce.
Red Maple and Red Oak just outside of plot are just as tall as the Red Spruce.

Notes:
Leaf litter is mostly from deciduous trees.
There are many Balsam Fir seedlings under the Black Huckleberry bushes.
Due to the Black Huckleberry and spruce it is a little difficult to walk through the area.
Black Huckleberry was between waist and head height.
There is a rock outcrop to the east with a cairn a bit north of the plot.
Soil Collecting: Soil is filled with roots making it difficult to dig through. There are also lots of decomposing coniferous needles.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/13/11
Time: 13:41
Quadrat ID: T1Q3

Coordinates: 556250, 4917046
Slope: Flat
Aspect: N/A
Canopy Cover: 26%

Species (Percent Cover):
White Birch adults: 20%
Balsam Fir adults: 20%
Gray Birch saplings: 30%
White Pine saplings: 10%
Red Oak seedlings: 1%
Black Huckleberry: 100%
Lowbush Blueberry: 20%
Wild raisin: 1%
Starflower: 1%
Sheep Laurel: 30%
Wintergreen: 10%
Bracken Fern: 80%
Lichen: 10%
Leaf Litter: 80%
Down Woody Debris: 10%
Rock Outcrop: 20%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Birch: 3.25, 2.10
Gray Birch: 2.0, 2.0, 2.26 (3 coppiced trunks), 1.64
Balsam Fir: 10.51

Number of Saplings:
White Pine: 1
Gray Birch: 4

Number of Seedlings:
None

Tallest Tree Heights:
In plot the tallest was a Gray Birch about 20 feet high. About 30-40 feet tall Red Oak and Red Spruce just outside of plot.

Notes:
We may have missed some seedlings under the thick ferns and Black Huckleberries.
The plot was filled with Bracken Fern and Black Huckleberries.
The Balsam Fir we cored had lost its top.
We marked the Red Maple just outside of plot as a trail marker.
We used the densiometer under a Red Maple outside of plot.
Soil Collecting: Lots of pebbles but easy to dig through. Mostly coniferous needles in the leaf litter.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Philip Walter, EHM
Date: 7/10/11
Time: 15:20
Quadrat ID: T1Q4

Coordinates: 556265, 4916846
Slope: 13°
Aspect: North-northeast
Canopy Cover: 11%

Species (Percent Cover):
Red Oak adults: 30%
Red Oak seedlings: 10%
Red Spruce adults: 30%
White Spruce adults: 10%
Spruce saplings: 20%
White Birch adults: 40%
Balsam Fir adults: 20%
Balsam Fir saplings: 30%
Balsam Fir seedlings: 20%
Red Maple seedlings: 10%
Gray Birch saplings: 20%
Lowbush Blueberry: 10%
Starflower: 10%
Wild Sarsaparilla: 10%
Canada Mayflower: 10%
Wild Raisin: 10%
Wintergreen: 10%
Viola spp.: 1%
Bracken Fern: 30%
Graminoids: 10%
Indian Pipe: 1% (only found one plant)
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 30%
Standing Dead: 20%
Unknown Fuzzy Aster: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Birch: 5.00
Gray Birch: 3.60
White Spruce: 2.40, 3.00, 2.50, 3.50, 3.50, 3.00, 2.30
Balsam Fir: 2.50, 3.40
Red Spruce: 4.00
Red Oak: 6.1

Number of Saplings:
White Spruce: 1
White Pine: 1

Number of Seedlings:
Gray Birch: 2
White Spruce: 1
Balsam Fir: 18
Red Spruce: 1
Red Oak: 11
Red Maple: 9

Tallest Tree Heights:
40-50 feet; Red Oak

Notes:
Down woody debris consisted mostly of White Birch.
There are many White Birches in the area, equal or greater to the number of Red Oak.
Soil Collecting: Rocky soil. Lots of deciduous leaf litter.
9/2/11: I saw a rabbit in Lost Swamp by the plot.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Phil Walter, EHM
Date: 7/10/11
Time: 16:49
Quadrat ID: T1Q5

Coordinates: 556280, 4916639
Slope: 1% very slight
Aspect: East
Canopy Cover: 4%

Species (Percent Cover):
Red Oak adults: 70%
Red Maple adults: 40%
White Spruce adults: 20%
White Pine seedlings: 10%
Balsam Fir seedlings: 10%
Black Huckleberry: 10%
Lowbush Blueberry: 20%
Sheep Laurel: 20%
Wild Raisin: 10%
Wintergreen: 30%
Starflower: 10%
Bunchberry: 10%
Canada Mayflower: 1%
White Meadowsweet: 1% (only found one plant)
Cow-wheat: 1%
Wild Strawberries: 1%
Bracken Fern: 40%
Graminoids: 10%
Moss: 10%
Leaf Litter: 100%
Down Woody Debris: 20%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Oak: 6.00, 5.00, 7.00 (2 coppiced trunks), 3.50, 5.00, 5.50 (2 coppiced trunks), 5.60, 5.5, 8.00 (2 coppiced trunks), 4.3, 5.00 (2 coppiced trunks), 6.80, 6.80
White Spruce: 2.00
Red Maple: 3.00, 3.00, 3.00, 2.00 1.8, 3.2, 1.6

Number of Saplings:
Red Oak, 2
White Pines: 6
Balsam Fir: 1
Red Pine: 1

Number of Seedlings:
None

Tallest Tree Heights:
30-40 feet; Red Oaks

Notes:
**This plot was moved from its proper location on the west side of the dirt pathway to the eastern side of the dirt pathway because otherwise I would just be surveying the road not the surrounding forest.
The densiometer was used under Red Oak and Red Maple adults.
There are not many seedlings or saplings.
There was only one White Spruce adult, which had 14 whorls.
Soil Collecting: Deciduous leaf litter.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/9/11
Time: 14:51
Quadrat ID: T1Q6

Coordinates: 556239, 4916461
Slope: 0°
Aspect: N/A
Canopy Cover: 7%

Species (Percent Cover):
Red Maple adults: 40%
Red Maple saplings: 10%
Red Maple seedlings: 10%
Red Spruce adults: 40%
Red Spruce saplings: 10%
Balsam Fir adults: 30%
Balsam Fir seedlings: 10%
Red Oak seedlings: 10%
White Pine adults: 20%
White Birch adults: 20%
Amelanchier spp. saplings: 10%
Amelanchier spp. seedlings: 1% (only 1)
Lowbush Blueberry: 10%
Wild Raisin: 1%
Star Flower: 20%
Wintergreen: 30%
Canada Mayflower: 10%
Partridgeberry: 1%
Wild Sarsaparilla: 10%
Graminoids: 10%
Leaf Litter: 100%
Down Woody Debris: 40%
Standing Dead: 40%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Maple: 6.23, 5.28, 8.10, 7.35, 5.41 (2 coppiced trunks)
Red Spruce: 2.90, 3.30, 7.15, 7.86, 1.57, 4.17, 3.85
White Birch: 4.63
Balsam Fir: 2.30, 4.04, 2.32, 2.91
White Pine: 10.14, 5.74

Number of Saplings:
Red Spruce: 2
Balsam Fir: 1

Number of Seedlings:
Red Maple: About 3 per acre
Red Oak: 9
Balsam Fir: 4

Tallest Tree Heights:
80-90 feet; Red Maple, Red Oak, Red Spruce.
White Pine just outside of plot

Notes:
*I moved the plot 20 meters north of where it should be because further south was too close to the road.
I used the densiometer under part of a White Pine and Red Spruce canopy.
From the plot we can still hear and see the road.
Two Winterberry plants have their berries. Wintergreen is very abundant in this plot.
Found rusted pails and cans along the plot boundaries.
White Pines are the tallest trees here, followed by Red Maples. They do not have lower branches.
A power line runs within meters of the western side of the plot. To the west of the power lines the woods are dominated by conifers and to the east the woods are dominated by deciduous trees.
Soil Collecting: Deciduous leaf litter. Easy to dig through.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 11:04
Quadrat ID: T2Q1

Coordinates: 556336, 4917448
Slope: 0°
Aspect: N/A
Canopy Cover: 17%

Species (Percent Cover):
White Pine adults: 50%
White Pine seedlings: 10%
White Spruce adults: 30%
Gray Birch saplings: 20%
Balsam Fir seedlings: 1%
Red Maple seedlings: 1%
Red Oak seedlings: 10%
Amelanchier spp.: 1%
Black Huckleberry: 40%
Lowbush Blueberry: 60%
Canada Mayflower: 10%
Starflower: 10%
Sweetfern: 10%
Moss: 20%
Lichen: 30%
Down Woody Debris: 10%
Rock Outcrop: 20%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Spruce: 4.71,
White Pine: 1.50, 2.06, 1.90, 17.73
Big-tooth Aspen: 2.07

Number of Saplings:
White Pine: 5
Gray Birch: 5

Number of Seedlings:
Balsam Fir: 2
Red Maple: 1
Red Oak: 2

Tallest Tree Heights:
30-40 feet; White Pine
Red Maple and Red Oak outside of plot

Notes:
There is one large White Pine in the middle of the plot and few other trees.
There is a rock outcrop to the northwest, mostly woods to the west, granite outcrop to the east, woods to the north and south.
Soil Collecting: The area is has a lot of flat granite outcrops and difficult to extract soil from.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 09:17
Quadrat ID: T2Q2

Coordinates: 0556344, 4917247
Slope: 0°
Aspect: N/A
Canopy Cover: 6%

Species (Percent Cover):
Red Oak adults: 60%
Red Oak seedlings: 10%

Red Maple adults: 40%
Balsam Fir adults: 30%
Balsam Fir seedlings: 10%
White Birch adults: 20%
Spruce adults: 30%
Gray Birch saplings: 40%
Black Huckleberry: 40%
Lowbush Blueberry: 40%

Canada Mayflower: 10%
Bunchberry: 10%
Partridgeberry: 10%
Sheep Laurel: 1%
Cow-wheat: 1%
False Solomon Seal: 1%
Solidago spp.: 1%
Bracken Fern: 30%
Graminoids: 1%
Moss: 40%
Leaf Litter: 100%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Spruce: 5.38
White Pine: 11.57
Balsam Fir: 3.27, 4.56, 3.23, 4.84
Gray Birch: 3.79,
Red Maple: 6.65, 5.47 (2 coppiced trunks), 5.21, 2.90, 2.29 (coppiced trunks)
Red Oak: 8.01

Number of Saplings:
Balsam Fir: 3
Gray Birch: 1

Number of Seedlings:
Balsam Fir: 8
Red Spruce: 1
Red Oak: 10

Tallest Tree Heights:
50-60 feet. White Pine, Red Oak, Red Maple, and Red Spruce outside of plot.

Notes:
There are 1.5 inch holes in the trunks of the Red Spruce.
The forest floor is open with lots of leaf litter.
Even age stand fir and Gray Birch are only codominants.
Buggy.
We heard a Hermit Thrush, Ovenbird, and a Black-throated Green Warbler.
Soil Collecting: Most of the leaf litter is from deciduous trees.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Hank Ainey, EHM
Date: 6/27/11
Time: 14:25
Quadrat ID: T2Q3

Coordinates: 556341, 4917038
Slope: 6°
Aspect: West
Canopy Cover: Not recorded

Species (Percent Cover):
White Pine adults: 20%
Salix spp.: 1%
Black Huckleberry: 20%
Lowbush Blueberry: 40%
Three-toothed Cinquefoil: 10%
Bracken Fern: 10%
Sweetfern: 20%
Graminoids: 20%
Lichen: 70%
Rock Outcrop: 50%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Pine: 6.00

Number of Saplings:
None

Number of Seedlings:
None

Tallest Tree Heights:
White Pine about 15 feet tall
Surrounding trees reach 20-30 feet; White and Red Pine

Notes:
There is only one seedling and one tree in the plot, both of which were White Pine.
The trees in the area are stunted.
The area is mostly rock outcrop with patches of trees or thick Black Huckleberry.
There is one Striped Maple in the surrounding area.
We cored two trees outside of the plot, one Red Oak and one Red Pine.
The plot is about 10 meters west of the cairn on top of the ridge top.
Soil Collecting: Lots of granite outcrops make it difficult to collect soil.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 11:57- 13:05
Quadrat ID: T2Q4

Coordinates: 556347, 4916840
Slope: 0°
Aspect: NA
Canopy Cover: 4%

Species (Percent Cover):
Northern White Cedar adults: 30%
Red Maple adults: 80%
Green Alder saplings: 20%
Red Oak seedlings: 1%
Balsam Fir: 10%
Red Spruce seedlings: 10% (Only 1)
Canada Mayflower: 10%
Winterberry: 70%
Starflower: 20%
Wild Raisin: 1%
Wild Sarsaparilla: 1%
Swamp Dewberry: 1%
Bright Orange Mushroom: 1%
Ferns (mostly likely Cinnamon Fern): 70%
Graminoids: 1%
Moss: 40%
Leaf Litter: 80%
Down Woody Debris: 80%
Mud: 50%
Standing Water: 10%
Wild Raisin: 1%
Unknown three-leafed plant (most likely a *Rubus* spp.): 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Maple: 6.50, 7.80, 5.16, 7.60, 5.44, 7.00, 5.26 (2 coppiced trunks), 8.90, 6.00, 2.30, 3.29, 3.25, 9.00, 4.50 (7 coppiced trunks), 3.93, 2.29, 6.20 (3 coppiced trunks)
Northern White Cedar: 6.70, 7.25, 8.10, 8.75, 8.25

Number of Saplings:
Balsam Fir: 2

Number of Seedlings:
Red Maple: 12
White Birch: 2

Tallest Tree Heights:
50-60 feet; Red Maple

Notes:
I took the densiometer measurements directly under a Northern White Cedar.
Found White-tailed Deer scat.
Larch tree close to plot.
Quadrat is in Lost Swamp.
Buggy.
Can hear a Common Raven calling.
9/2/11: We found a plaster sign with “Longevity” written on it in the woods between T2Q4 and T2Q5.
Soil Collecting: Wet area. We dug in the low spots.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 09:08- 10:37
Quadrat ID: T2Q5

Coordinates: 556347, 4916642
Slope: 2°
Aspect: East
Canopy Cover: 18%

Species (Percent Cover):
White Birch adults: 10%
Red Maple adults: 20%
White Spruce adults: 10%
Red Oak seedlings: 1% (Only 1 individual)
Gray Birch saplings: 70%
Gray Birch seedlings: 1%
Balsam Fir seedlings: 10% (There are 3 individuals each with about 15 whorls)
Purple Chokeberry: 1%
Amelanchier spp. seedlings: 1%
Black Huckleberry seedlings: 90%
Lowbush Blueberry: 70%
Canada Mayflower: 1%
Wintergreen: 10%
Starflower: 10%
Fern (Bracken, Cinnamon?): 70%
Rock Polypody: 1%
Leaf Litter: 90%
Bare Rock: 1%
Unknown Plant: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Maple: 6.69, 6.46, 5.35 (3 coppiced trunks)
Gray Birch: 1.93, 2.40, 3.80, 2.83 (2 coppiced trunks), 1.49 (2 coppiced trunks, but one is a sapling), 2.15 (2 coppice but other trunk is a sapling), 2.25, 1.57, 1.65 (3 coppiced trunk, but one is a sapling), 1.62, 2.33 (5 coppiced trunks but 3 are saplings), 1.69 (2 coppiced trunk but one is too small)
White Pine: 7.35

Number of Saplings:
Gray Birch: 32
White Pine: 1

Number Seedlings:
Balsam Fir: 2
White Spruce: 1

Tallest Tree Heights:
30-40 feet; White Pine
Red Oak outside of plot

Notes:
There are small green berries on the huckleberries and the blueberries have no or very few flowers or berries.
The Black Huckleberries and the ferns come up to my waist.
There is a large white pine by the NE corner that is not in the plot.
There may be a Norway Maple north of plot?
Soil Collecting: Lots of rocks make it difficult to dig. Lots of Black Huckleberries.

Protectorate Vegetation Quadrat Data Sheet

Observers: Kaija Kaluder, Philip Walter, EHM
Date: 7/3/11
Time: 09:20- 10:42
Quadrat ID: T3Q1

Coordinates: 556442, 4917438
Slope: 7°
Aspect: 30° (East-ish)
Canopy Cover: 3%

Species (Percent Cover):
White Pine adults: 20%
White Pine saplings: 10%
White Pine seedlings: 10%
Red Maple adults: 20%
White Birch adults 10%
Red Oak seedlings: 10%
Gray Birch adults (saplings): 10%
Amelanchier spp. seedlings: 1%
Black Huckleberry: 20%
Lowbush Blueberry: 20%
Sheep Laurel: 1%
Canada Mayflower: 10%
Wild Sarsaparilla: 1% (only 1 individual)
Wild Raisin: 1% (only 1 individual)
Solidago spp.: 1%
Rock Polypody: 1%
Bracken Fern: 1%
Graminoids: 10%
Lichen: 40%
Leaf Litter: 10% (mostly conifer needles)
Rock Outcrop: 60%
Unknown spp.: 10%
Unknown Aster #2: 1% (only 1 in plot)

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Pine: 11.2, 12.8, 2.5, 1.5 (3 trunks, the other 2 are saplings)
Red Maple: 2.00

Number of Saplings:
White Pine: 6
Unknown Birch: 2

Number of Seedlings:
Red Oak: 20
White Pine: 4
Red Maple: 1
(Gray?) Birch: 2

Tallest Tree Heights:
20-30 feet; White Pine, Red Oak, and Red Spruce

Notes:
There are Red Pines and Common Junipers growing just outside of plot, where it is still very rocky.
Canopy cover was measured under a Red Maple which is barely outside of the plot.
This plot is mostly rock outcrop and open canopy.
Heard many birds: Black-throated Green Warbler, Pine Warbler, White-throated Sparrow, and goldfinch.
We can see the Carter's (abutters) home from the plot. The house is directly to the east of plot.
Soil Collecting: The soil has a lot of lichen in it. There are lots of granite outcrops.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: 11:19
Quadrat ID: T3Q2

Coordinates: 556442, 4917235
Slope: 0°
Aspect: N/A
Canopy Cover: 3%

Species (Percent Cover):
Red Oak adults: 30%
Red Oak seedlings: 10%
Red Spruce adults: 50%
Red Spruce saplings: 10%
Balsam Fir saplings: 20%
Balsam Fir seedlings: 10%
White Pine saplings: 10%
White Pine seedlings: 10%
Lowbush Blueberry: 10%
Sheep Laurel: 1%
Wintergreen: 1%
Wild Raisin: 1%
Bunchberry: 1%
Starflower: 1%
Bracken Fern: 10%
Moss: 20%
Leaf Litter: 100%
Standing Dead: 20%
Rock Outcrop: 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Spruce: 3.3, 5.3, 5.8, 4.6
Balsam: 4.4, 5.1
Red Oak: 8.3, 5.7 (2 coppiced trunks)

Number of Saplings:
Balsam: 3
Spruce: 2
White pine: 1

Number of Seedlings:
Red oak: 45
Red Maple: 3
Balsam Fir: 8
White Pine: 2

Tallest Tree Heights:
50-60 feet tall: White Pine, Red Maple. White Birch are just a little shorter

Notes:
Canopy covered was measured under a White Pine.
Dominant trees include Red Oak and White Pine.
Codominant include Red Spruce
At this point coniferous trees begin to appear in what was an all oak forest.
Woods are not as open as before; there are more young spruce in the way of walking.
Soil Collecting: Lots of conifer and deciduous needles in leaf litter. Very different soils in each corner. It is sandy in the western corner.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 08:35- 10:27
Quadrat ID: T3Q3

Coordinates: 556437, 4917038
Slope: 8°
Aspect: East
Canopy Cover: 14%

Species (Percent Cover):
White Pine adults: 30%
Balsam Fir adults: 40%
Balsam Fir saplings: 20%
Balsam Fir seedlings: 10%
Red Maple adults: 30%
Red Maple seedlings: 10%
Red Oak adults: 30%
Red Oak seedlings: 10%
Red Spruce adults: 20%
Red Spruce saplings: 10%
Amelanchier spp. seedlings: 1%
Black Huckleberry: 10%
Lowbush Blueberry: 10%
Starflower: 10%
Sheep Laurel: 1%
Wild Sarsaparilla: 1%
Canada Mayflower: 1%
Wintergreen: 1%
Bracken Fern: 10%
Graminoids: 1%
Leaf Litter: 100%
Down Woody Debris: 40%
Moss: 20%
Rock Float: 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Balsam Fir: 3.00, 1.69, 2.32, 2.58, 1.93, 3.35, 1.86, 1.99, 1.71, 2.79, 1.80, 2.37, 2.36, 2.96, 3.60, 1.83, 1.78, 2.20, 2.92 2.97, 2.20, 2.70, 1.65, 1.62, 1.78, 1.57, 1.51
Red Maple: 3.20, 2.53, 2.14 (3 coppiced trunks), 1.77, 2.30 (a 1.5 foot long scar at the base photograph),
White Pine: 10.53
Spruce: 1.73

Number of Saplings:
Balsam Fir: 21
Spruce: 1

Number of Seedlings:
Balsam Fir: 21
Red Maple: 84
Red Oak: 47
Stripe Maple: 7

Tallest Tree Heights:
30-40 feet; White Pine and Red Oak

Notes:
We saw what was most likely two Hermit Thrushes (but maybe two Veerys or some combination of those species) franticly fluttering around each other. One was hopping around and picking up litter off the ground just north of the plot. We saw three of them fighting again at 09:50. I could tell that one of the birds was a Veery because of its song.
The average DBH was low except for a few White Pines.
There were some Partridgeberries growing just outside of the plot.
We heard a Black-throated Green Warbler.
Soil Collecting: Found charcoal in soil. SW corner has bedrock only a few inches down.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 11:04
Quadrat ID: T3Q4

Coordinates: 556438, 4916842
Slope: 19°
Aspect: 210° (West-ish)
Canopy Cover: 22%

Species (Percent Cover):
Red Spruce adults: 40%
Red Spruce seedlings: 10%
Red Pine adults: 30%
Red Oak adults: 30%
Red Oak seedlings: 10%
White Pine seedlings: 10%
Balsam Fir seedlings: 20%
Black Huckleberry: 40%
Lowbush Blueberry: 20%
Spreading Dogbane: 1%
Cow-wheat: 1%
Bracken Fern: 10%
Three-toothed Cinquefoil: 1%
Moss: 20%
Lichen: 20%
Graminoids: 1%
Leaf Litter: 80%
Down Woody Debris: 10%
Rock Outcrop: 20%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Spruce: 6.96, 8.03 (one side is sort of flattened from base to about breast height)
Red Pine: 9.05, 8.10 (two trunks), 9.39
Red Oak: 4.81, 5.32 (with dead second trunk), 4.08 (coppiced trunks with a second trunk out of plot)

Number of Saplings:
Red Spruce: 2
Balsam Fir: 1

Number of Seedlings:
Red Spruce: 1
Red Pine: 1
White Pine: 3
Balsam Fir: 6
Red Oak: 11

Tallest Tree Heights:
20-30 feet; Red Spruce, Red Pine, and Red Oak

Notes:
Heard a Common Raven, Red Squirrel, Red-breasted Nuthatch, and goldfinch.
The Blueberry Path crosses through the plot.
Dominant trees include Red Pine and Red Spruce. Codominant trees include Red Oak.
Soil Collecting: The soil is gravely, but easy to dig through in southwest corner. Hit rock at about three inches.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Gerorgaklis, EHM
Date: 7/5/11
Time: 17:00- 18:00
Quadrat ID: T3Q5

Coordinates: 556441, 4916637
Slope: 14°
Aspect: East
Canopy Cover: 3%

Species (Percent Cover):
Red Maple adults:
Red Maple seedlings: 10%
Red Spruce saplings:
Red Oak adults: 40%
Red Oak seedlings: 10%
White Ash adults: 20%
Balsam Fir seedlings: 10%
White Birch adults: 20%
Striped Maple seedlings: 10%
Amelanchier ssp. seedlings: 1%
Lowbush Blueberry: 1%
Canada Mayflower: 1%
Wild Raisin: 1%
Starflower: 20%
Velvet-leafed Blueberry: 1%
Moss: 10%
Leaf Litter: 100%
Standing Dead: 20%
Down Woody Debris: 20%
Rock Float: 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Balsam Fir: 3.04, 5.34, 1.76, 2.02
White Ash: 5.08
Red Maple: 2.05, 3.56, 2.15, 5.38
Red Oak: 7.45, 5.25, 3.33 (6 coppiced trunks, 3 are alive), 6.65 (2 coppiced trunks, one was cut with axe so I only measured one trunk), 4.79, 9.45, 6.76 (2 coppiced trunks), 11.60
Red Spruce: 1.75, 2.86, 1.57
White Birch: 5.55

Number of Saplings:
Striped Maple: 1
Red Spruce: 2

Number of Seedlings:
Balsam Fir: 13
Red Maple: 24
Striped Maple: 10
Red Oak: 26

Tallest Tree Heights:
60-70 feet; Red Oak, White Birch

Notes:
Canopy cover was measured under a Northern White Cedar and Red Oak canopy.
Heard an Eastern Wood-peewee and Ovenbird.
The White Pine and Red Oak are of the same height.
Average DBH is generally lower than in the plot.
Soil Collecting: Deciduous leaves in leaf litter. Easy to dig.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 6/30/11
Time: 09:40
Quadrat ID: T4Q1

Coordinates: 556543, 4917207
Slope: 10°(?)
Aspect: East
Canopy Cover: 3%

Species (Percent Cover):
Red Oak adults: 80%
Red Oak seedlings: 10%
Red Maple adults: 40%
Red Maple seedlings: 10% (some are the beginnings of a coppice)
Big-tooth Aspen adults: 10%
Balsam Fir seedlings: 10%
Striped Maple seedlings: 10%
White Pine saplings: 20%
White Pine seedlings: 30%
Lowbush Blueberry: 1%
Wintergreen: 1%
Wild Sarsaparilla: 10%
Canada Mayflower: 10%
Starflower: 10%
False Solomon Seal: 1%
Partridgeberry: 1%
Bracken Fern: 10%
Moss: 10%
Bright Orange Mushroom: 1%
Leaf Litter: 100%
Down Woody Debris: 20%
Standing Dead: 10%
Unknown Aster: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Big-tooth Aspen: 6.42 (scar on either side, survey markers)
Red Maple: 3.23, 3.12 (3 coppiced trunks with one dead), 2.28, 1.81 (missing apical shoot 2+ times)
Red Oak: 5.22 (2 coppiced trunks, the other trunk is dead and fallen), 6.75 (no scars), 10.76 (no scars), 9.17, 8.06 (2 coppiced trunk, but one was dead)

Number of Saplings:
White Pine 12

Number of Seedlings:
White Pine: 18
Balsam Fir: 2
Striped Maple: 115
Red Maple: 3
Red Oak: 1

Tallest Tree Heights:
80-90 feet; Red Oak, Big-tooth Aspen

Notes:
There are green flowers on the Starflowers.
The woods are very open, with very few intermediates, and bare forest floor, so it is easy to walk through.
Though canopy is thick it still lets a lot of light in.
Found strange insect(?) egg masses on leaves.
Soil Collecting: SE corner's organic layer is about one foot deep. Lots of deciduous leaves in duff.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 6/30/11
Time: 12:06- 13:22
Quadrat ID: T4Q2

Coordinates: 556544, 4917102
Slope: 21°
Aspect: East
Canopy Cover: 2%

Species (Percent Cover):
Red Maple seedlings: 10%
Striped Maple adults: 30%
Striped Maple seedlings: 40%
Eastern Hemlock seedlings: 1%
White Pine seedlings: 1%
Balsam Fir adults: 30%
Red Oak adults: 60%
Red Oak seedlings: 10%
Lowbush Blueberry: 1%
Starflower: 10%
Wild Sarsaparilla: 10%
Moss: 30%
Bracken Fern: 1%
Leaf Litter: 100%
Standing Dead: 20%
Floating Rock: 30%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Striped Maple: 1.67 (scar low on trunk similar to a Striped Maple sapling on the other side of the plot, possibly from a deer?)
Balsam Fir: 1.90 (no scarring), 2.14, 2.71
Red Oak: 7.34, 5.38 (2 coppiced trunks)

Number of Saplings:
Striped Maple: 2
Balsam Fir: 2

Number of Seedlings:
Striped Maple: 32
Balsam Fir: 6
Red Oak: 20
Red Maple: 14

Tallest Tree Heights:
90-100 feet; Red Oak, White Pine
Eastern Hemlocks are almost as tall.

Notes:
The canopy cover was measured under an Eastern Hemlock branch.
Most of the leaf litter was made up of Red Oak leaves.
There were three very large Eastern Hemlocks a few inches north of the plot which we cored.
There were low scars (gashes) on many trees.
This plot is rather devoid of trees but the surrounding area has many trees with large DBH.
There is a large Red Oak to the north of the plot.
The canopy is thick, but light can get through.
We saw a Red Squirrel.
There are lots of conifers with a small DBH mixed in with trees with large DBHs.
Balsam Firs were growing tightly together.
9/11/2011: From the plot we saw a Garter Snake and heard a Barred Owl again.
Soil Collecting: The soil above the bedrock was only a few inches deep.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 6/30/11
Time: 14:52
Quadrat ID: T4Q3

Coordinates: 556543, 4916999
Slope: 30°
Aspect: East
Canopy Cover: 56%

Species (Percent Cover):
Balsam Fir saplings: 40%
Balsam Fir seedlings: 30%
White Birch adult: 40%
Amelanchier spp. adults: 1%
Eastern Hemlock seedlings: 30%
Red Maple adults: 40%
Red Maple seedlings: 10%
Red Oak seedlings: 10%
Mountain Maple saplings: 10%
White Spruce adults: 40%
Black Huckleberry: 10%
Starflower: 1%
Wild Red Raspberry: 10%
Skunk Current: 10%
Velvet-leafed Blueberry: 1%
Rock Polypody: 10%
Marginal Woodfern: 10%
Moss: 60%
Leaf Litter: 90%
Orange Mushroom: 1%
Rock Outcrop: 80%
Unknown spp. #1: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
White Birch: 3.18 (large scar near head height)
White Spruce: 5.13 (no branches on the north side of the top, very spindly),
Balsam Fir: 6.65 (almost completely dead, only a few branches on west side), 7.50 (whole and even)
Striped Maple: 2.27, 2.42, 2.34, 5.37, 5.00
Red Maple: 4.42, 6.51, 3.45, 6.58 (5 coppiced trunks, one trunk is a sapling), 2.79, 6.80, 3.41, 2.48 (5 coppiced trunks but one trunk is a sapling)

Number of Saplings:
Balsam Fir: 5
Red Maple: 2
Striped Maple: 5
Eastern Hemlock: 4

Number of Seedlings:
Red Maple: 9
Striped Maple: 5
Red Oak: 7
Balsam Fir: 12
Eastern Hemlock: 9
White Spruce: 1

Tallest Tree Heights:
20-30 feet; Red Maple, White Birch, and White Spruce

Notes:
We found a porcupine den (we could tell by the pile of scat) under a granite overhang and many of the Eastern Hemlocks in the area were topped presumably by the porcupine.
Heard a Black-and-white Warbler, White-breasted Nuthatch, and Veery.
The plot was on a very steep, east facing rocky slope.
Soil Samples: There are many blocks of granite (ranging from about 3 in^3 to 12 in^3) and the bedrock is very shallow. We were really only able to collect the duff.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Coordinates: GPS was not working (roughly 556549, 4916901)
Date: 7/5/11 Slope: 23°
Time: 15:20 Aspect: East
Quadrat ID: T4Q4 Canopy Cover: 56%

Species (Percent Cover):
Balsam Fir adults: 70%
Balsam Fir saplings: 30%
Red Maple adults: 20%
Eastern Hemlock adults: 20%
Eastern Hemlock saplings:
Red Spruce adults: 30%
Striped Maple seedlings: 10%
Red Oak seedlings: 20%
Lowbush Blueberry: 1%
Wild Raisin: 1%
Starflower: 1%
Rock Polypody: 10%
Unknown fern (Most likely a young Cinnamon Fern): 10%
Moss: 30%
Leaf Litter: 100%
Down Woody Debris: 30%
Rock Float: 40%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Balsam Fir: 2.62 (top snapped at about 20 feet), 2.01, 3.04, 1.87, 1.47, 2.66, 2.08, 2.62, 3.59, 5.52, 1.49, 2.20, 1.52, 8.94, 2.50, 2.65
Red Maple: 3.64, 2.75, 5.33
Red Spruce: 11.12
Red Oak: 2.92

Number of Saplings:
Balsam Fir: 11
Eastern Hemlock: 1

Number of Seedlings:
Balsam Fir: 1
Striped Maple: 1
Red Oak: 132
Red Maple: 61

Tallest Tree Heights:
40-50 feet; White Pine, Red Oak

Notes:
Canopy cover was measured under Red Oak and Balsam Fir branches from trees outside of the plot.
Down woody debris was mostly White Birch.
No or very few Balsam Fir seedlings.
Very rocky and steep to the east. Surrounded by infrequent Yellow Birch, Red Oak, Red Maple, and large Red Spruce.
The Balsam Fir adults generally had low DBH (in inches).
We heard Common Ravens and two Barred Owls calling to each other.
Soil Collecting: Very rocky. We could only collect mostly duff.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 09:16-11:15
Quadrat ID: T5Q1

Coordinates: 556645, 4917453
Slope: 9°
Aspect: East
Canopy Cover: 3%

Species (Percent Cover):
Balsam Fir adults: 70%
Balsam Fir saplings: 10%
Balsam Fir seedlings: 10%
Red Oak adults: 20%
Red Oak seedlings: 10%
Red Maple adults: 30%
Red Maple seedlings: 10%
Red Spruce seedlings: 20%
Striped Maple seedlings: 1%
Speckled Alder saplings: 20%
Winterberry saplings: 10%
White Pine seedlings: 10%
Crataegus spp.: 1%
Lowbush Blueberry: 1%
Starflower: 10%
Bunchberry: 1%
Partridgeberry: 1%
Wild Sarsaparilla: 10%
Swamp Dewberry: 10%
Mad-dog Skullcap: 1%
Flat-topped Aster: 1%
White Meadowsweet: 1%
Rosa spp.: 1%
Bracken Fern: 10%
Graminoids: 10%
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 30%
Unknown Aster with basal leaves: 1%
Unknown *Spirea* #2: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Balsam Fir: 2.01, 4.37, 3.38, 2.71, 3.02, 2.87, 2.37, 1.96, 2.58, 3.02, 2.82, 4.89 (basal scar), 3.06, 6.19, 2.18, 1.86, 3.46, 2.05, 2.18, 12.82, 3.52, 3.88, 2.60, 2.81, 3.17, 2.76, 1.59 (small scar at 3 feet), 3.05, 2.67, 1.72, 3.62, 2.26, 2.44, 2.25
Red Maple: 4.61, 5.08 (3 coppiced trunks but only 2 trunks are alive), 3.77 (coppiced trunks, but only one living trunk)
Red Spruce: 2.18, 2.67, 1.72
White Pine: 12.82
Red Oak: 14.82

Number of Saplings:
Balsam Fir: 14
Speckled Alder: 1
Red Spruce: 2

Number of Seedlings:
Red Maple: 78
Balsam Fir: 11
Red Spruce: 6
Red Oak: 5
Striped Maple: 2
White Pine: 1

Tallest Tree Heights:
90-100 feet; Red Oak and White Pine

Notes:
The slope because steeper west of the plot.
When we cored a Red Oak about 2 tbsp of yellow, salty liquid poured out of the hole.
We heard a Broad-winged Hawk, Common Yellowthroat, and bullfrogs.
I followed a barbed wire which led from our plot up the hill that could have been an old boundary line. It begins under a Red Oak just south of plot.
There are old logs piled in the NW corner of our plot. There are Gray Birch by wetland, but not in our plots.
There was a pipe on the northern boundary line but it did not have a top to identify it.
There are Northern White Cedars to the north of the plot.
Soil Collecting: Easy to dig through.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 12:33
Quadrat ID: T5Q2

Coordinates: 556638, 4917240
Slope: 10°
Aspect: East
Canopy Cover: 6%

Species (Percent Cover):
Northern White Cedar: 30%
Red Oak adults: 20%
Red Oak seedlings: 10%
Balsam Fir adults: 30%
Balsam Fir saplings: 20%
Balsam Fir seedlings: 10%
White Ash adults: 20%
Red Maple adults: 20%
Red Maple seedlings: 10%
Red Spruce adults: 10%
White Pine seedlings: 10%
Speckled Alder saplings: 10%
Speckled Alder seedlings: 1%
Winterberry saplings: 10%
Wild Raisin seedlings: 10%
Starflower: 10%
Bunchberry: 1%
False Solomon Seal: 1%
Wild Sarsaparilla: 1%
Bracken Fern: 10%
Moss: 40%
Leaf Litter: 90%
Down Woody Debris: 30%
Standing Dead: 20%
Rock Float: 20%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Northern White Cedar: 14.08, 5.34, 3.81 (2 trunks), 4.45 (large basal scar)
Balsam Fir: 6.20, 1.52, 2.84, 3.31, 3.76, 2.01, 1.80, 2.13, 2.57, 1.87, 2.63, 5.54
White Ash: 5.85, 4.14
Speckled Alder: 1.70
Red Spruce: 1.59
Red Oak: 9.38,
Red Maple: 8.56, 6.26 (2 coppiced trunks with basal scars)
Eastern Hemlock: 15.31

Number of Saplings:
Balsam Fir: 12
Red Spruce: 1
Speckled Alder: 3

Number of Seedlings:
Eastern Hemlock: 1
White Pine: 2
Red Maple: 32
Balsam Fir: 5
Red Oak: 47

Tallest Tree Heights:
90-100 feet; Eastern Hemlock and Red Oak

Notes:
This plot is surrounded by some very large White Pine.
It is very grassy along the wetland.
Canopy (which is made up mostly of conifers) is pretty even but for some younger spruce.
Soil Collecting: Duff is at least a foot thick.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 14:50
Quadrat ID: T5Q3

Coordinates: 556564, 4917059
Slope: 11°
Aspect: East
Canopy Cover: 3%

Species (Percent Cover):
Northern White Cedar adults: 40%
Northern White Cedar seedlings: 10%
Red(?) Spruce adults: 30%
Red Spruce seedlings: 1% (only 1 individual)
Eastern Hemlock seedlings: 10%
Red Oak seedlings: 10%
Red Maple adults: 30%
Red Maple seedlings: 1%
White Pine seedlings: 1%
Amelanchier spp. seedlings: 1%
Black Huckleberry: 1%
Lowbush Blueberries: 1%
Canada Mayflower: 10%
Goldthread: 10%
Bunchberry: 10%
Starflower: 10%
Wild Sarsaparilla: 1%
Wild Raisin: 1%
Sheep Laurel: 1%
Jack in the Pulpit: 1%
Large-leaved Aster- 10%
Royal Fern: 10%
Graminiods: 20%
Sensitive Fern: 10%
Cinnamon Fern: 20%
Moss: 30%
Leaf Litter: 80%
Down Woody Debris: 30%
Unknown Aster with fuzzy leaves: 10%
Unknown Fern #1: 1%
Unknown Fern (Long Beech Fern?) #2: 10%
Unknown Fern #3: 10%

Number of Saplings:
None

Number of Seedlings:
Red Maple: 45
Eastern Hemlock: 41
Balsam Fir: 67
Red Spruce: 1
Red Oak: 13
Northern White Cedar: 10
White Pine: 19

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Balsam Fir: 5.12
Northern White Cedar: 8.85, 9.18 (small basal scar), 8.72, 8.21, 4.16,
Red Spruce: 10.96
Red Maple: 8.24

Tallest Tree Heights:
70-80 feet; Red Maple and Eastern Hemlock

Notes:
Canopy cover was measured under the boughs of a White Pine which was out of the plot.
Heard a Red-breasted Nuthatch and goldfinch.
No saplings in the plot.
We saw a Red Squirrel.
About 30 meters north of the plot is a beaver dam which looks at least a year old. There were no new beaver chews. We also observed what we think were Muskrat tracks in the mud. There is also a possible deer yard under some Eastern Hemlocks by the beaver dam.
Soil Collecting: The soil is filled with roots and is wet; difficult to dig through.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/1/11
Time: 12:30
Quadrat ID: T6Q1

Coordinates: 0556733, 4916983
Slope: 0°
Aspect: N/A
Canopy Cover: 24%

Species (Percent Cover):
Gray Birch adults: 40%
Gray Birch seedlings: 10%
White Birch adults: 20%
Red Maple adults: 60%
Red Maple seedlings: 10%
Red Oak seedlings: 10%
Balsam Fir: 20%
Balsam Fir seedlings: 10%
White Ash adults: 30%
White Ash seedlings: 10%
Speckled Alder saplings: 50%
Winterberry sapling: 40%
Black Huckleberry: 1%
Lowbush Blueberry: 1%
Canada Mayflower: 10%
Starflower: 10%
False Solomon Seal: 10%
Wild Raisin: 1%
Bunchberry: 1%
Goldenseal: 10%
Japanese Barberry: 10%
Amelanchier spp.: 1%
White Meadowsweet: 10%
Swamp dewberry: 10%
Jack-in-the-pulpit: 1%
Swamp Candles: 1%
Rosa spp.: 1%
Viola spp.: 1%
Gallum spp.: 1%
Ranunculus spp.: 1%
Graminoids: 30%
Royal Fern: 20%
Sensitive Fern: 10%
Cinnamon Fern: 40%
Christmas Fern: 10%
Moss: 50%
Leaf Litter: 70%
Standing Dead: 20%
Down Woody Debris: 40%
Mud: 30%
Standing Water: 10%
Unknown Fern #1: Not recorded
Unknown Fern #2: Not recorded
Unknown three-leafed plant (most likely a *Rubus* spp.): 10%
Unknown Aster with fuzzy basal leaves: 1%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Gray Birch: 3.25, 2.67, 2.40, 1.79, 3.88, (5 coppiced trunks, but one is a sapling), 2.68, 3.05, 2.16, 1.76 (2 coppiced trunks around fallen trunk), 2.47, 3.34 (2 coppiced trunks), 1.60
Red Maple: 3.44, 5.84, 8.21, 4.59 (4 coppiced trunks), 2.71, 3.11, 9.76, (3 coppiced trunks), 2.15
White Ash: 2.42
White Birch: 5.17

Number of Saplings:
Gray Birch: 2
White Birch: 1
Balsam Fir: 11

Number of Seedlings:
White Ash: 4
Balsam Fir: 5
Red Oak: 2
Gray Birch: 8

Tallest Tree Heights:
40-50 feet; Red Maple.

Notes:
Heard a Veery.
Soil Collecting: Wet soil.

The Protectorate Vegetation Quadrat Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/1/11
Time: 15:30- 16:45
Quadrat ID: T6Q2

Coordinates: 556749, 4916778
Slope: 0°
Aspect: N/A
Canopy Cover: 6%

Species (Percent Cover):
Northern White Cedar adults: 30%
Northern White Cedar seedlings: 1%
Eastern Hemlock adults: 10%
Eastern Hemlock seedlings: 10%
Red Spruce adults: 30%
Red Maple adults: 40%
Red Oak seedlings: 1%
White(?) Spruce seedlings: 10%
White Pine seedlings: 1%
Striped Maple seedlings: 1%
Starflower: 10%
Bunchberry: 1%
Wild Raisin: 10%
Canada Mayflower: 1%
Wild Sarsaparilla: 10%
Tall Meadow-rue: 1%
Swamp Dewberry: 10%
Rubus spp.: 10%
Cinnamon Fern: 20%
Leaf Litter: 90%
Down Woody Debris: 30%
Moss: 70%
Mud: 30%
Standing Water: 30%
Unknown Fern: 40%
Unknown *Spirea* spp. from T6Q1: 1%
Unknown kinky graminoid: 10%

DBH (in inches) of Trees Above 1.5 Inches (3.81 cm):
Red Spruce: 13.15, 5.70,
Northern White Cedar: 16.05, 4.71, 8.04
Eastern Hemlock: 17.71, 18.09, 18.76, 18.47, 14.45 (2 trunks), 8.03
Red Maple: 11.05, 10.24
Balsam Fir: 2.29, 1.72

Number of Saplings:
Balsam Fir: 22
Red Oak: 1
Striped Maple: 1
Red Spruce: 2

Number of Seedlings:
None

Tallest Tree Heights:
80-90 feet; Eastern Hemlock

Notes:
We found two Wood Frogs. One was in a pool in the NE of the NW corner. We also found one Green Frog.
We found a Wild Raisin growing under the ferns.
Steep hill to the west.
Plot is surrounded by White Ash and Red Maple.
There are a Red Spruce, Northern White Cedar, and Eastern Hemlock all growing against each other.
There is an adult Eastern Hemlock with lots of little holes in it that look like sapsucker holes.
Soil Collecting: The soil is moist and has lots of deciduous duff.

The Protectorate Observation Point Data Sheet

Observer: Erica Georgaklis, EHM
Date: 7/12/11
Time: 15:22
Plot ID: T1Q1_1
Coordinates: 556231, 4917393

Dominant Vegetation:
White Pine: 40%
Red Maple: 10%
Red Oak: 10%

Codominant Vegetation:
Gray Birch: 30%
Balsam Fir: 20%
White Birch: 10%

Intermediate:
Balsam Fir: 20%

Forest Floor:
Black Huckleberry: 80%
Lowbush Blueberries: 30%
Balsam Fir seedlings: 20%
Leaf Litter: 100%

Notes:
Leaf litter consists mostly of needles.
There are lots of Black Huckleberry plants here, though no fruits.
North: Red Oak woods with ferns on forest floor.
East: White Pine and Red Maple woods, with patches of rock outcrops.
South: Very little canopy cover. Gray Birch and ~1 meter tall Black Huckleberry.
West: Spruce and birch woods, with patches of rock outcrops.

The Protectorate Observation Point Data Sheet

Observer: Erica Georgaklis, EHM
Date: 7/12/11
Time: 15:28
Plot ID: T1Q1_2
Coordinates: 556238, 4917342

Dominant Vegetation:
Big-tooth Aspen: 20%
Balsam Fir: 10%
Red Oak: 10%
White Pine: 10%
Red Maple: 30%

Codominant Vegetation:
White Birch: 10%
Gray Birch: 10%

Intermediate:
None

Forest Floor:
Balsam Fir seedlings: 20%
Red Oak seedlings: 1%
Lowbush Blueberry: 10%
Black Huckleberry: 20%
Wild Raisin: 1%
Starflower: 10%
Bracken Fern: 20%
Moss: 30%
Leaf Litter: 100%
Down Woody Debris: 30%

Notes:
North: A mixed conifer/deciduous woods with a Black Huckleberry patch.
East: Conifer snag and birch woods.
South: Red Oak and White Pine woods, with lots of conifers.
West: Birch and spruce woods with Black Huckleberry.

The Protectorate Observation Point Data Sheet

Observer: Erica Georgaklis, EHM
Date: 7/12/11
Time: 15:33
Plot ID: T1Q1_3
Coordinates: 556240, 4917283

Dominant Vegetation:
Big-tooth Aspen: 10%
White Birch: 10%
Red Spruce: 40%

Codominant Vegetation:
White Birch: 20%
Gray Birch: 10%

Intermediate:
Striped Maple: 10%

Forest Floor:
Spruce seedlings: 20%
Lowbush Blueberry: 30%
Sheep Laurel: 10%
Bracken Fern: 20%
Lichen: 40%
Rock: 50%

Notes:
We did not observe any Red Oak adults.
North: Spruce and birch woods.
East: Dense spruce stand with a low average DBH (~5 inches or so). With rock float.
South: Spruce and birch woods. Slightly muddy.
West: Rocky outcrops sloping north. Birch and spruce woods with a Black Huckleberry patch.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/12/11
Time: 16:12
Plot ID: T1Q2_1
Coordinates: 556247, 4917186

Dominant Vegetation:
Red Maple: 10%
White Pine: 10%
Red Spruce: 30%
Red Oak: 20%
Gray Birch: 30%

Codominant Vegetation:
White Birch: Not recorded
Gray Birch: 10%
Balsam Fir: 10%

Intermediate:
White Birch: 10%
Balsam Fir saplings: 10%

Forest Floor:
Balsam Fir seedlings: 20%
Gray Birch seedlings: 10%
Black Huckleberry: 30%
Lowbush Blueberry: 40%
Sheep Laurel: 10%
Starflower: 10%
Moss: 30%
Mud: 10%

Notes:
The path from this point south is muddy for a few meters. There were deer tracks in the mud.
The surrounding areas mostly had open canopies.
North: Tall Black Huckleberry patches surrounded by spruce and birch woods.
East: Black Huckleberry patches surrounded by spruce, pine, Red Maple, Red Oak, and birch.
South: Black Huckleberry patch in the distance surrounded by White Pines and birches.
West: Rocky outcrops surrounded by spruce and birch woods.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/12/11
Time: 16:12
Plot ID: T1Q2_2
Coordinates: GPS was not working (roughly 556251, 4917151)

Dominant Vegetation:
Red Maple: 20%
White Pine: 20%
Red Spruce: 40%

Codominant Vegetation:
White Birch: 20%
Gray Birch: 20%

Intermediate:
White Birch: 10%

Forest Floor:
Balsam Fir seedlings: 20%
Black Huckleberry: 40%
Lowbush Blueberry: 20%
Sheep Laurel: 20%
Wild Raisin: 10%
Lichen: 20%
Leaf Litter: 80%
Down Woody Debris: 10%
Rock Outcrop: 40%

Notes:
North: Red Maple and spruce woods, with rock outcrops.
East: Huckleberry patches. Wet area beyond the rocky outcrops that is about 10 meters from the observation point. Gray Birches are growing in the wetland.
South: Conifer forest with a thick canopy cover.
West: Huckleberry patches surrounded by spruce and birch woods.

The Protectorate Vegetation Plot IDs Data Sheet

Observer: EHM
Date: 7/12/11
Time: 16:19
Plot ID: T1Q2_3
Coordinates: 556249, 4917082

Dominant Vegetation:
Red Spruce: 40%
Gray Birch: 20%
White Pine: 10%
Red Oak: 10%

Codominant Vegetation:
Gray Birch: 10%
White Birch: 10%

Intermediate:
None

Forest Floor:
Red Spruce seedlings: 20%
Black Huckleberry: 50%
Lowbush Blueberry: 10%
Bracken Fern:
Leaf Litter: 100%
Lichen: 10%
Moss: 10%
Down Woody Debris: 30%
Standing Dead: 10%

Notes:
Leaf littler consists mostly of needles.
North: Birch and spruce woods with Black Huckleberry on forest floor.
East: Conifer snags with a very thick canopy.
South: Conifer and Red Oak woods with patches of Black Huckleberry and open canopy.
West: Coniferous snags.

The Protectorate Observation Point Data Sheet

Observer: Corinne Boet-Whitaker, EHM
Date: 7/13/11
Time: 13:30
Plot ID: T1Q3_1
Coordinates: 556251, 4916986

Dominant Vegetation:
Red Oak: 10%
Big-tooth Aspen: 30%
White Birch: 20%
White Pine: 10%

Codominant Vegetation:
Red Oak: 10%
Witch Hazel: 20%
White Birch: 10%
Red Maple: 10%
Balsam Fir: 20%
Red Spruce: 20%

Intermediate:
Striped Maple: 10%
Balsam Fir saplings: 10%
Red Spruce: 10%

Forest Floor:
Balsam Fir seedlings: 30%
Red Oak seedlings: 10%
Red Maple seedlings: 10%
Striped Maple seedlings: Not recorded
Black Huckleberry: 30%
Lowbush Blueberry: 10%
Starflower: 10%
Moss: 30%
Leaf Litter: 90%
Down Woody Debris: 40%
Rock Outcrop: 40%

Notes:
We found a foot long garter snake by the observation point.
North: Mixed conifer and deciduous forest with rock floats.
East: Mixed conifer and deciduous forest with rock floats.
South: Mixed conifer and deciduous forest with rock floats.
West: Mixed conifer and deciduous forest but with fewer rock floats than in the other directions.

The Protectorate Observation Point Data Sheet

Observer: Corinne Boet-Whitaker, EHM
Date: 7/13/11
Time: 13:16
Plot ID: T1Q3_2
Coordinates: 556268, 4916941

Dominant Vegetation:
Red Spruce: 20%
Yellow Birch: 30%
Northern White Cedar: 10%

Codominant Vegetation:
Northern White Cedar: 10%
Red Spruce: 10%

Intermediate:
Winterberry: 30%

Forest Floor:
Red Maple seedlings: 10%
Starflower: 10%
Bunch Berry: 10%
Cinnamon Fern: 80%
Graminoids: 30%
Moss: 70%
Leaf Litter: 70%
Standing Dead: 20%

Notes:
The dominant species are mostly the same height.
This observation point is along the northern edge of Lost Swamp. The boundary is easier to follow from here to the north.
North: Spruce and birch woods with many ferns covering the forest floor.
East: Mixed conifer and deciduous woods (mostly conifer) which slopes up to a dry mixed woods. The forest floor is covered in Cinnamon Fern.
South: Lost Swamp with moss, Northern White Cedars and Winterberry.
West: Lost Swamp with Winterberry.
8/30/11: Lots of songbirds in this area.

The Protectorate Observation Point Data Sheet

Observer: Corinne Boet-Whitaker, EHM
Date: 7/13/11
Time: 12:40
Plot ID: T1Q3_3
Coordinates: 556263, 4916886

Dominant Vegetation:
Red Maple: 80%
Northern White Cedar: 10%

Codominant Vegetation:
White Birch: 10%
Witch Hazel: 10%
Red Spruce: 10%
Gray Birch: 10%

Intermediate:
Winterberry: 40%
Speckled(?) Alder: 10%

Forest Floor:
Red Maple seedlings: 10%
Lowbush Blueberry: 10%
Starflower: 10%
Steeplebush: 10%
Dwarf Raspberry: 1%
Cinnamon Fern: 60%
Sensitive Fern: 10%
Horsetail spp: 10%
White Meadowsweet: 10%
Graminoids: 30%
Moss: 90%
Leaf Litter: 80%
Dead Woody Debris: 20%
Standing Dead: 20%
Mud: 30%

Notes:
Most of the dominant species are Red Maples, most of which have multiple trunks. There is only one Northern White Cedar.
North: Ferns and Red Maple fading into mixed conifer and deciduous forest.
East: Wetland. Mostly Red Maple towering over Winterberry.
South: Thick Winterberry with taller Red Maple.
West: Wet forest floor. Mixed conifer/deciduous woods.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/10/11
Time: Not recorded
Plot ID: T1Q4_1
Coordinates: 556263, 4916788

Dominant Vegetation:
Red Oak: 30%
Red Spruce: 20%
White Birch: 10%

Codominant Vegetation:
Red Maple: 20%
Balsam Fir: 20%
Red Spruce: 10%
White Birch: 10%

Intermediate:
Balsam Fir saplings: 10%

Forest Floor:
Balsam Fir seedlings: 30%
Black Huckleberry: 40%
Lowbush Blueberry: 20%
Bunchberry: 10%
Starflower: 10%
Moss: 30%
Leaf Litter: 90%
Down Woody Debris: 40%

Notes:
There is less leaf litter on the path than in the surrounding woods.
North: Mostly deciduous dominated forest.
East: Mixed conifer/ deciduous forest.
South: Mixed conifer/ deciduous forest with Black Huckleberry patches.
West: Mostly deciduous dominated forest.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/10/11
Time: 16:15
Plot ID: T1Q4_2
Coordinates: 556266, 04916741

Dominant Vegetation:
Red Oak: 60%

Codominant Vegetation:
Gray Birch: 10%
White Spruce: 20%
White Birch: 20%
Red Spruce: 10%
Red Maple: 20%

Intermediate:
White Pine saplings: 10%
Balsam Fir saplings: Not recorded
Gray Birch: 1%

Forest Floor:
Balsam Fir seedlings: 10%
Wintergreen: 10%
Black Huckleberry: 80%
Lowbush Blueberry: 10%
Bunchberry: 10%
Starflower: 10%
Canada Mayflower: 10%
Bracken Fern: 30%
Leaf Litter: 100%

Notes:
North: Red Oak dominated woods. Black Huckleberry patches on the forest floor, but otherwise a bare floor.
East: Mixed conifer/ deciduous woods.
South: Mixed conifer. Deciduous woods, but mostly Red Oak. Conifer seedlings are on the forest floor.
West: Mixed conifer/ deciduous woods.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/10/11
Time: 16:24
Plot ID: T1Q4_3
Coordinates: 556266, 04916691

Dominant Vegetation:
Red Oak: 20%
Red Maple: 40%

Codominant Vegetation:
White Spruce: 20%
Red Maple: 20%

Intermediate:
White Pine saplings: 20%
Balsam Fir saplings: 10%

Forest Floor:
Red Oak seedlings: 10%
Wintergreen: 20%
Black Huckleberry: 70%
Lowbush Blueberry: 20%
Starflower: 10%
Bracken Fern: 30%
Graminoids: 10%
Leaf Litter: 100%
Down Woody Debris: 30%

Notes:
The dominant trees are even aged.
North: Mixed conifer/deciduous woods though most of the trees are Red Oak.
East: The Blueberry Path by the old house site. The path is surrounded by Red Oak dominated woods.
South: Mixed conifer/deciduous woods.
West: Mixed conifer/deciduous woods with a very open canopy. The trees are spaced apart.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/14/11
Time: 12:39
Plot ID: T1Q5_1
Coordinates: 556274, 4916589

Dominant Vegetation:
Red Oak: 40%

Codominant Vegetation:
White Spruce: 20%
White Pine: 10%
Red Maple: 10%

Intermediate:
White Pine: 10%
White Spruce: 10%

Forest Floor:
Spruce seedlings: 10%
Amelanchier spp. seedlings: 1%
Black Huckleberry: 40%
Lowbush Blueberry: 20%
Wintergreen: 20%
Starflower: 1%
Canada Mayflower: 1%
Sweetfern: 10%
Bracken Fern:
Graminoids: 20%
Leaf Litter: 60%
Down Woody Debris: 30%
Blueberry Path: 30%

Notes:
This observation point is at the corner marker along the Blueberry Path, about 10 meters north from the parking place.
North: Blueberry Path. Mixed conifer/deciduous woods.
East: Mixed conifer/deciduous woods. Mostly White Pine and Red Oak with Black Huckleberry.
South: Chapman's driveway and mixed conifer/deciduous woods.
West: Mixed conifer/deciduous woods.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/14/11
Time: 12:32
Plot ID: T1Q5_2
Coordinates: 556252, 4916542

Dominant Vegetation:
Red Maple: 20%
Red Oak: 40%

Codominant Vegetation:
White Spruce: 20%
Red Maple: Not recorded
Red Oak: 10%
White Pine: 10%

Intermediate:
Balsam Fir: 20%
White Pine saplings: 20%

Forest Floor:
Red Oak seedlings: 1%
Amelanchier spp. seedlings: 10%
Wintergreen: 40%
Lowbush Blueberry: 1%
Canada Mayflower: 1%
Starflower: 1%
Leaf Litter: 100%
Unknown spp.: Not recorded

Notes:
North: Mixed conifer/deciduous woods.
East: Chapman's driveway just before the circle. Mixed conifer/deciduous woods.
South: Mixed conifer/deciduous woods, with a thick understory. The tallest trees are Red Oak.
West: Mixed conifer/deciduous woods.

The Protectorate Observation Point Data Sheet

Observer: EHM
Date: 7/14/11
Time: 12:25
Plot ID: T1Q5_3
Coordinates: 556239, 4916491

Dominant Vegetation:
Red Oak: 40%

Codominant Vegetation:
Amelanchier spp.:10%
Red Spruce saplings: 20%
White Pine: 20%

Intermediate:
White Pine: 10%
White Spruce: 10%
Balsam Fir: 10%

Forest Floor:
Red Oak seedlings: 10%
Amelanchier spp. seedlings: 10%
Hawthorn seedling: 1% (1 individual)
White Pine seedlings: 1%
Wintergreen: 10%
Lowbush Blueberry: 30%
Canada Mayflower: 10%
Graminoid: 20%
Leaf Litter: 10%
Down Woody Debris: 30%

Notes:
There are some logs near the observation point.
North: Dense conifer saplings under a canopy of mixed conifer/deciduous woods. Power lines are running north-south to the west.
East: The Chapman's driveway is just beyond a wall of mixed trees.
South: Mixed conifer/deciduous woods, very tall White Pines along the power lines.
West: Mixed conifer/deciduous woods.

The Protectorate Observation Point Data Sheet

Observer: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 10:34
Plot ID: T2Q1_1
Coordinates: 556345, 4917386

Dominant Vegetation:
Red Oak: 40%
White Pine: 20%
Red Maple: 20%

Codominant Vegetation:
White Pine: 10%
Red Spruce: 10%
White Spruce: 20%
Balsam Fir: 30%

Intermediate:
Balsam Fir: 10%
White Spruce: 20%

Forest Floor:
Balsam Fir seedlings: 40%
Red Oak seedlings:
Lowbush Blueberry: 20%
Canada Mayflower: <10%
Starflower: <10%
Wild Sarsaparilla: 1%
Ferns: 10%
Moss: 20%
Leaf Litter: 100%

Notes:
There are more Red Oak than conifers around this observation point than to the south.
Leaf litter is made up of Red Oak leaves and needles.
There is a wet area to the west, and a game trail running north-south.
North: Red Oak dominated woods.
East: Deciduous woods.
South: Red Oak dominated woods.
West: Deciduous woods and wetland.

The Protectorate Observation Point Data Sheet

Observer: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 10:19
Plot ID: T2Q1_2
Coordinates: 556341, 4917339

Dominant Vegetation:
Gray Birch: 20%
White Birch: 30%
White Pine: 40%
Red Maple: 40%

Codominant Vegetation:
Winterberry: 30%
Balsam Fir: 20%
Red Spruce: 40%

Intermediate:
Winterberry: 10%

Forest Floor:
Balsam Fir seedlings: 10%
Winterberry seedlings: 10%
Lowbush Blueberry: <10%
Canada Mayflower:
Starflower: 10%
Wild Raisin: 1%
Larger Blue Flag: 10%
Ferns: 10%
Graminoids: 70%
Moss: 70%
Standing Water: 40%
Unknown Aster: 1%

Notes:
The observation point is along side of a wet area about 100 feet long and 15 feet wide.
We heard a Broad-winged Hawk from this point.
North: Wet area.
East: Coniferous woods.
South: Coniferous woods.
West: Coniferous woods, mostly White Pine.

The Protectorate Observation Point Data Sheet

Observer: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: Not recorded
Plot ID: T2Q1_3
Coordinates: 556337, 4917300

Dominant Vegetation:
White Pine: 20%
Red Oak: 30%
Red Maple: 20%
Red Spruce: 20%

Codominant Vegetation:
Red Spruce: 20%

Intermediate:
Red Spruce saplings: 30%
Balsam Fir saplings: 30%

Forest Floor:
Fir saplings: 1%
Wild Raisin: 1%
Lowbush Blueberry: 10%
Canada Mayflower: 1%
Starflower: 10%
Ferns: 10% (Bracken Fern?)
Leaf Litter: 100%
Rock Float: 10%

Notes:
The trees are relatively even aged and the trees are spaced out so it is easy to walk through.
There are tips of the Red Spruce twigs on the ground suggesting a Red Squirrel.
North: Coniferous trees with some deciduous as well.
East: Coniferous trees with some deciduous as well.
South: Coniferous trees with some deciduous as well.
West: Coniferous trees with some deciduous as well.

The Protectorate Observation Point Data Sheet

Observer: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 08:57
Plot ID: T2Q2_1
Coordinates: 556341, 4917200

Dominant Vegetation:
Red Maple: 20%
Red Oak: 30%
White Pine: 10%

Codominant Vegetation:
Balsam Fir saplings: 10%
Striped Maple: 10%
Red Maple: 30%
Red Spruce: 40%
Amelanchier spp.: 10%

Intermediate:
Balsam Fir saplings: 20%

Forest Floor:
Red Oak seedlings: 10%
Balsam Fir seedlings: 10%
Black Huckleberry: 40%
Lowbush Blueberry: 20%
Wild Sarsaparilla: 10%
Ferns: 10%
Moss: 40%
Leaf Litter: 100%
Rock Floats: 30%
Rock Outcrops: 40%

Notes:
North: White Pine woods. Mossy rock outcrops.
East: Mixed conifer/deciduous woods, dominant Red Oak and Red Maple. Trees are spaced apart by at least a meter.
South: Flat. Mixed conifer/deciduous woods with dominant Red Oak and Red Maple.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 08:41
Plot ID: T2Q2_2
Coordinates: 556342, 4917140

Dominant Vegetation:
Red Oak: 40%
White Pine: 20%

Codominant Vegetation:
Red Spruce: 10%
Gray Birch: 10%
Balsam Fir: 30%

Intermediate:
Red Spruce: 20%
Balsam Fir saplings: 20%

Forest Floor:
Red Oak seedlings: 10%
Balsam Fir seedlings: %
Black Huckleberry: 60%
Lowbush Blueberry: 30%
Starflower: 10%
Bracken Ferns: 30%
Moss: 10%
Lichen: 10%
Leaf Litter: 90%

Notes:
There are many snags.
Most of the leaf litter is needles.
There is *Usnea* growing on the spruce.
North: A decline in elevation with some snags and huckleberries.
South: Granite outcrops leading to the northwest, with lichens and huckleberries growing on it.
West: Red Oak and White Pine dominated woods with some granite outcrops.
East: A decline in elevation. Mixed conifer/deciduous woods with a single Striped Maple.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, Marina Garland, EHM
Date: 6/28/11
Time: 08:21
Plot ID: T2Q2_3
Coordinates: 556337, 4917091

Dominant Vegetation:
Red Pine: 10%
Red Oak: 40%
White Pine: 20%

Codominant Vegetation:
Red Spruce: 20%
Eastern Hemlock (1 individual): 10%

Intermediate:
None

Forest Floor:
Black Huckleberry: 40%
Lowbush Blueberry: 40%
Ferns (Bracken?): 20%
Lichen: 30%
Leaf Litter: 90%

Notes:
The forest was mostly an even age, spaced out stand (except for the Speckled Alder).
North: Granite outcrops.
East: Woods are similar to observation point with some patches of open canopy.
South: Not recorded.
West: Black Huckleberry patches.
There was one Speckled Alder.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 13:36
Plot ID: T2Q3_1
Coordinates: 556341, 4916990

Dominant Vegetation:
Red Oak: 50%
Red Pine: 50%
Gray Birch: 20%

Codominant Vegetation:
White Pine: 20%

Intermediate:
White Pine: 20%
Balsam Fir: 10%

Forest Floor:
Black Huckleberry: 30%
Lowbush Blueberry: 90%
Sweetfern: 20%
Three-leafed Cinquefoil: 10%
Juniper: 10%
Graminoids: 20%
Moss and Lichen: 50%
Rock Outcrops: 80%

Notes:
There are only a few ripe blueberries and some are turning slightly pink though they are still mostly green.
Very exposed rocky area.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 13: 27
Plot ID: T2Q3_2
Coordinates: 556337, 4916939

Dominant Vegetation:
Red Pine: 30%
Red Maple: 40%

Codominant Vegetation:
Red Oak: 10%

Intermediate:
Red Spruce: 20%
Balsam Fir: 20%

Forest Floor:
Balsam Fir seedlings: 10%
Black Huckleberry: 60%
Lowbush Blueberry: 20%
Ferns: 30%
Moss: 10%
Leaf Litter: 100%

Notes:
Most of the leaf litter is pine needles
North: There are rock outcrops to walk up.
East: Rock outcrops with Black Huckleberry patches.
South: Mixed conifer/deciduous woods with thickly vegetated forest floor.
West: Red Pine dominated woods with a dry forest floor.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 13:13
Plot ID: T2Q3_3
Coordinates: 556333, 4916901

Dominant Vegetation:
Red Oak: 80%
Red Maple: 40%
Red Pine: 30%

Codominant Vegetation:
Red Pine: 30%
Balsam Fir: 40%
Amelanchier spp.: 10%
Red Maple: 30%
White Birch: 20%

Intermediate:
Balsam Fir: 30%

Forest Floor:
Red Spruce seedlings: 10%
Black Huckleberry: 50%
Lowbush Blueberry: 10%
Wild Sarsparilla: 1%
Starflower: 10%
Sheep Laurel: 1%
Ferns (Bracken?): 50%
Leaf Litter: 100%

Notes:
This observation point is at the edge of a wet area.
The trees are spaced out and easy to walk through.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 11:25
Plot ID: T2Q4_1
Coordinates: 556348, 4916785

Dominant Vegetation:
White Pine: 20%
Red Maple: 90%

Codominant Vegetation:
Gray Birch: 10%
Red Maple: 10%
Red Oak: 20%
White Spruce: 30%
Amelancheir spp.: 10%
White Pine 20%

Intermediate:
Winterberry: 40%

Forest Floor:
Balsam Fir seedlings: 10%
Red Oak seedlings: 1%
Black Huckleberry: 10%
Goldthread: 1%
Starflower: not recorded
Canada Mayflower: not recorded
Ferns: 60%
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 10%

Notes:
The forest floor is mostly free of live vegetation and covered in leaf litter.
Most of the Red Maples are dominant trees.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 11:11
Plot ID: T2Q4_2
Coordinates: 556342, 4916746

Dominant Vegetation:
White Pine: 40%
Red Oak: 70%
Red Maple: 40%
White Spruce: 30%

Codominant Vegetation:
Balsam Fir: 20%
Gray Birch: 20%

Intermediate:
Balsam Fir: 10%
White Pine: 10%

Forest Floor:
Ash seedlings: 30%
Black Huckleberry
Lowbush Blueberry: 40%
Wild Red Raspberry: not recorded
Canada Mayflower: not recorded
Asters: 30%
Clovers: 1%
Ferns: 20%
Graminoids: 40%
Moss: 1%

Notes:
This observation point is on the western side of the beginning of the Blueberry Path.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Hank Ainley, EHM
Date: 6/27/11
Time: 10:54
Plot ID: T2Q4_3
Coordinates: 5563339, 4916696

Dominant Vegetation:
White Pine: 70%
Red Oak: 40%

Codominant Vegetation:
Red Spruce: 30%
Red Maple: 20%
Purple Chokeberry: 10%

Intermediate:
Balsam Fir saplings: 20%
White Pine saplings: 20%
Gray Birch: 10%
White Birch: 10%

Forest Floor:
White Pine seedlings: 10%
Wintergreen: 20%
Black Huckleberry: 40%
Lowbush Blueberry: 70%
Sheep Laurel: 30%
Bracken(?) Fern: 50%
Moss: 1%
Rock Float: 1%

Notes:
The observation is in an open spot in the woods along a deer trail.
On the way to T2Q4_2 I saw burrs in the Sweetfern along the Blueberry Path.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/14/11
Time: 11:54
Plot ID: T2Q5_1
Coordinates: 556348, 4916590

Dominant Vegetation:
Red Oak: 50%
White Pine: 20%
Gray Birch: 10%

Codominant Vegetation:
Gray Birch: 10%
White Pine: 30%
Red Maple: 20%
Red Spruce: 10%

Intermediate:
White Pine: 10%

Forest Floor:
Red Oak seedlings: 10%
Lowbush Blueberry: 30%
Wintergreen: 20%
Sheep Laurel: 30%
Bracken Fern: 50%
Vaccinium spp.: 20%

Notes:
This observation point is located in the Chapman's backyard, so I did not put in a flag.
The coordinates are not exactly where they should be because I did not want to get closer to the Chapman's house.
The observation point is in a clearing surrounded by woods. The White Pine are growing in the clearing where as the oak are in the woods surrounding the clearing.
There looks like there was an old garden in the clearing and that there are some circles of burned earth.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/14/11
Time: 12:02
Plot ID: T2Q5_2
Coordinates: 556345, 4916526

Dominant Vegetation:
Red Oak: 30%
White Pine: 20%
Amelanchier spp.: 10%
Red Spruce: 10%
Gray Birch: 10%
Red Maple: Not recorded

Codominant Vegetation:
White Pine: 30%
Red Spruce: 20%

Intermediate:
Red Spruce: 10%

Forest Floor:
Sheep Laurel: 80%
Bracken Fern: 40
Leaf Litter: 80%
Down Woody Debris: 70%

Notes:
The observation point is in a clearing surrounded by Red Oak, Spruce, and White Pine.
There are lots of cut trees.
The trees are very spaced out so they are all dominant.
You can see the abutter's red house from here. That was Bill Booth's old house and is currently owned by the Henrys.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/14/11
Time: 12:09
Plot ID: T2Q5_3
Coordinates: 556340, 4916489

Dominant Vegetation:
Red Oak: 10%
White Pine: 10%
Gray Birch: 10%

Codominant Vegetation:
Red Maple: 20%
Red Spruce: 20%
Red Oak: 10%
Amelanchier spp.: 10%
White Pine: 20%
Gray Birch: 20%
Black Locust(?): 20%

Intermediate:
None

Forest Floor:
Red Oak seedlings: 10%
White Spruce seedlings: 10%
Lowbush Blueberry: 80%
Sheep Laurel: 10%
Steeplebush: 1%
Wild Raisin: 10%
Queen Anne's Lace: 10%
Sweetfern: 20%
Bracken Fern: 20%
Rosa spp.: 1%

Notes:
The observation point is at the edge of a blueberry patch. The berries are ripe!
The dominant Gray Birch is located in the field.
You can see the abutter's house from this observation point.
The Black Locust(?) is all in a single stand, it is not dispersed.
Some large White Pines (DBH ~20 inches) are in the woods.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: Not recorded
Plot ID: T3Q1_1
Coordinates: 556440, 4917393

Dominant Vegetation:
Red Oak: 50%
Red Maple: 20%
White Pine: 30%

Codominant Vegetation:
White Spruce: 10%

Intermediate:
Striped Maple (one individual): 1%

Forest Floor:
White Pine seedlings: Not recorded
Black Huckleberry: 30%
Lowbush Blueberry: 20%
Canada Mayflower: 1%
Wild Sarsaparilla: 10%
Common Juniper: 20%
Bracken Fern: 10%
Graminoids: 10%
Moss: 20%
Lichens: 40%
Leaf Litter: not 30%
Rock Outcrop: 80%

Notes:
This is the beginning of Red Oak dominated woods.
This is the northern border of a Red Oak dominated woods.
Saw a hummingbird.
North: Forest of stunted Red Oaks and White Pine.
East: Forest dominated by Red Oaks and rock outcrops.
South: Rock outcrops.
West: Dense Red Oak and White Pine woods.

The Protectorate Observation Point Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: 11:06
Plot ID: T3Q1_2
Coordinates: 556436, 4917337

Dominant Vegetation:
Red Oak: 80%

Codominant Vegetation:
Red Maple: 20%
White Pine: 10%

Intermediate:
White Pine saplings and adults: 40%
Red Maple: 10%
Striped Maple: 10%

Forest Floor:
White Pine seedlings: 10%
White Pine saplings: 205
Red Oak seedlings: 10%
Balsam Fir seedlings: 20%
Black Huckleberry: 30%
Lowbush Blueberry: 40%
Bracken Fern: 10%
Moss: 20%
Lichen: 20%
Rock Float: 40%

Notes:
North: Red Oak dominated woods. Trees are spaced about a meter apart, easy to walk through.
East: Same as north, but more lichens.
South: Same as the north, but with more White Pine saplings.
West: Same as north.

The Protectorate Observation Point Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: 11:09
Plot ID: T3Q1_3
Coordinates: 556436, 4917299

Dominant Vegetation:
Red Oak: 70%
Red Maple: 10%
Quaking Aspen: 10%

Codominant Vegetation:
White Pine: 20%

Intermediate:
White Pine: 40%
Balsam Fir: 20%

Forest Floor:
Striped Maple: 10%
Red Maple seedlings: 1%
Black Huckleberry: 30%
Lowbush Blueberry: 10%
Sweetfern: 20%
Graminoids: 10%
Moss: 40%
Leaf Litter: 100%
Dead Standing: 40%
Rock Float: 30%

Notes:
The trees are spaced at least a meter apart from each other, making the woods easy to walk through.
There was a burnt stump near the observation point.
There are lots of dead standing trees. One is about 30 feet tall, most likely a Red Oak.
North: Red Oak dominated woods with conifer codominant trees.
East: Same as north.
South: Same as north.
West: Same as the north but with fewer codominant conifers.

The Protectorate Observation Point Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: Not recorded
Plot ID: T3Q2_1
Coordinates: 556442, 4917190

Dominant Vegetation:
Red Oak: 70%
Red Maple: 10%

Codominant Vegetation:
Red Maple: 10%
Red Spruce: 10%
Balsam Fir: 10%

Intermediate:
Balsam Fir saplings: 40%
Red Spruce: 60%

Forest Floor:
Red Oak seedlings: 10%
Balsam Fir seedlings: 10%
Lowbush Blueberry: 10%
Canada Mayflower: 1%
Starflower: 1%
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 20%
Standing Dead: 20%

Notes:
The ground is mostly free of live vegetation.
North: Snags.
East: Snags.
South: Snags, but with more Red Oaks than the other directions.
West: Snags.

The Protectorate Observation Point Data Sheet

Observers: Kaijah Kluader, Phil Walter, EHM
Date: 7/3/11
Time: 12:29
Plot ID: T3Q2_2
Coordinates: 556438, 4917141

Dominant Vegetation:
Red Oak: 30%
White Pine: 40%

Codominant Vegetation:
Red Maple: 10%
Striped Maple: 20%
Red Spruce: 30%

Intermediate:
Balsam Fir: 20%
Red Spruce: 20%

Forest Floor:
Red Oak seedlings: 10%
Red Maple seedlings: 1%
Moss: 20%
Rock Float: 20%
Leaf Litter: 100%
Down Woody Debris: 40%
Standing Dead: 30%

Notes:
We heard a Common Raven, Mourning Dove, and Black-throated Green Warbler.
North: Snags.
East: Thick Snags.
South: Red Oaks and White Pine, fewer snags than the other directions.
West: Snags with some rock outcrops.

The Protectorate Observation Point Data Sheet

Observers: Kaija Klauder, Philip Walter, EHM
Date: 7/3/11
Time: 12:35
Plot ID: T3Q2_3
Coordinates: 556438, 4917087

Dominant Vegetation:
Red Oak: 50%
White Pine: 30%

Codominant Vegetation:
Red Spruce: 10%
Red Maple: 20%

Intermediate:
Balsam Fir: 10%
Red Spruce: 30%
White Spruce: 10%

Forest Floor:
Black Huckleberry: 1%
Lowbush Blueberry: 10%
Starflower: 10%
Bracken Fern: 10%
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 50%

Notes:
The ground is mostly open and free of live vegetation.
North: Not recorded.
East: Not recorded.
South: Not recorded.
West: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: Not recorded
Plot ID: T3Q3_1
Coordinates: 556441, 4917000

Dominant Vegetation:
White Pine: 40%
Red Oak: 70%

Codominant Vegetation:
Red Maple: 20%
White Pine: 10%

Intermediate:
Balsam Fir: 10%
White Birch: 10%
Red Spruce: 10%

Forest Floor:
Balsam Fir seedlings: 10%
Red Oak seedlings: 10%
Red Spruce seedlings: 1%
Starflower: 1%
Moss: 30%
Leaf Litter: 100%
Down Woody Debris: 40%
Standing Dead: 20%
Rock Floats: 40%

Notes:
The GPS was acting finicky so the coordinates may not be very accurate.
North: Snags with dominant Red Oak.
East: Snags with dominant Red Oak and White Pines.
South: Snags with dominant Red Oak and White Pines.
West: Snags with dominant Red Oak and White Pines, with rock outcrop.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 10:41
Plot ID: T3Q3_2
Coordinates: 556441, 4916940

Dominant Vegetation:
Red Oak: 70%
White Pine: 30%

Codominant Vegetation:
Red Maple: 30%
Red Spruce: 10%
White Pine: 10%

Intermediate:
Balsam Fir: 10%

Forest Floor:
Red Oak seedlings: 10%
Balsam Fir seedlings: 10%
Lowbush Blueberry: 1%
Wild Sarsaparilla: 10%
Canada Mayflower: 1%
Bristly Sarsaparilla: 1%
Rock Polypody: 10%
Moss: 30%
Lichens: 20%
Leaf Litter: 80%
Down Woody Debris: 30%
Standing Dead: 20%
Rock Float:
Unknown Fern: 1%

Notes:
The observation point is on a very rocky area.
Most of the standing dead and the down woody debris are White Birch
We are on the eastern side of the ridge which is sloping east.
North: Snags with some rock float.
East: Snags, hill is sloping down.
South: Snags with rock float.
West: Snags with taller Red Oaks and lots of large rock float.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 10:53
Plot ID: T3Q3_3
Coordinates: 556440, 4916896

Dominant Vegetation:
Red Oak: 60%
White Pine: 20%
Red Spruce: 10%

Codominant Vegetation:
Red Maple: 10%
Red Spruce: 30%

Intermediate:
Balsam Fir: 20%

Forest Floor:
Red Spruce seedlings: 10%
Lowbush Blueberry: 10%
Bracken Fern: 1%
Moss: 40%
Leaf Litter: 100%
Down Woody Debris: 50%
Rock Float: 30%
Unknown Fern from T3Q3_1: 1%

Notes:
There are lots of blow downs.
This observation point is flat and is closer to the top of the ridge than T3Q3_2.
North: Snags with rock outcrop and a few blueberry patches.
East: Rocky outcrop. Mostly stunted Red Oak and White Pine. Fewer snags than other directions.
South: Snags.
West: Snags with live Red Oak.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 12:13
Plot ID: T3Q4_1
Coordinates: 556441, 4916786

Dominant Vegetation:
Red Oak: 60%

Codominant Vegetation:
Gray Birch: 10%
White Pine: 10%

Intermediate:
White Pine: 10%

Forest Floor:
Black Huckleberry: 40%
Lowbush Blueberry: 90%
Whorled Loosestrife: 10%
Spreading Dogbane: 10%
Wintergreen: 1%
Lichen: 20%
Leaf Litter: 40%
Graminoids: 1%

Notes:
I can see T3Q4 from T3Q4_1.
There are ripe blueberries.
The observation point is in a Lowbush Blueberry patch with an open canopy.
North: Red Oak woods (Red Oaks are not stunted here like they are further up on the ridge).
There is a thick canopy.
East: Stunted Red Oak woods.
South: Red Oak woods.
West: Red Oak woods.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 12:22
Plot ID: T3Q4_2
Coordinates: 556440, 4916736

Dominant Vegetation:
Red Oak: 40%
White Pine: 30%

Codominant Vegetation:
Balsam Fir: 10%
White Spruce: 10%
Witch Hazel: 20%

Intermediate:
Witch Hazel: 10%

Forest Floor:
Amelanchier spp.: 10%
Lowbush Blueberry: 10%
Wild Strawberry: 20%
Starflower: 1%
Juniper: 10%
Wintergreen: 40%
Sweetfern: 40%
Bracken Fern: 50%
Graminoids: 10%
Unknown spp.: 1%

Notes:
Red Oak is the tallest tree followed by White Pines.
North: The Blueberry Path surrounded by Red Oak and White Pines.
East: A Lowbush Blueberry patch bordered with a Red Oak forest.
South: Witch Hazel trees are blocking the Red Oak forest on the other side.
West: A wall of White Pines.

The Protectorate Observation Point Data Sheet

Observers: Maggie Mansfield, EHM
Date: 7/4/11
Time: 12:32
Plot ID: T3Q4_3
Coordinates: 556440, 4916695

Dominant Vegetation:
Red Oak: 70%
Red Maple: 30%

Codominant Vegetation:
Gray Birch: 10%
White Spruce: 10%
White Pine: 10%
Red Maple: 30%

Intermediate:
White Pine: 20%

Forest Floor:
Red Oak seedlings: 1%
Lowbush Blueberry: 10%
Starflower: 10%
Wintergreen: 10%
Canada Mayflower: 1%
Bracken Fern: 20%
Graminoids: 20%
Leaf Litter: 100%
Rock Float: 10%

Notes:
The graminoids are growing by the stream.
The stream is a few meters west of the observation point.
The trees are spaced out about a meter apart, and it is very easy to walk through.
North: Red Oak dominated woods.
East: Red Oak dominated woods sloping down.
South: There is a stream running south. Red Oak dominated woods.
West: Stream in Red Oak Dominated woods.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whittaker, EHM
Date: 7/9/11
Time: Not recorded
Plot ID: T3Q5_1
Coordinates: 556436, 4916587

Dominant Vegetation:
Red Oak: 50%

Codominant Vegetation:
White Pine: 30%

Intermediate:
Striped Maple: 10%
White Pines: 20%

Forest Floor:
Red Oak seedlings: 10%
Red Maple seedlings: 10%
Lowbush Blueberry: 40%
Wintergreen: 20%
Moss: 10%
Lichen: 20%
Graminoids: 30%
Leaf Litter: 50%
Rock Outcrop: 40%

Notes:
The observation point is on a rocky clearing with many Lowbush Blueberries and graminoids.
North: Red Oak woods.
East: Red Oak woods.
South: An uphill with rocky outcrops, Red Oak, and White Pine.
West: Red Oak woods with codominant White Pine.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/9/11
Time: 16:52
Plot ID: T3Q5_2
Coordinates: 556440, 4916538

Dominant Vegetation:
Red Oak: 60%
White Pine: 40%
Red Maple: 10%

Codominant Vegetation:
Red Maple: 40%
White Pine: 40%

Intermediate:
None

Forest Floor:
Black Huckleberry: 50%
Lowbush Blueberry: 30%
Wintergreen: 10%
Bracken Fern: 20%
Leaf Litter: 100%
Down Woody Debris: 40%
Rock Float: 20%

Notes:
The observation point is in a patch of Black Huckleberries on a west-facing slope.
North: Dense White Pine woods.
East: Granite outcrop with White Pine forest with Black Huckleberry.
West: Red Oak and White Pine woods with young White Pine which you have to walk through.
South: Not recorded.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/9/11
Time: 17:00
Plot ID: T3Q5_3
Coordinates: 556437, 4916488

Dominant Vegetation:
Red Oak: 50%

Codominant Vegetation:
White Pine: 30%
Red Maple: 20%

Intermediate:
White Pine: 20%

Forest Floor:
Lowbush Blueberry: 40%
Wild Sarsaparilla: 1%
Wintergreen: 10%
Starflower: 10%
Canada Mayflower: 10%
Sheep Laurel: 1%
Bracken Fern: 20%
Graminoids: 1%

Notes:
The trees are spaced out and the woods are easy to walk and see through.
We can see a dump site from the observation point which is on the abutter's property. The pile contains cars, tires, glass bottles, and beer cans. We can also see the red house to the west, the house which the dump pile presumably belongs to.
North: Red Oak and White Pine woods with patches of open canopy with rock and Lowbush Blueberry.
East: Red Oak and White Pine woods. Can See Mill Brook Road.
South: Red Oak woods. Can see dump site.
West: Red Oak and White Pine woods with patches of open canopy.

The Protectorate Observation Point Data Sheet

Observers: Erica Georgaklis, EHM
Date: 6/30/11
Time: 11:33
Plot ID: T4Q1_1
Coordinates: 556539, 4917156

Dominant Vegetation:
Red Maple: 10%
Red Oak: 70%

Codominant Vegetation:
White Pine: 20%
Striped Maple: 10%
Red Maple: 40%
Red Oak: 10%

Intermediate:
Balsam Fir: 20%
Red Maple: 10%
Red Spruce: 10%
White Pine saplings: 20%

Forest Floor:
Red Maple seedlings: 10%
Balsam Fir seedlings: not recorded
Red Oak seedlings: 10%
Wild Raisin: 1%
Starflower: 10%
Wild Sarsaparilla: 10%
Orange Mushroom: 1%
Moss: 20%
Leaf Litter: 10%
Floating Rock: 30%

Notes:
The trees are pretty much even age except for the firs.
This is one of the more diverse areas on the property.
There are scars on the bottom of the Red Oak tree trunks.
North: Densely spaced live conifer trees with small DBH, with a few large Red Oaks growing.
East: Same as north but with fewer conifers. It is a bit more open. It is sloping down a bit.
South: Same a north.
West: Like the east, but sloping up.

The Protectorate Observation Point Data Sheet

Observers: Erica Georgaklis, EHM
Date: 6/30/11
Time: 14:09
Plot ID: T4Q2_1
Coordinates: 556539, 4917038

Dominant Vegetation:
Red Spruce: Not Recorded
Red Maple: 20%
Red Oak: 20%
White Birch: 30%
Big-tooth Aspen: 10%

Codominant Vegetation:
Beech: 10%

Intermediate:
Striped Maple: 10%
Balsam Fir saplings: 20%

Forest Floor:
Oak seedlings: Not recorded
Moss: Not recorded
Leaf Litter: 90%
Down Woody Debris: Not recorded

Notes:
Most of the down woody debris consisted of White Birch.
There were lots of trees snapped in half and blown down, perhaps due to wind coming down from the ridge?
The forest is relatively even aged except for the firs which are younger. There are a diverse number of trees.
We heard American Crows, Common Ravens, and a Barred Owl.
North: Forest with Eastern Hemlock, birch, Red Oak, with a thick understory
East: Same as north.
South: Same as north.
West: Sloping upwards, but other wise it is like the north. The understory is mostly firs.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/5/11
Time: 16:10
Plot ID: T4Q3_1
Coordinates: GPS was not working (roughly 556542, 4916950)

Dominant Vegetation:
Red Maple: 20%
White Birch: 20%
Balsam Fir: 10%
Striped Maple: 10%
Red Oak: 20%
Quaking Aspen: 10%

Codominant Vegetation:
Gray Birch: 10%
White Spruce: 10%
White Pine: 10%

Intermediate:
Balsam Fir saplings: 30%

Forest Floor:
Red Maple seedlings: 1%
Fir seedlings: 40%
Wild Sarsaparilla: 20%
Cinnamon Fern: 10%
Rock Polypody: 10%
Moss: 40%
Leaf Litter: 90%
Down Woody Debris: 50%
Standing Dead: 20%
Rock Outcrop: 40%
Rock Float: 40%

Notes:
There are tons of blow downs and standing dead.
We found two porcupine dens along the transect hidden under overhanging rocks.
The canopy is open right above the observation point.
The stand is pretty even age but for the seedlings which are mostly fir.
North: There is a patch of open canopy surrounded by birch, aspen, and Balsam Fir.
East: There is rocky cliff drop off leading to conifer woods.
South: Dense woods with some snags and some Red Oak.
West: A rocky slope upwards with dense snags.

The Protectorate Observation Point Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 11:21
Plot ID: T5Q1_1
Coordinates: 556652, 4917391

Dominant Vegetation:
Red Maple: 30%
Big-toothAspen: 10%
White Pine: 10%
Red Oak: 20%

Codominant Vegetation:
Speckled Alder: 20%
Balsam Fir: 30%
White Pine: 10%

Intermediate:
Balsam Fir saplings: 20%
White Pine: 10%
Red Spruce: 10%

Forest Floor:
Red Spruce seedlings: 10%
Balsam Fir seedlings: 10%
Lowbush Blueberry: 1%
Wild Sarsaparilla: 10%
Starflower: 10%
Bunchberry: 10%
Canada Mayflower: 1%
Sweet Gale: 10%
Sassafras: 1% (one individual)
Bracken Fern: 10%
Graminoids: 20%
Leaf Litter: 100%
Down Woody Debris: 30%

Notes:
The average DBH is low at this observation point.
Conifers are about four inches in diameter.
Sweet Gale and alders are growing along the wetland border.
North: Snags.
East: Wetland, no canopy. Heavily vegetated with graminoids.
South: Snags with Balsam Fir saplings.
West: There is an incline to the west covered in snags.

The Protectorate Observation Point Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 11:30
Plot ID: T5Q1_2
Coordinates: 556638, 4917352

Dominant Vegetation:
Red Maple: 30%
Red Oak: 20%

Codominant Vegetation:
Red Spruce: 20%
Alder: 30%
Beech: 20%

Intermediate:
Balsam Fir saplings: 20%
Red Spruce: 10%

Forest Floor:
Red Maple seedlings: 1%
Balsam Fir seedlings: 20%
White Pine seedlings: 10%
Bunchberry: 10%
Starflower: 20%
Wild Sarsaparilla: 10%
Bracken Fern: 10%
Graminoids: 10%
Moss: 30%
Leaf Litter: 100%

Notes:
The alders are along the wetland, not in the woods.
We found what might be a mink or weasel hole along the edge of the wetland.
North: Snags.
East: Wetland is grassy with a patch of cattails and a few Larger Blue Flag. No canopy in wetland.
South: Snags. Trees with large DBH with many dead lower branches. Dead branches make it difficult to walk through.
West: There is an incline to the west. The trees are healthy looking with lots of green leaves. Red Maple and Red Oak are the dominant trees.

The Protectorate Observation Point Data Sheet

Observers: Erica Georgaklis, EHM
Date: 7/7/11
Time: 11:43
Plot ID: T5Q1_3
Coordinates: 556636, 4917304

Dominant Vegetation:
Northern White Cedar: 20%
Red Maple: 30%
Beech: 20%
Red Oak: 20%

Codominant Vegetation:
Striped Maple: 10%
Amelancheir spp?: 10%
Red Spruce: 10%
White Pine: 10%
Alder: 20%

Intermediate:
Balsam Fir: 20%

Forest Floor:
Red Oak seedlings: 1%
White Pine seedlings: 1%
Lowbush Blueberry: 1%
False Solomon Seal: 10%
Wild Sarsaparilla: 10%
Starflower: 20%
Cinnamon Fern: 40%
Bracken Fern: 10%
Moss: 40%

Notes:
We found a hummingbird at the observation point.
We found some sort of cherry tree or *Amelancheir* sapling next a 40 foot tall fallen adult of the same species.
The observation point is just east of an inlet from the wetland.
Trees extend into the wetland more, and wetland looks like it has more solid ground.
We heard a raven.
North: Lots of Cinnamon Ferns.
East: The wetland is hidden by a thick wall of alders. Still no canopy cover in the wetland, which is very thick with graminoids.
South: Not recorded.
West: Woods are thick with snags and some 20 inch+ DBH Red Oaks.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/711
Time: Not recorded
Plot ID: T5Q2_1
Coordinates: 556040, 4917190

Dominant Vegetation:
Red Maple: 30%
Northern White Cedar: 20%
Red Oak: 10%
White Pine: 30%

Codominant Vegetation:
Balsam Fir: 30%
Striped Maple: 10%
Winterberry: 10%
Alder: 20%

Intermediate:
Balsam Fir: 20%

Forest Floor:
Balsam Fir seedlings: 1%
Canada Mayflower: 1%
White Meadowsweet: 1%
Ranunculaceae spp.: 1%
Cinnamon Fern: 40%
Sensitive Fern: 20%
Graminoids: 50%
Moss: 30%

Notes:
Graminoids are in the wetland not the woods.
There are more shrubs growing in the middle of the wetland. There is a patch of Winterberry in the wetland.
The codominant vegetation is growing primarily in the wetland.
North: Mossy ground with trees with large DBH (~20+ DBH).
East: Wetland has some Red Maples growing in the middle of it.
South: Northern White Cedar, Red Oak woods with lots of ferns on the forest floor.
West: Steep uphill. The Red Oak, Red Maple, and White Pine look green and lush.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/7/11
Time: 13:38
Plot ID: T5Q2_2
Coordinates: 556638, 4917150

Dominant Vegetation:
Red Maple: 50%
Speckled Alder: 30%
Red Oak: 10%

Codominant Vegetation:
Winterberry: 10%
Speckled Alder: 10%
Red Spruce: 20%

Intermediate:
Balsam Fir: 20%
Red Spruce: 10%

Forest Floor:
Bunchberry: 10%
Starflower: 1%
Goldthread: 10%
Cinnamon Fern: 30%
Graminoids: 50%
Moss: 40%
Leaf Litter: 100%
Down Woody Debris: 10%
Unknown Tall Aster from T5Q1: 1%
Rock Float: 20%

Notes:
The Speckled Alder are the dominant species in the wetland where as the Red Maples are dominant in the woods.
The wetland is becoming more grown in. There are about 50 foot tall Red Maples growing in the middle of the wetland.
There is a survey line running east which would run in the middle of the cross piece of the "H." It does not apply to the Protectorate boundaries.
North: The slope from Porcupine Hill goes right to the wetland. There are ferns in the woods which are primarily spruce, Red Maple, and Red Oak.
East: Wetland is just beginning to grow Red Maples in the middle. Alders are also encroaching further into the wetland.
South: Young firs make up the understory and Red Maples are primarily the dominant species.
West: Steep up hill with rock floats, Red Maples, and Red Oaks.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/711
Time: 13:51
Plot ID: T5Q2_3
Coordinates: 556627, 4917099

Dominant Vegetation:
White Pine: 40%
Red Maple: 40%

Codominant Vegetation:
Eastern Hemlock: 20%
Alder: 20%
Northern White Cedar: 10%

Intermediate:
Striped Maple: 10%
Balsam Fir: 20%
Winterberry: 10%

Forest Floor:
Red Oak seedlings: 1%
Red Maple seedlings: 1%
Canada Mayflower: 1%
Starflower: 10%
Wild Sarsaparilla: 10%
Bracken Fern: 10%
Cinnamon Fern: 40%
Moss: 20%
Leaf Litter: 100%
Down Woody Debris: 50%
Standing Dead: 30%
Rock Float: 20%
Standing Water: 30%

Notes:
Some of the down woody debris consists of White Birch, though there are no live ones.
There is a beaver dam in the wetland to the east.
There is more Red Maple in the middle of the wetland than to the north.
8/30/11: The stream is running quickly today. In the past it has been more sluggish.
North: There are many coniferous branches which make the area difficult to walk through
East: Wetland has many Red Maple growing in the middle now. There are more distinct streams instead of a large wet area.
South: Northern White Cedar and Red Oak forest.
West: There is still an uphill but it is not as steep as T5Q2_2. It is snaggy with some live large White Pines, Red Maples, and Red Oaks. Possibly an American Beech stand further up.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/711
Time: Not recorded
Plot ID: T5Q3_1
Coordinates: 556641, 4916990

Dominant Vegetation:
Red Maple: 40%
Speckled Alder: 30%

Codominant Vegetation:
Larch: 10%
Speckled Alder: 10%

Intermediate:
Balsam Fir: 40%

Forest Floor:
Lowbush Blueberry: 1%
Bunchberry: 1%
Canada Mayflower: 1%
Cinnamon Fern: 20%
Graminoids: 40%
Moss: Not recorded
Unknown three-leafed plant with spines (most likely *Rubus* spp.): 10%
Unknown plant from T5Q3: 10%
Unknown not fuzzy aster of T5Q1: 1%
Unknown fuzzy aster of T5Q3: 1%
Unknown *Spirea*: 10%
Unknown five-leafed plant: 1%

Notes:
There is a small beaver dam, with Muskrat(?) tracks in a muddy, well worn area.
There are lots of firs in the woods.
The waterway is a distinct stream, not just a large wet area.
North: Thick conifer forest with Red Oak and Red Maple.
East: Wetland grown in with alders and Red Maples.
South: There are few snags and the White Pines and Red Oaks have large DBHs.
West: There is an uphill. There is a wall of snags then woods beyond it with few snags and many Red Oak, Red Maple, and White Pine.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/7/11
Time: 15:51
Plot ID: T5Q3_2
Coordinates: 556622, 4916947

Dominant Vegetation:
Northern White Cedar: 40%
White Birch: 10%
Red Spruce: Not recorded
Eastern Hemlock: 20%
Red Maple: 10%

Codominant Vegetation:
White Pine: 20%

Intermediate:
Balsam Fir: 20%

Forest Floor:
Balsam Fir seedlings: 20%
Starflower: 1%
Cinnamon Fern: 40%
Moss: 40%
Leaf Litter: 100%
Dead Woody Debris: 40%
Rock Float: 20%

Notes:
The canopy is thick.
The average DBH is low, about 10 inches or less.
The trees are spaced and easy to walk through.
North: Conifer stand filled with snags.
East: Wetland with a thick wall of alders blocking a view to the middle of the wetland.
South: Conifer forest with trees spaces out enough to make walking through easy. There are some birches, and very little understory.
West: Uphill with snaggy conifer and birch woods.

The Protectorate Observation Point Data Sheet

Observers: EHM
Date: 7/7/11
Time: 15:59
Plot ID: T5Q3_3
Coordinates: 556634, 4916899

Dominant Vegetation:
Red Maple: 30%
Northern White Cedar: 40%
Yellow Birch: 10%

Codominant Vegetation:
Speckled Alder: 20%
Yellow Birch: 10%
Eastern Hemlock: 30%
Red Spruce: 20%

Intermediate:
Balsam Fir saplings: 20%

Forest Floor:
Balsam Fir seedlings: 10%
Red Oak seedlings: 1%
Starflower: 10%
Goldthread: 1%
Cinnamon Fern: 40%
Graminoids: 40%
Moss: 40%
Rock Float: 20%
Unknown tall, not fuzzy aster of T5Q1: 10%

Notes:
The alders are thick along the edge.
Both forest and wetland have Northern White Cedars now.
North: Thick conifer woods
East: The wetland is grown in. A thick wall of alders is blocking the middle of the wetland.
South: Ferns in conifer woods
West: Conifer woods with rock floats. Some deciduous which are mostly adults with large DBH.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/1/11
Time: 14:41
Plot ID: T6Q1_1
Coordinates: 556739, 4916935

Dominant Vegetation:
White Ash: 10%
Red Maple: 50%
Northern White Cedar: 10%
Red Spruce: 10%

Codominant Vegetation:
Balsam Fir: 10%

Intermediate:
Balsam Fir: 10%
Speckled Alder: 10%

Forest Floor:
Steeplebush: 10%
Oxalis spp.: 1%
Violia spp. from one last plot: 1%
Northern Bugleweed: 1%
Rosa spp. hybrid: 1%
Graminoids: 80%
Standing Water: 40%
Sensitive Fern: Not recorded
Unknown Aster: Not recorded
Unknown Cleavers: 1%

Notes:
The most abundant species is Red Maple.
There was a trunk about 10 inches in diameter on an island in the middle of the stream which was chewed down by a beaver. It was not fresh, at least a season old.
North: Wetland with graminoids. Mostly Red Maple trees.
East: Forest with thick graminoids underneath.
South: The ground is muddy. It is mixed forest with dense snags which make it a little difficult to walk though.
West: There is a stream directly to the west flowing north.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/1/11
Time: Not recorded
Plot ID: T6Q1_2
Coordinates: 556742, 4916874

Dominant Vegetation:
Northern White Cedar: 20%
Eastern Hemlock: 10%
Red Maple: 40%
Yellow Birch: 10%
White Birch: None?

Codominant Vegetation:
Alser: 10%

Intermediate:
Balsam Fir: 20%
White Ash: 10%

Forest Floor:
Starflower: 1%
Wild Sarsaparilla: 1%
Starflower: 1%
Canada Mayflower: 1%
Goldthread: 1%
Moss: 30%
Leaf Litter: 100%
Royal Fern: 20%
Cinnamon(?) Fern:10%
Unknown Fern: 10%

Notes:
There are lots of slow, sunken streams flowing by the observation point.
North: There is a stream to the west flowing north. Lots of Cinnamon Ferns and graminoids
East: Mixed woods with a layer of graminoids on forest floor. Most of the trees are Red Maple.
South: Woods are open. Lots of Northern White Cedars in the woods. Forest floor has lots of Cinnamon Ferns.
West: Mixed woods, thick with conifers.
8/30/11: Saw a squat raptor with a dark underside flying in the woods. Possibly a Barred Owl.

The Protectorate Observation Point Data Sheet

Observers: Corinne Boet-Whitaker, EHM
Date: 7/1/11
Time: 15:17
Plot ID: T6Q1_3
Coordinates: 556749, 4916824

Dominant Vegetation:
Northern White Cedar: 10%
Red Maple: 40%
Eastern Hemlock: 10%:
Red Spruce: 10%

Codominant Vegetation:
White Ash: 10%
Northern White Cedar: 30%

Intermediate:
Balsam Fir: 20%
Speckled Alder: 30%

Forest Floor:
Red Maple seedlings: 1%
Canada Mayflower: 1%
Wild Sarsaparilla: 10%
Jack-in-the-pulpit: 10%
Tall Meadow-rue: 1%
Ranunculus spp. #1: 20%
Dwarf Enchantress'-nightshade: 1%
Sensitive Fern: 10%
Moss: 80%
Leaf Litter: 80%
Down Woody Debris: 40%

Notes:
North: Mixed woods with a forest floor covered in moss and Cinnamon Ferns.
East: Mixed woods with a forest floor covered in moss and Cinnamon Ferns.
South: Mixed woods with a forest floor covered in moss and Cinnamon Ferns.
West: Mixed woods with a forest floor covered in moss and Cinnamon Ferns.



Figure: A5: T1Q1 from the northern line



Figure A6: T1Q1 from the eastern line



Figure A7: T1Q1 from the southern line



Figure A8: T1Q1 from the western line



Figure A9: T1Q1_1 facing north



Figure A10: T1Q1_1 facing south



Figure A11: T1Q1_2 facing north



Figure A12: T1Q1_2 facing south



Figure A13: T1Q1_3 facing north



Figure A14: T1Q1_3 facing south



Figure A15: T1Q2 from the northern line



Figure A16: T1Q2 from the eastern line



Figure A17: T1Q2 from the southern line



Figure A18: T1Q2 from the western line



Figure A19: T1Q2_1 facing north



Figure A20: T1Q2_1 facing south



Figure A21: T1Q2_2 facing north



Figure A22: T1Q2_2 facing south



Figure A23: T1Q2_3 facing north



Figure A24: T1Q2_3 facing south



Figure A25: T1Q3 from the northern line



Figure A26: T1Q3 from the eastern line



Figure A27: T1Q3 from the southern line



Figure A28: T1Q3 from the western line



Figure A29: T1Q3_1 facing north



Figure A30: T1Q3_1 facing south



Figure A31: T1Q3_2 facing north



Figure A32: T1Q3_2 facing south



Figure A33: T1Q3_3 facing north



Figure A34: T1Q3_3 facing south



Figure A35: T1Q4 from the northern line



Figure A36: T1Q4 from the eastern line



Figure A37: T1Q4 from the southern line



Figure A38: T1Q4 from the western line



Figure A39: T1Q4_1 facing north



Figure A40: T1Q4_1 facing south



Figure A41: T1Q4_2 facing north



Figure A42: T1Q4_2 facing south



Figure A43: T1Q4_3 facing north



Figure A44: T1Q4_3 facing south



Figure A45: T1Q5 from the northern line



Figure A46: T1Q5 from the eastern line



Figure A47: T1Q5 from the southern line



Figure A48: T1Q5 from the western line



Figure A49: T1Q5_1 facing north



Figure A50: T1Q5_1 facing south



Figure A51: T1Q5_2 facing north



Figure A52: T1Q5_2 facing south



Figure A53: T1Q5_3 facing north



Figure A54: T1Q5_3 facing south



Figure A55: T1Q6 from the northern line



Figure A56: T1Q6 from the eastern line



Figure A57: T1Q6 from the southern line



Figure A58: T1Q6 from the western line



Figure A59: T2Q1 from the northern line



Figure A60: T2Q1 from the eastern line



Figure A61: T2Q1 from the southern line

No image for T2Q1 from the western line



Figure A62: T2Q1_1 facing north



Figure A63: T2Q1_1 facing south



Figure A64: T2Q1_2 facing north



Figure A65: T2Q1_2 facing south



Figure A66: T2Q1_3 facing north



Figure A67: T2Q1_3 facing south



Figure A68: T2Q2 from the northern line



Figure A69: T2Q2 from the eastern line



Figure A70: T2Q2 from the southern line



Figure A71: T2Q2 from the western line



Figure A72: T2Q2_1 facing north



Figure A73: T2Q2_1 facing south



Figure A74: T2Q2_2 facing north



Figure A75: T2Q2_2 facing south



Figure A76: T2Q2_3 facing north



Figure A77: T2Q2_3 facing south



Figure A78: T2Q3 from the northern line



Figure A79: T2Q3 from the eastern line



Figure A80: T2Q3 from the southern line



Figure A81: T2Q3 from the western line



Figure A82: T2Q3_1 facing north



Figure A83: T2Q3_1 facing south



Figure A84: T2Q3_2 facing north



Figure A85: T2Q3_2 facing south



Figure A86: T2Q3_3 facing north



Figure A87: T2Q3_3 facing south



Figure A88: T2Q4 from the northern line



Figure A89: T2Q4 from the eastern line



Figure A90: T2Q4 from the southern line



Figure A91: T2Q4 from the western line



Figure A92: T2Q4_1 facing north



Figure A93: T2Q4_1 facing south



Figure A94: T2Q4_2 facing north



Figure A95: T2Q4_2 facing south



Figure A96: T2Q4_3 facing north



Figure A97: T2Q4_3 facing south



Figure A98: T2Q5 from the northern line



Figure A99: T2Q5 from the eastern line



Figure A100: T2Q5 from the southern line



Figure A101: T2Q5 from the western line



Figure A102: T2Q5_1 facing north



Figure A103: T2Q5_1 facing south



Figure A104: T2Q5_2 facing north



Figure A105: T2Q5_2 facing south



Figure A106: T2Q5_3 facing north



Figure A107: T2Q5_3 facing south



Figure A108: T3Q1 from the northern line



Figure A109: T3Q1 from the eastern line



Figure A110: T3Q1 from the southern line



Figure A111: T3Q1 from the western line



Figure A112: T3Q1_1 facing north



Figure A113: T3Q1_1 facing south



Figure A114: T3Q1_2 facing north



Figure A115: T3Q1_2 facing south



Figure A116: T3Q1_3 facing north



Figure A117: T3Q1_3 facing south



Figure A118: T3Q2 from the northern line



Figure A119: T3Q2 from the eastern line



Figure A120: T3Q2 from the southern line



Figure A121: T3Q2 from the western line



Figure A122: T3Q2_1 facing north



Figure A123: T3Q2_1 facing south



Figure A124: T3Q2_2 facing north



Figure A125: T3Q2_2 facing south



Figure A126: T3Q2_3 facing north



Figure A127: T3Q2_3 facing south



Figure A128: T3Q3 from the northern line



Figure A129: T3Q3 from the eastern line



Figure A130: T3Q3 from the southern line



Figure A131: T3Q3 from the western line



Figure A132: T3Q3_1 facing north



Figure A133: T3Q3_1 facing south



Figure A134: T3Q3_2 facing north



Figure A135: T3Q3_2 facing south



Figure A136: T3Q3_3 facing north



Figure A137: T3Q3_3 facing south



Figure A138: T3Q4 from the northern line



Figure A139: T3Q4 from the eastern line



Figure A140: T3Q4 from the southern line



Figure A141: T3Q4 from the western line



Figure A142: T3Q4_1 facing north



Figure A143: T3Q4_1 facing south



Figure A144: T3Q4_2 facing north



Figure A145: T3Q4_2 facing south



Figure A146: T3Q4_3 facing north



Figure A147: T3Q4_3 facing south



Figure A148: T3Q5 from the northern line



Figure A149: Figure T3Q5 from the eastern line



Figure A150: T3Q5 from the southern line



Figure A151: T3Q5 from the western line



Figure A152: T3Q5_1 facing north



Figure A153: T3Q5_1 facing south



Figure A154: T3Q5_2 facing north



Figure A155: T3Q5_2 facing south



Figure A156: T3Q5_3 facing north



Figure A157: T3Q5_3 facing south



Figure A158: T4Q1 from the northern line



Figure A159: T4Q1 from the eastern line



Figure A160: T4Q1 from the southern line



Figure A161: T4Q1 from the western line



Figure A162: T4Q1_1 facing north



Figure A163: T4Q1_1 facing south



Figure A164: T4Q2 from the northern line



Figure A165: T4Q2 from the eastern line



Figure A166: T4Q2 from the southern line



Figure A167: T4Q2 from the western line



Figure A168: T4Q2_1 facing north



Figure A169: T4Q2_1 facing south



Figure A170: T4Q3 from the northern line



Figure A171: T4Q3 from the eastern line



Figure A172: T4Q3 from the southern line



Figure A173: T4Q3 from the western line



Figure A174: T4Q3_1 facing north



Figure A175: T4Q3_1 facing south



Figure A176: T4Q4 from the northern line



Figure A177: T4Q4 from the eastern line



Figure A178: T4Q4 from the southern line



Figure A179: T4Q4 from the western line



Figure A180: T5Q1 from the northern line



Figure A181: T5Q1 from the eastern line



Figure A182: T5Q1 from the southern line



Figure A183: T5Q1 from the western line



Figure A184: T5Q1 facing the wetland from the eastern line



Figure A185: T5Q1_1 facing north



Figure A186: T5Q1_1 facing south



Figure A187: T5Q1_2 facing north



Figure A1848 T5Q1_2 facing south



Figure A189: T5Q1_3 facing north



Figure A190: T5Q1_3 facing south



Figure A191: T5Q2 from the northern line



Figure A192: T5Q2 from the eastern line



Figure A193: T5Q2 from the southern side



Figure A194: T5Q2 from the western side



Figure A195: T5Q2 facing the wetland from the eastern line



Figure A196: T5Q2_1 facing north



Figure A197: T5Q2_1 facing south



Figure A198: T5Q2_2 facing north



Figure A199: T5Q2_2 facing south



Figure A200: T5Q2_3 facing north



Figure A201: T5Q2_3 facing south



Figure A202: T5Q3 from the northern line



Figure A203: T5Q3 from the eastern line



Figure A204: T5Q3 from the southern line



Figure A205: T5Q3 from the western line



Figure A206: T5Q3 facing the wetland from the eastern line



Figure A207: T5Q3_1 facing north



Figure A208: T5Q3_1 facing south



Figure A209: T5Q3_2 facing north



Figure A210: T5Q3_2 facing south



Figure A211: T5Q3_3 facing north



Figure A212: T5Q3_3 facing south



Figure A213: T6Q1 from the northern line



Figure A214: T6Q1 from the eastern line



Figure A215: T6Q1 from the southern line



Figure A216: T6Q1 from the western line



Figure A217: T6Q1_1 facing north



Figure A218: T6Q1_1 facing south



Figure A219: T6Q1_2 facing north



Figure A220: T6Q1_2 facing south



Figure A221: T6Q1_3 facing north



Figure A222: T6Q1_3 facing south



Figure A223: T6Q2 from the northern line



Figure A224: T6Q2 from the eastern line



Figure A225: T6Q2 from the southern line



Figure A226: T6Q2 from the western line