Hamilton

LAND AND FOREST STEWARDSHIP PLAN

SPRING 2023

ABOUT THE PLAN

THE FORMATION of the Sustainability Working Group in May of 2019 formalized Hamilton's commitment to sustainability and carbon neutrality, and resulted in the creation of the Land and Forest Stewardship subcommittee whose members below have authored and overseen the implementation of this plan.

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LAND ACKNOWLEDGEMENT

Hamilton College recognizes our collective responsibility to acknowledge our colonial history. Our campus is located on the ancestral lands of the Oneida Nation. We express gratitude for the relationship between Chief Skenandoah and Samuel Kirkland, who founded the Hamilton-Oneida Academy to educate Indigenous and settler youth together. That institution became Hamilton College.

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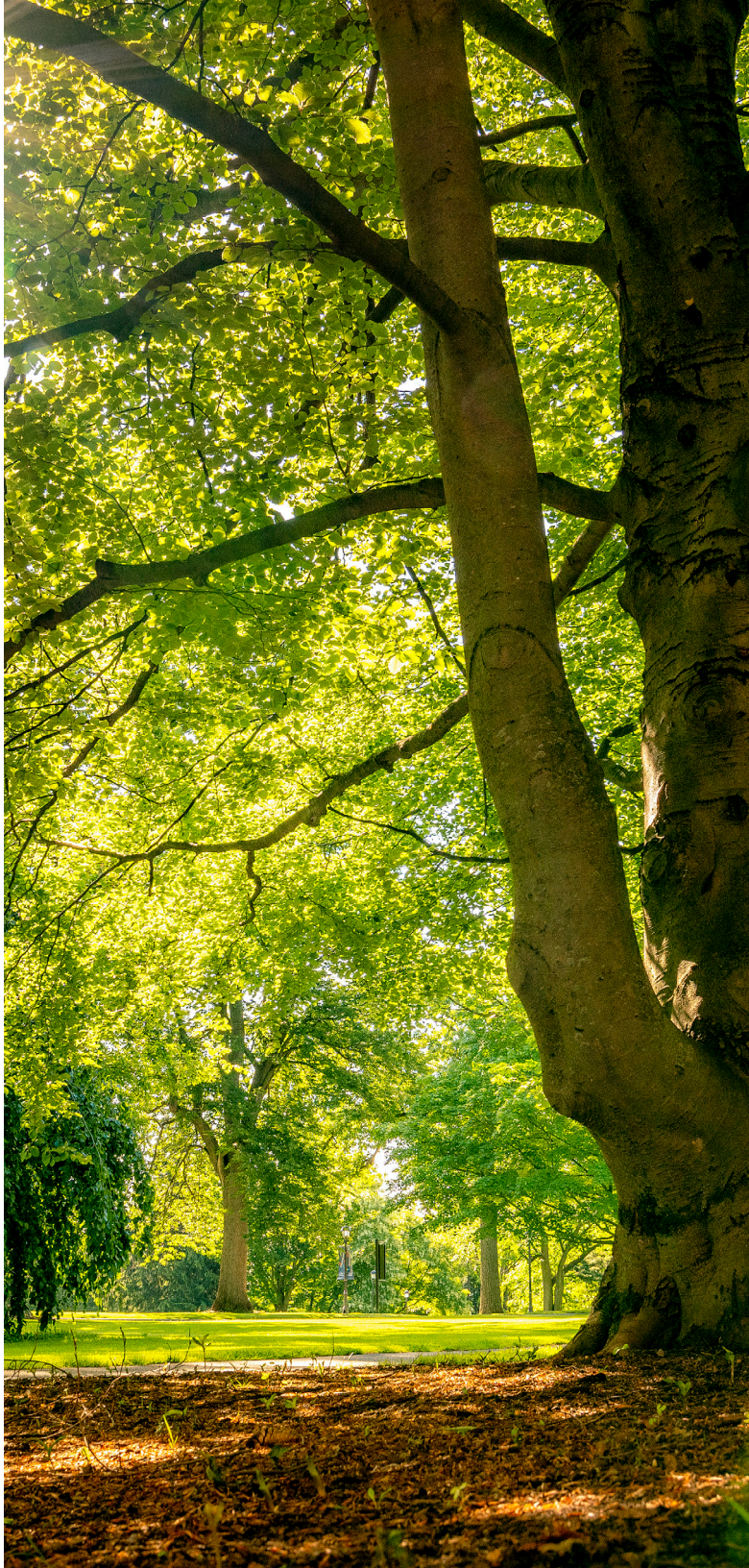


1. Introduction and Guiding Principles

ORIGINALLY FOUNDED as the Hamilton-Oneida Academy, Hamilton College was officially chartered in 1812. Hamilton's commitment to landscape preservation dates to 1850 when Oren and Nancy Root bought a building near the center of campus (named "The Homestead") and set about planting trees, shrubs, and flowers in what eventually became known as the Root Glen. Today, Hamilton's verdant, 1,390-acre campus is an admixture of managed campus facilities and landscapes, athletics fields, forested areas, and open lands, each of which serves our 200+ year academic mission.

In the past, certain contiguous and non-contiguous forested areas and open lands surrounding the Hamilton campus served purposes other than those directly related to environmental stewardship, including potential or actual revenue streams associated with timber harvesting and sale, or leasing to neighboring farmers for agricultural uses; acreage set aside for potential managed campus expansion; and recreation related to a nine-hole golf course and trails for walking, hiking, or biking. The non-contiguous forest was originally a fenced/controlled area designed to protect three small reservoirs that provided the campus its drinking water.

Today, however, the emphasis of our land/forest management has shifted to better match Hamilton's commitment to education and research, while continuing to provide low-impact recreation opportunities for our community. Hamilton's forested areas and open/agricultural lands also serve as a critical component of the College's commitment to sustainability and carbon neutrality.

Specifically, our management goals are designed to meet the following guiding principles:

1. Promote academic teaching and research opportunities to enhance Hamilton's educational mission.
2. Maximize carbon storage and sequestration, to the extent possible in consideration of our other goals, from our forests and open/agricultural lands (including the former golf course).
3. Protect and expand the health and diversity of native flora and fauna through reforestation, invasive species management, and appropriate silvicultural practices.
4. Facilitate low-impact recreation and wellness opportunities.
5. Promote biodiversity and native wildlife populations.

All future work in our open and forested lands will be made with careful consideration of research, biodiversity, and sustainability goals.

2. Scope of this Plan

The 1,390-acres comprising Hamilton's lands are generally divided into three use types:

1 THE 400-ACRE HAMILTON CAMPUS

Inclusive of

- Buildings
- Facilities Management spaces
- Athletics fields
- Parking lots

2 THE FOUR DISTINCT FORESTS
(total 800 acres)

- Kirkland Forest
- North Central Forest
- Reservoir Forest
- Rogers Forest

3 190 ACRES OF AGRICULTURAL LAND
(current and former)

- Parts of the old golf course

Broadly speaking, the Hamilton College Landscape Master Plan has jurisdiction over the 400 acres comprising the campus, while this Land and Forest Stewardship Plan has jurisdiction over the 990 acres of forested and open/agricultural lands. Accordingly, the bulk of this plan will focus on the tactical management of those 990 acres; however, since the Landscape Master Plan implements sustainable landscaping elements into the Hamilton campus proper (low-mow/no-mow areas and pollinator habitats), those elements will be discussed in Section 5 (Green Attributes and the Main Hamilton Campus).

3. Identification of Open/Agricultural Lands and Forests

OPEN/AGRICULTURAL LANDS

Hamilton's open and agricultural lands generally include those that are currently or were formerly under agricultural lease contracts with neighboring farms and certain areas vacated by the former nine-hole golf course. The majority of the 14 tracts of open/agricultural lands are on either side of Campus Road, with one additional tract located off of Reservoir Road ***(Fig. 1)***.

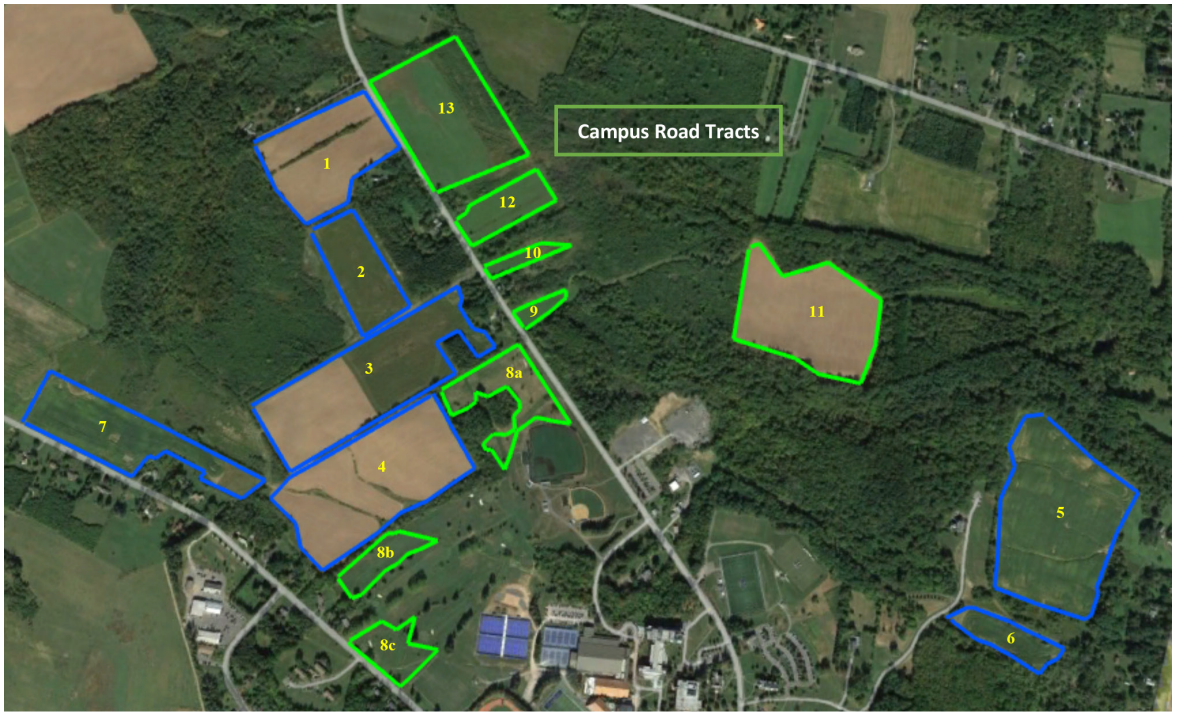
CAMPUS ROAD TRACT ACREAGE (13)

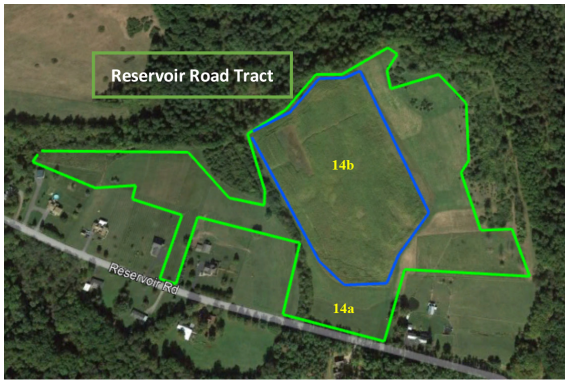
Tract 1	12.27 acres	Tract 7	11.37 acres
Tract 2	8.05 acres	Tract 8a/b/c	12 acres
Tract 3	18.05 acres	Tract 9	1.8 acres
Tract 4	18.04 acres	Tract 10	1.6 acres
Tract 5	20.54 acres	Tract 11	16.91 acres
Tract 6	2.21 acres	Tract 12/13	30.1 acres

RESERVOIR ROAD TRACT ACREAGE (1)

Tract 14a/b	35 acres

Figure 1. Hamilton Open/Agricultural Lands





SUMMARY

- **103.5 acres (blue)** under current agricultural lease contracts
- **84.4 acres (light green)** are former agricultural lands/golf course currently being managed through reforestation or managed grasslands
- **Totals** — 187.9 acres and 14 tracts

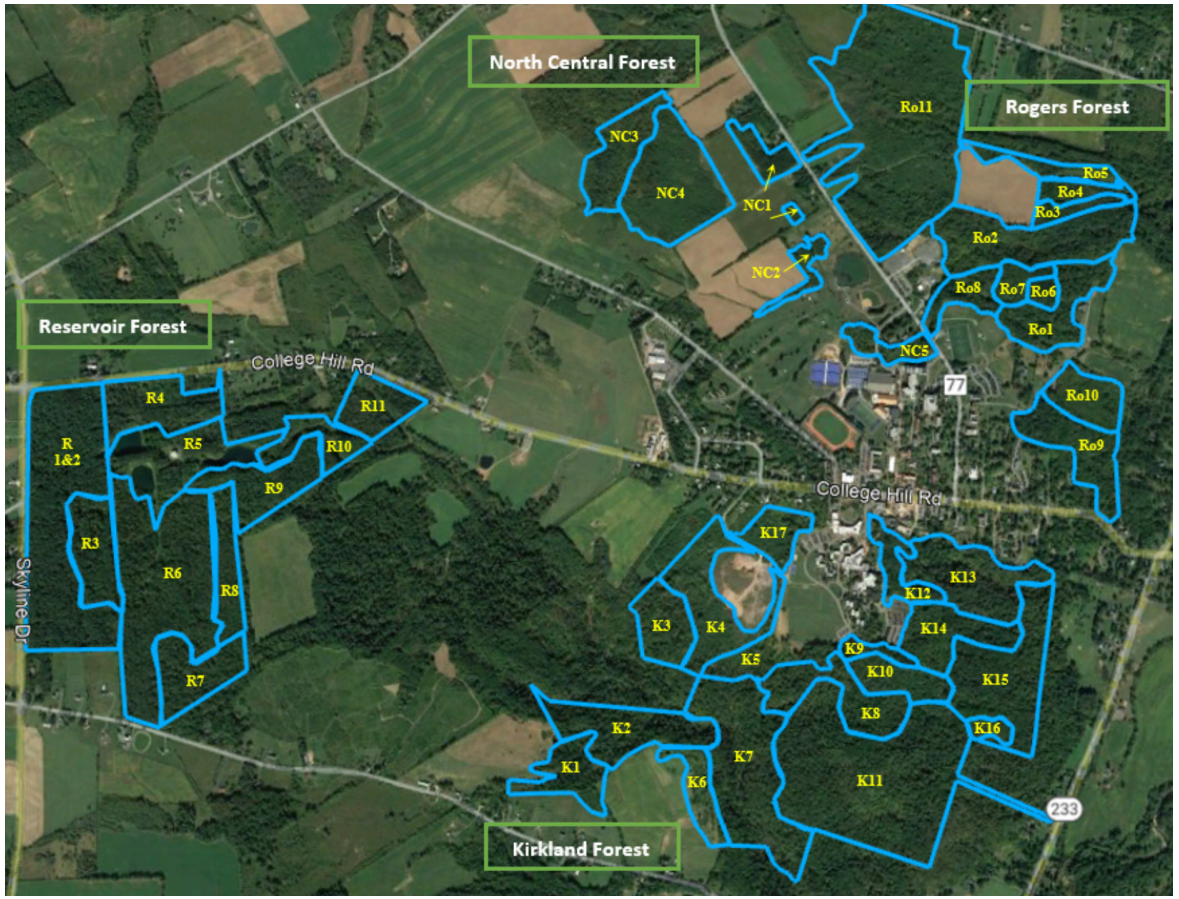
3. **Identification of Open/Agricultural Lands and Forests** *(cont.)*

FORESTED LANDS

Hamilton's forests ***(Fig. 2)*** are mostly on the contiguous fringes of the main campus to the north and south of College Hill Road. The Reservoir Forest is a non-contiguous tract west of campus off College Hill Road. Combined, all of Hamilton's forested lands total 803.5 acres, with each forest further subdivided into individual management stands that are characteristically unique by geography, dominant tree species, density, age, and other factors.

Total acreage for four forests and 44 individual forest stands: 803.5

Figure 2. Hamilton's Forests



KIRKLAND FOREST STANDS (17)

Stand #	Type	BA/Acres	Acres
K1	Sugar Maple	123	11.3
K2	Eastern Hemlock	135	10.6
K3	Sugar Maple, Eastern Hemlock	104	11.8
K4	Green Ash	56	21.5
K5	Sugar Maple	124	9.7
K6	Sugar Maple	115	8/3
K7	Sugar Maple, Eastern Hemlock	142	37.4
K8	White Pine, Northern Red Oak	146	3.2
K9	Norway Spruce Plantation	145	3.2
K10	White Pine	135	9.7
K11	Beech, Sugar Maple	91	70.1
K12	Mixed Hardwood	100	7.7
K13	Sugar Maple, Eastern Hemlock	100	22.7
K14	Northern Hardwood	91	15
K15	Sugar Maple	73	28.9
K16	Sugar Maple	68	2.7
K17	Mixed Hardwood/Softwood Plt.	47	7.7
		Total	**295.6**

NORTH CENTRAL FOREST STANDS (5)

Stand #	Type	BA/Acres	Acres
NC1	White Spruce Plantation	109	7.4
NC2	Mixed Hardwood	94	4.6
NC3	Eastern Hemlock	89	16.1
NC4	Buckthorn	>40	31.6
NC5	Beech, Sugar Maple	151	6.3
		Total	**66.0**

RESERVOIR FOREST STANDS (11)

Stand #	Type	BA/Acres	Acres
R1&2	White Pine Plantation	122	58.6
R3	Black Cherry, Maple	100	15.3
R4	White Pine Plantation, Buckthorn	49	18.9
R5	Norway Spruce, White Pine Plantation	156	18.2
R6	White Spruce, Northern Hardwood	72	56.9
R7	Sugar Maple	104	15.5
R8	Northern Hardwood	87	12.6
R9	White Pine Plantation	122	17.6
R10	Sugar Maple	94	10.6
R11	White Spruce Plantation	89	11.7
		Total	**235.9**

ROGERS FOREST STANDS (11)

Stand #	Type	BA/Acres	Acres
Ro1	Sugar Maple	91	16.8
Ro2	Eastern Hemlock, Sugar Maple, White Pine, Red Pine	116	31.7
Ro3	White Spruce Plantation	84	4.6
Ro4	White Ash	90	5.9
Ro5	Sugar Maple	86	5.9
Ro6	Norway Spruce Plantation	170	2.8
Ro7	Sugar Maple	105	7.3
Ro8	Northern Hardwood	48	8.4
Ro9	Mixed Hardwood	91	17.2
Ro10	White Ash	71	11.1
Ro11	Buckthorn	>40	94.3
		Total	**206**

4. **Land/Forest Management Strategies, Projects and Priorities**

The goal of this plan is to actively manage the open and forested land in an intentional way that follows our guiding principles, with careful consideration of research, biodiversity, and sustainability goals. As of the writing of this plan, multiple projects are already underway and/or are in the near-term planning process. Examples of ongoing projects in portions of the former golf course (Tract 8) and an open area formerly used for agricultural purposes (Ttract 11) are described in ***Fig. 3***. Below, we identify specific land/forest management strategies, examples of ongoing projects, the research/educational and sustainability (carbon) impact of each strategy, and upcoming three-year priorities.

Figure 3. Completed/Ongoing Reforestation Efforts at the Golf Course

GOLF COURSE REFORESTATION AREA

- **Area A is a 3.5-acre parcel** near the former 7th and 8th holes that has been the focus of reforestation efforts since 2018 through the Sustainability Office. While it has only been marginally successful in terms of tree survival, it has been a feasibility demonstration to inform future reforestation decision making.
- **Area B is a 2-acre parcel** near the former 5th hole that Associate Professor of Biology Andrea Townsend has integrated into her fall Ecology classes since 2019. Over 200 trees protected by tree tubes have been planted with a very high survival rate. Future expansion of this area into Area C is planned.

Figure 18. Completed/Ongoing Reforestation Efforts on Tract 1

TRACT 11 REFORESTATION AREA

- **In 2021, 8 acres of this 17-acre tract were enclosed** with fencing to exclude deer, and 250 native trees were planted (mostly in tree tubes and mostly within the fenced area). Several hundred black walnut seeds were planted as well.
- **In 2022, another 700 native trees were planted** in this tract, all protected by tree tubes. 500 were planted outside the fencing, and 200 were planted within it. A portion of the unfenced area has been cleared and tilled for future seed distribution.

4. **Land/Forest Management Strategies, Projects and Priorities** *(cont.)*

Although all land currently under agricultural lease contracts is under consideration for future reforestation efforts ***(Fig. 1)***, we have two primary short-term goals for existing forest, agricultural lands, and fallow fields on campus ***(Table A)***. First, we will reforest all lands previously held in agricultural leases on the northeast side of campus (Tract 5, 6, 11). These reforestation efforts will help meet our guiding principles to promote native biodiversity and wildlife populations as well as to increase carbon storage and sequestration. Second, we will manage the four open fallow fields/meadows (Tracts 9, 10, 12, 13) on the east side of Campus Road as intentional grasslands, using them as a teaching and research opportunity to assess grassland management techniques that maximize biodiversity and wildlife habitat. In addition to the specific management actions outlined in Table A, all efforts will include measures to mitigate and prevent the spread of invasive species. Timelines for short-term goals are outlined at right.

TABLE A. SHORT-TERM (5-YEAR) GOALS FOR LAND AND FOREST MANAGEMENT

Areas	Goal	Management Strategies	Completion Timeline
Tract 11	Reforestation	Native trees planted in fenced enclosures and deer exclusion tubes. Success of different strategies monitored/compared.	2021–23
Tracts 5 & 6	Reforestation	Native trees will be planted in deer exclusion tubes by an external company.	2022–25
Tracts 9 & 10	Managed Grassland and Shrublands	Brush-hogging on a rotating schedule in the late fall (after nesting season) every three years to reduce shrub encroachment and maintain early-successional stage.	2022–
Golf Course	Reforestation	Native trees will be planted in deer exclusion tubes by students in classes and outreach events.	2019–

RESEARCH/EDUCATIONAL CONNECTIONS AND GOALS

Ongoing and future research projects in Hamilton's open and forested lands support faculty scholarship, student research, are experiential learning, as well as inform the College's goals and responses to managing and conserving land. Ongoing projects include long-term monitoring of tree species diversity and carbon sequestration (Guiden, Strong, and Kropp), monitoring the water cycling and soil moisture in different land cover types (Kropp and Benson '23), monitoring wildlife communities (small-mammal live-trapping, camera trapping; Guiden), quantifying herbivory and seed predation (Guiden), monitoring weather and the campus microclimate (Kropp), soil carbon measurements in different land use types (Strong), monitoring the success of different reforestation techniques (Townsend, Watkins '21), measurements of carbon, nitrogen, and methane cycling in reservoir ponds and wetlands (Strong, Sangree '24, Jacobs '24, Hodges '23), and assessment of avian biodiversity in different land use types on campus (e.g., golf course, old field, agricultural fields, regrowth forest (Townsend and Wydler '21).

Currently, numerous Hamilton courses take advantage of forests and open lands to support hands-on learning in activities that are integral parts of the curriculum. These include introductory courses in Environmental Studies, Geosciences, and Biology, as well as ENVST 206 Introduction to Environmental Data, ENVST 212 Climate Change, BIO 237 Ecology, BIO 250 Biodiversity, BIO 419 Life and the Seasons, and others.

We recognize that forests are the products of decades of growth and development, and thus protecting existing forests is essential. Existing forests will be subject to increasing variability in weather and novel growing conditions as a result of climate change. The emergence of novel pests and worsening of forest infestations can impact developing and mature tracts. Therefore, management efforts will also prioritize the protection of existing forests from changing environmental conditions.

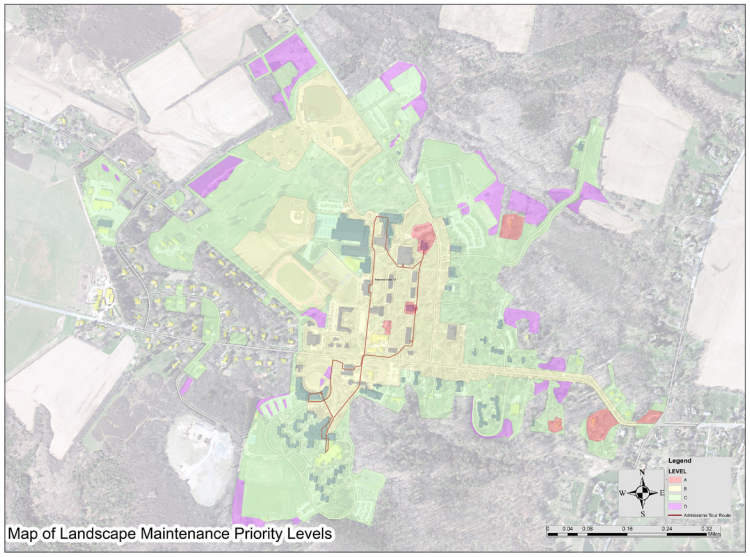
These forests represent an essential tool for teaching and research at Hamilton. All current and future land management decisions should keep Hamilton's educational mission and our guiding principles at the forefront. The health of the existing mature forest and meadows, and success of reforestation efforts, should be monitored in a research-driven framework to inform and evaluate management decisions. Management decisions should be adaptive, learning, and improving with experience, and consider the campus landscape as a whole, including the connections among individual tracts. Research, mapping, and data collection can facilitate this understanding of the broader campus landscape. Research efforts can offer long-term monitoring and add to assessment of Hamilton's carbon and water footprint at the ecosystem scale. Land management practices should be documented and easily findable for research purposes. Data collected in coordination with land management practices should be made available for faculty to use in research and teaching. All strategies for management should consult the members of the Land and Forest Stewardship subcommittee, the Hamilton Experimental Forest Committee, and the natural resources supervisor.


Adirondack
Adventure
2020

5. Green Attributes and the Main Hamilton Campus

Hamilton has intentionally integrated many environmental features into the main campus over its 200+ years, including major initiatives like the Root Glen and Arboretum, to smaller/building-specific elements like retention ponds and parking lot rain gardens. A 2019 Facilities Management initiative to stipulate landscape maintenance priorities ***(Fig. 4)*** was followed by an update to Hamilton's Landscape Master Plan in 2020, which together set aspirations to better connect the historic environmental features on campus with those in Hamilton's forests and open/agricultural lands under the banner of sustainability. Concurrently, it was vital to integrate academic teaching and research opportunities into the process.

Figure 4. Landscape Maintenance Priorities



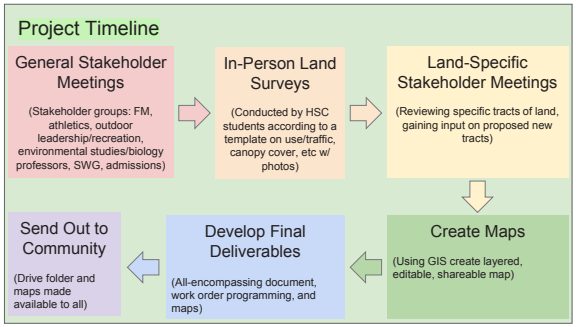
FACILITIES MANAGEMENT LANDSCAPE MAINTENANCE PRIORITIES

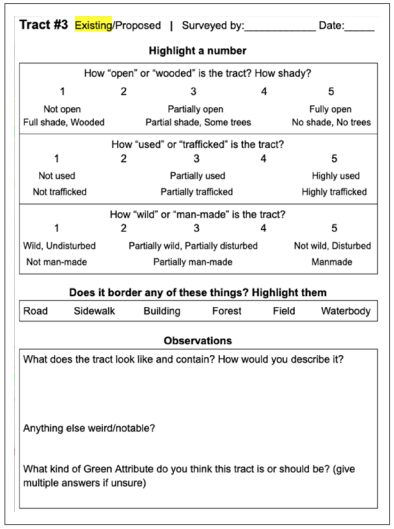
- **In 2019, Facilities Management developed** this map to identify campus maintenance priorities. The sections shaded in purple were described as "naturalized areas," but no formal process was developed to plan for and manage those areas into the future.

PROJECT STRATEGY AND ONGOING PROGRESS

The Green Attributes Project may more correctly be described as one to define, delineate, and implement naturalized landscaping features on campus, such that they can be better managed in both the near and long term. The project began formally in the spring of 2022 by students and the Sustainability Office working with critical stakeholder groups, including several Biology and Environmental Studies faculty members and the departments of Facilities Management, Admission, Athletics, and Outdoor Leadership. The six-step process the students followed, including the land survey template they completed at 108 individual tracts of land, are depicted at right ***(Fig. 5)***.

Figure 5. Green Attributes Project Process and Land Surveys




Tract #3 Existing/Proposed | Surveyed by:_____ Date:_____

Highlight a number

How "open" or "wooded" is the tract? How shady?

1	2	3	4	5
Not open Full shade, Wooded		Partially open Partial shade, Some trees		Fully open No shade, No trees

How "used" or "trafficked" is the tract?

1	2	3	4	5
Not used Not trafficked		Partially used Partially trafficked		Highly used Highly trafficked

How "wild" or "man-made" is the tract?

1	2	3	4	5
Wild, Undisturbed Not man-made		Partially wild, Partially disturbed Partially man-made		Not wild, Disturbed Manmade

Does it border any of these things? Highlight them

Road Sidewalk Building Forest Field Waterbody

Observations

What does the tract look like and contain? How would you describe it?

Anything else weird/notable?

What kind of Green Attribute do you think this tract is or should be? (give multiple answers if unsure)

By the end of the summer of 2022, the students/Sustainability Office completed all six of the initial project steps identified above, and the Green Attributes Project is now moving into full implementation. ***Fig. 6*** at right represents two of the critical project deliverables:

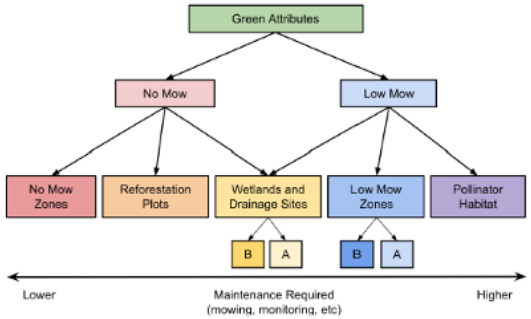
- **New tract-by-tract definitions** and maintenance regimes to replace the initial 2019 landscape maintenance priorities map.
- **An interactive GIS map** depicting our current tract management strategy that can be updated should a tract management change be necessary.

5. **Green Attributes and the Main Hamilton Campus** *(cont.)*

Figure 6. Tract-by-Tract Definitions/Maintenance Regimes & Interactive Map

I. Overview

A) Definitions and B) Brief Statement on Maintenance Regimes of Seven Green Attributes



(Figure 1: Flow chart of seven Green Attributes distinguishing between "no-mow" and "low-mow" maintenance distinctions and ranked loosely by total maintenance/management requirements.)

Definitions, In short:

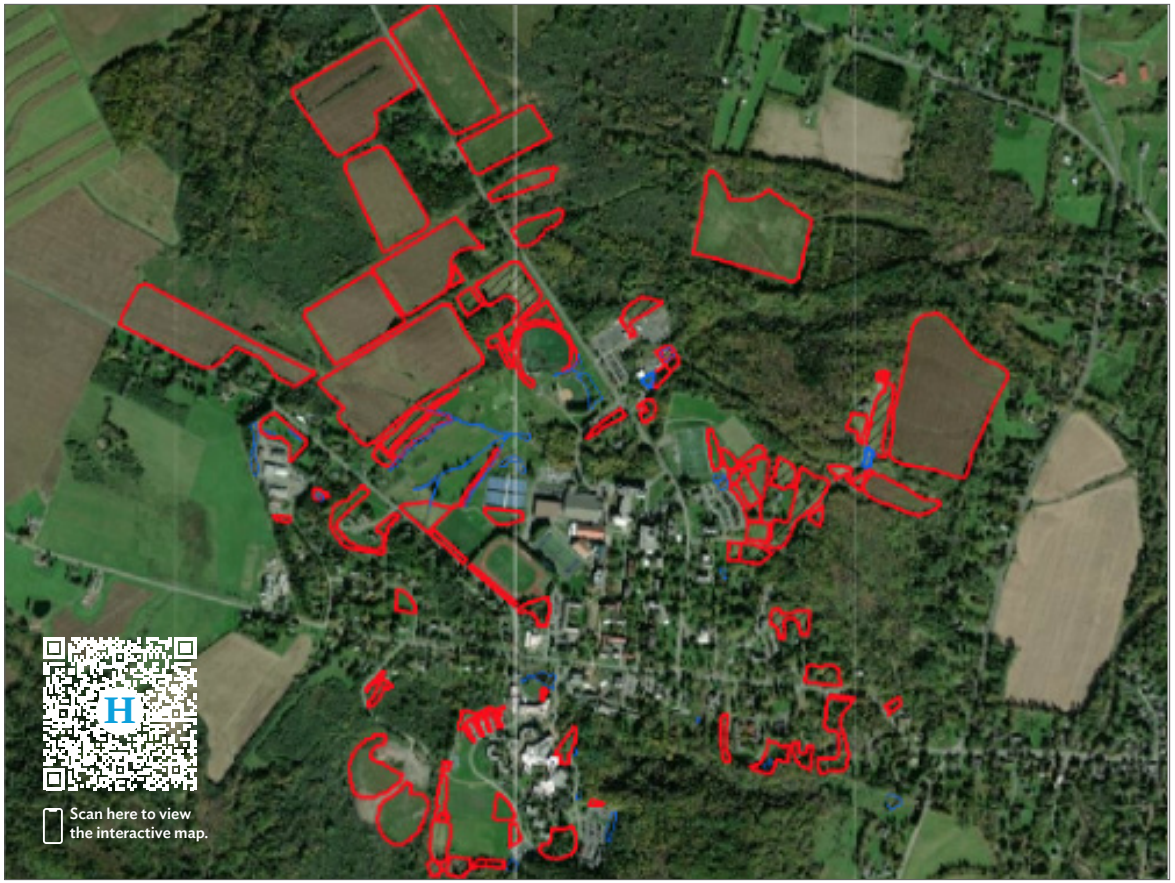
No Mow Zones - forest regeneration sites; not actively managed

Reforestation Plots - forest regeneration sites; actively managed

Wetlands and Drainage Sites - wetland habitat and run-off mitigation sites

Low Mow Zones - open spaces maintained as field habitat

Pollinator Habitat - open spaces maintained as field habitat with wildflowers seeded for pollinators



EXAMPLE INITIATIVES ASSOCIATED WITH THIS PROJECT

As depicted in ***Fig. 7***, Hamilton has implemented two pollinator habitats on campus. In addition to eliminating resource-intense lawn mowing in these fields, the purpose of these habitats is to support and maintain pollinators (bees, butterflies, etc.) by supplying food in the form of pollen and nectar to bolster biodiversity and assure these important animals may pollinate nearby crops for continued fruit/vegetable production.

Figure 7. Campus Pollinator Habitats

ROGERS ESTATE POLLINATOR HABITAT
(installed Oct. 2018)

MINOR FIELD POLLINATOR HABITAT
(installed Oct. 2022)

UPCOMING PRIORITIES

When the Green Attributes Project was in its initial conception phase (2021), students in the Sustainability Office, in collaboration with Facilities Management, designed a signage strategy to communicate land management tactics alternative to mowing in six locations on campus ***(Fig 8)***. Within the next year, this signage strategy will be dramatically and collaboratively expanded to highlight the fully implemented Green Attributes Project to former, current, and prospective members of the College community.

Figure 8. Low/No-Mow Signage

LOW-MOW SIGNAGE INSTALLED IN AUGUST 2021

EXAMPLE LOW/NO-MOW SIGNAGE TO BE CONSIDERED IN THE FUTURE


COMPOST

6. **Outdoor Recreation and Wellness**

Hamilton's Outdoor Leadership and Wellness programs are long-established and provide many benefits to the College community beyond sustainability. However, this plan's guiding principles create a strategic intersection among these areas in our open/agricultural lands and forests. All current and future expansion of trails will include plans to monitor and control invasive species, which can be spread by creating openings in existing forests. The following are ongoing projects and future areas of opportunity.

TRAIL DEVELOPMENT AND EXPANSION

Since 2020, multiple tree-thinning and reforestation projects have resulted in the expansion of existing trail networks or created new trails ***(Fig. 9)***.

Figure 9. Trail Development and Expansion Projects

ROGERS AND RESERVOIR FORESTS

- **Tree removal in 2020 and 2021** to increase emergency accessibility of water utility lines; the resulting trails were mulched and seeded in 2022 to expand the trial network in these areas.

TRACT 11 REFORESTATION

- **Reforestation efforts in 2021 and 2022** at Tract 11 created a new trail network around and through the tract.

6. **Outdoor Recreation and Wellness** *(cont.)*

TRAIL IDENTIFICATION AND SIGNAGE

Outdoor Leadership has successfully implemented and managed trail systems in certain sections of the Kirkland and Rogers forests for many years. ***Fig. 10A/B*** depicts projects where students and the Sustainability Office have assisted (or will in the near future) Outdoor Leadership with the trail identification and signage program.

Figure 10A. Trail Identification and Signage

KIRKLAND FOREST

- **Sustainability interns installing trail markers and developing maps in 2017.**

Figure 10B. Trail Identification and Signage

KIRKLAND AND ROGERS FORESTS

- **Trailhead wayfinding signage** developed and installed in 2020 by Outdoor Leadership.
- **Similar trailhead wayfinding signage** will be developed and installed at the Reservoir Forest in the near future.

Other areas of future intersecting opportunities between Outdoor Leadership/Wellness and sustainability in open/agricultural and forested lands include:

- **Golf course replanting** for snow management
- **Campsite(s) establishment** in the Kirkland forest, including building a bridge and new trail spur up the south side of Potter's Trail
- **Examine feasibility** of recreation development in the Reservoir Forest with careful consideration of research, biodiversity, and sustainability goals
- **Formal creation** of a trail crew

7. Community Garden and Other Food-Growing Opportunities

HAMILTON'S HALF-ACRE COMMUNITY GARDEN ***(Fig. 11)*** was founded as the Hamilton College Community Farm in 2007 and is located to the northeast of the Woollcott and Ferguson houses. The original intent was for the farm to be a multi-plot food production operation for student workers and Hamilton's primary food service provider, with one plot (the 1812 Heritage Garden) dedicated to an academic course titled Food for Thought; The Science, Culture, and Politics of Food.

Today ***(Fig. 12)***, most of the plots are managed by individual students or employees for their own enjoyment, and the 1812 Heritage Garden has been turned into a small apple orchard. Further, a small beekeeping operation is being piloted near the garden. While a formal, long-term plan for the Community Garden has yet to be established, currently there are two locations (marked "open plot") that may be utilized by students, faculty, or staff. Discussions regarding increased utilization and potential expansion of the operation in support of our guiding principles are under active consideration.

Figure 11. Community Farm as Originally Founded

Figure 12. Community Garden Today

8. **Carbon Sequestration and Additionality**

The ability for Hamilton to annually claim the carbon sequestered by its forested and open/agricultural lands as a sink in comparison to its carbon emissions inventory is based on several critical factors at the heart of this Land and Forest Stewardship Plan:

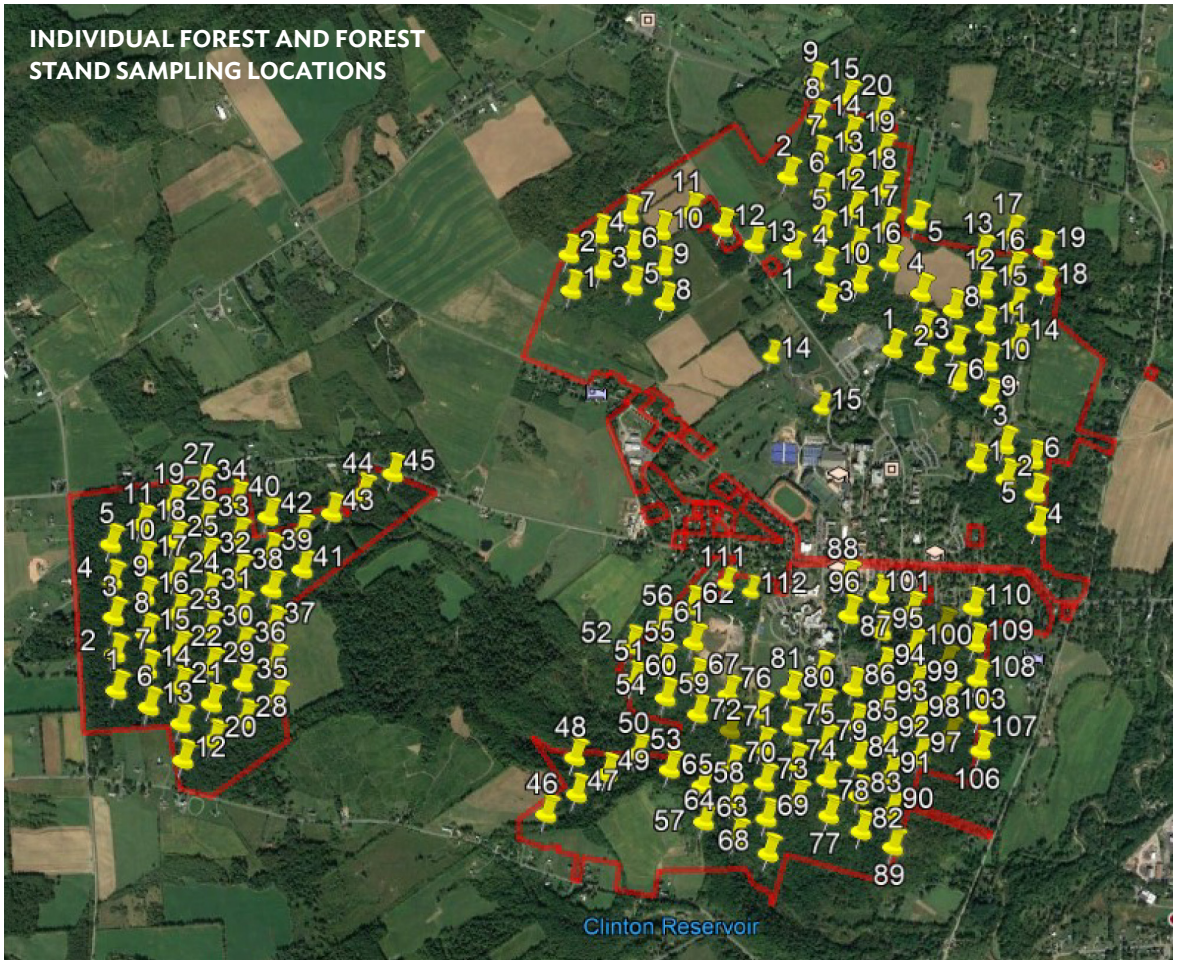
- **Accurate forest/land measurement and forest-carbon accounting**
- **Formal certification and objective third-party verification**
- **Meeting the principle of additionality**

The following pages discuss each of these factors.

ACCURATE FOREST/LAND MEASUREMENT AND FOREST-CARBON ACCOUNTING

Building upon an initial 1983 Timber Management Plan, Hamilton hired a consulting forester in both 2017 and 2020 to perform accurate forest-carbon accounting measurements to determine the applicable baseline sequestration rates ***(Fig. 13)*** of our four forests, in accordance with recognized and peer-reviewed techniques. Simultaneous and integral to that carbon-accounting process were the compilation of additional forest-by-forest and stand-by-stand criteria (i.e., stand acreage, age, species diversity/density, overall health, invasive species), which enable future management considerations focusing on criteria other than carbon.

Figure 13. Forest & Forest-Carbon Accounting Projects



CARBON STORAGE/SEQUESTRATION ACCOUNTING PROJECTS

- **2017**—Reservoir and Kirkland forests baseline measurements
- **2020**—Rogers and North Central forests baseline measurements
- **2022**—5-year remeasurements for the Reservoir and Kirkland forests, and 2-year remeasurements for the Rogers and North Central forests

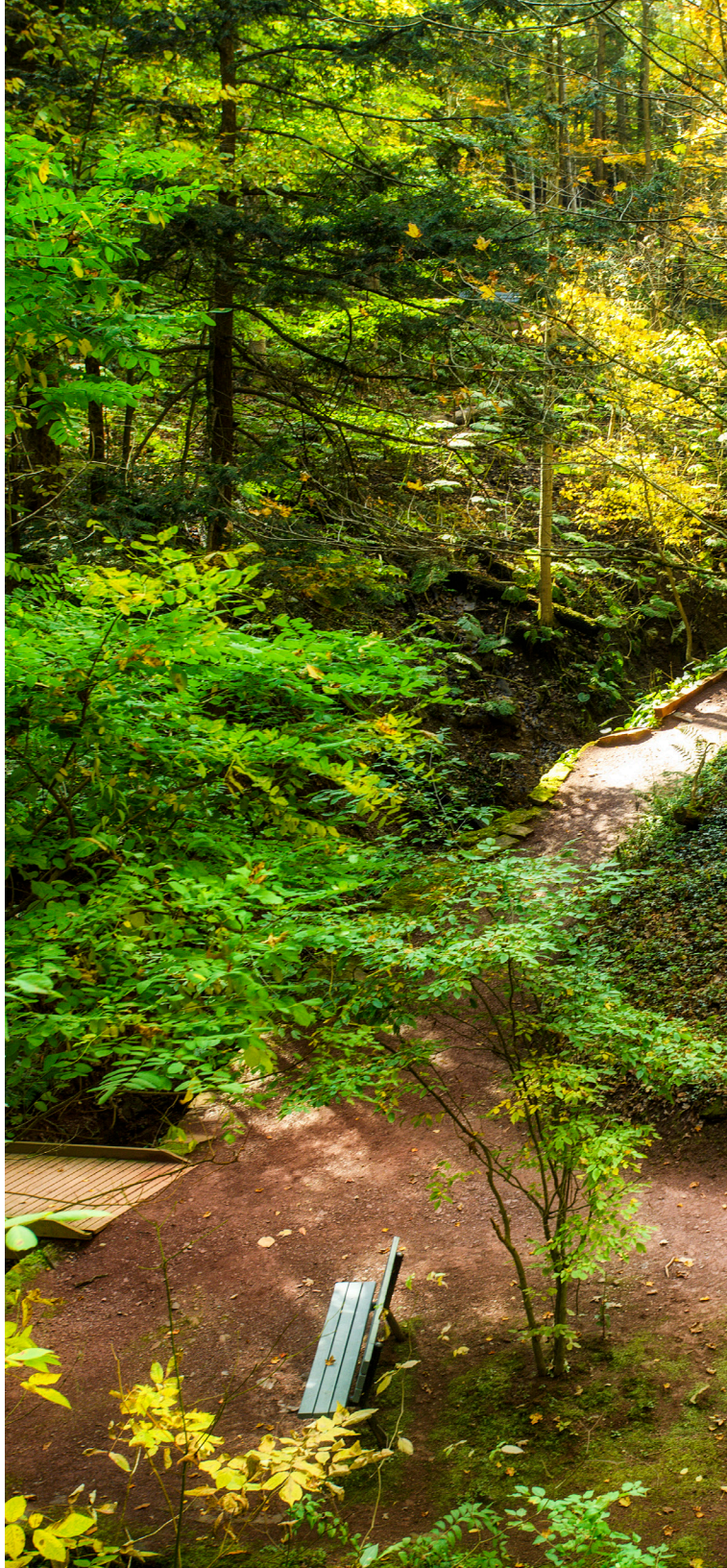
8. **Carbon Sequestration and Additionality** *(cont.)*

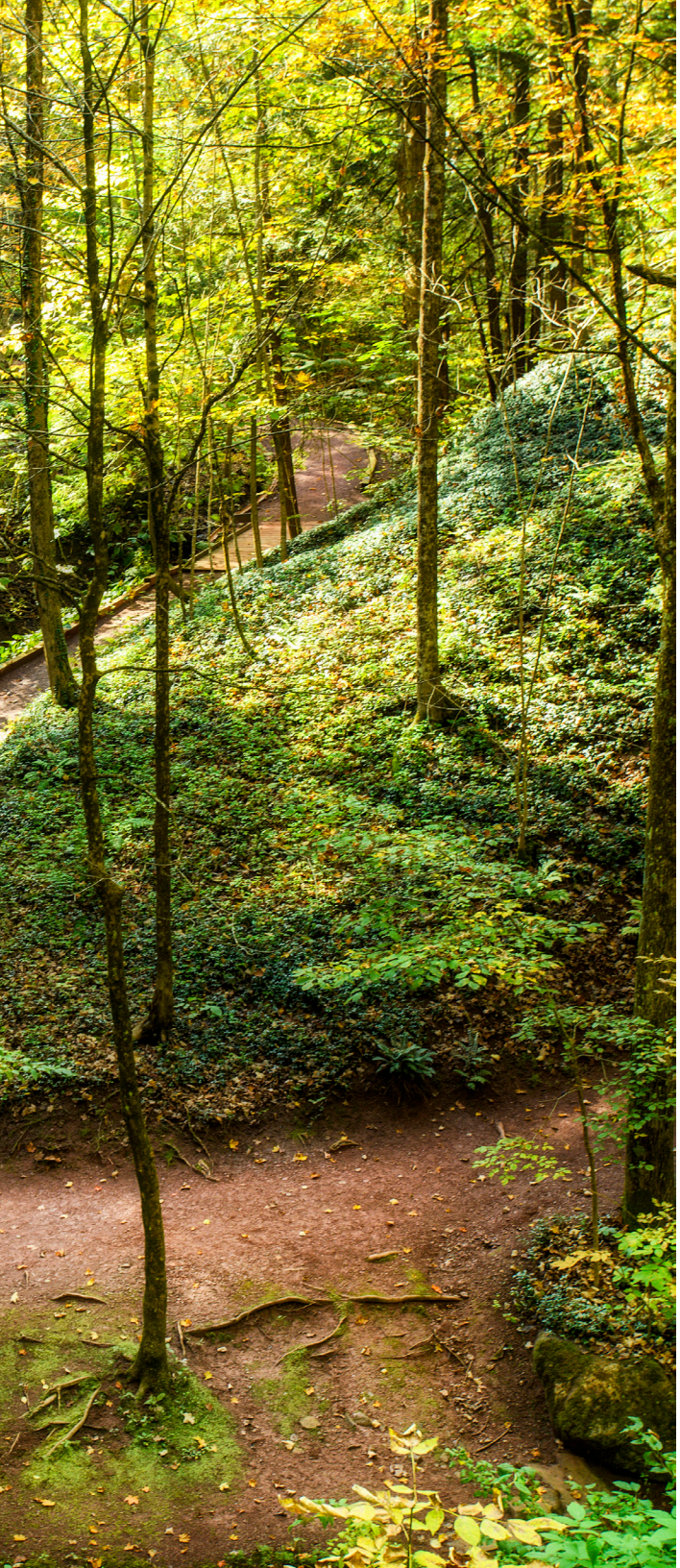
As a result of the determined feasibility of forest carbon sequestration to significantly contribute to our multi-pronged carbon neutrality strategy, Hamilton brought the forester back for remeasurement purposes in 2022 and will continue to do so at five-year intervals. It is important to note that if intentional silvicultural practices are performed to thin or remove individual trees/tree stands in a measurement tract or accidental (forest fires) or unplanned (theft) events occur beyond natural mortality, Hamilton will account for such events as generated emissions in its annual carbon emissions inventory.

FORMAL CERTIFICATION AND OBJECTIVE THIRD-PARTY VERIFICATION

A fundamental element of the formal forest certification process includes a third-party inspection across eight standard categories, including:

1. Commitment to practicing sustainable forestry *(including a management plan)*
2. Compliance with laws
3. Reforestation and afforestation
4. Air, water, and soil protection
5. Fish, wildlife, biodiversity, and forest health
6. Forest aesthetics
7. Protect special sites
8. Forest product harvests and other activities





From a forestry and geographical perspective, Hamilton's four forests are only considered to be two distinct ones; those that are contiguous to the campus proper (Kirkland Forest, North Central Forest, Rogers Forest) and those that are non-contiguous to the campus proper (Reservoir Forest). Both forested areas were formally certified through the American Tree Farm System (ATFS) following inspection and verification by Steven Bick (a qualified ATFS inspector) on Feb. 6, 2020, with the following ATFS designations:

- **Non-contiguous forest** (Reservoir): Tree Farm Number 4222
- **Contiguous forest** (Kirkland, North Central, Rogers): Tree Farm Number 4223

All future management actions embodied by this Land and Forest Stewardship Plan shall both observe our established guiding principles and conform to the minimum forest certification standards necessary to maintain such certification.

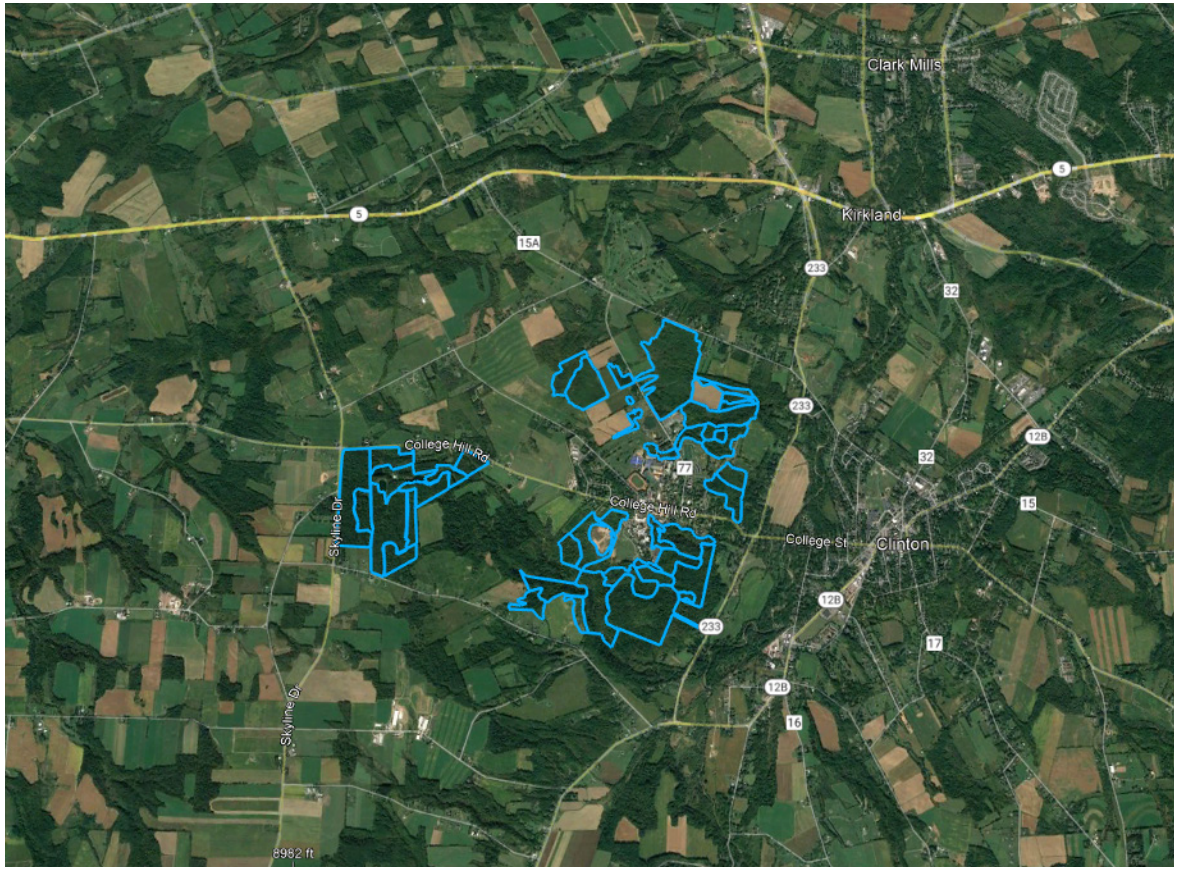
PRINCIPLE OF ADDITIONALITY

By managing existing forested lands to sequester carbon, Hamilton can reduce its net greenhouse gas emissions. However, Hamilton must consider the additionality of these carbon removals (i.e., Are we removing more carbon from the atmosphere than would have occurred without Hamilton's actions?). The aforementioned 1983 Timber Management Plan evaluated Hamilton's forests for their financial value if they were to be harvested and sold as home-heating cordwood or saw-timber for construction/furniture manufacturing. Today, Hamilton values its forests and open/agricultural lands for both their intrinsic natural value as well as their capacity to sequester carbon in pursuit of carbon neutrality goals.

If not for its historic and future intended forest/land management efforts, it is likely that at least 90% of Hamilton's existing forested landholdings (those areas outside of glens or deep ravines) would have been cleared for agricultural purposes, like most of

8. **Carbon Sequestration *and* Additionality** *(cont.)*

Figure 14. Agricultural Lands Surrounding Hamilton College



the surrounding area ***(Fig. 14)***. Thus, we are electing to account for 90% of the carbon sequestration — the carbon removed each year from the atmosphere from forest growth — as additional and as negative emissions in our inventory. This approach to carbon accounting is in line with the requirements of carbon inventory reporting to Second Nature.

Hamilton further postulates that this Land and Forest Stewardship Plan, in active pursuit of its established guiding principles, is additional and beyond the "business-as-usual" standard such that

- **90% of the forest carbon sequestered** annually (minus any intentional, accidental, or unplanned events) as remeasured every five years ***and***
- **100% of the carbon sequestered** from the reforestation tracts Hamilton has or intends to implement in the near future (to be assessed once there is measurable (>3") tree growth and therefore carbon)

will be treated as a carbon sink and deducted from our annual carbon emissions inventory in pursuit of our carbon neutrality strategy.

Additional Land and Forest Stewardship Plan Participants

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