

ECOLOGICAL INVENTORY
for
DISTANT HILL GARDENS AND NATURE TRAIL

Prepared for:
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Distant Hill Gardens and Nature Trail



Respectfully submitted by:

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Contents

Introduction.....	2
Site description.....	2
Wildlife Inventory.....	4
Birds	6
Mammals.....	7
Reptiles and Amphibians	9
Invertebrates	10
Plant Inventory.....	11
Natural Communities	14
Rare and Uncommon Plants.....	16
Invasive Plants.....	16
Unfragmented Landscape and Habitat Connectivity	18
Recommendations.....	20
Literature Resources	22
Appendix A. Distant Hill Bird Species.....	i
Appendix B: Property Species List.....	v
Appendix C: Habitat Block Size Requirements for Wildlife.....	41

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Cover photos (clockwise from top-left): Spring Peeper, Cutleaf Grapefern, Twelve-spotted Skimmer, and Eastern Milksnake. Photos by Steven Lamonde.

Introduction

Following completion of the stewardship plan for Distant Hill Gardens and Nature Trail (Mohr 2022), Moosewood Ecological LLC conducted an ecological inventory to establish a baseline snapshot of the ecological communities and their wildlife by thoroughly searching for and documenting wildlife and rare plants within the various habitats and natural communities present. These surveys were coordinated in conjunction with Jesse Mohr of Native Geographic and students and faculty from Antioch University New England. This report provides Distant Hill Gardens and Nature Trail (Distant Hill) with a better sense of management opportunities to support biodiversity and species of conservation concern.

Site description

Covering 155 acres saddled on the Walpole-Alstead boundary in southwestern New Hampshire (Figures 2 and 4), Distant Hill includes five contiguous parcels of privately-owned land. Mixed hardwood-softwood stands cover the largely forested study area, which contains several miles of trails that offer visitors scenic views, a self-paced geology tour, a monthly story book walk, and countless opportunities for passive and active environmental education.

The most recent addition to Distant Hill, a 29.26-acre lot, referred to as “Lost Acre”, was purchased and added to the Distant Hill property just after the completion of this study. While Moosewood Ecological’s field sampling was conducted prior to this purchase, the Lost Acre parcel was included in a 2021-2022 invertebrate survey by Antioch University New England faculty and students. Preliminary data from these reports are summarized within.



Figure 1. Rattlesnake Knoll, a nutrient-rich outcrop hosting numerous uncommon plants.

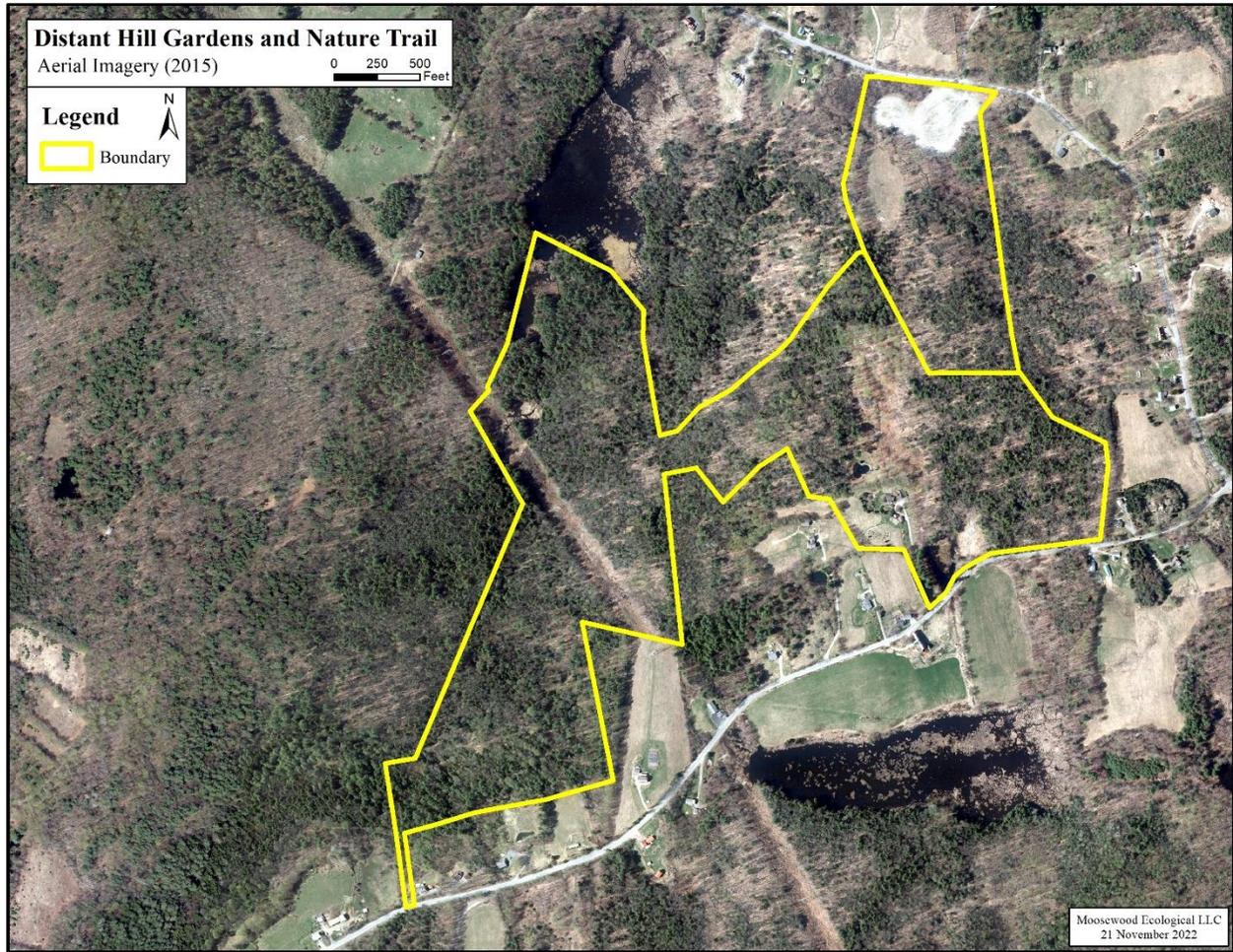


Figure 2. Aerial photography (2015) of Distant Hill Gardens and Nature Trail.



Figure 3. Yellow-bellied Sapsuckers are common during breeding and migration seasons.

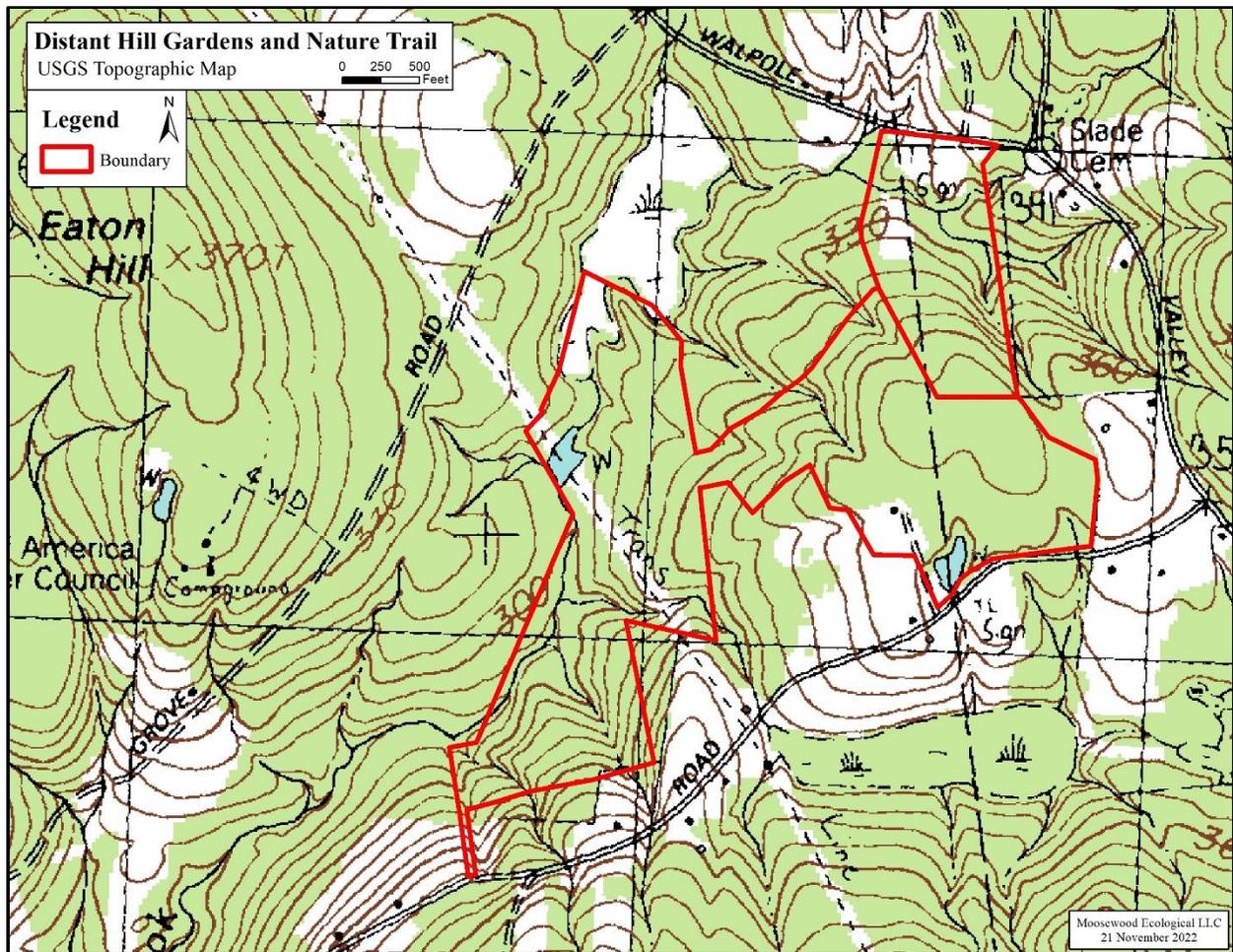


Figure 4. US Geological Survey topographic map of Distant Hill Gardens and Nature Trail.

Wildlife Inventory

Prior to field surveys, a landscape analysis was conducted in ESRI ArcMap 10.8 to locate natural features of particular interest. Spatial datasets included 2015 high-resolution color infrared and color aerial photographs (Figure 2), USGS topographic quadrangles (Figure 4), National Wetlands Inventory data, NH Wildlife Action Plan habitats (Figure 5), and NH hydrography datasets provided by NH GRANIT. The analysis of these data afforded the opportunity to better understand the ecological characteristics of the property prior to on-site investigations and to complement the efforts of our systematic sampling design (Figure 6). Rare species and exemplary natural communities from the NH Natural Heritage database were reviewed for Distant Hill and the surrounding area.

Spring and summer months were emphasized for wildlife and plant surveys, while mammal tracking was conducted following winter snowfalls. We recorded locations of significant observations with handheld GPS units while casual observations of non-focal plants, wildlife, and fungi were collected to establish a baseline species list for the property. Two community-

science databases, eBird and iNaturalist, were used for recording most data points as well as searching for additional data submitted by other observers visiting Distant Hill.

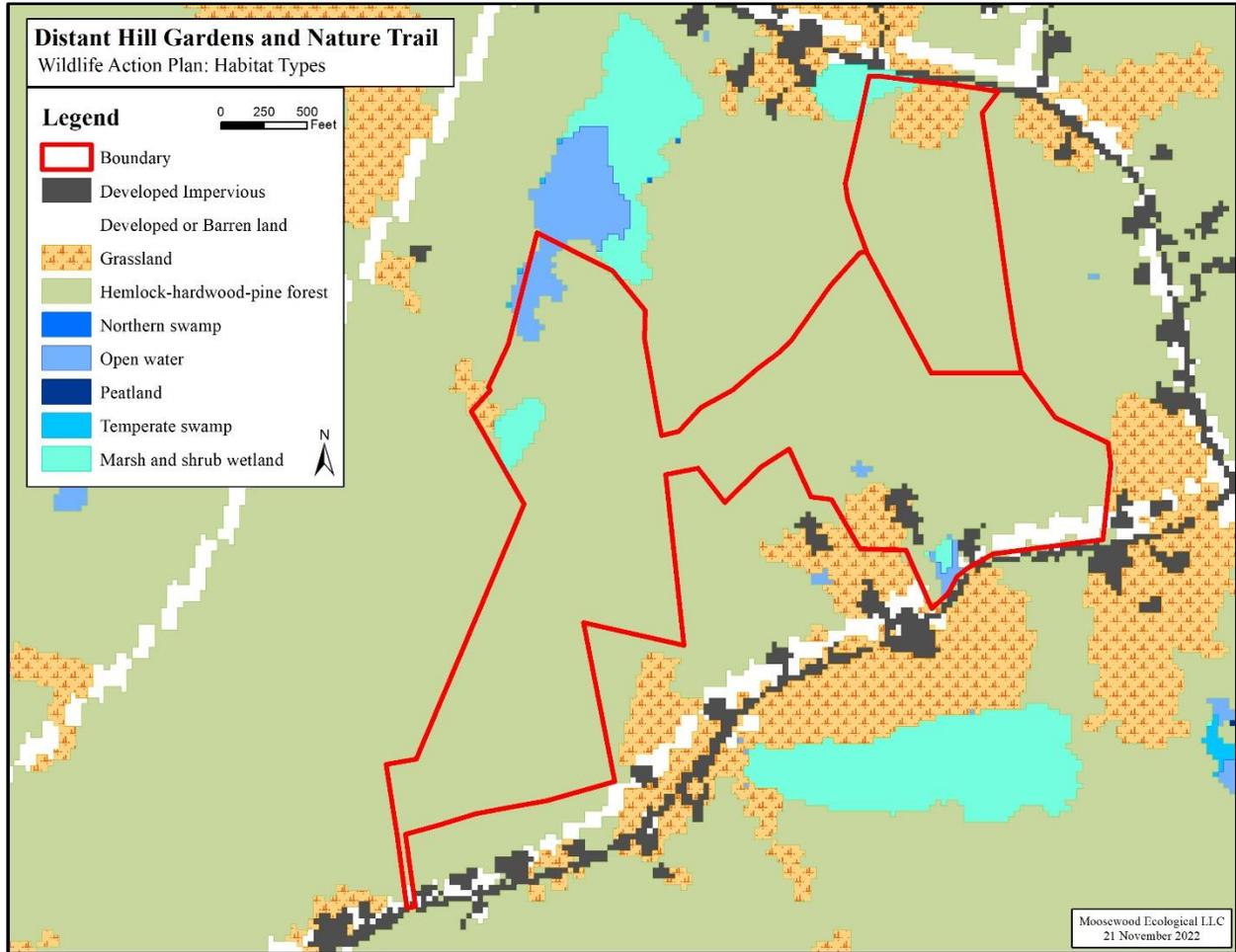


Figure 5. NH Wildlife Action Plan (2020) coarse-filter habitats of Distant Hill Gardens and Nature Trail.

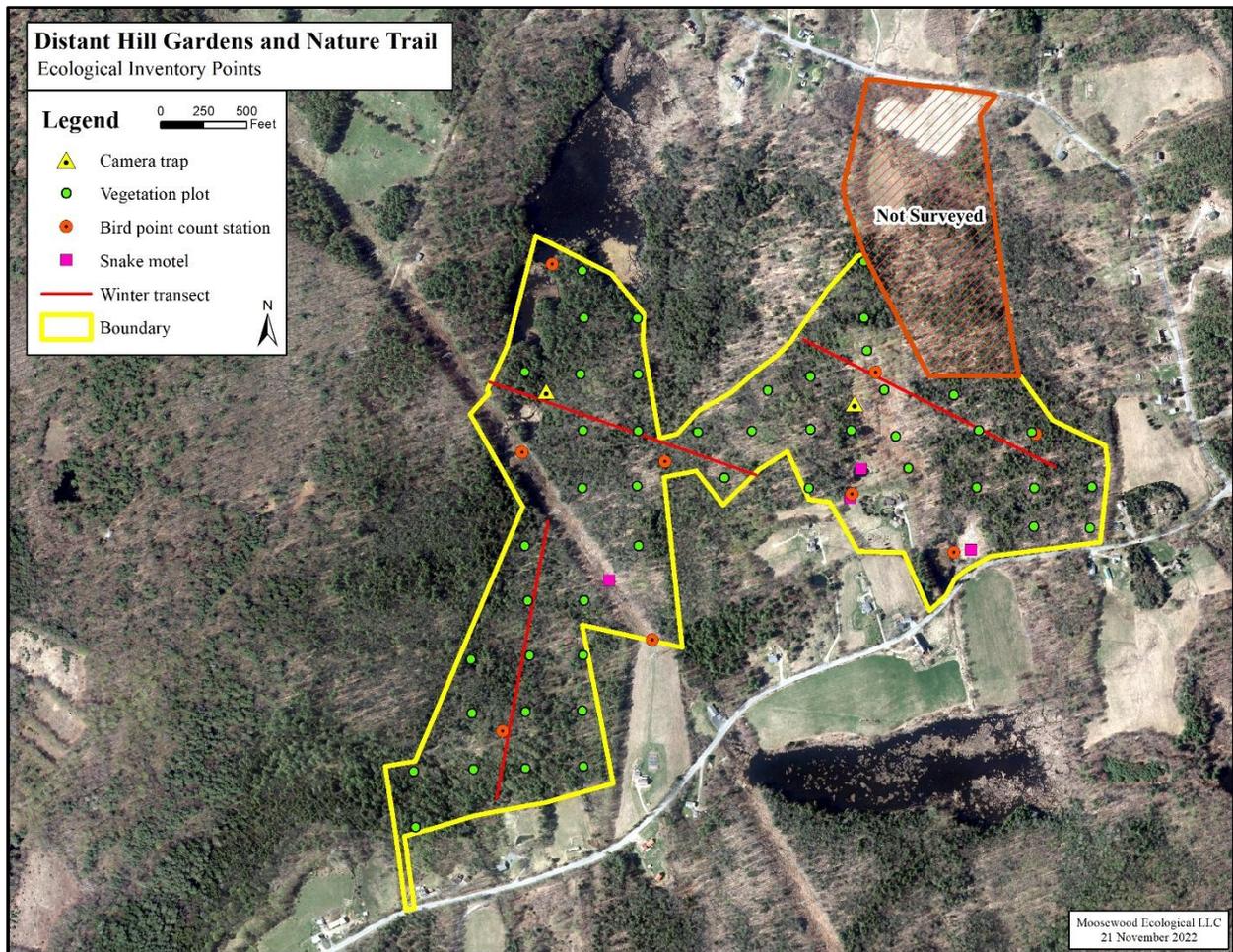


Figure 6. Ecological inventory points by survey type used for the ecological inventory at Distant Hill Gardens and Nature Trail.

Birds

Three breeding bird surveys took place during May-July 2021 (5/20, 6/11, 7/15), when all local breeding bird species were expected to have returned from spring migration. These followed a migration-season survey conducted on 29 April to document species that utilize the property as they transition from winter to the breeding season. Prior to this ecological inventory, additional standardized data was collected monthly from November through early April. All species detected during these nine months of surveys are included in this report. Bird surveys in all seasons followed the same protocol, taking place on calm mornings with no precipitation and completed no later than three hours after sunrise to maximize detections during peak dawn chorus time. These surveys recorded all birds seen or heard during 10-minute observation windows at nine point-count stations positioned within or adjacent to all representative habitats on the property. Point-count stations were spaced more than 250 meters apart to minimize double-counting.

In total, 112 bird species have been documented at Distant Hill, including 90 species detected during point-count surveys and 22 species noted during public programs or other site visits. From the full species list (Appendix A), various conservation plans list 36 of them as a species of conservation concern (Table 1). Some 79 species are possible, probable, or confirmed breeders on the property, while the remaining 33 species visit or fly over Distant Hill during migration or winter seasons. Amongst breeding season species, Ruffed Grouse, Black-billed and Yellow-billed Cuckoos, American Kestrel, Veery, Wood Thrush, Purple Finch, and Scarlet Tanager are listed as species of greatest conservation need within New Hampshire.

Table 1. Bird species of conservation concern detected at Distant Hill.

Species	Status	Species	Status
Wood Duck	3	Evening Grosbeak*	2, 5
American Black Duck*	1, 3, 4	Pine Grosbeak*	3
Ruffed Grouse	1, 3, 4	Purple Finch	1, 3, 4
Yellow-billed Cuckoo	1, 2, 4	American Tree Sparrow*	2
Black-billed Cuckoo	1, 2, 3, 4, 5	Eastern Towhee	1, 4
Chimney Swift*	1, 2, 3, 4, 5	Bobolink*	1, 2, 3, 4, 5
Killdeer*	3	Common Grackle	2
Common Loon*	1, 3, 4	Ovenbird	3
Northern Harrier*	1, 3, 4	American Redstart	3
Bald Eagle*	1, 3, 4	Northern Parula*	3
Yellow-bellied Sapsucker	3	Blackburnian Warbler	3
Northern Flicker	3	Chestnut-sided Warbler	3
American Kestrel	1, 4	Blackpoll Warbler*	3
Eastern Wood-Pewee	3	Black-throated Blue Warbler	3
Barn Swallow*	3	Black-throated Green Warbler	3
Brown Creeper	3	Canada Warbler*	1, 2, 3, 4, 5
Veery	1, 3, 4	Scarlet Tanager	1, 4
Wood Thrush	1, 2, 3, 4, 5	Rose-breasted Grosbeak	3

* species not likely breeding on the property

1. New Hampshire Wildlife Action Plan (2015)
2. Partners in Flight (2016)
3. Bird Conservation Region 14 (2006)
4. New Hampshire Audubon (2020)
5. North American Bird Conservation Initiative (2022)

Mammals

Three primary methodologies were employed to survey mammals at Distant Hill, each with a different focus. Starting in late October 2021 and ending in July 2022, motion-sensing camera traps were established at three locations to document wildlife, especially large and medium-sized mammals as they moved throughout the property. In late January and early March of 2022, three

500-meter linear transects were walked to record animal tracks moving across them. Additionally, Jesse Mohr of Native Geographic, LLC conducted acoustic bat surveys from July 2021 to August 2021, in which three acoustic recording stations were established across the property (Mohr 2021). Complementing the camera trap data and winter tracking data were incidental observations of mammals during site visits throughout the year.

To date, 23 species of wild mammals have been recorded by sight, tracks, scat, scent stations, browse, and acoustic recordings at Distant Hill. These included white-tailed deer, eastern gray squirrel, American black bear, coyote, bobcat, gray fox, eastern chipmunk, red fox, American beaver, North American porcupine, North American river otter, Virginia opossum, woodland jumping mouse, American red squirrel, mink, fisher, northern long-eared bat, little brown bat, big brown bat, hoary bat, red bat, flying squirrel (genus *Glaucomys*), and weasel (genus *Mustela*). While so far undetected at Distant Hill, numerous small rodents are likely present, including voles, shrews, and additional mice species.

Despite one of the camera traps malfunctioning during deployment, good data was collected at two sites, the first along Great Brook approximately 70 meters east of the right-of-way and the second along a walking trail in the sugarbush (Table 2). The sugarbush site yielded far more detections (N = 266) and species (n = 12) than the Great Brook site, which had 10 detections of 6 species (Table 2). Humans were the most abundant visitor (n = 159), followed by dogs (n = 70), and white-tailed deer (n = 48). Future camera trapping efforts should consider placing cameras in more locations to better quantify mammal usage of different habitats.

Table 2. Camera trapping data summarized by the number of detections (D), count of individuals (n), and mean number of days between detections (mDays) calculated as the deployment length in days divided by the total number of detections.

	Great Brook		Sugarbush	
	D (n)	mDays	D (n)	mDays
American black bear	1 (1)	107.0	3 (3)	60.0
Bobcat	1 (1)	107.0	3 (3)	60.0
Coyote	1 (1)	107.0	4 (4)	45.0
Dog			57 (70)	3.2
Eastern gray squirrel			30 (31)	6.0
Flying squirrel sp.			1 (1)	180.0
Gray fox	1 (1)	107.0		
Human	3 (4)	36.0	110 (159)	1.6
North American porcupine			1 (1)	180.0
Red fox			1 (1)	180.0
White-tailed deer	3 (5)	36.0	36 (48)	5.0
Wild turkey			8 (19)	22.5

Winter mammal tracking detected fewer animals than the longer-term camera trapping study, and no additional mammals were detected during this effort. A total of 63 track-based detections were made, representing seven species: bobcat, coyote, mink, otter, weasel (*Mustela sp.*), white-tailed deer, and wild turkey. Twenty-two (35%) of all tracks could not be identified to species, most often as a result of snow conditions. Despite this common limitation of winter tracking, transect two stood out as the most species-diverse transect (Table 3).

Table 3. Total number of detections for all species at each of three 500-meter transects during winter tracking surveys.

Species	T1	T2	T3
Bobcat			1
Coyote		4	2
Mink		1	
Mustelid sp.	2	2	
Northe American river otter		1	2
unknown canine	4	3	
unknown mammal	4	3	4
Weasel sp.			4
White-tailed Deer	10	12	3
Wild Turkey		1	

Reptiles and Amphibians

Four snake motels were deployed at Distant Hill in June of 2021 and checked irregularly for the remainder of the 2021 and 2022 field seasons. This simple design, consisting of two to four layers of separated wooden boards and a black pool liner covering, was pioneered by herpetologists in Vermont as a means to attract and inventory snakes, particularly in grassy fields within the Champlain Valley. Moosewood Ecological began implementing this survey technique in New Hampshire, with Distant Hill being used as one of our first test sites. Several common garter snakes were observed using the snake motels and one eastern milksnake was found in the right-of-way motel. In general, no more than one snake was observed during a motel check, and motels were not checked with enough regularity to determine how frequently snakes occupied each motel. Incidentally, ants, spiders, and sign of small rodents were common in each of the four motels. These snake data, complemented with iNaturalist observations, suggest common garter snake as the most abundant snake species at Distant Hill, with eastern milksnake, eastern ribbon snake, and ring-necked snake making occasional appearances.

Given the largely forested landcover of Distant Hill, the discovery of Dekay’s brown snake and red-bellied snake would not be unexpected. Similarly, there is good potential for northern watersnake to occur in or near the aquatic systems at Distant Hill, particularly the northern wetland abutting the property. Lastly, while smooth green snakes prefer larger tracts of

shrubland, this species may use the powerline right-of-way to move from one local population to another. According to NH Fish & Game's Reptile and Amphibian Reporting Program, smooth green snakes have been reported in Alstead within the last 24 years. Both smooth green snakes and eastern ribbon snakes are species of conservation concern in New Hampshire.

Standardized turtle trapping was not conducted as part of this inventory due to the lack of extensive wetland within the boundary of Distant Hill and to the unlikely occurrence of species of conservation concern, namely spotted turtle, Blanding's turtle, wood turtle and eastern box turtle. However, both painted turtles and common snapping turtles are known to occur at Distant Hill, the former of which maintains a modest population in the wetland north of Distant Hill.

Due to prior monitoring efforts of Distant Hill's nine vernal pools, standardized surveys were not conducted during this inventory. However, a successful effort was made to confirm the presence of Jefferson Salamander complex in the one vernal pool they are known to breed and deposit their egg masses. All told, thirteen species of amphibians have been detected at Distant Hill: eastern newt, spring peeper, eastern red-backed salamander, spotted salamander, green frog, wood frog, American toad, gray treefrog, American bullfrog, pickerel frog, northern-two-lined salamander, Jefferson salamander complex, and four-toed salamander.

Invertebrates

While no standardized surveys were implemented for invertebrates by Moosewood Ecological on the property, it was hard not to take notice of the many winged insects and other eye-catching critters at Distant Hill. All incidental observations were reported to iNaturalist. Additionally, in 2021 and 2022, Antioch University students and faculty conducted surveys for moths, bees, and ants at Distant Hill. The preliminary data from their study is included in the following summary numbers. Of the nearly 1,000 animal species detected at Distant Hill, more than 85% of these are invertebrates and the following six taxonomic orders are represented by more than 20 species, as documented by surveys or research-grade iNaturalist observations: Lepidoptera (330 species), Hymenoptera (84), Coleoptera (47), Diptera (45), Hemiptera (25) and Odonata (23).

Many of the species discovered during this two-year period are first-records for Cheshire County or New Hampshire, which, while exciting, also points to a general lack of invertebrate surveys in the region. For example, Hunt (2012) identified northern Cheshire County as a region in need of dragonfly and damselfly surveys, and Alstead had an official Odonata list of zero species as of the publication of the New Hampshire Dragonfly Survey. Aside from the statewide odonate survey, taxa-specific inventories at this scale are generally lacking. A direct consequence of this is that not enough information is known on the majority of invertebrate species, particularly the less charismatic ones, to allow for potential listing as a species of conservation concern. As a result, only a handful of butterflies and moths (20 species), tiger beetles (4), bumblebees (4), and odonates (10) are listed (NH Fish and Game 2015). Of these, only the monarch, a species of greatest conservation need, has been detected at Distant Hill.

Plant Inventory

Plants were sampled in upland and wetland communities. The purpose of the plant inventory was to better understand the presence and distribution of rare and uncommon plants, natural communities, and invasive species. These data would then inform land management planning and stewardship activities.

Wetland communities were assessed qualitatively during various site visits. Upland forests were systematically sampled in a total of 47 plots spaced at least 100 meters apart. Three vertically distributed zones within the forest, or synusia, were designated to inventory plants at each plot. The variable radius plot method was used to sample the upper synusium (≥ 3 meters above the ground) using a 10-factor prism to record species by diameter. The middle synusium was sampled within a 10x10-meter plot and included all plants 0.5-3 meters above the ground. The number of each species within the plot was recorded. The lower synusium (<0.5 meters) was sampled using a 1-m² plot in two locations: northeast and southwest corners of the 10x10-meter plot. Percent coverage was recorded for each species.

A total of 51 plant species were documented at vegetation plots during the systematic surveys (Tables 3, 4, and 5). These included 16 trees, 8 shrubs and brambles, and 27 species of wildflowers, ferns, mosses, *Lycopodium* (clubmosses), and one *Carex* (sedge) species. This list of species is not meant to be comprehensive, rather it serves as a sample of the forested community at Distant Hill during this ecological inventory. Several other species are known to occur and many others are yet to be discovered.

The upper synusium assesses the relative dominance and frequency of the canopy and subcanopy within a forest. At Distant Hill, there were 14 tree species documented in this zone, including hophornbeam (an understory tree). The upper synusium is dominated by eastern hemlock (RD = 35%), followed by red maple and sugar maple then black birch and American beech (Table 3). Most of the species are generalists or prefer moderate to more slightly acidic soils and are not strong ecoindicators of site conditions. However, a couple of species indicate some moderate enrichment in small pockets. These included sugar maple, white ash, and hophornbeam. Other incidental observations of shagbark hickory and basswood also attest to this enrichment scattered throughout Distant Hill.

Most of these enriched pockets have been previously identified, and the plant inventory data reinforces these observations due to intrusions of enriched bedrock. Further exploration is needed to fully understand the distribution of the enriched sites. Nonetheless, these intrusions were not unexpected since underlying enriched bedrock is known to occur in the Connecticut River valley, extending into the adjacent eastern highlands.

The middle synusium examines the mid story of a forest to begin to understand species regeneration. It typically documents tree saplings and shrubs, but due to the sampling height range it can also include a few tall, non-woody plants including various types of ferns. American beech, eastern hemlock, and striped maple (an understory tree) were the most abundant and frequently observed throughout the vegetation plots (Table 4). Relative frequency of occurrence

was 81%, 68%, and 31% respectively. Glossy buckthorn was the only invasive plant documented in the middle synusium, although other species exist and are discussed below.

Tree species composition within this zone was similar to the upper synusium. However, the middle synusium did have a very low abundance and distribution of red spruce, but hophornbeam, white oak, black cherry, and bigtooth aspen were absent altogether. The low abundance of early successional and disturbance-related trees is indicative of the past logging history. Most of the overstory species and those regenerating are mid to late successional trees. Shrubs observed included hobblebush, maple-leaved viburnum, witch-hazel, and a *Swida* species. Six species of ferns grew tall enough to be recorded within the middle synusium.

A total of 43 species were recorded in the lower synusium during systematic surveys (Table 5). These included 11 trees, 3 shrubs, 16 wildflowers, 8 ferns, 3 clubmosses, 1 sedge, and 1 invasive plant (glossy buckthorn). These species can range quite dramatically in terms of its ecoindicator status or habitat preference. For example, lowbush blueberry, wintergreen, and partridgeberry are ecoindicators of dry, acidic sites. In contrast, jewelweed, yellow birch, watercress, and sensitive fern demonstrates the range of moisture gradients from mesic to hydric. In addition, sugar maple and white ash are indicators of rich mesic soils. While most of the property is similar to the surrounding landscape, which demonstrates the typical acidic granite, the inclusions of enriched bedrock combined with a variable groundwater table and bedrock fractures provides multiple microhabitats for an interesting and diverse plant community at Distant Hill.

A list of rare and uncommon plants is maintained by the NH Natural Heritage Bureau (2019 and 2020). Rare plants include those listed as state or federally endangered and threatened. Uncommon plants include those listed as state watch and indeterminate species. Whereas, state watch species are vulnerable to becoming threatened, and indeterminate species are under review for listing as endangered, threatened, or watch species, but their rarity, nativity, taxonomy, and/or nomenclature are not clearly understood.

There were no listed species documented during the systematic plant surveys. However, four uncommon species were incidentally observed during the ecological inventory. These species included: eastern wild indigo (indeterminate), American chestnut (state watch), foxglove beardtongue (indeterminate), and Tuckerman's sedge (state watch). Another potential uncommon species includes the American hog-peanut. The variety *Amphicarpaea bracteata* var. *comosa* is considered indeterminate. Further investigation is needed to confirm if the American hog-peanut documented on the property was this particular variety. Other rare and uncommon plants may potentially occur at Distant Hill.

Table 3. Total count, relative dominance and frequency of trees in the upper synusium.

Species	Count	Relative Dominance (%)	Relative Frequency (%)
white pine	52	6.4	31.9
hemlock	283	34.6	80.9
black birch	78	9.5	57.4
yellow birch	46	5.6	59.6
paper birch	7	0.9	10.6
white ash	25	3.1	23.4
sugar maple	92	11.2	46.8
hophornbeam	4	0.5	2.1
red oak	39	4.8	31.9
red maple	107	13.1	57.4
beech	76	9.3	44.7
bigtooth aspen	1	0.1	2.1
black cherry	7	0.9	10.6
white oak	1	0.1	2.1

Table 4. Total count and relative frequency of plants within the middle synusium.

Species	Tally	Rel. Frequency (%)	Species	Tally	Rel. Frequency (%)
beech	385	80.85	red oak	8	6.38
black birch	59	21.28	red raspberry	1	2.13
blackberry	75	6.38	red spruce	6	2.13
christmas fern	25	14.89	sensitive fern	3	2.13
cinnamon fern	14	8.51	spinulose wood fern	69	19.15
<i>Swida</i> spp.	1	2.13	striped maple	192	34.04
glossy buckthorn	13	10.64	sugar maple	48	14.89
hemlock	148	68.09	white ash	10	4.26
hobblebush	57	6.38	white pine	1	2.13
maple-leaved viburnum	1	2.13	witch-hazel	1	2.13
marginal wood fern	6	2.13	yellow birch	14	8.51
paper birch	6	4.26	hay-scented fern	100+	6.38
red maple	2	4.26			

Table 5. Percent coverage and frequency of plants within the lower synusium.

Species	Coverage (%)	Frequency (%)	Species	Coverage (%)	Frequency (%)
beech	495.4	27.7	partridgeberry	4.3	11.7
black birch	16.1	2.1	princess pine	0.5	5.3
blackberry	32.0	3.2	red maple	4.6	14.9
canada mayflower	3.4	3.2	red oak	16.9	9.6
christmas fern	112.0	11.7	sarsparilla	19.4	4.3
cinnamon fern	98.9	4.3	<i>Carex</i> spp.	3.2	1.1
downy rattlesnake plantain	0.1	1.1	sensitive fern	0.1	1.1
fan clubmoss	0.2	2.1	sessile-leaved bellwort	0.4	4.3
glossy buckthorn	43.2	3.2	shining clubmoss	6.6	4.3
hay-scented fern	553.8	9.6	spinulose wood fern	57.7	12.8
hemlock	16.5	10.6	starflower	0.2	2.1
indian cucumber root	10.6	13.8	striped maple	35.6	4.3
irregular clubmoss	3.2	1.1	sugar maple	6.8	6.4
jack-in-the-pulpit	3.9	8.5	<i>Viola</i> spp.	0.1	1.1
jewelweed	3.2	1.1	watercress	0.1	1.1
lady fern	52.9	7.4	white ash	0.3	3.2
long beech fern	16.0	1.1	white pine	3.2	1.1
lowbush blueberry	0.1	1.1	wintergreen	0.1	1.1
maple-leaved viburnum	0.1	1.1	wood aster	0.2	2.1
marginal wood fern	16.1	2.1	wood sorrel	3.2	1.1
painted trillium	0.1	1.1	yellow birch	0.1	1.1
paper birch	16.1	2.1			

Natural Communities

Natural communities are assemblages of plants, their physical environments, and ecological processes that affect them. Essentially, they are ecological units that are repeated on the landscape. Natural communities include both uplands and wetlands, such as forests and woodlands, shorelines, vernal pools, forested swamps, peatlands, floodplains, and deep aquatic systems. Each natural community is distinguished by its species composition and physical structure and condition.

These communities provide scientists and resource managers with an ecological understanding of the land and its inhabitants to make intelligent, informed decisions regarding land use. Therefore, natural community classifications provide conservationists with a powerful tool to guide strategic planning. Equally as important, they provide a basis from which inventory and monitoring programs can be developed, and a means to document and track rare species and exemplary natural communities. Natural community types at Distant Hill follow Sperduto and Nichols (2011), and natural community system types follow Sperduto (2011).

Contributing to the diversity of wildlife, the natural communities and other ecological features at Distant Hill provide varied plant structure and composition (Figure 8). These include multiple types of uplands and wetlands. The majority of Distant Hill is comprised of the hemlock-beech-

oak-pine forest (106.2 acres) with a variety of embedded ecological communities. Other uplands include two distinct patches of grasslands (1.7 acres), two patches of scrub-shrub habitat (4.9 acres), six dry to mesic enriched sites (1.9 acres), a half-acre red spruce inclusion, and a 7-acre sugarbush.

Wetland communities range from open to wooded and minerotrophic to acidic. Nine confirmed vernal pools are scattered mostly throughout the eastern part of Distant Hill. These essential communities support vernal pool obligate species such as spotted salamander, Jefferson salamander complex, wood frog, and fairy shrimp. Other significant organisms include aquatic macroinvertebrates such as caddisflies, mosquitos, midges, springtails, dragonflies, and damselflies. Other wetlands dominated by the surrounding forest include five acidic seeps and two red maple-black ash swamps. These swamps are considered uncommon (S3) and locally significant by the NH Natural Heritage Bureau (Sperduto and Nichols 2011). A small fen (0.7 acres) can be found just southeast of the house near March Hill Road. This peatland is an unusual occurrence at Distant Hill, offering a different suite of plants adapted to nutrient poor conditions. The other two wetlands at Distant Hill are part of the drainage marsh-shrub swamp system associated with Great Brook, providing open water and marsh habitats.



Figure 7. Emergent marsh full of cottongrass (*Eriophorum*) within a beaver pond adjacent to Distant Hill.

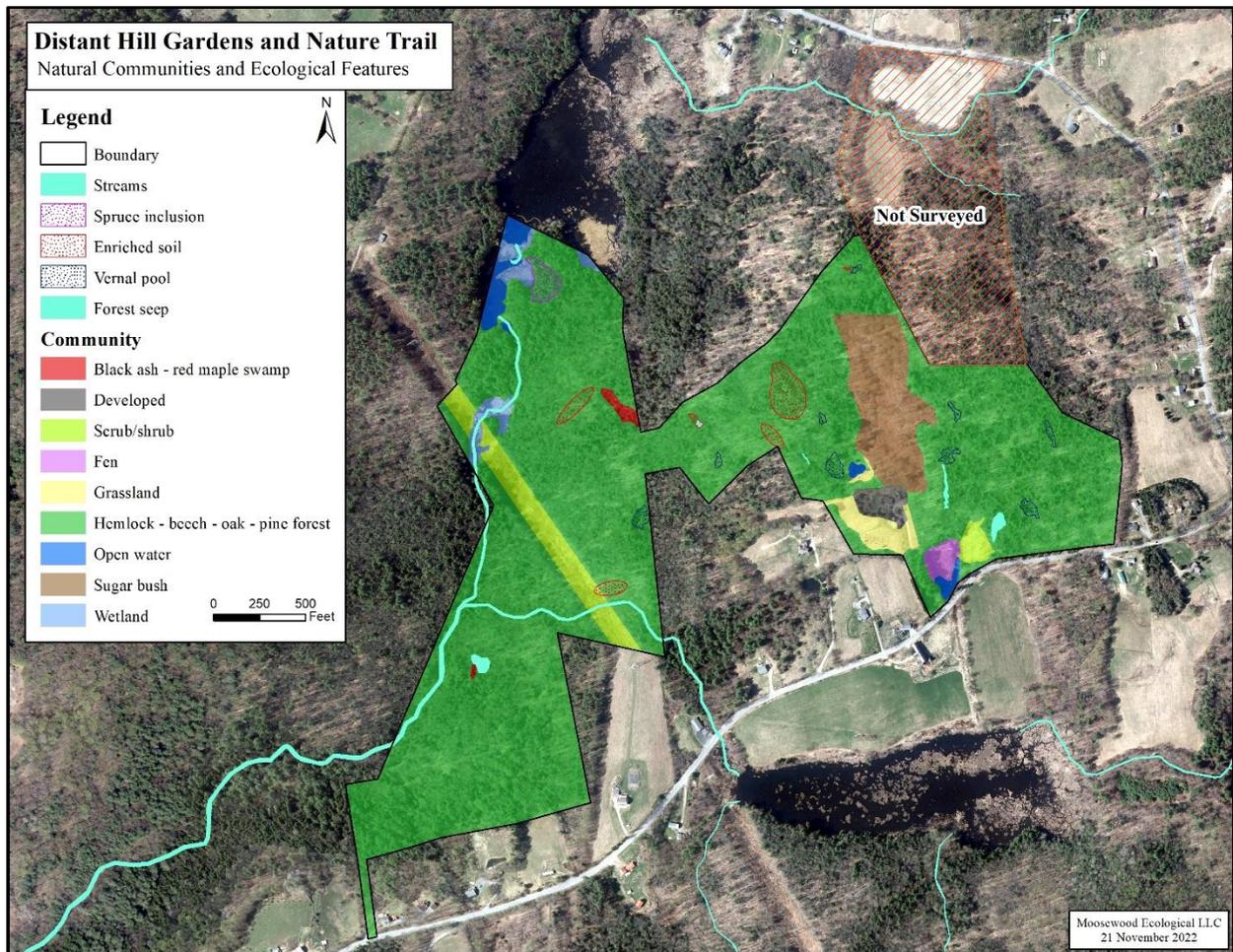


Figure 8. Natural communities and other ecological features at Distant Hill Gardens and Nature Trail.

Rare and Uncommon Plants

There were no rare plants documented during the 2021 field surveys. However, a NH Natural Heritage Bureau DataCheck revealed the presence of a showy orchid (*Galearis spectabilis*) population within one mile of Distant Hill. This native, low-growing species' geographic distribution spans the eastern United States and eastern Canada, where it occupies rich calcareous deciduous forests. The showy orchid is listed as Threatened in New Hampshire, and it is only known to occur within three counties.

Invasive Plants

Invasive, non-native plants whose introduction to an area can degrade environmental quality, are a growing issue in New Hampshire. Distant Hill is not without this issue and is similar to most properties in the Mondanock Region. Invasive plants are scattered throughout the property and are closely tied to past and current land uses.

There was a total of 11 species of invasive, non-native plants documented in over 50 locations at Distant Hill (Figure 9). Glossy buckthorn was by far the most abundant and highly distributed woody invasive plant observed across Distant Hill, followed by Japanese barberry, multi-flora rose, Morrow’s honeysuckle, Oriental bittersweet, and winged euonymus. Colts-foot was the most common herbaceous invasive, non-native plant documented at Distant Hill. This species was most closely associated with the scrub-shrub area near March Hill Road.

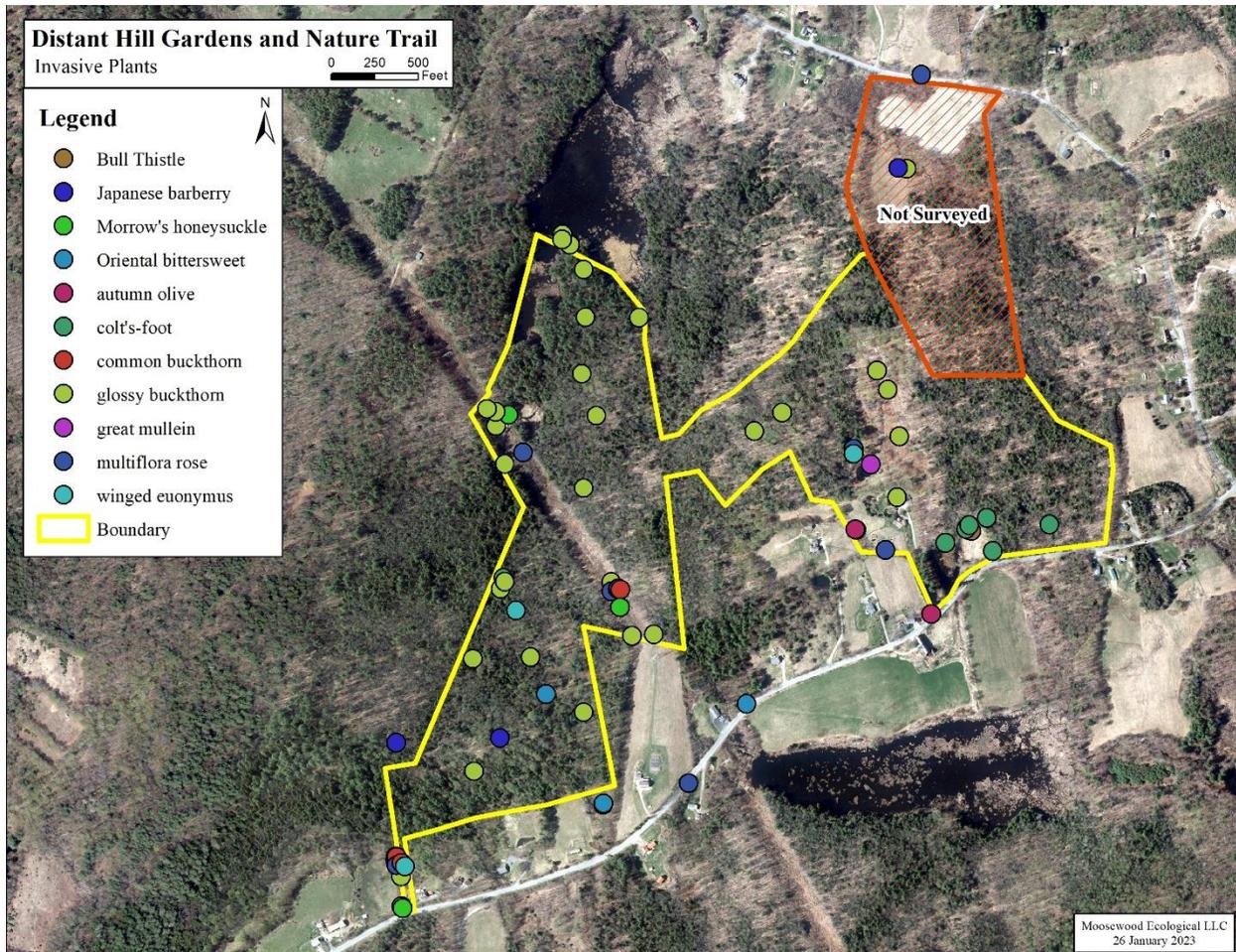


Figure 9. Invasive plant species distribution at Distant Hill Gardens and Nature Trail.

These 11 species are most common and abundant in areas of moderate to high levels of frequent disturbance, such as the utility right-of-way, field edges, and other human created environments. Wetland edges also serve as a typical site of and conduit for the expansion of invasive plants such as buckthorn, bush honeysuckles, and Oriental bittersweet. Less frequently found were invasive plants in forested communities. Glossy buckthorn was the most abundant and widely distributed invasive plant in the hemlock-beech-oak-pine forest. There were three locations where winged euonymus, Oriental bittersweet, and Japanese barberry were observed in very low abundance. It is presumed that the invasive species within the forest began their foothold with an

established seed source in the area and during a previous logging operation(s), small-scale wind events, and bird droppings.

Unfragmented Landscape and Habitat Connectivity

Unfragmented lands are relatively large blocks of contiguous habitat that include a mix of forests, wetlands, riparian areas, or other habitat that supports wide-ranging mammals and forest interior birds. Unfragmented lands are defined by the lack of human infrastructure, such as roads and developed areas. Fragmentation of landscapes can negatively affect wildlife populations, from reducing habitat quality and availability, to causing direct mortality due to wildlife migration across roads. Increased predation and nest parasitism occurs along edges of smaller blocks of habitat, resulting in diminished breeding success; fewer offspring may lead to species elimination. The severity of fragmentation can be affected by the size and shape of unfragmented blocks, the species or natural community in question, the extent of natural habitats lost, intensity of human use, and colonization by invasive species.

The NH Wildlife Action Plan (2015) developed an unfragmented lands analysis. For the purposes of this project, fragmenting features were defined as 500 feet on either side of existing roadways, including all state and town roads but excluding Class VI roads and trails, as well as private driveways. This assumes that most development occurs within 500 feet of roadways. Unfragmented blocks of land include a variety of natural habitats such as forests, wetlands, streams, and ponds but also can include human-modified areas such as agricultural lands and shrublands.

Larger blocks of unfragmented areas support greater biodiversity than smaller blocks (Appendix C). They include a variety of natural habitats such as forests, wetlands, streams, and ponds but also can include human-modified areas such as agricultural lands and shrublands. As unfragmented areas become fragmented due to the construction of roadways and development, their biodiversity generally decreases. This fragmentation effect has less immediate impact on generalist species (those with small home ranges, such as gray squirrel, raccoon, many amphibians, and small rodents). Area-sensitive specialists can be eliminated because they need large forested blocks in order to maintain their home ranges and for long-term survival; examples include bear, bobcat, moose, wood thrush, goshawk, and various reptiles such as Blanding's turtles. To illustrate this point, Appendix C provides a general list of habitat block size requirements for wildlife.

Large unfragmented landscapes allow wildlife to migrate to new territories and to move among critical feeding, breeding, nesting, and overwintering habitats. Maintaining connectivity between critical habitats can provide permanent wildlife corridors within the built environment, enabling wildlife populations to survive.

Wildlife must be able to travel safely throughout the landscape to meet their biological needs. Many animals depend upon a variety of habitats for their survival and may utilize several natural features for travel, including riparian zones of wetlands, ponds and streams, ridgelines, utility rights-of-way, and forest patches acting as a safe route between two or more habitats. A

variety of wildlife can be associated with these corridors, including otter, muskrat, fox, coyote, bobcat, deer, moose, fisher, mink, and bear.

Wildlife corridors are not only significant for mammals but equally important for amphibians, reptiles, and aquatic species. Amphibians and reptiles begin to move from their wintering habitats to their respective breeding and nesting grounds in the spring. This is the time of year that most mortality can be noticed as these species travel across roadways in search of suitable habitats. This negative effect is repeated when the same individuals return to their wintering habitats. Thus, there is a great significance in maintaining habitat connectivity, as well as understanding where these patterns of movement are taking place. This latter point can be an important focus for both community education and awareness about wildlife corridors that cross roadways. This knowledge can provide a means to adjust transportation patterns to decrease potential road mortality and identify sites for road modifications, including bridges and culverts designed to allow wildlife to safely cross within them.

Distant Hill is located within a large, 2,900-acre unfragmented block of forests with embedded wetlands and other smaller natural communities (Figure 11). It is also adjacent to other large unfragmented forestlands and conserved properties. The variety and variability of habitats on and surrounding Distant Hill in combination with the availability of large, unbroken landscapes provide important habitat connectivity for diverse wildlife (Figure 10).



Figure 10. Black Bear (left) and Bobcat (right), two wide-roaming mammals found at Distant Hill during the camera trapping study.

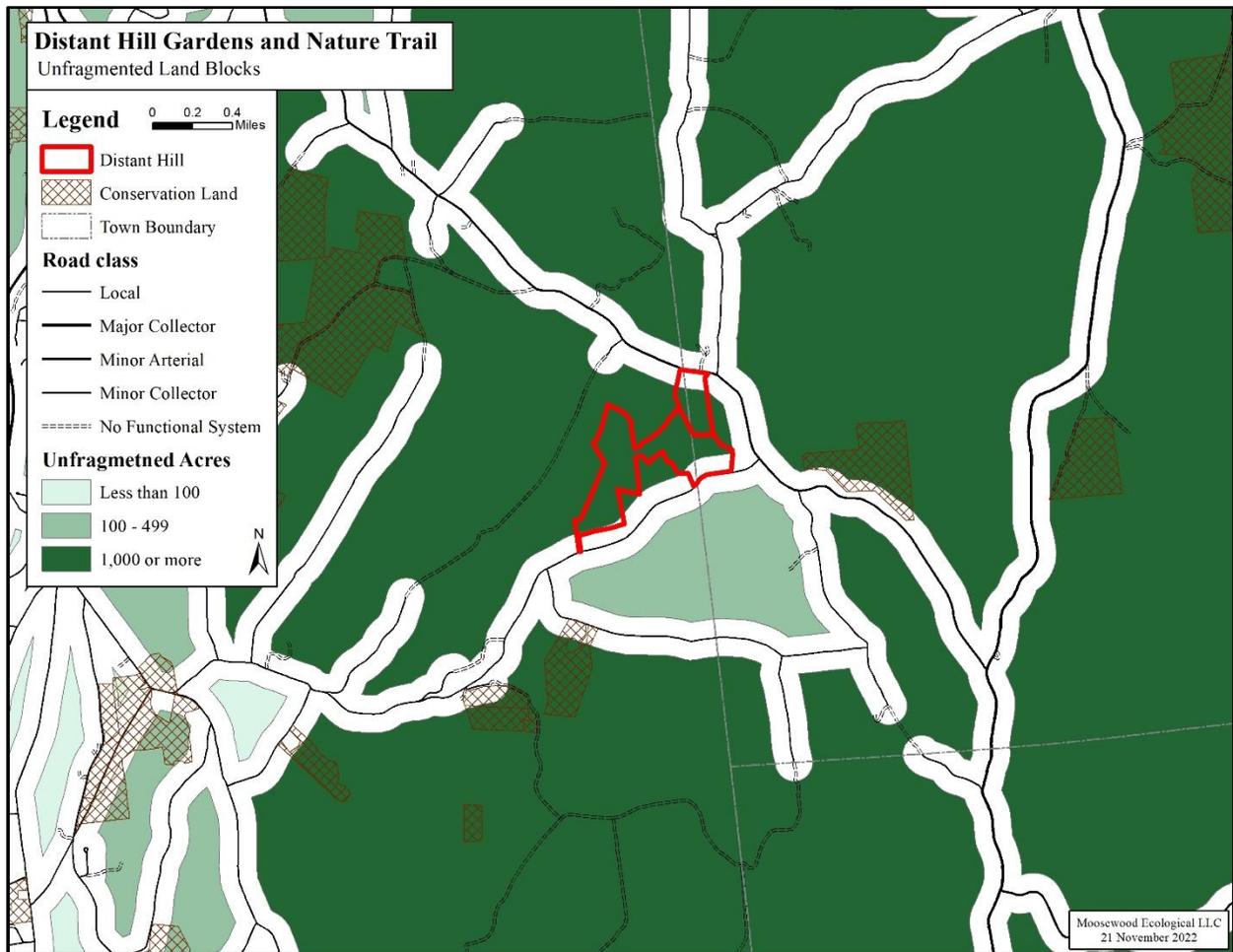


Figure 11. Unfragmented landscape with surrounding conservation lands associated with Distant Hill Gardens and Nature Trail.

Recommendations

Mohr (2022) outlined the stewardship goals and objectives of Distant Hill, including a variety of land management recommendations and actions to help achieve these goals and objectives. Based on our findings, and in agreement with Mohr (2022), Moosewood Ecological suggests the following additional actions.

- Continue monitoring vernal pools and consider stronger buffers for these ecologically sensitive areas. The tiered approach outlined by Calhoun and deMaynadier (2004) provides a good template to use for vernal pool protection during timber operations.
- Avoid timber harvests or significant habitat management near other ecologically sensitive areas, including wetlands, steep slopes, uncommon natural communities, and rare/uncommon plants.
- Monitor the spread of invasive species, particularly along the powerline and road edges. Develop an invasive species management plan, utilizing Mohr (2022) as a starting point.

This plan should seek to prioritize ecologically sensitive areas for invasive species management actions.

- Continue promoting early-successional habitat in and around the sugarbush.
- Consider the creation of a feathered edge and small patch cuts adjacent to the utility right-of-way to expand early successional habitat in this area of Distant Hill.
- Support the concept of multiple age classes within the forest to promote biodiversity.
- Maintain a diverse age class of hardwood and softwood snags throughout the property. Basic recommendations include 10-12 snags per acre.
- Monitor rare and uncommon plants. Protect these individuals or patches during timber operations.

Literature Resources

- Calhoun, A. J. K., and P. deMaynadier. 2004. Forestry Habitat Management Guidelines for Vernal Pool Wildlife. MC Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, NY.
- Dettmers, R. 2006. A Blueprint for the Design and Delivery of Bird Conservation in the Atlantic Northern Forest (BCR 14). U.S. Fish and Wildlife Service.
- Hunt, P. D. 2012. The New Hampshire Dragonfly Survey: A Final Report. Report to the NH Fish and Game Department. Audubon Society of NH, Concord.
- Hunt, P. D. 2020. The State of New Hampshire's Birds – A Conservation Guide. New Hampshire Audubon, Concord, New Hampshire.
- K. V. Rosenberg, J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee.
- Mohr, J. 2021. Acoustic bat Survey: Distant Hill. Native Geographic, LLC, Fairlee, Vermont.
- Mohr, J. 2022. Distant Hill: Wildlife Habitat Stewardship and Conservation Activity Plan. Native Geographic, LLC, Fairlee, Vermont.
- New Hampshire Fish and Game Department. 2015. New Hampshire Wildlife Action Plan. Concord, New Hampshire.
- New Hampshire Natural Heritage Bureau. 2020. New Hampshire Official Rare Plants List. Concord, NH.
- North American Bird Conservation Initiative. 2022. The State of the Birds, United States of America, 2022. StateoftheBirds.org
- Sperduto, D.D. 2011. Natural Community Systems of New Hampshire. New Hampshire Natural Heritage Bureau, Concord, NH.
- Sperduto, D.D. and W.F. Nichols. 2011. Natural Communities of New Hampshire. New Hampshire Natural Heritage Bureau, Concord, NH. Pub. UNH Cooperative Extension, Durham, NH.

Appendix A. Distant Hill Bird Species

New Hampshire population trends taken from Hunt (2020), seasons present at Distant Hill taken from eBird (2022), and breeding status assessed from a combination of field surveys and eBird data. Seasons marked with * indicate hypothetical occurrence.

Species	New Hampshire Population Trend	Seasons Present at Distant Hill	Distant Hill Breeding Status
Canada Goose	Strongly increasing	Sp, Su, Fa	Possible
Wood Duck	Increasing	Sp, Su, Fa	Probable
Mallard	Increasing	Sp, Su, Fa	Probable
American Black Duck	Stable	Sp, Fa*	Non-breeder
Green-winged Teal	Stable	Sp*, Fa	Non-breeder
Hooded Merganser	Increasing	Sp, Su*, Fa*	Possible
Wild Turkey	Strongly increasing	Sp, Su*, Fa*, Wi	Possible
Ruffed Grouse	Decreasing	Sp, Su, Fa, Wi*	Possible
Rock Pigeon	Stable	Sp, Su, Fa, Wi*	Non-breeder
Mourning Dove	Increasing	Sp, Su, Fa, Wi	Possible
Yellow-billed Cuckoo	Decreasing	Sp*, Su, Fa*	Possible
Black-billed Cuckoo	Decreasing	Sp, Su, Fa*	Possible
Chimney Swift	Strongly decreasing	Sp*, Su, Fa*	Non-breeder
Ruby-throated Hummingbird	Increasing	Sp, Su, Fa	Probable
Killdeer	Strongly decreasing	Sp*, Su*, Fa	Non-breeder
Spotted Sandpiper	Decreasing	Sp*, Su*, Fa	Non-breeder
Common Loon	Strongly increasing	Sp* Su, Fa*	Non-breeder
Double-crested Cormorant	Increasing	Sp, Fa	Non-breeder
Great Blue Heron	Increasing	Sp, Su, Fa	Probable
Green Heron	Strongly decreasing	Sp, Su, Fa*	Possible
Turkey Vulture	Strongly increasing	Sp, Su, Fa	Non-breeder
Northern Harrier	Unknown	Sp*, Fa	Non-breeder
Sharp-shinned Hawk	Increasing	Sp*, Su*, Fa, Wi*	Unknown
Cooper's Hawk	Strongly increasing	Sp* Su, Fa*, Wi	Unknown
Bald Eagle	Strongly increasing	Sp*, Su, Fa*, Wi*	Non-breeder

Species	New Hampshire Population Trend	Seasons Present at Distant Hill	Distant Hill Breeding Status
Red-shouldered Hawk	Increasing	Sp, Su, Fa*	Probable
Broad-winged Hawk	Increasing	Sp, Su, Fa*	Possible
Red-tailed Hawk	Increasing	Sp, Su, Fa, Wi	Possible
Barred Owl	Increasing	Sp, Su, Fa, Wi	Probable
Belted Kingfisher	Decreasing	Sp, Su, Fa	Possible
Yellow-bellied Sapsucker	Increasing	Sp, Su, Fa, Wi	Confirmed
Red-bellied Woodpecker	Strongly increasing	Sp, Su, Fa, Wi	Possible
Downy Woodpecker	Strongly increasing	Sp, Su, Fa, Wi	Possible
Hairy Woodpecker	Increasing	Sp, Su, Fa, Wi	Possible
Pileated Woodpecker	Strongly increasing	Sp, Su, Fa, Wi	Possible
Northern Flicker	Decreasing	Sp, Su, Fa	Possible
American Kestrel	Strongly decreasing	Sp, Su, Fa*	Possible
Eastern Wood-Pewee	Decreasing	Sp*, Su, Fa*	Probable
Alder Flycatcher	Strongly increasing	Sp*, Su, Fa*	Probable
Least Flycatcher	Strongly decreasing	Sp, Su, Fa*	Probable
Eastern Phoebe	Stable	Sp, Su, Fa	Confirmed
Great Crested Flycatcher	Stable	Sp*, Su, Fa*	Probable
Eastern Kingbird	Strongly decreasing	Sp, Su, Fa	Possible
Blue-headed Vireo	Increasing	Sp, Su, Fa	Probable
Warbling Vireo	Stable	Sp, Su, Fa*	Possible
Red-eyed Vireo	Increasing	Sp, Su, Fa	Probable
Blue Jay	Decreasing	Sp, Su, Fa, Wi	Possible
American Crow	Increasing	Sp, Su, Fa, Wi	Possible
Common Raven	Increasing	Sp, Su, Fa, Wi	Possible
Black-capped Chickadee	Increasing	Sp, Su, Fa, Wi	Confirmed
Tufted Titmouse	Strongly increasing	Sp, Su, Fa, Wi	Probable
Tree Swallow	Decreasing	Sp, Su, Fa*	Confirmed
Barn Swallow	Strongly decreasing	Sp, Su, Fa	Non-breeder
Ruby-crowned Kinglet	Decreasing	Sp, Fa	Non-breeder

Species	New Hampshire Population Trend	Seasons Present at Distant Hill	Distant Hill Breeding Status
Golden-crowned Kinglet	Increasing	Sp, Fa	Non-breeder
Red-breasted Nuthatch	Increasing	Sp, Su, Fa, Wi	Probable
White-breasted Nuthatch	Strongly increasing	Sp, Su, Fa, Wi	Probable
Brown Creeper	Increasing	Sp, Su, Fa, Wi	Probable
House Wren	Decreasing	Sp, Su, Fa	Probable
Winter Wren	Unknown	Sp, Su, Fa	Probable
European Starling	Strongly decreasing	Sp, Su, Fa, Wi	Possible
Gray Catbird	Stable	Sp, Su, Fa	Probable
Eastern Bluebird	Strongly increasing	Sp, Su, Fa, Wi	Confirmed
Veery	Decreasing	Sp, Su, Fa	Probable
Hermit Thrush	Stable	Sp, Su, Fa	Confirmed
Wood Thrush	Strongly decreasing	Sp, Su, Fa	Probable
American Robin	Stable	Sp, Su, Fa, Wi	Confirmed
Cedar Waxwing	Stable	Sp, Su, Fa, Wi	Possible
House Sparrow	Strongly decreasing	Sp, Su, Fa*, Wi	Possible
Evening Grosbeak	Decreasing	Sp*, Su* Fa, Wi	Non-breeder
Pine Grosbeak	Strongly decreasing	Wi	Non-breeder
House Finch	Stable	Sp, Su, Fa, Wi*	Possible
Purple Finch	Strongly decreasing	Sp* Su, Fa, Wi*	Possible
Common Redpoll	Decreasing	Fa, Wi	Non-breeder
Red Crossbill	Unknown	Fa, Wi	Non-breeder
White-winged Crossbill	Unknown	Fa*, Wi	Non-breeder
American Goldfinch	Stable	Sp, Su, Fa, Wi	Confirmed
Chipping Sparrow	Increasing	Sp, Su, Fa	Probable
American Tree Sparrow	Decreasing	Sp*, Fa, Wi*	Non-breeder
Fox Sparrow	Increasing	Sp*, Fa	Non-breeder
Dark-eyed Junco	Strongly decreasing	Sp, Fa, Wi	Non-breeder
White-crowned Sparrow	Decreasing	Sp, Fa	Non-breeder
White-throated Sparrow	Strongly decreasing	Sp, Fa, Wi	Non-breeder

Species	New Hampshire Population Trend	Seasons Present at Distant Hill	Distant Hill Breeding Status
Song Sparrow	Decreasing	Sp, Su, Fa, Wi	Probable
Swamp Sparrow	Stable	Sp, Su, Fa	Probable
Eastern Towhee	Strongly decreasing	Sp, Fa*	Non-breeder
Bobolink	Strongly decreasing	Sp, Su, Fa*	Non-breeder
Baltimore Oriole	Increasing	Sp, Su, Fa*	Possible
Red-winged Blackbird	Decreasing	Sp, Su, Fa*	Probable
Brown-headed Cowbird	Decreasing	Sp*, Su, Fa*	Possible
Common Grackle	Strongly decreasing	Sp, Su, Fa	Possible
Ovenbird	Stable	Sp, Su, Fa*	Probable
Louisiana Waterthrush	Stable	Sp, Su, Fa*	Probable
Black-and-white Warbler	Strongly decreasing	Sp, Su, Fa*	Probable
Nashville Warbler	Strongly decreasing	Sp, Fa*	Non-breeder
Common Yellowthroat	Stable	Sp, Su, Fa	Probable
American Redstart	Decreasing	Sp, Su, Fa	Probable
Northern Parula	Strongly increasing	Sp, Fa	Non-breeder
Magnolia Warbler	Stable	Sp, Fa*	Non-breeder
Blackburnian Warbler	Stable	Sp, Su, Fa*	Probable
Yellow Warbler	Strongly decreasing	Sp, Su, Fa*	Probable
Chestnut-sided Warbler	Strongly decreasing	Sp, Su, Fa*	Probable
Blackpoll Warbler	Decreasing	Sp, Fa	Non-breeder
Black-throated Blue Warbler	Increasing	Sp, Su, Fa*	Probable
Pine Warbler	Strongly increasing	Sp, Su, Fa*	Probable
Yellow-rumped Warbler	Stable	Sp, Su, Fa	Probable
Black-throated Green Warbler	Increasing	Sp, Su, Fa	Probable
Canada Warbler	Strongly decreasing	Sp, Fa*	Non-breeder
Scarlet Tanager	Strongly decreasing	Sp, Su, Fa*	Probable
Northern Cardinal	Strongly increasing	Sp, Su, Fa, Wi	Probable
Rose-breasted Grosbeak	Strongly decreasing	Sp, Su, Fa*	Possible
Indigo Bunting	Stable	Sp, Su, Fa	Probable

Appendix B: Property Species List

Combined list of species confirmed on the property by Moosewood Ecological or found by community scientists who submitted observations to the iNaturalist database. Only Research Grade iNaturalist observations are included in this appendix. Species are first categorized alphabetically by iconic taxon and then alphabetically sorted by scientific order, family (in parentheses), genus, and species. Birds have been separated out with additional population-specific information in Appendix A.

Common Name	Scientific Name		
Fish (<i>Actinopterygii</i>)		Whitman's Jumping Spider	(<i>Salticidae</i>) <i>Phidippus whitmani</i>
Largemouth Bass	(<i>Centrarchidae</i>) <i>Micropterus salmoides</i>	Slender Ant-mimic Jumping Spider	(<i>Salticidae</i>) <i>Synemosyna formica</i>
		Emerton's Bituberclcd Cobweaver	(<i>Theridiidae</i>) <i>Theridula emertoni</i>
Amphibians (<i>Amphibia</i>)		Goldenrod Crab Spider	(<i>Thomisidae</i>) <i>Misumena vatia</i>
American Toad	(<i>Bufo</i>) <i>Anaxyrus americanus</i>	Black Cherry Leaf Gall Mite	(<i>Eriophyidae</i>) <i>Eriophyes cerasicrumena</i>
Gray Treefrog	(<i>Hylidae</i>) <i>Hyla versicolor</i>	Red Nail Gall Mite	(<i>Eriophyidae</i>) <i>Eriophyes tiliae</i>
Spring Peeper	(<i>Hylidae</i>) <i>Pseudacris crucifer</i>	Maple Spindle Gall Mite	(<i>Eriophyidae</i>) <i>Vasates aceriscrumena</i>
American Bullfrog	(<i>Ranidae</i>) <i>Lithobates catesbeianus</i>	American Dog Tick	(<i>Ixodidae</i>) <i>Dermacentor variabilis</i>
Green Frog	(<i>Ranidae</i>) <i>Lithobates clamitans</i>	Eastern Black-legged Tick	(<i>Ixodidae</i>) <i>Ixodes scapularis</i>
Pickerel Frog	(<i>Ranidae</i>) <i>Lithobates palustris</i>		(<i>Sclerosomatidae</i>) <i>Leiobunum aldrichi</i>
Wood Frog	(<i>Ranidae</i>) <i>Lithobates sylvaticus</i>		(<i>Sclerosomatidae</i>) <i>Leiobunum ventricosum</i>
Jefferson Salamander complex	(<i>Ambystomatidae</i>) <i>Ambystoma jeffersonianum</i>		
Spotted Salamander	(<i>Ambystomatidae</i>) <i>Ambystoma maculatum</i>	Fungi and Lichens (<i>Fungi</i>)	
Northern Two-lined Salamander	(<i>Plethodontidae</i>) <i>Eurycea bislineata</i>	Brown American Star-footed Amanita	(<i>Amanitaceae</i>) <i>Amanita brunnescens</i>
Four-toed Salamander	(<i>Plethodontidae</i>) <i>Hemidactylium scutatum</i>	Yellow Patches	(<i>Amanitaceae</i>) <i>Amanita flavoconia</i>
Eastern Red-backed Salamander	(<i>Plethodontidae</i>) <i>Plethodon cinereus</i>	Tawny Grisette	(<i>Amanitaceae</i>) <i>Amanita fulva</i>
Eastern Newt	(<i>Salamandridae</i>) <i>Notophthalmus viridescens</i>	violet coral fungus	(<i>Clavariaceae</i>) <i>Clavaria zollingeri</i>
		Golden Spindles	(<i>Clavariaceae</i>) <i>Clavulinopsis fusiformis</i>
Leeches (<i>Hirudinidae</i>)		wrinkled cortinarius	(<i>Cortinariaceae</i>) <i>Cortinarius corrugatus</i>
North American Medicinal Leech	(<i>Hirudinidae</i>) <i>Macrobdella decora</i>	Viscid Violet Cort	(<i>Cortinariaceae</i>) <i>Cortinarius iodes</i>
		Aborted entoloma	(<i>Entolomataceae</i>) <i>Entoloma abortivum</i>
Arachnids (<i>Arachnida</i>)		Yellow Unicorn Entoloma	(<i>Entolomataceae</i>) <i>Entoloma murrayi</i>
Six-spotted Orbweaver	(<i>Araneidae</i>) <i>Araniella displicata</i>	orange gilled waxcap	(<i>Hygrophoraceae</i>) <i>Humidicutis marginata</i>
Banded Garden Spider	(<i>Araneidae</i>) <i>Argiope trifasciata</i>	Vermilion Waxcap	(<i>Hygrophoraceae</i>) <i>Hygrocybe miniata</i>
Arabesque Orbweaver	(<i>Araneidae</i>) <i>Neoscona arabesca</i>	Pear-shaped Puffball	(<i>Lycoperdaceae</i>) <i>Apioperdon pyriforme</i>
Eastern Parson Spider	(<i>Gnaphosidae</i>) <i>Herpyllus ecclesiasticus</i>	common puffball	(<i>Lycoperdaceae</i>) <i>Lycoperdon perlatum</i>
Drumming Sword Wolf Spider	(<i>Lycosidae</i>) <i>Gladicosa gulosa</i>	orange mycena	(<i>Mycenaceae</i>) <i>Mycena leaiana</i>
Striped Fishing Spider	(<i>Pisauridae</i>) <i>Dolomedes scriptus</i>	Luminescent Panellus	(<i>Mycenaceae</i>) <i>Panellus stipticus</i>
American Nursery Web Spider	(<i>Pisauridae</i>) <i>Pisaurina mira</i>	common bird's nest fungus	(<i>Nidulariaceae</i>) <i>Crucibulum laeve</i>
		Oak-loving Gymnopus	(<i>Omphalotaceae</i>) <i>Gymnopus dryophilus</i>

golden coincap	(<i>Physalacriaceae</i>) <i>Cyptotrama chrysopepla</i>
Deer Mushroom	(<i>Pluteaceae</i>) <i>Pluteus cervinus</i>
Eastern American Platterful Mushroom	(<i>Porothelaceae</i>) <i>Megacollybia rodmanii</i>
Late Oyster	(<i>Sarcomyaceae</i>) <i>Sarcomyxa serotina</i>
Brick Cap	(<i>Strophariaceae</i>) <i>Hypholoma lateritium</i>
Golden Pholiota	(<i>Strophariaceae</i>) <i>Pholiota aurivella</i>
Pinewood Gingertail	(<i>Xeromphalina</i>) <i>Xeromphalina campanella</i>
Scarletina Bolete	(<i>Boletaceae</i>) <i>Neoboletus luridiformis</i>
reddish brown bitter bolete	(<i>Boletaceae</i>) <i>Tylopilus rubrobrunneus</i>
False Chanterelle	(<i>Hygrophoropsidaceae</i>) <i>Hygrophoropsis aurantiaca</i>
Painted Suillus	(<i>Suillaceae</i>) <i>Suillus spraguei</i>
Velvet-footed Pax	(<i>Tapinellaceae</i>) <i>Tapinella atrotomentosa</i>
Eastern Black Trumpet	(<i>Hydnaceae</i>) <i>Craterellus fallax</i>
Orange Jelly Spot	(<i>Dacrymycetaceae</i>) <i>Dacrymyces chrysospermus</i>
Conifer Mazegill	(<i>Gloeophyllaceae</i>) <i>Gloeophyllum sepiarium</i>
Green Wood Cup	(<i>Chlorociboriaceae</i>) <i>Chlorociboria aeruginascens</i>
chaga	(<i>Hymenochaetaceae</i>) <i>Inonotus obliquus</i>
	(<i>Hymenochaetaceae</i>) <i>Inonotus obliquus sterilis</i>
Aspen Bracket	(<i>Hymenochaetaceae</i>) <i>Phellinus tremulae</i>
violet-toothed polypore	(<i>Hymenochaetaceae</i>) <i>Trichaptum bifforme</i>
	(<i>Cordycipitaceae</i>) <i>Torrubiella pulvinata</i>
Amanita Mold	(<i>Hypocreaceae</i>) <i>Hypomyces hyalinus</i>
British soldier lichen	(<i>Cladoniaceae</i>) <i>Cladonia cristatella</i>
Dixie Reindeer Lichen	(<i>Cladoniaceae</i>) <i>Cladonia subtenuis</i>
Boreal Oakmoss	(<i>Parmeliaceae</i>) <i>Evernia mesomorpha</i>
common greenshield lichen	(<i>Parmeliaceae</i>) <i>Flavoparmelia caperata</i>
Smokey-eyed Boulder Lichen	(<i>Lecideaceae</i>) <i>Porpidia albocaulis</i>
Chicken Lips	(<i>Leotiaceae</i>) <i>Leotia viscosa</i>
Common Script Lichen	(<i>Graphidaceae</i>) <i>Graphis scripta</i>
dog pelt lichen	(<i>Peltigeraceae</i>) <i>Peltigera canina</i>
Spring Orange Peel Fungus	(<i>Caloscyphaceae</i>) <i>Caloscypha fulgens</i>
Skirted Stinkhorn	(<i>Phallaceae</i>) <i>Phallus duplicatus</i>
Ravenel's stinkhorn	(<i>Phallaceae</i>) <i>Phallus ravenelii</i>
birch polypore	(<i>Fomitopsidaceae</i>) <i>Fomitopsis betulina</i>
Wrinkled Crust	(<i>Meruliaceae</i>) <i>Phlebia radiata</i>
Dyer's Polypore	(<i>Phaeolaceae</i>) <i>Phaeolus schweinitzii</i>

Thin-walled Maze Polypore	(<i>Polyporaceae</i>) <i>Daedaleopsis confragosa</i>
	(<i>Polyporaceae</i>) <i>Fomes excavatus</i>
Hoof Fungus	(<i>Polyporaceae</i>) <i>Fomes fomentarius</i>
hemlock varnish shelf	(<i>Polyporaceae</i>) <i>Ganoderma tsugae</i>
Crown Rust	(<i>Pucciniaceae</i>) <i>Puccinia coronata</i>
Yellow Fan	(<i>Cudoniaceae</i>) <i>Spathularia flavida</i>
Velvet-foot Fairy Fan	(<i>Cudoniaceae</i>) <i>Spathulariopsis velutipes</i>
Speckled Tar Spot	(<i>Rhytismataceae</i>) <i>Rhytisma punctatum</i>
crown-tipped coral fungus	(<i>Auriscalpiaceae</i>) <i>Artomyces pyxidatus</i>
Bear's Head Tooth	(<i>Hericiaceae</i>) <i>Hericium americanum</i>
Coral tooth fungus	(<i>Hericiaceae</i>) <i>Hericium coralloides</i>
crowded parchment	(<i>Stereaceae</i>) <i>Stereum complicatum</i>
witch's butter	(<i>Tremellaceae</i>) <i>Tremella mesenterica</i>
Speckled Blister Lichen	(<i>Trypetheliaceae</i>) <i>Viridothelium virens</i>
Insects (<i>Insecta</i>)	
Flat-headed Hardwood Borer	(<i>Buprestidae</i>) <i>Dicerca divaricata</i>
	(<i>Cantharidae</i>) <i>Cantharis livida</i>
Brown Leatherwing Beetle	(<i>Cantharidae</i>) <i>Pacificanthia rotundicollis</i>
Six-spotted Tiger Beetle	(<i>Carabidae</i>) <i>Cicindela sexguttata</i>
	(<i>Cerambycidae</i>) <i>Analeptura lineola</i>
Red Oak Borer	(<i>Cerambycidae</i>) <i>Enaphalodes rufulus</i>
	(<i>Cerambycidae</i>) <i>Hesperophanes pubescens</i>
	(<i>Cerambycidae</i>) <i>Judolia cordifera</i>
Northeastern Pine Sawyer Beetle	(<i>Cerambycidae</i>) <i>Monochamus notatus</i>
Broad-necked Root Borer	(<i>Cerambycidae</i>) <i>Prionus laticollis</i>
Round-headed Apple Tree Borer	(<i>Cerambycidae</i>) <i>Saperda candida</i>
Strangalepta Flower Longhorn Beetle	(<i>Cerambycidae</i>) <i>Strangalepta abbreviata</i>
Red Milkweed Beetle	(<i>Cerambycidae</i>) <i>Tetraopes tetrophthalmus</i>
Banded Longhorn Beetle	(<i>Cerambycidae</i>) <i>Typocerus velutinus</i>
Common Willow Calligrapher Beetle	(<i>Chrysomelidae</i>) <i>Calligrapha multipunctata</i>
Golden Tortoise Beetle	(<i>Chrysomelidae</i>) <i>Charidotella sexpunctata</i>
Common Asparagus Beetle	(<i>Chrysomelidae</i>) <i>Crioceris asparagi</i>
Spotted Cucumber Beetle	(<i>Chrysomelidae</i>) <i>Diabrotica undecimpunctata</i>
Swamp Milkweed Leaf Beetle	(<i>Chrysomelidae</i>) <i>Labidomera clivicollis</i>
Colorado Potato Beetle	(<i>Chrysomelidae</i>) <i>Leptinotarsa decemlineata</i>
	(<i>Chrysomelidae</i>) <i>Microrhopala xerene</i>

Twice-stabbed Lady Beetle	(Coccinellidae) <i>Chilocorus stigma</i>
Spotted Pink Ladybeetle	(Coccinellidae) <i>Coleomegilla maculata</i>
Asian Lady Beetle	(Coccinellidae) <i>Harmonia axyridis</i>
Fourteen-spotted Lady Beetle	(Coccinellidae) <i>Propylea quatuordecimpunctata</i>
Clay-coloured Weevil	(Curculionidae) <i>Ottiorhynchus singularis</i>
Brown Leaf Weevil	(Curculionidae) <i>Phyllobius oblongus</i>
	(Dytiscidae) <i>Acilius mediatius</i>
	(Dytiscidae) <i>Ilybius</i>
	(Hydrophilidae) <i>Hydrophilus ovatus</i>
Winter Firefly	(Lampyridae) <i>Ellychnia corrusca</i>
Black Firefly	(Lampyridae) <i>Lucidota atra</i>
Red-rot Decay Stag Beetle	(Lucanidae) <i>Ceruchus piceus</i>
	(Melandryidae) <i>Dircaea liturata</i>
Buttercup Oil Beetle	(Meloidea) <i>Meloe americanus</i>
Red-necked False Blister Beetle	(Oedemeridae) <i>Ischnomera ruficollis</i>
Bumble Flower Beetle	(Scarabaeidae) <i>Euphoria inda</i>
Oriental Beetle	(Scarabaeidae) <i>Exomala orientalis</i>
American Rose Chafer	(Scarabaeidae) <i>Macrodactylus subspinosus</i>
Asiatic Garden Beetle	(Scarabaeidae) <i>Maladera formosae</i>
Japanese Beetle	(Scarabaeidae) <i>Popillia japonica</i>
American Carrion Beetle	(Silphidae) <i>Necrophila americana</i>
Roundneck Sexton Beetle	(Silphidae) <i>Nicrophorus orbicollis</i>
Tomentose Burying Beetle	(Silphidae) <i>Nicrophorus tomentosus</i>
Margined Carrion Beetle	(Silphidae) <i>Oiceoptoma noveboracense</i>
false mealworm beetle	(Tenebrionidae) <i>Alobates pennsylvanicus</i>
Forked Fungus Beetle	(Tenebrionidae) <i>Bolitotherus cornutus</i>
European Earwig	(Forficulidae) <i>Forficula auricularia</i>
	(Agromyzidae) <i>Nemorimyza posticata</i>
	(Agromyzidae) <i>Phytomyza aralivora</i>
Stripe-legged Robberfly	(Asilidae) <i>Dioctria hyalipennis</i>
	(Asilidae) <i>Efferia aestuans</i>
White-winged March Fly	(Bibionidae) <i>Bibio albipennis</i>
Greater Bee Fly	(Bombyliidae) <i>Bombylius major</i>
Pygmy Bee Fly	(Bombyliidae) <i>Bombylius pygmaeus</i>
Tiger Bee Fly	(Bombyliidae) <i>Xenox tigrinus</i>
Ocellate Gall Midge	(Cecidomyiidae) <i>Acericecis ocellaris</i>
Euthamia leaf gall midge	(Cecidomyiidae) <i>Asteromyia euthamiae</i>

Linden Wart Gall Midge	(Cecidomyiidae) <i>Contarinia verrucicola</i>
	(Cecidomyiidae) <i>Macrodiplosis niveipila</i>
Dogwood Eyespot Gall Midge	(Cecidomyiidae) <i>Parallelodiplosis subtruncata</i>
Oak Leaf Gall Midge	(Cecidomyiidae) <i>Polystepha pilulae</i>
Goldentop pedicellate gall midge	(Cecidomyiidae) <i>Rhopalomyia pedicellata</i>
Jewelweed Gall Midge	(Cecidomyiidae) <i>Schizomyia impatientis</i>
	(Cecidomyiidae) <i>Schizomyia racemicola</i>
	(Conopidae) <i>Physocephala furcillata</i>
Walker's Anopheles	(Culicidae) <i>Anopheles walkeri</i>
Cattail Mosquito	(Culicidae) <i>Coquillettidia perturbans</i>
	(Dolichopodidae) <i>Condylostylus patibulatus</i>
	(Limoniidae) <i>Erioptera caliptera</i>
Giant Eastern Crane Fly	(Pediidae) <i>Pedicia albivitta</i>
Cluster Flies	(Polleniidae) <i>Pollenia</i>
Eastern Phantom Crane Fly	(Ptychopteridae) <i>Bittacomorpha clavipes</i>
Ornate Snipe Fly	(Rhagionidae) <i>Chrysopilus ornatus</i>
Quadrate Snipe Fly	(Rhagionidae) <i>Chrysopilus quadratus</i>
Oblique Streaktail	(Syrphidae) <i>Allograpta obliqua</i>
Violet Leafwalker	(Syrphidae) <i>Chalcosyrphus chalybeus</i>
Black-horned Smoothtail	(Syrphidae) <i>Epistrophe grossulariae</i>
Black-shouldered Drone Fly	(Syrphidae) <i>Eristalis dimidiata</i>
Common Drone Fly	(Syrphidae) <i>Eristalis tenax</i>
Transverse-banded Flower Fly	(Syrphidae) <i>Eristalis transversa</i>
	(Syrphidae) <i>Eupeodes americanus</i>
Variable Duskyface Fly	(Syrphidae) <i>Melanostoma mellinum</i>
American Snout Fly	(Syrphidae) <i>Rhingia nasica</i>
Globetails	(Syrphidae) <i>Sphaerophoria</i>
Bald-faced Hornet Fly	(Syrphidae) <i>Spilomyia fusca</i>
Eastern Calligrapher	(Syrphidae) <i>Toxomerus geminatus</i>
Margined Calligrapher	(Syrphidae) <i>Toxomerus marginatus</i>
	(Tabanidae) <i>Chrysops geminatus</i>
	(Tabanidae) <i>Chrysops univittatus</i>
Early Tachinid Fly	(Tachinidae) <i>Epalpus signifer</i>
Swift Feather-legged Fly	(Tachinidae) <i>Trichopoda pennipes</i>
Goldenrod Gall Fly	(Tephritidae) <i>Eurosta solidaginis</i>
Edge-striped Shield Bug	(Acanthosomatidae) <i>Elasmucha lateralis</i>
Lupine Bug	(Alydidae) <i>Megalotomus quinquespinosus</i>

Oleander Aphid	(Aphididae) <i>Aphis nerii</i>
American Giant Water Bug	(Belostomatidae) <i>Lethocerus americanus</i>
Saddled Leafhopper	(Cicadellidae) <i>Colladonus clitellarius</i>
Red-banded Leafhopper	(Cicadellidae) <i>Graphocephala coccinea</i>
	(Cicadellidae) <i>Ponana pectoralis</i>
Sharp-nosed Leafhopper	(Cicadellidae) <i>Scaphytopius acutus</i>
	(Coreidae) <i>Acanthocephala terminalis</i>
Western Conifer Seed Bug	(Coreidae) <i>Leptoglossus occidentalis</i>
Citrus Flatid Planthopper	(Flatidae) <i>Metcalfa pruinosa</i>
	(Gerridae) <i>Gerris</i>
	(Gerridae) <i>Limnoporus dissortis</i>
Small Milkweed Bug	(Lygaeidae) <i>Lygaeus kalmii</i>
Large Milkweed Bug	(Lygaeidae) <i>Oncopeltus fasciatus</i>
Keeled Treehopper	(Membracidae) <i>Entylia carinata</i>
North American Tarnished Plant Bug	(Miridae) <i>Lygus lineolaris</i>
Four-lined Plant Bug	(Miridae) <i>Poecilocapsus lineatus</i>
Two-spotted Grass Bug	(Miridae) <i>Stenotus binotatus</i>
Green Burgundy Stink Bug	(Pentatomidae) <i>Banasa dimidiata</i>
Green Stink Bug	(Pentatomidae) <i>Chinavia hilaris</i>
Twice-stabbed Stink Bug	(Pentatomidae) <i>Cosmopepla linnneriana</i>
Elf Shoe Stink Bug	(Pentatomidae) <i>Meneclis insertus</i>
Ringed Assassin Bug	(Reduviidae) <i>Pselliopus cinctus</i>
Pale Green Assassin Bug	(Reduviidae) <i>Zelus luridus</i>
Hawthorn Mining Bee	(Andrenidae) <i>Andrena crataegi</i>
Cloudy-winged Mining Bee	(Andrenidae) <i>Andrena nubecula</i>
	(Apidae) <i>Andrena nigroviride</i>
Brown-fovea Miner	(Apidae) <i>Andrena rufosignata</i>
Western Honey Bee	(Apidae) <i>Apis mellifera</i>
Pure Gold-green Sweat Bee	(Apidae) <i>Augochlora pura</i>
Two-spotted Bumble Bee	(Apidae) <i>Bombus bimaculatus</i>
Northern Amber Bumble Bee	(Apidae) <i>Bombus borealis</i>
Brown-belted Bumble Bee	(Apidae) <i>Bombus griseocollis</i>
Common Eastern Bumble Bee	(Apidae) <i>Bombus impatiens</i>
Tricolored Bumble Bee	(Apidae) <i>Bombus ternarius</i>
Yellow-banded Bumble Bee	(Apidae) <i>Bombus terricola</i>
	(Apidae) <i>Ceratina dupla</i>
	(Apidae) <i>Ceratina mikmaqi</i>

	(Apidae) <i>Coelioxys porterae</i>
	(Apidae) <i>Lasioglossum cressoni</i>
Macoupin County Sweat Bee	(Apidae) <i>Lasioglossum macoupinense</i>
	(Apidae) <i>Lasioglossum oblongum</i>
	(Apidae) <i>Lasioglossum versatum</i>
Horn-faced Mason Bee	(Apidae) <i>Osmia cornifrons</i>
Eastern Carpenter Bee	(Apidae) <i>Xylocopa virginica</i>
Modest Masked Bee	(Colletidae) <i>Hylaeus modestus</i>
Hump-backed Beewolf	(Crabronidae) <i>Philanthus gibbosus</i>
Larger Empty Oak Apple Wasp	(Cynipidae) <i>Amphibolips quercusinanis</i>
	(Cynipidae) <i>Zopheroteris sphaerula</i>
Red-headed Pine Sawfly	(Diprionidae) <i>Neodiprion lecontei</i>
European Pine Sawfly	(Diprionidae) <i>Neodiprion sertifer</i>
Tawny Collard Ant	(Formicidae) <i>Aphaenogaster fulva</i>
Pitch-black Collared Ant	(Formicidae) <i>Aphaenogaster picea</i>
Winnow Ant	(Formicidae) <i>Aphaenogaster rudis</i>
Hairless Rover Ant	(Formicidae) <i>Brachymyrmex depilis</i>
Nearctic Carpenter Ant	(Formicidae) <i>Camponotus nearcticus</i>
New York Carpenter Ant	(Formicidae) <i>Camponotus novaeboracensis</i>
Eastern Black Carpenter Ant	(Formicidae) <i>Camponotus pennsylvanicus</i>
	(Formicidae) <i>Dolichoderus pustulatus</i>
	(Formicidae) <i>Formica aserva</i>
Allegheny Mound Ant	(Formicidae) <i>Formica exsectoides</i>
Uncertain Field Ant	(Formicidae) <i>Formica incerta</i>
	(Formicidae) <i>Formica lasioides</i>
	(Formicidae) <i>Formica neogagates</i>
	(Formicidae) <i>Formica pergandei</i>
Silky Field Ant	(Formicidae) <i>Formica subsericea</i>
Woodland Fuzzy Ant	(Formicidae) <i>Lasius americanus</i>
Shaded Fuzzy Ant	(Formicidae) <i>Lasius aphidicola</i>
Short-horned Meadow Ant	(Formicidae) <i>Lasius brevicornis</i>
New World Fuzzy Ant	(Formicidae) <i>Lasius nearcticus</i>
Turfgrass Ant	(Formicidae) <i>Lasius neoniger</i>
American Mite-eating Ant	(Formicidae) <i>Myrmecina americana</i>
	(Formicidae) <i>Myrmica americana</i>
Eroded Ant	(Formicidae) <i>Myrmica detritinodis</i>
	(Formicidae) <i>Myrmica fracticornis</i>

Ant of the Pines	(<i>Formicidae</i>) <i>Myrmica pinetorum</i>	White-spotted Sable	(<i>Crambidae</i>) <i>Anania funebris</i>
Punctured Ant	(<i>Formicidae</i>) <i>Myrmica punctiventris</i>	Small Magpie	(<i>Crambidae</i>) <i>Anania hortulata</i>
	(<i>Formicidae</i>) <i>Myrmica sp. AF-smi</i>	Hollow-spotted Blepharomastix Moth	(<i>Crambidae</i>) <i>Blepharomastix ranalis</i>
	(<i>Formicidae</i>) <i>Ponera pennsylvanica</i>	Sooty-winged Chalcoela Moth	(<i>Crambidae</i>) <i>Chalcoela iphitalis</i>
	(<i>Formicidae</i>) <i>Prenolepis imparis</i>	Topiary Grass-veneer	(<i>Crambidae</i>) <i>Chrysoteuchia topiarius</i>
Thief Ant	(<i>Formicidae</i>) <i>Solenopsis molesta</i>	Double-banded Grass-veneer	(<i>Crambidae</i>) <i>Crambus agitatellus</i>
Vampire Ant	(<i>Formicidae</i>) <i>Stigmatomma pallipes</i>	Small White Grass-veneer	(<i>Crambidae</i>) <i>Crambus albellus</i>
Odorous House Ant	(<i>Formicidae</i>) <i>Tapinoma sessile</i>	Forked Grass-veneer	(<i>Crambidae</i>) <i>Crambus bidens</i>
Long-spined Acorn Ant	(<i>Formicidae</i>) <i>Temnothorax longispinosus</i>	Common Grass-veneer	(<i>Crambidae</i>) <i>Crambus praefectellus</i>
Immigrant Pavement Ant	(<i>Formicidae</i>) <i>Tetramorium immigrans</i>	Young's Grass-veneer	(<i>Crambidae</i>) <i>Crambus youngellus</i>
Bicolored Striped Sweat Bee	(<i>Halictidae</i>) <i>Agapostemon virescens</i>	Darker Diacme Moth	(<i>Crambidae</i>) <i>Diacme adipaloides</i>
Metallic Epauletted-Sweat bee	(<i>Halictidae</i>) <i>Augochloropsis metallica</i>	Julia's Dicymolomia Moth	(<i>Crambidae</i>) <i>Dicymolomia julianalis</i>
Ligated Furrow Bee	(<i>Halictidae</i>) <i>Halictus ligatus</i>	Waterlily Borer Moth	(<i>Crambidae</i>) <i>Elophila gyralis</i>
Texas Striped Sweat Bee	(<i>Halticidae</i>) <i>Agapostemon texanus</i>	Pondside Crambid Moth	(<i>Crambidae</i>) <i>Elophila icciusalis</i>
Confusing Furrow Bee	(<i>Halticidae</i>) <i>Halictus confusus</i>	Striped Eudonia Moth	(<i>Crambidae</i>) <i>Eudonia strigalis</i>
Orange-legged Furrow Bee	(<i>Halticidae</i>) <i>Halictus rubicundus</i>	Serpentine Webworm Moth	(<i>Crambidae</i>) <i>Herpetogramma aeglealis</i>
	(<i>Ichneumonidae</i>) <i>Ichneumon centrator</i>		(<i>Crambidae</i>) <i>Herpetogramma aquilonalis</i>
Black Giant Ichneumonid Wasp	(<i>Ichneumonidae</i>) <i>Megarhyssa atrata</i>		(<i>Crambidae</i>) <i>Herpetogramma sphingalis</i>
Greene's Giant Ichneumonid Wasp	(<i>Ichneumonidae</i>) <i>Megarhyssa greenei</i>	Gold-striped Grass-veneer	(<i>Crambidae</i>) <i>Microcrambus biguttellus</i>
	(<i>Ichneumonidae</i>) <i>Megarhyssa macrurus macrurus</i>	Elegant Grass-veneer	(<i>Crambidae</i>) <i>Microcrambus elegans</i>
Oblong Woolcarder Bee	(<i>Megachilidae</i>) <i>Anthidium oblongatum</i>	Minor Grass-veneer	(<i>Crambidae</i>) <i>Microcrambus minor</i>
Blueberry Stem Gall Wasp	(<i>Pteromalidae</i>) <i>Hemadas nubilipennis</i>	Streaked Orange Moth	(<i>Crambidae</i>) <i>Nascia acutellus</i>
Gold-marked Thread-waisted Wasp	(<i>Sphecidae</i>) <i>Eremnophila aureonotata</i>	Splendid Palpita Moth	(<i>Crambidae</i>) <i>Palpita magniferalis</i>
Great Golden Digger Wasp	(<i>Sphecidae</i>) <i>Sphex ichneumoneus</i>	Polymorphic Pondweed Moth	(<i>Crambidae</i>) <i>Parapoynx maculalis</i>
Dogwood Sawfly	(<i>Tenthredinidae</i>) <i>Macremphytus testaceus</i>	Titian Peale's Moth	(<i>Crambidae</i>) <i>Perispasta caeculalis</i>
dusky birch sawfly	(<i>Tenthredinidae</i>) <i>Nematus latitarsus</i>	Bicolored Pyrausta Moth	(<i>Crambidae</i>) <i>Pyrausta bicoloralis</i>
	(<i>Tenthredinidae</i>) <i>Tenthredo grandis</i>	Raspberry Pyrausta Moth	(<i>Crambidae</i>) <i>Pyrausta signatalis</i>
Common Aerial Yellowjacket	(<i>Vespidae</i>) <i>Dolichovespula arenaria</i>	Many-spotted Scoparia Moth	(<i>Crambidae</i>) <i>Scoparia basalis</i>
Bald-faced Hornet	(<i>Vespidae</i>) <i>Dolichovespula maculata</i>	Sooty Scoparia Moth	(<i>Crambidae</i>) <i>Scoparia cinereomedia</i>
Dark Paper Wasp	(<i>Vespidae</i>) <i>Polistes fuscatus</i>	Celery Leaf-tier Moth	(<i>Crambidae</i>) <i>Udea rubigalis</i>
Blackjacket	(<i>Vespidae</i>) <i>Vespula consobrina</i>	Snowy Urola Moth	(<i>Crambidae</i>) <i>Urola nivalis</i>
Eastern Yellowjacket	(<i>Vespidae</i>) <i>Vespula maculifrons</i>	Many-lined Grass-veneer	(<i>Crambidae</i>) <i>Xubida panalope</i>
Widow Yellowjacket	(<i>Vespidae</i>) <i>Vespula vidua</i>	Arched Hooktip Moth	(<i>Drepanidae</i>) <i>Drepana arcuata</i>
Triangle-marked Twirler Moth	(<i>Autostichidae</i>) <i>Taygete attributella</i>	Dogwood Thyatirid Moth	(<i>Drepanidae</i>) <i>Euthyatira pudens</i>
	(<i>Choreutidae</i>) <i>Tebenna onustana</i>	Lettered Habrosyne Moth	(<i>Drepanidae</i>) <i>Habrosyne scripta</i>
Wood Leopard Moth	(<i>Cossidae</i>) <i>Zeuzera pyrina</i>	Tufted Thyatirine Moth	(<i>Drepanidae</i>) <i>Pseudothyatira cymatophoroides</i>
Yellow-spotted Webworm Moth	(<i>Crambidae</i>) <i>Anageshna primordialis</i>	Virgin Tiger Moth	(<i>Erebidae</i>) <i>Apantesis virgo</i>

Bent-winged Owlet	<i>(Erebidae) Bleptina caradrinalis</i>
Clover Looper Moth	<i>(Erebidae) Caenurgina crassiuscula</i>
Betrothed Underwing	<i>(Erebidae) Catocala innubens</i>
Bride Underwing	<i>(Erebidae) Catocala neogama</i>
Morbid Owlet	<i>(Erebidae) Chytolita morbidalis</i>
Pale Lichen Moth	<i>(Erebidae) Crambidia pallida</i>
Virginia Ctenucha Moth	<i>(Erebidae) Ctenucha virginica</i>
Cinnamon Tussock Moth	<i>(Erebidae) Dasychira cinnamomea</i>
Visitation Moth	<i>(Erebidae) Dyspyralis illocata</i>
Spot-edged Dyspyralis Moth	<i>(Erebidae) Dyspyralis puncticosta</i>
Milkweed Tussock Moth	<i>(Erebidae) Euchaetes egle</i>
	<i>(Erebidae) Halysidota</i>
Banded Tussock Moth	<i>(Erebidae) Halysidota tessellaris</i>
Baltimore Snout	<i>(Erebidae) Hypena baltimoralis</i>
Dimorphic Snout	<i>(Erebidae) Hypena bijugalis</i>
Gray-edged Snout	<i>(Erebidae) Hypena madefactalis</i>
Green Cloverworm Moth	<i>(Erebidae) Hypena scabra</i>
Large Hypenodes Moth	<i>(Erebidae) Hypenodes caducus</i>
Broken-lined Hypenodes Moth	<i>(Erebidae) Hypenodes fractilinea</i>
Fall Webworm Moth	<i>(Erebidae) Hyphantria cunea</i>
Painted Lichen Moth	<i>(Erebidae) Hypoprepia fucosa</i>
Common Idia Moth	<i>(Erebidae) Idia aemula</i>
American Idia Moth	<i>(Erebidae) Idia americalis</i>
Pale-winged Idia Moth	<i>(Erebidae) Idia concisa</i>
Orange-spotted Idia Moth	<i>(Erebidae) Idia diminuendis</i>
Glossy Black Idia Moth	<i>(Erebidae) Idia lubricalis</i>
Greater Idia Moth	<i>(Erebidae) Idia majoralis</i>
Rotund Idia Moth	<i>(Erebidae) Idia rotundalis</i>
Smoky Idia Moth	<i>(Erebidae) Idia scobialis</i>
Ambiguous Moth	<i>(Erebidae) Lascoria ambigualis</i>
Hickory Tussock Moth	<i>(Erebidae) Lophocampa caryae</i>
Spotted Tussock Moth	<i>(Erebidae) Lophocampa maculata</i>
Black-and-yellow Lichen Moth	<i>(Erebidae) Lycomorpha pholus</i>
Spongy Moth	<i>(Erebidae) Lymantria dispar</i>
Brown-lined Owlet	<i>(Erebidae) Macrochilo litophora</i>
Common Fungus Moth	<i>(Erebidae) Metalectra discalis</i>
Definite Tussock Moth	<i>(Erebidae) Orgyia definita</i>

White-marked Tussock Moth	<i>(Erebidae) Orgyia leucostigma</i>
Dark-spotted Palthis Moth	<i>(Erebidae) Palthis angulalis</i>
Faint-spotted Palthis Moth	<i>(Erebidae) Palthis asopialis</i>
Decorated Owlet	<i>(Erebidae) Pangrapta decoralis</i>
Red-lined Panopoda Moth	<i>(Erebidae) Panopoda rufimargo</i>
Maple Looper Moth	<i>(Erebidae) Parallelia bistrariis</i>
Dark-banded Owlet	<i>(Erebidae) Phalaenophana pyramusalis</i>
Black-banded Owlet	<i>(Erebidae) Phalaenostola larentioides</i>
Pale Phalaenostola Moth	<i>(Erebidae) Phalaenostola metonalis</i>
Ruby Tiger Moth	<i>(Erebidae) Phragmatobia fuliginosa</i>
Isabella Tiger Moth	<i>(Erebidae) Pyrrharctia isabella</i>
Sociable Renia Moth	<i>(Erebidae) Renia factiosalis</i>
Yellow-spotted Renia Moth	<i>(Erebidae) Renia flavipunctalis</i>
Spotted Grass Moth	<i>(Erebidae) Rivula propinqualis</i>
Virginian Tiger Moth	<i>(Erebidae) Spilosoma virginica</i>
Joyful Virbia Moth	<i>(Erebidae) Virbia laeta</i>
Tawny Virbia Moth	<i>(Erebidae) Virbia opella</i>
Horrid Zale Moth	<i>(Erebidae) Zale horrida</i>
Early Fan-foot	<i>(Erebidae) Zanclognatha cruralis</i>
Wavy-lined Fan-foot	<i>(Erebidae) Zanclognatha jacchusalis</i>
Variable Fan-foot	<i>(Erebidae) Zanclognatha laevigata</i>
Lettered Fan-foot	<i>(Erebidae) Zanclognatha lituralis</i>
Yellowish Fan-foot	<i>(Erebidae) Zanclognatha marcidilinea</i>
Ruby Aristotelia Moth	<i>(Gelechiidae) Aristotelia rubidella</i>
	<i>(Gelechiidae) Chionodes fondella</i>
Cream-edged Dichomeris Moth	<i>(Gelechiidae) Dichomeris flavocostella</i>
Orange-dotted Dichomeris Moth	<i>(Gelechiidae) Dichomeris juncidella</i>
Shining Dichomeris Moth	<i>(Gelechiidae) Dichomeris ochripalpella</i>
Many-spotted Dichomeris Moth	<i>(Gelechiidae) Dichomeris punctipennella</i>
Common Gray	<i>(Geometridae) Anavitrinella pampinaria</i>
Variable Antepione Moth	<i>(Geometridae) Antepione thisoaria</i>
Oak Besma Moth	<i>(Geometridae) Besma quercivoraria</i>
Peppered Moth	<i>(Geometridae) Biston betularia</i>
Pale Beauty	<i>(Geometridae) Campaea perlata</i>
Brown Pine Looper Moth	<i>(Geometridae) Caripeta angustiorata</i>
Gray Spruce Looper Moth	<i>(Geometridae) Caripeta divisata</i>
Northern Pine Looper Moth	<i>(Geometridae) Caripeta piniata</i>

Bent-lined Carpet	(<i>Geometridae</i>) <i>Costaconvexa centrostrigaria</i>
Sweetfern Geometer Moth	(<i>Geometridae</i>) <i>Cyclophora pendulinaria</i>
Bad-wing Moth	(<i>Geometridae</i>) <i>Dyspteris abortivaria</i>
Orange-barrred Carpet Moth	(<i>Geometridae</i>) <i>Dysstroma hersiliata</i>
Small Phoenix	(<i>Geometridae</i>) <i>Ecliptopera silaceata</i>
Maple Spanworm Moth	(<i>Geometridae</i>) <i>Ennomos magnaria</i>
White-banded Toothed Carpet	(<i>Geometridae</i>) <i>Epirrhoe alternata</i>
Mottled Euchlaena Moth	(<i>Geometridae</i>) <i>Euchlaena tigrinaria</i>
Grapevine Looper Moths	(<i>Geometridae</i>) <i>Eulithis diversilineata</i>
Sharp-angled Carpet	(<i>Geometridae</i>) <i>Euphyia intermediata</i>
Confused Eusarca Moth	(<i>Geometridae</i>) <i>Eusarca confusaria</i>
Chickweed Geometer Moth	(<i>Geometridae</i>) <i>Haematopis grataria</i>
Three-spotted Phillip	(<i>Geometridae</i>) <i>Heterophleps triguttaria</i>
Pale Homochlodes Moth	(<i>Geometridae</i>) <i>Homochlodes fritillaria</i>
Unadorned Carpet Moth	(<i>Geometridae</i>) <i>Hydrelia inornata</i>
One-spotted Variant	(<i>Geometridae</i>) <i>Hypagyrtis unipunctata</i>
Brown-shaded Gray	(<i>Geometridae</i>) <i>Iridopsis defectaria</i>
Bent-line Gray	(<i>Geometridae</i>) <i>Iridopsis larvaria</i>
Hemlock Looper Moth	(<i>Geometridae</i>) <i>Lambdina fiscellaria</i>
Red-headed Inchworm Moth	(<i>Geometridae</i>) <i>Macaria bisignata</i>
Minor Angle	(<i>Geometridae</i>) <i>Macaria minorata</i>
Lesser Maple Spanworm Moth	(<i>Geometridae</i>) <i>Macaria pustularia</i>
Day Emerald	(<i>Geometridae</i>) <i>Mesothea incertata</i>
Pale Metanema Moth	(<i>Geometridae</i>) <i>Metanema inatomaria</i>
Horned Spanworm Moth	(<i>Geometridae</i>) <i>Nematocampa resistaria</i>
Red-fringed Emerald	(<i>Geometridae</i>) <i>Nemoria bistriaria</i>
White-fringed Emerald	(<i>Geometridae</i>) <i>Nemoria mimosaria</i>
Gem Moth	(<i>Geometridae</i>) <i>Orthonama obstipata</i>
Green Pug	(<i>Geometridae</i>) <i>Pasiphila rectangulata</i>
Hubner's Pero Moth	(<i>Geometridae</i>) <i>Pero anctaria</i>
Straight-lined Plagodis Moth	(<i>Geometridae</i>) <i>Plagodis phlogosaria</i>
Common Tan Wave	(<i>Geometridae</i>) <i>Pleuroprucha insulsaria</i>
Friendly Probosc Moth	(<i>Geometridae</i>) <i>Probosc amicaria</i>
Large Maple Spanworm Moth	(<i>Geometridae</i>) <i>Prochoerodes lineola</i>
Porcelain Gray	(<i>Geometridae</i>) <i>Protoaboarmia porcelaria</i>
Barberry Geometer Moth	(<i>Geometridae</i>) <i>Rheumaptera meadii</i>
Scallop Shell Moths	(<i>Geometridae</i>) <i>Rheumaptera undulata</i>

Large Lace-border Moth	(<i>Geometridae</i>) <i>Scopula limboundata</i>
Red Twin-Spot Carpet	(<i>Geometridae</i>) <i>Xanthorhoe ferrugata</i>
Toothed Brown Carpet	(<i>Geometridae</i>) <i>Xanthorhoe lacustrata</i>
Crocus Geometer Moths	(<i>Geometridae</i>) <i>Xanthotype</i>
False Crocus Geometer Moth	(<i>Geometridae</i>) <i>Xanthotype urticaria</i>
Lilac Leafminer Moth	(<i>Gracillariidae</i>) <i>Gracillaria syringella</i>
Aspen Serpentine Leafminer Moth	(<i>Gracillariidae</i>) <i>Phyllocnistis populiella</i>
Delaware Skipper	(<i>Hesperiidae</i>) <i>Anatrytone logan</i>
Silver-spotted Skipper	(<i>Hesperiidae</i>) <i>Epargyreus clarus</i>
Dun Skipper	(<i>Hesperiidae</i>) <i>Euphyes vestris</i>
Hobomok Skipper	(<i>Hesperiidae</i>) <i>Lon hobomok</i>
Northern Broken-Dash	(<i>Hesperiidae</i>) <i>Polites egeremet</i>
Long Dash	(<i>Hesperiidae</i>) <i>Polites mystic</i>
European Skipper	(<i>Hesperiidae</i>) <i>Thymelicus lineola</i>
Little Glassywing	(<i>Hesperiidae</i>) <i>Vernia verna</i>
Eastern Tent Caterpillar Moth	(<i>Lasiocampidae</i>) <i>Malacosoma americana</i>
Forest Tent Caterpillar Moth	(<i>Lasiocampidae</i>) <i>Malacosoma disstria</i>
American Lappet Moth	(<i>Lasiocampidae</i>) <i>Phyllodesma americana</i>
Spiny Oak-slug Moth	(<i>Limacodidae</i>) <i>Euclea delphinii</i>
Yellow-shouldered Slug Moth	(<i>Limacodidae</i>) <i>Lithacodes fasciola</i>
Jeweled Tailed Slug Moth	(<i>Limacodidae</i>) <i>Packardia geminata</i>
Abbreviated Button Slug Moth	(<i>Limacodidae</i>) <i>Tortricidia flexuosa</i>
Red-crossed Button Slug Moth	(<i>Limacodidae</i>) <i>Tortricidia pallida</i>
Cherry Gall Azure	(<i>Lycaenidae</i>) <i>Celastrina serotina</i>
Banded Hairstreak	(<i>Lycaenidae</i>) <i>Satyrium calanus</i>
Striped Hairstreak	(<i>Lycaenidae</i>) <i>Satyrium liparops</i>
Gray Hairstreak	(<i>Lycaenidae</i>) <i>Strymon melinus</i>
Scalloped Sack-bearer Moth	(<i>Mimallonidae</i>) <i>Lacosoma chiridota</i>
Aspen Petiole Gall Moth	(<i>Nepticulidae</i>) <i>Ectoedemia populella</i>
American Dagger	(<i>Noctuidae</i>) <i>Acronicta americana</i>
Funerary Dagger	(<i>Noctuidae</i>) <i>Acronicta funeralis</i>
Powdered Dagger	(<i>Noctuidae</i>) <i>Acronicta impleta</i>
Unmarked Dagger	(<i>Noctuidae</i>) <i>Acronicta innotata</i>
Large Gray Dagger	(<i>Noctuidae</i>) <i>Acronicta insita</i>
Marsh Dagger	(<i>Noctuidae</i>) <i>Acronicta insularis</i>
Interrupted Dagger	(<i>Noctuidae</i>) <i>Acronicta interrupta</i>
Smearred Dagger	(<i>Noctuidae</i>) <i>Acronicta oblongata</i>

Maple Dagger	(Noctuidae) <i>Acrionicta retardata</i>
Ipsilon Dart	(Noctuidae) <i>Agrotis ipsilon</i>
Eight-spotted Forester Moth	(Noctuidae) <i>Alypia octomaculata</i>
American Ear Moth	(Noctuidae) <i>Amphipoea americana</i>
Copper Underwing	(Noctuidae) <i>Amphipyra pyramidoides</i>
Puta Sallow	(Noctuidae) <i>Anathix puta</i>
Common Looper Moth	(Noctuidae) <i>Autographa precatonis</i>
Three-lined Balsa Moth	(Noctuidae) <i>Balsa tristrigella</i>
Tufted Bird-dropping Moth	(Noctuidae) <i>Cerma cerintha</i>
Laugher Moth	(Noctuidae) <i>Charadra deridens</i>
Formosa Looper Moth	(Noctuidae) <i>Chrysanympha formosa</i>
Cloaked Marvel	(Noctuidae) <i>Chytonix palliatricula</i>
Close-banded Yellowhorn Moth	(Noctuidae) <i>Colocasia propinquilinea</i>
Asteroid Moth	(Noctuidae) <i>Cucullia asteroides</i>
Brown-hooded Owlet	(Noctuidae) <i>Cucullia convexipennis</i>
Bog Glyph	(Noctuidae) <i>Deltote bellicula</i>
Hologram Moth	(Noctuidae) <i>Diachrysia balluca</i>
Pale-winged Midget	(Noctuidae) <i>Elaphria alapallida</i>
Beautiful Wood-nymph	(Noctuidae) <i>Eudryas grata</i>
American Angle Shades	(Noctuidae) <i>Euplexia benesimilis</i>
Master's Dart	(Noctuidae) <i>Feltia herilis</i>
Dingy Cutworm Moth	(Noctuidae) <i>Feltia jaculifera</i>
Bristly Cutworm Moth	(Noctuidae) <i>Lacinipolia renigera</i>
Green Leuconycta Moth	(Noctuidae) <i>Leuconycta diptheroides</i>
Black-dotted Glyph	(Noctuidae) <i>Maliattha synochitis</i>
Hitched Arches	(Noctuidae) <i>Melanchra adjuncta</i>
Exhausted Brocade	(Noctuidae) <i>Neoligia exhausta</i>
Large Yellow Underwing	(Noctuidae) <i>Noctua pronuba</i>
Flame-shouldered Dart	(Noctuidae) <i>Ochropleura implecta</i>
Cynical Quaker	(Noctuidae) <i>Orthodes cynica</i>
Disparaged Arches Moth	(Noctuidae) <i>Orthodes detracta</i>
Black Zigzag Moth	(Noctuidae) <i>Panthea acronyctoides</i>
Eastern Panthea Moth	(Noctuidae) <i>Panthea furcilla</i>
Olive Angle Shades	(Noctuidae) <i>Phlogophora iris</i>
Putnam's Looper Moth	(Noctuidae) <i>Plusia putnami</i>
Small Bird-dropping Moth	(Noctuidae) <i>Ponometia erastrionides</i>
Pale Glyph	(Noctuidae) <i>Protodeltote albidula</i>

Large Mossy Glyph	(Noctuidae) <i>Protodeltote muscosula</i>
Miranda Moth	(Noctuidae) <i>Proxenus miranda</i>
Pink-barred Pseudeustrotia Moth	(Noctuidae) <i>Pseudeustrotia carneola</i>
Pink-spotted Dart	(Noctuidae) <i>Pseudohermonassa bicarnea</i>
Brother Moth	(Noctuidae) <i>Raphia frater</i>
Black-letter Darts	(Noctuidae) <i>Xestia c-nigrum</i>
Praevia Dart	(Noctuidae) <i>Xestia praevia</i>
Smith's Dart	(Noctuidae) <i>Xestia smithii</i>
Doubleday's Baileya Moth	(Nolidae) <i>Baileya doubledayi</i>
Saddled Prominent	(Notodontidae) <i>Cecrita guttivitta</i>
Sigmoid Prominent	(Notodontidae) <i>Clostera albosigma</i>
Apical Prominent	(Notodontidae) <i>Clostera apicalis</i>
Angle-lined Prominent	(Notodontidae) <i>Clostera inclusa</i>
Unicorn Prominent	(Notodontidae) <i>Coelodasys unicornis</i>
Gray-patched Prominent	(Notodontidae) <i>Dasylophia thyatiroides</i>
Gray Furcula Moth	(Notodontidae) <i>Furcula cinerea</i>
Common Gluphisia Moth	(Notodontidae) <i>Gluphisia septentrionis</i>
Mottled Prominent	(Notodontidae) <i>Macrurlocampa marthesia</i>
White-dotted Prominent	(Notodontidae) <i>Nadata gibbosa</i>
Red-humped Caterpillar Moth	(Notodontidae) <i>Oedemasia concinna</i>
Red-washed Prominent	(Notodontidae) <i>Oedemasia semirufescens</i>
Georgian Prominent	(Notodontidae) <i>Paraeschra georgica</i>
Angulose Prominent	(Notodontidae) <i>Peridea angulosa</i>
Oval-based Prominent	(Notodontidae) <i>Peridea basitriens</i>
Chocolate Prominent	(Notodontidae) <i>Peridea ferruginea</i>
Morning-glory Prominent	(Notodontidae) <i>Schizura ipomaeae</i>
Orange-humped Mapleworm	(Notodontidae) <i>Symmerista leucitys</i>
Common Wood-Nymph	(Nymphalidae) <i>Cercyonis pegala</i>
Common Ringlet	(Nymphalidae) <i>Coenonympha californica</i>
Monarch	(Nymphalidae) <i>Danaus plexippus</i>
Northern Pearly-eye	(Nymphalidae) <i>Lethe anthedon</i>
Eyed Brown	(Nymphalidae) <i>Lethe eurydice</i>
Viceroy	(Nymphalidae) <i>Limenitis archippus</i>
White Admiral	(Nymphalidae) <i>Limenitis arthemis arthemis</i>
Little Wood Satyr	(Nymphalidae) <i>Megisto cymela</i>
Mourning Cloak	(Nymphalidae) <i>Nymphalis antiopa</i>
Pearl Crescent	(Nymphalidae) <i>Phyciodes tharos</i>

Question Mark	<i>(Nymphalidae) Polygonia interrogationis</i>
Atlantis Fritillary	<i>(Nymphalidae) Speyeria atlantis</i>
Great Spangled Fritillary	<i>(Nymphalidae) Speyeria cybele</i>
Painted Lady	<i>(Nymphalidae) Vanessa cardui</i>
American Lady	<i>(Nymphalidae) Vanessa virginiensis</i>
Orange-headed Epicallima Moth	<i>(Oecophoridae) Epicallima argenticinctella</i>
Canadian Tiger Swallowtail	<i>(Papilionidae) Papilio canadensis</i>
Eastern Giant Swallowtail	<i>(Papilionidae) Papilio cresphontes</i>
Black Swallowtail	<i>(Papilionidae) Papilio polyxenes</i>
Gold-striped Leaf-tier Moth	<i>(Peleopodidae) Machimia tentoriferella</i>
Cabbage White	<i>(Pieridae) Pieris rapae</i>
Common Bagworm Moth	<i>(Psychidae) Psyche casta</i>
Lobed Plume Moth	<i>(Pterophoridae) Dejongia lobidactylus</i>
Himmelman's and Busck's Plume Moths	<i>(Pterophoridae) Geina tenuidactylus</i>
Posturing Arta Moth	<i>(Pyralidae) Arta statalis</i>
Drab Condylolomia Moth	<i>(Pyralidae) Condylolomia participialis</i>
Yellow-fringed Dolichomia Moth	<i>(Pyralidae) Hypsopygia olinalis</i>
Darker Moodna Moth	<i>(Pyralidae) Moodna ostrinella</i>
Maple Webworm Moth	<i>(Pyralidae) Pococera asperatella</i>
Meal moth	<i>(Pyralidae) Pyralis farinalis</i>
Luna Moth	<i>(Saturniidae) Actias luna</i>
Polyphemus Moth	<i>(Saturniidae) Antheraea polyphemus</i>
Rosy Maple Moth	<i>(Saturniidae) Dryocampa rubicunda</i>
Cecropia Moth	<i>(Saturniidae) Hyalophora cecropia</i>
Squash Vine Borer	<i>(Sesiidae) Eichlinia cucurbitae</i>
Hornet Clearwing Moth	<i>(Sesiidae) Paranthrene simulans</i>
Maple Callus Borer Moth	<i>(Sesiidae) Synanthedon acerni</i>
Walnut Sphinx	<i>(Sphingidae) Amorpha juglandis</i>
Waved Sphinx	<i>(Sphingidae) Ceratomia undulosa</i>
Azalea Sphinx	<i>(Sphingidae) Darapsa choerilus</i>
Virginia Creeper Sphinx	<i>(Sphingidae) Darapsa myron</i>
Pawpaw Sphinx	<i>(Sphingidae) Dolba hyloeus</i>
Diervilla Clearwing	<i>(Sphingidae) Hemaris aethra</i>
Snowberry Clearwing	<i>(Sphingidae) Hemaris diffinis</i>
Hummingbird Clearwing	<i>(Sphingidae) Hemaris thysbe</i>
Bedstraw Hawkmoth	<i>(Sphingidae) Hyles gallii</i>

Northern Pine Sphinx	<i>(Sphingidae) Lapara bombycoides</i>
Carolina Sphinx	<i>(Sphingidae) Manduca sexta</i>
Blinded Sphinx	<i>(Sphingidae) Paonias excaecata</i>
Small-eyed Sphinx	<i>(Sphingidae) Paonias myops</i>
Laurel Sphinx	<i>(Sphingidae) Sphinx kalmiae</i>
Northern Apple Sphinx	<i>(Sphingidae) Sphinx poecila</i>
Yellow Wave Moth	<i>(Tineidae) Hybroma servulella</i>
Blueberry Leaf-tier Moth	<i>(Tortricidae) Acleris curvalana</i>
Maple Leaf-tier Moth	<i>(Tortricidae) Acleris forsskaleana</i>
Silver-bordered Aethes	<i>(Tortricidae) Aethes argenticinctana</i>
Boldly-marked Archips Moth	<i>(Tortricidae) Archips dissitana</i>
Omnivorous Leafroller	<i>(Tortricidae) Archips purpurana</i>
White-spotted Leafroller Moth	<i>(Tortricidae) Argyrotaenia alisellana</i>
Pine Tube Moth	<i>(Tortricidae) Argyrotaenia pinatubana</i>
Yellow-winged Oak Leafroller Moth	<i>(Tortricidae) Argyrotaenia quercifoliaria</i>
Red-banded Leafroller Moth	<i>(Tortricidae) Argyrotaenia velutinana</i>
Reticulated Fruitworm Moth	<i>(Tortricidae) Cenopsis reticulatana</i>
Jack Pine Budworm Moth	<i>(Tortricidae) Choristoneura pinus</i>
Filbertworm Moth	<i>(Tortricidae) Cydia latiferreana</i>
Codling Moth	<i>(Tortricidae) Cydia pomonella</i>
Brighton's Epiblema Moth	<i>(Tortricidae) Epiblema brightonana</i>
White Pine Coneborer Moth	<i>(Tortricidae) Eucopina tocullionana</i>
Dotted Gymnandrosoma Moth	<i>(Tortricidae) Gymnandrosoma punctidiscanum</i>
Astronomer Moth	<i>(Tortricidae) Olethreutes astrologana</i>
Hydrangea Leaf-tier Moth	<i>(Tortricidae) Olethreutes ferriferana</i>
Derelict Pelochrista Moth	<i>(Tortricidae) Pelochrista derelicta</i>
	<i>(Tortricidae) Phalonidia lepidana</i>
Exasperating Platynota Moth	<i>(Tortricidae) Platynota exasperatana</i>
Poplar Leafroller Moth	<i>(Tortricidae) Pseudosciaphila duplex</i>
Sparganothis Fruitworm Moth	<i>(Tortricidae) Sparganothis sulfureana</i>
Brown Scoopwing	<i>(Uraniidae) Caledapteryx dryopterata</i>
European Mantis	<i>(Mantidae) Mantis religiosa</i>
Summer Fishfly	<i>(Corydalidae) Chauliodes pectinicornis</i>
	<i>(Chrysopidae) Chrysopa oculata</i>
Brown Wasp Mantidfly	<i>(Mantispidae) Climaciella brunnea</i>
Canada Darner	<i>(Aeshnidae) Aeshna canadensis</i>
Black-tipped Darner	<i>(Aeshnidae) Aeshna tuberculifera</i>

Shadow Darner	(<i>Aeshnidae</i>) <i>Aeshna umbrosa</i>
Harlequin Darner	(<i>Aeshnidae</i>) <i>Gomphaeschna furcillata</i>
Aurora Damsel	(<i>Coenagrionidae</i>) <i>Chromagrion conditum</i>
Fragile Forktail	(<i>Coenagrionidae</i>) <i>Ischnura posita</i>
Eastern Forktail	(<i>Coenagrionidae</i>) <i>Ischnura verticalis</i>
Sphagnum Sprite	(<i>Coenagrionidae</i>) <i>Nehalennia gracilis</i>
Sedge Sprite	(<i>Coenagrionidae</i>) <i>Nehalennia irene</i>
Sweetflag Spreadwing	(<i>Lestidae</i>) <i>Lestes forcipatus</i>
Slender Spreadwing	(<i>Lestidae</i>) <i>Lestes rectangularis</i>
Eastern Pondhawk	(<i>Libellulidae</i>) <i>Erythemis simplicicollis</i>
White Corporal	(<i>Libellulidae</i>) <i>Ladona exusta</i>
Chalk-fronted Corporal	(<i>Libellulidae</i>) <i>Ladona julia</i>
Dot-tailed Whiteface	(<i>Libellulidae</i>) <i>Leucorrhinia intacta</i>
Spangled Skimmer	(<i>Libellulidae</i>) <i>Libellula cyanea</i>
Slaty Skimmer	(<i>Libellulidae</i>) <i>Libellula incesta</i>
Twelve-spotted Skimmer	(<i>Libellulidae</i>) <i>Libellula pulchella</i>
Four-spotted Skimmer	(<i>Libellulidae</i>) <i>Libellula quadrimaculata</i>
Elfin Skimmer	(<i>Libellulidae</i>) <i>Nannothemis bella</i>
Blue Dasher	(<i>Libellulidae</i>) <i>Pachydiplax longipennis</i>
Common Whitetail	(<i>Libellulidae</i>) <i>Plathemis lydia</i>
Autumn Meadowhawk	(<i>Libellulidae</i>) <i>Sympetrum vicinum</i>
Carolina Grasshopper	(<i>Acrididae</i>) <i>Dissosteira carolina</i>
Two-striped Grasshopper	(<i>Acrididae</i>) <i>Melanoplus bivittatus</i>
Red-legged Grasshopper	(<i>Acrididae</i>) <i>Melanoplus femurrubrum</i>
Fall Field Cricket	(<i>Gryllidae</i>) <i>Gryllus pennsylvanicus</i>
Two-spotted Tree Cricket	(<i>Gryllidae</i>) <i>Neoxabea bipunctata</i>
Roesel's Bush-cricket	(<i>Tettigoniidae</i>) <i>Roeseliana roeselii</i>
Northern Walkingstick	(<i>Diapheromeridae</i>) <i>Diapheromera femorata</i>
	(<i>Phryganeidae</i>) <i>Banksiola dossuaria</i>
Mammals (<i>Mammalia</i>)	
White-tailed Deer	(<i>Cervidae</i>) <i>Odocoileus virginianus</i>
Coyote	(<i>Canidae</i>) <i>Canis latrans</i>
Gray Fox	(<i>Canidae</i>) <i>Urocyon cinereoargenteus</i>
Red Fox	(<i>Canidae</i>) <i>Vulpes vulpes</i>
Bobcat	(<i>Felidae</i>) <i>Lynx rufus</i>
North American River Otter	(<i>Mustelidae</i>) <i>Lontra canadensis</i>

weasel sp.	(<i>Mustelidae</i>) <i>Mustela</i>
Fisher	(<i>Mustelidae</i>) <i>Pekania pennanti</i>
American Black Bear	(<i>Ursidae</i>) <i>Ursus americanus</i>
Big Brown Bat	(<i>Vespertilionidae</i>) <i>Eptesicus fuscus</i>
Eastern Red Bat	(<i>Vespertilionidae</i>) <i>Lasiurus borealis</i>
Hoary Bat	(<i>Vespertilionidae</i>) <i>Lasiurus cinereus</i>
Little Brown Bat	(<i>Vespertilionidae</i>) <i>Myotis lucifugus</i>
Northern Long-eared Bat	(<i>Vespertilionidae</i>) <i>Myotis septentrionalis</i>
Virginia Opossum	(<i>Didelphidae</i>) <i>Didelphis virginiana</i>
American Beaver	(<i>Castoridae</i>) <i>Castor canadensis</i>
North American Porcupine	(<i>Erethizontidae</i>) <i>Erethizon dorsatum</i>
flying squirrel sp.	(<i>Sciuridae</i>) <i>Glaucomys</i>
Eastern Gray Squirrel	(<i>Sciuridae</i>) <i>Sciurus carolinensis</i>
Eastern Chipmunk	(<i>Sciuridae</i>) <i>Tamias striatus</i>
American Red Squirrel	(<i>Sciuridae</i>) <i>Tamiasciurus hudsonicus</i>
Woodland Jumping Mouse	(<i>Zapodidae</i>) <i>Napaeozapus insignis</i>
Mollusks (<i>Molluska</i>)	
Rounded Snail	(<i>Discidae</i>) <i>Discus rotundatus</i>
Winding Mantleslug	(<i>Philomycidae</i>) <i>Philomycus flexuolaris</i>
Eastern Whitelip	(<i>Polygyridae</i>) <i>Neohelix albolabris</i>
Plants (<i>Plantae</i>)	
Jack-in-the-Pulpit	(<i>Araceae</i>) <i>Arisaema triphyllum</i>
Queen Anne's lace	(<i>Apiaceae</i>) <i>Daucus carota</i>
golden Alexander	(<i>Apiaceae</i>) <i>Zizia aurea</i>
bristly sarsaparilla	(<i>Araliaceae</i>) <i>Aralia hispida</i>
wild sarsaparilla	(<i>Araliaceae</i>) <i>Aralia nudicaulis</i>
American spikenard	(<i>Araliaceae</i>) <i>Aralia racemosa</i>
American Water-pennywort	(<i>Araliaceae</i>) <i>Hydrocotyle americana</i>
dwarf ginseng	(<i>Araliaceae</i>) <i>Panax trifolius</i>
winterberry holly	(<i>Aquifoliaceae</i>) <i>Ilex verticillata</i>
Canada mayflower	(<i>Asparagaceae</i>) <i>Maianthemum canadense</i>
Solomon's plume	(<i>Asparagaceae</i>) <i>Maianthemum racemosum</i>
northern blue flag	(<i>Iridaceae</i>) <i>Iris versicolor</i>
northern coralroot	(<i>Orchidaceae</i>) <i>Corallorhiza trifida</i>
pink lady's slipper	(<i>Orchidaceae</i>) <i>Cypripedium acaule</i>

Broad-leaved Helleborine	(<i>Orchidaceae</i>) <i>Epipactis helleborine</i>
downy rattlesnake plantain	(<i>Orchidaceae</i>) <i>Goodyera pubescens</i>
checkered rattlesnake plantain	(<i>Orchidaceae</i>) <i>Goodyera tessellata</i>
ragged fringed orchid	(<i>Orchidaceae</i>) <i>Platanthera lacera</i>
Rose Pogonia	(<i>Orchidaceae</i>) <i>Pogonia ophioglossoides</i>
common yarrow	(<i>Asteraceae</i>) <i>Achillea millefolium</i>
white snakeroot	(<i>Asteraceae</i>) <i>Ageratina altissima</i>
pearly everlasting	(<i>Asteraceae</i>) <i>Anaphalis margaritacea</i>
Nodding Beggarticks	(<i>Asteraceae</i>) <i>Bidens cernua</i>
Bull Thistle	(<i>Asteraceae</i>) <i>Cirsium vulgare</i>
common boneset	(<i>Asteraceae</i>) <i>Eupatorium perfoliatum</i>
flat-topped goldenrod	(<i>Asteraceae</i>) <i>Euthamia graminifolia</i>
tall blue lettuce	(<i>Asteraceae</i>) <i>Lactuca biennis</i>
oxeye daisy	(<i>Asteraceae</i>) <i>Leucanthemum vulgare</i>
dense blazing star	(<i>Asteraceae</i>) <i>Liatris spicata</i>
whorled wood aster	(<i>Asteraceae</i>) <i>Oclemena acuminata</i>
orange hawkweed	(<i>Asteraceae</i>) <i>Pilosella aurantiaca</i>
black-eyed Susan	(<i>Asteraceae</i>) <i>Rudbeckia hirta</i>
silverrod	(<i>Asteraceae</i>) <i>Solidago bicolor</i>
early goldenrod	(<i>Asteraceae</i>) <i>Solidago juncea</i>
common wrinkle-leaved goldenrod	(<i>Asteraceae</i>) <i>Solidago rugosa</i>
Common Blue Wood Aster	(<i>Asteraceae</i>) <i>Symphotrichum cordifolium</i>
New England aster	(<i>Asteraceae</i>) <i>Symphotrichum novae-angliae</i>
colt's-foot	(<i>Asteraceae</i>) <i>Tussilago farfara</i>
Indian tobacco	(<i>Campanulaceae</i>) <i>Lobelia inflata</i>
Pennsylvania Bittercress	(<i>Brassicaceae</i>) <i>Cardamine pensylvanica</i>
Ontario rhodobryum moss	(<i>Bryaceae</i>) <i>Rhodobryum ontariense</i>
Sweet-William	(<i>Caryophyllaceae</i>) <i>Dianthus barbatus</i>
round-leaved sundew	(<i>Droseraceae</i>) <i>Drosera rotundifolia</i>
halberd-leaved tearthumb	(<i>Polygonaceae</i>) <i>Persicaria arifolia</i>
Common Purslane	(<i>Portulacaceae</i>) <i>Portulaca oleracea</i>
winged euonymus	(<i>Celastraceae</i>) <i>Euonymus alatus</i>
Canadian bunchberry	(<i>Cornaceae</i>) <i>Cornus canadensis</i>
gray dogwood	(<i>Cornaceae</i>) <i>Cornus racemosa</i>
wild hydrangea	(<i>Hydrangeaceae</i>) <i>Hydrangea arborescens</i>
northern bush honeysuckle	(<i>Caprifoliaceae</i>) <i>Diervilla lonicera</i>
American fly-honeysuckle	(<i>Caprifoliaceae</i>) <i>Lonicera canadensis</i>

black elderberry	(<i>Viburnaceae</i>) <i>Sambucus canadensis</i>
red-berried elder	(<i>Viburnaceae</i>) <i>Sambucus racemosa</i>
mapleleaf viburnum	(<i>Viburnaceae</i>) <i>Viburnum acerifolium</i>
northern wild raisin	(<i>Viburnaceae</i>) <i>Viburnum cassinoides</i>
hobblebush	(<i>Viburnaceae</i>) <i>Viburnum lantanoides</i>
field horsetail	(<i>Equisetaceae</i>) <i>Equisetum arvense</i>
common jewelweed	(<i>Balsaminaceae</i>) <i>Impatiens capensis</i>
striped wintergreen	(<i>Ericaceae</i>) <i>Chimaphila maculata</i>
trailing arbutus	(<i>Ericaceae</i>) <i>Epigaea repens</i>
Eastern Teaberry	(<i>Ericaceae</i>) <i>Gaultheria procumbens</i>
mountain laurel	(<i>Ericaceae</i>) <i>Kalmia latifolia</i>
Ghost Pipe	(<i>Ericaceae</i>) <i>Monotropa uniflora</i>
shinleaf	(<i>Ericaceae</i>) <i>Pyrola elliptica</i>
lowbush blueberry	(<i>Ericaceae</i>) <i>Vaccinium angustifolium</i>
Northern highbush blueberry	(<i>Ericaceae</i>) <i>Vaccinium corymbosum</i>
American Cranberry	(<i>Ericaceae</i>) <i>Vaccinium macrocarpon</i>
northern starflower	(<i>Primulaceae</i>) <i>Lysimachia borealis</i>
purple pitcher plant	(<i>Sarraceniaceae</i>) <i>Sarracenia purpurea</i>
American hog-peanut	(<i>Fabaceae</i>) <i>Amphicarpaea bracteata</i>
tall blue wild indigo	(<i>Fabaceae</i>) <i>Baptisia australis</i>
eastern wild indigo	(<i>Fabaceae</i>) <i>Baptisia tinctoria</i>
large hop clover	(<i>Fabaceae</i>) <i>Trifolium aureum</i>
Red Clover	(<i>Fabaceae</i>) <i>Trifolium pratense</i>
white clover	(<i>Fabaceae</i>) <i>Trifolium repens</i>
tufted vetch	(<i>Fabaceae</i>) <i>Vicia cracca</i>
fringed polygala	(<i>Polygalaceae</i>) <i>Polygaloides paucifolia</i>
gray alder	(<i>Betulaceae</i>) <i>Alnus incana</i>
yellow birch	(<i>Betulaceae</i>) <i>Betula alleghaniensis</i>
sweet birch	(<i>Betulaceae</i>) <i>Betula lenta</i>
paper birch	(<i>Betulaceae</i>) <i>Betula papyrifera</i>
gray birch	(<i>Betulaceae</i>) <i>Betula populifolia</i>
American hophornbeam	(<i>Betulaceae</i>) <i>Ostrya virginiana</i>
American chestnut	(<i>Fagaceae</i>) <i>Castanea dentata</i>
American beech	(<i>Fagaceae</i>) <i>Fagus grandifolia</i>
white oak	(<i>Fagaceae</i>) <i>Quercus alba</i>
northern red oak	(<i>Fagaceae</i>) <i>Quercus rubra</i>
black oak	(<i>Fagaceae</i>) <i>Quercus velutina</i>

bitternut hickory	(<i>Juglandaceae</i>) <i>Carya cordiformis</i>
shagbark hickory	(<i>Juglandaceae</i>) <i>Carya ovata</i>
eastern black walnut	(<i>Juglandaceae</i>) <i>Juglans nigra</i>
sweet-fern	(<i>Myricaceae</i>) <i>Comptonia peregrina</i>
spreading dogbane	(<i>Apocynaceae</i>) <i>Apocynum androsaemifolium</i>
swamp milkweed	(<i>Apocynaceae</i>) <i>Asclepias incarnata</i>
common milkweed	(<i>Apocynaceae</i>) <i>Asclepias syriaca</i>
buttonbush	(<i>Rubiaceae</i>) <i>Cephalanthus occidentalis</i>
Hedge Bedstraw	(<i>Rubiaceae</i>) <i>Galium mollugo</i>
azure bluet	(<i>Rubiaceae</i>) <i>Houstonia caerulea</i>
partridgeberry	(<i>Rubiaceae</i>) <i>Mitchella repens</i>
herb Robert	(<i>Geraniaceae</i>) <i>Geranium robertianum</i>
brocade moss	(<i>Hypnaceae</i>) <i>Callicladium imponens</i>
greater whipwort	(<i>Lepidoziaceae</i>) <i>Bazzania trilobata</i>
anise hyssop	(<i>Lamiaceae</i>) <i>Agastache foeniculum</i>
Scarlet Beebalm	(<i>Lamiaceae</i>) <i>Monarda didyma</i>
wild bergamot	(<i>Lamiaceae</i>) <i>Monarda fistulosa</i>
common selfheal	(<i>Lamiaceae</i>) <i>Prunella vulgaris</i>
white ash	(<i>Oleaceae</i>) <i>Fraxinus americana</i>
black ash	(<i>Oleaceae</i>) <i>Fraxinus nigra</i>
Beechdrops	(<i>Orobanchaceae</i>) <i>Epifagus virginiana</i>
white turtlehead	(<i>Plantaginaceae</i>) <i>Chelone glabra</i>
foxglove beardtongue	(<i>Plantaginaceae</i>) <i>Penstemon digitalis</i>
heath speedwell	(<i>Plantaginaceae</i>) <i>Veronica officinalis</i>
great mullein	(<i>Scrophulariaceae</i>) <i>Verbascum thapsus</i>
blue vervain	(<i>Verbenaceae</i>) <i>Verbena hastata</i>
sessile bellwort	(<i>Colchicaceae</i>) <i>Uvularia sessilifolia</i>
bluebead lily	(<i>Liliaceae</i>) <i>Clintonia borealis</i>
yellow trout lily	(<i>Liliaceae</i>) <i>Erythronium americanum</i>
Cucumber Root	(<i>Liliaceae</i>) <i>Medeola virginiana</i>
red trillium	(<i>Melanthiaceae</i>) <i>Trillium erectum</i>
painted trillium	(<i>Melanthiaceae</i>) <i>Trillium undulatum</i>
prickly tree-clubmoss	(<i>Lycopodiaceae</i>) <i>Dendrolycopodium dendroideum</i>
Hickey's tree-clubmoss	(<i>Lycopodiaceae</i>) <i>Dendrolycopodium hickeyi</i>
fan clubmoss	(<i>Lycopodiaceae</i>) <i>Diphasiastrum digitatum</i>
blue clubmoss	(<i>Lycopodiaceae</i>) <i>Diphasiastrum tristachyum</i>
shining firmoss	(<i>Lycopodiaceae</i>) <i>Huperzia lucidula</i>

stag's-horn clubmoss	(<i>Lycopodiaceae</i>) <i>Lycopodium clavatum</i>
interrupted clubmoss	(<i>Lycopodiaceae</i>) <i>Spinulum annotinum</i>
Spotted spurge	(<i>Euphorbiaceae</i>) <i>Euphorbia maculata</i>
Virginia marsh St. John's-wort	(<i>Hypericaceae</i>) <i>Hypericum virginicum</i>
bigtooth aspen	(<i>Salicaceae</i>) <i>Populus grandidentata</i>
trembling aspen	(<i>Salicaceae</i>) <i>Populus tremuloides</i>
downy yellow violet	(<i>Violaceae</i>) <i>Viola pubescens</i>
Round-leaved Violet	(<i>Violaceae</i>) <i>Viola rotundifolia</i>
Great-spurred Violet	(<i>Violaceae</i>) <i>Viola selkirkii</i>
basswood	(<i>Malvaceae</i>) <i>Tilia americana</i>
	(<i>Marchantiaceae</i>) <i>Marchantia polymorpha polymorpha</i>
Virginia meadowbeauty	(<i>Melastomataceae</i>) <i>Rhexia virginica</i>
broadleaf enchanter's nightshade	(<i>Onagraceae</i>) <i>Circaea canadensis</i>
Watershield	(<i>Cabombaceae</i>) <i>Brasenia schreberi</i>
American white waterlily	(<i>Nymphaeaceae</i>) <i>Nymphaea odorata</i>
narrow triangle moonwort	(<i>Ophioglossaceae</i>) <i>Botrychium angustisegmentum</i>
lanceleaf moonwort	(<i>Ophioglossaceae</i>) <i>Botrychium lanceolatum</i>
matricary grapefern	(<i>Ophioglossaceae</i>) <i>Botrychium matricariifolium</i>
rattlesnake fern	(<i>Ophioglossaceae</i>) <i>Botrypus virginianus</i>
Cutleaf Grapefern	(<i>Ophioglossaceae</i>) <i>Sceptridium dissectum</i>
crisped pincushion	(<i>Orthotrichaceae</i>) <i>Ulota crispa</i>
interrupted fern	(<i>Osmundaceae</i>) <i>Osmunda claytoniana</i>
American Royal Fern	(<i>Osmundaceae</i>) <i>Osmunda spectabilis</i>
cinnamon fern	(<i>Osmundaceae</i>) <i>Osmundastrum cinnamomeum</i>
mountain woodsorrel	(<i>Oxalidaceae</i>) <i>Oxalis montana</i>
common juniper	(<i>Cupressaceae</i>) <i>Juniperus communis</i>
tamarack	(<i>Pinaceae</i>) <i>Larix laricina</i>
red spruce	(<i>Pinaceae</i>) <i>Picea rubens</i>
eastern white pine	(<i>Pinaceae</i>) <i>Pinus strobus</i>
eastern hemlock	(<i>Pinaceae</i>) <i>Tsuga canadensis</i>
Canadian wild ginger	(<i>Aristolochiaceae</i>) <i>Asarum canadense</i>
bristly sedge	(<i>Cyperaceae</i>) <i>Carex comosa</i>
northern long sedge	(<i>Cyperaceae</i>) <i>Carex folliculata</i>
bladder sedge	(<i>Cyperaceae</i>) <i>Carex intumescens</i>
sallow sedge	(<i>Cyperaceae</i>) <i>Carex lurida</i>
Tuckerman's sedge	(<i>Cyperaceae</i>) <i>Carex tuckermanii</i>

Three-way Sedge	(<i>Cyperaceae</i>) <i>Dulichium arundinaceum</i>
tawny cotton-grass	(<i>Cyperaceae</i>) <i>Eriophorum virginicum</i>
broad-leaved panic grass	(<i>Poaceae</i>) <i>Dichantheium latifolium</i>
broad-leaved cattail	(<i>Typhaceae</i>) <i>Typha latifolia</i>
maidenhair spleenwort	(<i>Aspleniaceae</i>) <i>Asplenium trichomanes</i>
northern lady fern	(<i>Athyriaceae</i>) <i>Athyrium angustum</i>
lady fern	(<i>Athyriaceae</i>) <i>Athyrium filix-femina</i>
silvery glade fern	(<i>Athyriaceae</i>) <i>Deparia acrostichoides</i>
northern oak fern	(<i>Cystopteridaceae</i>) <i>Gymnocarpium dryopteris</i>
hay-scented fern	(<i>Dennstaedtiaceae</i>) <i>Dennstaedtia punctilobula</i>
common bracken	(<i>Dennstaedtiaceae</i>) <i>Pteridium aquilinum</i>
crested wood fern	(<i>Dryopteridaceae</i>) <i>Dryopteris cristata</i>
intermediate wood fern	(<i>Dryopteridaceae</i>) <i>Dryopteris intermedia</i>
marginal wood fern	(<i>Dryopteridaceae</i>) <i>Dryopteris marginalis</i>
Christmas fern	(<i>Dryopteridaceae</i>) <i>Polystichum acrostichoides</i>
ostrich fern	(<i>Onocleaceae</i>) <i>Matteuccia struthiopteris</i>
sensitive fern	(<i>Onocleaceae</i>) <i>Onoclea sensibilis</i>
rock polypody	(<i>Polypodiaceae</i>) <i>Polypodium virginianum</i>
northern maidenhair fern	(<i>Pteridaceae</i>) <i>Adiantum pedatum</i>
New York fern	(<i>Thelypteridaceae</i>) <i>Amauropelta noveboracensis</i>
long beech fern	(<i>Thelypteridaceae</i>) <i>Phegopteris connectilis</i>
marsh fern	(<i>Thelypteridaceae</i>) <i>Thelypteris palustris</i>
New York Scalewort	(<i>Frullaniaceae</i>) <i>Frullania eboracensis</i>
Japanese barberry	(<i>Berberidaceae</i>) <i>Berberis thunbergii</i>
early blue cohosh	(<i>Berberidaceae</i>) <i>Caulophyllum giganteum</i>
blue cohosh	(<i>Berberidaceae</i>) <i>Caulophyllum thalictroides</i>
Dutchman's breeches	(<i>Papaveraceae</i>) <i>Dicentra cucullaria</i>
bloodroot	(<i>Papaveraceae</i>) <i>Sanguinaria canadensis</i>
white baneberry	(<i>Ranunculaceae</i>) <i>Actaea pachypoda</i>
marsh marigold	(<i>Ranunculaceae</i>) <i>Caltha palustris</i>
threeleaf goldthread	(<i>Ranunculaceae</i>) <i>Coptis trifolia</i>
round-lobed hepatica	(<i>Ranunculaceae</i>) <i>Hepatica americana</i>
Hooked buttercup	(<i>Ranunculaceae</i>) <i>Ranunculus recurvatus</i>
autumn olive	(<i>Elaeagnaceae</i>) <i>Elaeagnus umbellata</i>
glossy buckthorn	(<i>Rhamnaceae</i>) <i>Frangula alnus</i>
common buckthorn	(<i>Rhamnaceae</i>) <i>Rhamnus cathartica</i>
white avens	(<i>Rosaceae</i>) <i>Geum canadense</i>

sulphur cinquefoil	(<i>Rosaceae</i>) <i>Potentilla recta</i>
black cherry	(<i>Rosaceae</i>) <i>Prunus serotina</i>
multiflora rose	(<i>Rosaceae</i>) <i>Rosa multiflora</i>
Allegheny blackberry	(<i>Rosaceae</i>) <i>Rubus allegheniensis</i>
purple-flowered raspberry	(<i>Rosaceae</i>) <i>Rubus odoratus</i>
white meadowsweet	(<i>Rosaceae</i>) <i>Spiraea alba</i>
Steeplebush	(<i>Rosaceae</i>) <i>Spiraea tomentosa</i>
American elm	(<i>Ulmaceae</i>) <i>Ulmus americana</i>
Canada clearweed	(<i>Urticaceae</i>) <i>Pilea pumila</i>
staghorn sumac	(<i>Anacardiaceae</i>) <i>Rhus typhina</i>
Amur Corktree	(<i>Rutaceae</i>) <i>Phellodendron amurense</i>
striped maple	(<i>Sapindaceae</i>) <i>Acer pensylvanicum</i>
red maple	(<i>Sapindaceae</i>) <i>Acer rubrum</i>
sugar maple	(<i>Sapindaceae</i>) <i>Acer saccharum</i>
Mountain Maple	(<i>Sapindaceae</i>) <i>Acer spicatum</i>
common witch-hazel	(<i>Hamamelidaceae</i>) <i>Hamamelis virginiana</i>
American golden saxifrage	(<i>Saxifragaceae</i>) <i>Chrysosplenium americanum</i>
Swamp Saxifrage	(<i>Saxifragaceae</i>) <i>Micranthes pensylvanica</i>
Virginia saxifrage	(<i>Saxifragaceae</i>) <i>Micranthes virginiensis</i>
twoleaf miterwort	(<i>Saxifragaceae</i>) <i>Mitella diphylla</i>
Heartleaf Foamflower	(<i>Saxifragaceae</i>) <i>Tiarella cordifolia</i>
clammy groundcherry	(<i>Solanaceae</i>) <i>Physalis heterophylla</i>
bittersweet nightshade	(<i>Solanaceae</i>) <i>Solanum dulcamara</i>
eastern black nightshade	(<i>Solanaceae</i>) <i>Solanum emulans</i>
Virginia creeper	(<i>Vitaceae</i>) <i>Parthenocissus quinquefolia</i>
Slime Molds (Protozoa)	
Honeycomb Coral Slime Mold	(<i>Ceratiomyxaceae</i>) <i>Ceratiomyxa fruticulosa</i>
Dog Vomit Slime Mold	(<i>Physaraceae</i>) <i>Fuligo septica</i>
Reptiles (Reptilia)	
Northern Ringneck Snake	(<i>Colubridae</i>) <i>Diadophis punctatus edwardsii</i>
Eastern Milksnake	(<i>Colubridae</i>) <i>Lampropeltis triangulum</i>
Ribbon Snake	(<i>Colubridae</i>) <i>Thamnophis saurita</i>
Common Garter Snake	(<i>Colubridae</i>) <i>Thamnophis sirtalis</i>
Common Snapping Turtle	(<i>Chelydridae</i>) <i>Chelydra serpentina</i>
Painted Turtle	(<i>Emydidae</i>) <i>Chrysemys picta</i>

Other	
Hornworm Parasitoid Wasp Bracovirus	<i>(Polydnaviridae) Cotesia congregata bracovirus</i>

Appendix C: Habitat Block Size Requirements for Wildlife

1-19 Acres	20-99 Acres	100-499 Acres	500-2,500 Acres	>2,500 Acres
raccoon	raccoon	raccoon	raccoon	raccoon
	hare	hare	hare	hare
				coyote
small rodent	small rodent	small rodent	small rodent	small rodent
	porcupine	porcupine	porcupine	porcupine
				bobcat
cottontail	cottontail	cottontail	cottontail	cottontail
	beaver	beaver	beaver	beaver
				black bear
squirrel	squirrel	squirrel	squirrel	squirrel
	weasel	weasel	weasel	weasel
		mink	mink	mink
				fisher
	woodchuck	woodchuck	woodchuck	woodchuck
		deer	deer	deer
muskrat	muskrat	muskrat	muskrat	muskrat
			moose	moose
red fox	red fox	red fox	red fox	red fox
songbirds	songbirds	songbirds	songbirds	songbirds
		sharp-shinned hawk	sharp-shinned hawk	sharp-shinned hawk
			bald eagle	bald eagle
skunk	skunk	skunk	skunk	skunk
		Cooper's hawk	Cooper's hawk	Cooper's hawk
		harrier	harrier	harrier
		broad-winged hawk	broad-winged hawk	broad-winged hawk
			goshawk	goshawk
		kestrel	kestrel	kestrel
			red-tailed hawk	red-tailed hawk
		great-horned owl	great-horned owl	great-horned owl
			raven	raven
		barred owl	barred owl	barred owl
		osprey	osprey	osprey
		turkey vulture	turkey vulture	turkey vulture
		turkey	turkey	turkey
most reptiles	most reptiles	reptiles	reptiles	reptiles
	garter snake	garter snake	garter snake	garter snake
	ring-necked snake	ring-necked snake	ring-necked snake	ring-necked snake
most amphibians	most amphibians	most amphibians	amphibians	amphibians
		wood frog	wood frog	wood frog