

VERMONT BOTANICAL & BIRD CLUB NEWSLETTER

FEBRUARY 2010

2010 ANNUAL MEETING ANNOUNCEMENT

The 115th Annual Meeting of the Vermont Botanical and Bird Club will be held at Craftsbury Outdoor Center in Craftsbury, Vermont from Thursday, June 3 – Sunday, June 6, 2010. This location in the near Northeast Kingdom affords the opportunity to visit a variety of habitats including Barr Hill Nature Preserve, cedar swamps along the Black River, Big Hosmer Lake and Nichols Ledge. At this early time of the year, we would expect to see some of the first orchids of the summer and a long list of breeding birds. The Club last visited Craftsbury Outdoor Center in 1998 (and earlier in 1989 and in 1981).

2009 MEETING HIGHLIGHTS



Lake Shaftsbury, Shaftsbury State Park June 27, 2009

Photo: Deborah Benjamin

The summer of 2009 was a wet one when all was said and done and that trend was well under way when the Vermont Botanical and Bird Club held

its 114th Annual Meeting at Southern Vermont College in Bennington from June 25 – June 28, 2009.

The College is nestled on the lower slopes of Mount Anthony and includes the grounds and early twentieth-century Everett Mansion. We stayed at Hunter Hall, a dormitory in the new style with wings of rooms surrounding a central atrium and kitchen area. Views were out across the valley to the southern Green Mountains.

Our first evening was warm and steamy, a perfect setting for an evening presentation by Sadie Puglisi, Director of Programs - "New England Tropical Conservatory: From Indonesia to Bennington". And we met the Scholarship Students of this year's meeting: Allison Stegner, Stanford University; Darienne Chouinard and Larry Richards with their Teacher, Douglas LaPoint, of Spaulding High School in Barre.

On Friday morning, the early morning bird walkers walked up the grassy path to toward the Mansion and into the woods along the Carriage Road.

Field trips set out Friday morning: Trip 1, led by Ruth Botzow to Quarry Hill in North Pownal in the morning and by Debbie Benjamin to Woodford State Park in Woodford in the afternoon; Trip 2, led by Connie Youngstrom and Charlotte Bill to New England Tropical Conservatory in Bennington and Shaftsbury State Park in Shaftsbury. Connie, Charlotte and Debbie led the trips on Saturday.

On Friday evening, we enjoyed a presentation by Tammy Kenny, Instructor of Biological Sciences at SVC, who described her research "Little Brown Bats (*Myotis lucifigus*) Recognize Individual Identity of Conspecifics Using Sonar Calls".

On Saturday morning, the early morning birders walked up the Farm Road and into the woods on the lower slopes of Mount Anthony. Saturday evening's Annual Business Meeting was held at the Everett Mansion's Theater and concluded with the Slides by Members Show.

EVENING PROGRAMS

THURSDAY, JUNE 25:

NEW ENGLAND TROPICAL CONSERVATORY: FROM INDONESIA TO BENNINGTON

Speakers: Sadie Puglisi, Director of Programs and Dr. Mary M. Fuqua, President, New England Tropical Conservatory.

Sadie said that the New England Tropical Conservatory (NETC) is a 96-acre reserve, the Norman and Selma Greenberg Conservation Reserve, and is on its way to becoming a botanical garden in Bennington with a large glass conservatory where people can learn about the global to local connection of conservation. She described the three parts of their mission as research, education and display.

Scott Hoover, Director of Research, grew up with a love of plants and applied his interest to his studies by designing independent expeditions for the purpose of collecting and studying plants since 1974. His writing for the Massachusetts Museum of Contemporary Art attracted the attention of Dr. Mary Fuqua and the seeds were sown for the idea of developing a tropical conservatory that would conduct research expeditions to tropical regions and build its own collection of tropical and native plants.

Formed in 1992, NETC in conjunction with the Bogor Herbarium in Indonesia has conducted expeditions to that country to explore the rich diversity of species where relatively little exploration has taken place. Since 1995, forty-five mountains have been explored with work contributing to the studies of ten Masters Degree students. Specimens of all species of plants that are in bloom are collected, prepared and sent to several herbaria: Bogor Herbarium, Smithsonian Herbarium (the sister organization to NETC), Leiden National Herbarium, Kew Gardens,

Harvard University and the University of Edinborough.

We saw the stages in an expedition to Mt. Slamet, one of the highest mountains in Java at 11,260'. Long days and difficult terrain in unique ecological areas that have not been explored reward the team with exciting discoveries that will add to the knowledge of tropical botany in the many institutions where the plants are housed.

Closer to home, NETC has recently purchased a building opposite the Norman and Selma Greenberg Reserve where community education programs will be held. The Club visited the Reserve on one of its field trips

See their website at www.netrop.org

FRIDAY, JUNE 26:

LITTLE BROWN BATS (*MYOTIS LUCIFIGUS*) RECOGNIZE INDIVIDUAL IDENTITY OF CONSPECIFICS USING SONAR CALLS

Speaker: Tammy Kenny, Instructor of Biological Sciences, Southern Vermont College.

Bats use sonar to detect prey and to maneuver during the night to avoid obstacles. They also use sonar to maintain group cohesion, to establish social structure in a colony, to communicate among individuals for purposes of mating and raising young, and to interact with individuals in huge flying colonies.

Statistical analysis has shown that there is enough variation in the sonar signature to distinguish species, such as little from big brown bats. Also shown are colony membership, age of an individual adult or young of year, state of lactation and ultimately individual identity.

Tammy introduced us to the techniques that she and her team developed during her research with

the Chautauqua Institution at SUNY Fredonia. Using a U30 bat detector recording device with an amplifier, a digitizing card and signal software, they were able to collect calls from test bats and systematically expose the bats to calls that they knew and new calls from another set of bats.

By observing the behavior of the study group using a habituation-discrimination design, they could see when the bats were picking up on an individual identity by increasing their rate of calling. This study was the first to demonstrate that bats recognize individual identity of conspecifics without a familiarity factor.

The results of these findings point the way to many areas of new study. This ability may help researchers observe that bats can identify relatives and that they form foraging groups and find roosts with help from others. One new benefit to being able to identify an individual in a large group has to do with altruism. Little brown bats can live for 30 years. It is known that vampire bats regurgitate blood when returning to the roost after a successful feeding. Perhaps there is a return favor but only if the individual can remember which bat did the favor.

This research could help biologists study bats during the white nose syndrome outbreak by identifying individuals by their individual call instead of by the more intrusive practice of capturing and banding the bat.

SATURDAY, JUNE 27, 7:00 PM

ANNUAL BUSINESS MEETING MINUTES EVERETT MANSION THEATRE

1. Secretary's Report

Debbie Benjamin reported the passing away of two long time Club members in the past year and members shared memories.

In Memoriam: Connie Earle

January 10, 1918 – November 8, 2008

Word of Connie's passing was noted in last year's Newsletter. She wrote a poem that was placed in her Last Wishes book.

*To my family
Look not on my face when I am dead,
Go out and walk in the woods instead.
There you will find wondrous infinity;
I loved what you see, it was part of me;
I lived fully, gladly, never sadly;
My hour has but passed (and nothing lasts)
Please weep not today for useless clay.*

At this meeting, members remembered her fondly. Phillip recalled that Connie was given a new gazetteer one Christmas by her family who knew that her copy was getting a little dog-eared. When she realized that she didn't want to go through all the effort of transferring all of her notes from the old one she gave the new one to him.

Connie was known for her patient dedication to looking at wildflowers and ferns and recording those through photographs.

In Memoriam: Margaret (Mrs. John) Dye

deceased - October 29, 2008

Debbie read a message from Peter Hope – “One of my first memories of Margaret was back in 1976 when I started working at VINS and I remember seeing her and John's bird nest display and program. She was a great contributing member of the network of birders and naturalists in Vermont also being active in the Vergennes based nature group Forest and Field. I learned a lot about birds from Margaret as did all the members of the Vermont Botanical and Bird Club.”

Midge remembered that the Club used to meet from Wednesday to Saturday and she made a suggestion that the group meet from Thursday to Sunday at the business meeting so that spouses and others who had to work a regular work week could more easily attend the meeting. Midge said that the room was filled with dead silence. It was Margaret who said “That is not a bad idea”. And here we are.

Barbara remembered that she met Margaret and John at Mt. Philo. The following week, The Nature Conservancy was having an event at Mt. Philo where Barbara was camped out. She said that she received a message out of the blue from the State Park Ranger that included an invitation from Margaret and John to visit them at their home in Ferrisburg.

2. Treasurer's Report

Treasurer Charlotte Bill presented the Report.

Club Accounts (3):

1) Certificate of Deposit, Merchants Bank,
Johnson, VT
Balance on 4/9/09 \$8,759.58

2) Green Century Equity Fund, Indianapolis, IN
Net Asset Value 6/23/09 \$9,529.09

3) Checking Account, Chittenden Bank
Account Balance 6/27/09 \$6,995.89

Scholarship Funds (2):

1) Current Year/Rollover Scholarship Money in
Checking Account 6/27/09 \$1,083.29

2) Scholarship Endowment Fund
Contributions as of 6/27/09 \$8,042.50

Two significant contributions were received in 2009:

In Memory of Connie Earle \$1,080.00 to Scholarship Endowment Fund

In Memory of Margaret Dye \$2,547.89 to General Fund

3. Scholarship Committee Report

Dorothy Allard said that she has worked out the procedure over the last couple of years and has received from the Department of Education a list of High School teachers in Vermont. She said that the website has proven very useful for conveying information to a wider audience. She suggested that the Club reach out geographically perhaps to include all of New England. Allison Stegner, one of the students this year, will be working with Dorothy on bryophytes. Doug LaPoint said that he would approach teachers.

4. Nominating Committee

During the course of the meeting, the Officers spoke with each other and with members about continuing in the office that each holds and seeking additional people to share in the many duties. The following slate was drawn up at the meeting.

President	Deborah Benjamin
Co-Vice-Presidents	Plants: Dorothy Allard Michael St. John
Vice-President	Birds Connie Youngstrom
Treasurer	Charlotte Bill
Secretary	no candidate

All twenty-two members present at the meeting voted in favor of electing the slate of Officers.

5. Field Trip Reports

Birds: Vice-President of Birds, Connie Youngstrom reviewed that four trip destinations in addition to the Southern Vermont College

campus and noted some of the highlights – pileated woodpecker sunning itself in an apple tree; redstart at a nest with birch bark shreds; willow flycatcher; wild turkeys off in the distance from the top of Quarry Hill; and olive-sided flycatcher at Shaftsbury State Park and red-winged blackbirds feeding young.

Plants: Vice-President of Plants, Dorothy Allard, described the plant highlights that the campus and four trip destinations revealed. Quarry Hill in North Pownal is one of the top ten special botanical places in Vermont. It is host to rare species but also invasive species. Woodford State Park had a boreal suite of species while Shaftsbury State Park was much more typical of this southern Vermont location. The NETROP Greenberg Conservation Reserve also held a mix of native and non-native species.

6. Meeting Location Ideas for 2010 - Several places were suggested for the 2010 meeting – Craftsbury Outdoor Center, where the Club last visited in 1998; the Londonderry area; and the Champlain Valley.

7. Other Business

TNC Quarry Hill, Pownal

The Club visited this very significant botanical site at this meeting and at the 1999 meeting. Beginning in 2001, The Nature Conservancy has been actively conserving the land through a series of acquisitions. Volunteer land stewards, Ruth Botzow and Barb Hines, hosted the Friday visit. Emily Seifert, TNC Land Stewardship Coordinator, described the importance of continuing to conserve this special place as land becomes available.

Ann Burcroff moved and Lynne Arnold seconded that the Club donate \$100.00 to The Nature Conservancy specifically to support the continuing conservation of Quarry Hill. The motion passed unanimously.

Club Resources

Discussion followed about the Club utilizing some of its money to support worthwhile projects. It was determined that the subject was larger than could be addressed this evening.

Dorothy Allard moved and Ann Burcroff seconded that the Officers form an Ad Hoc Committee of willing persons to discuss and come up with some proposals for the next annual business meeting about how the Club could support some worthwhile projects within its mission. The vote of members present was All in Favor with One Opposed (M. St. J.).

8. Adjourn

Charlotte Bill moved and Bill Arnold seconded that the meeting adjourn. The vote was in favor with one opposed. We then enjoyed a Slides by Members Show. See notes later in this Newsletter.

HENRY POTTER SCHOLARSHIP STUDENTS

This year, we welcomed three scholarship students to attend the meeting.

1) Allison Stegner, Stanford University

Allison is a Junior majoring in Ecology and Evolution. In her own words: "My Honors thesis project looks at the range of Blue Goose temporally and spatially throughout the Quaternary with relation to its preferred food plant, Douglas Fir. It unifies the biology of birds and the biology of plant life. I am interested in asking questions such as, how does range change and habitat change affect the genetic diversity and diversification of birds? I have taken a class on general bird biology, but lectures and scientific papers are no comparison to learning from practicing naturalists, and I think it is vital that ecologists, even theoretical ecologists, have

a firm grounding in the field methods and observational methods of naturalism."

2) Darienne Chouinard, Spaulding High School, Barre

This is Darienne's second year attending the meeting as a scholarship student. "I had an incredible experience with all the members that attended the meeting last year! I've never been in an environment so rich with both personalities and species before, and oh the passion everyone had."

"One nippy day on my walk back from school, I was walking under a long line of cherry trees at the courthouse in Barre and noticed that a huge flock of birds had settled in them. Cherries were being dropped all over the ground as the birds moved from branch to branch, eating and singing. They sounded so beautiful. I stopped all my movements in hope of being able to get an accurate picture of one to check later and hopefully find out what they were. They were everywhere! When a car would go by, they'd all fly out of the trees to take safety on a tall dead tree and the telephone wires. I ran home, grabbed a camera and ran back. I spent a good half hour trying to get close enough for a nice picture, but gave up and just watched the birds socialize. The next day, I went to Mr. LaPoint's science closet and found in one of his bird guides that they were a huge group of cedar waxwings. I felt so proud of myself to be able to recognize them!"

3) Larry Richards, Spaulding High School, Barre

Larry also attended the meeting last year. "I very much enjoyed the experience of going out on nature walks with all the very well versed birders and botanists."

Larry was recognized as an Outstanding Citizen of Barre by the local rotary clubs, the first teenager ever to get this award, for his work in greening the city and working on food drives. He

also was selected for Boys State, a leadership conference.

Douglas LaPoint has had both Darienne and Larry in his classes at Spaulding High School and he attended the meeting this year as well. "Darienne and Larry both have become more interested in plants and birds and are both scheduled to take my Environmental Science and Vermont Natural History class next Fall. They enjoyed both the nature that they saw and were slowly becoming more familiar with and the people at the meeting that were so passionate about observing and learning."

The Club will continue with its efforts to invite qualified candidates to take part in the Henry Potter Scholarship program. A special thank you to all those who have generously responded to the annual appeal to raise funds for the programs.

SLIDES BY MEMBERS SATURDAY EVENING

Dorothy Allard started by showing some pictures of a visit that she and Bill took to his home area in South Carolina. We saw great blue heron and great egret; and a nice picture of buckeye. With the wonders of digital camera and a quick-thinking switch to the video setting, Bill captured a long look at a red-tailed hawk as it caught and devoured a banded water snake.

Tig Arnold started with a nice picture of a flying squirrel. He then showed pictures from this year's meeting, starting with Debbie and Phillip viewing a goatsbeard seed head that had formed during the morning bird walk. We saw an eastern comma butterfly, the courtyard of the Everett Mansion, a closeup digiscoped view of a redstart and later a redstart on its nest. There were bulblet bladder ferns with fertile bulblets, burdock that was damaged by hail from the previous day's sharp thunderstorm. We saw black swallowwort, prickly ash, penstemons, American hornbeam

and ended with an idyllic view of Shaftsbury Lake at the State Park.

Roger Bradley showed tiny mushrooms on wood with a pin for scale. Winter ended with blackbirds and vole holes and a white moose. There was a red fox. Plants included spicebush, trout lily and a pink/red magnolia with an abstract green background. There was morel, Japanese Jack-in-the-pulpit and wisteria. He rounded out the evening with a horse sculpture made from woven tree strips and on display in Fells, NH; and the oldest house in Somers, CT – 1736 – where he has resided for not quite that long.

MEMBERS MEMORABLE MOMENTS

"So do you all love bats now ?"

"One day it was a Blue-billed Weed Wacker; the next it was a Orange-wielding Chain Sawyer."

"I used to eat them before it became illegal."

"16 million by 1917"

"Was it in flower ? No ! It was a dragonfly ! Oh, I thought that you said "jewelweed"."

"There was a boulder covered with walking fern just where you would start your walk."

"The seed looks like a baseball fielding mit."

"The only ones you are supposed to eat are at the grocery store."

VERMONT BOTANICAL AND BIRD CLUB ARTICLES OF ASSOCIATION

At the Saturday business meeting, some members wanted the Club's mission to be included in this Newsletter. The following excerpts are helping the Ad Hoc Resources Committee fulfill its mandate.

The Club is organized for the following charitable, educational and scientific purposes.

A. To promote communications and relationships among all those seriously interested in the flora of Vermont, including, but not limited to: promoting a more thorough knowledge of the flora of Vermont; assisting with the preparation, publication and distribution of information describing the flora of Vermont.

B. To promote communications and relationships among all those seriously interested in the study of birds, including, but not limited to: collecting and preserving information concerning those species found in the State of Vermont; promoting scientific investigation; assisting with securing protection of species; and encouraging a general public awareness and interest in birds.

C. To promote an interest in the preservation of natural areas in Vermont.

D. To encourage academic interests in Botany, Ornithology, general Biology, environmental science, and related natural sciences, including but not limited to providing certain financial and other assistance to students having such interests.

E. To accept, hold and use gifts and endowments for the stated purposes of the corporation.

F. To engage in any and all lawful activities deemed by the Board of Trustees to be necessary or desirable in connection with any of the Corporation's charitable, educational or scientific purposes.

At the June 2010 Annual Meeting at Craftsbury Outdoor Center members will hear the proposal that the Resources Committee puts forward to consider supporting worthwhile projects that meet the Club's original purposes.

FIELD TRIPS

FIELD TRIP 1:

Quarry Hill, North Pownal

Quarry Hill, in far southwestern Vermont, is home to many species of plants that are typically found further south. The combination of limestone bedrock, relatively warm climatic conditions and proximity to seed sources for plants more common further south makes this place one of the most botanically bio-diverse sites in Vermont, with 30 species of plants that are classified as rare, including upland boneset and rue anemone. The forest cover is hardwood-conifer lower down and oak-hickory higher up. When the Club visited in 1999, the area was in private ownership. In October, 2002, The Nature Conservancy began a slow process of conserving this special place by purchasing 50.7 acres from the Town of Pownal. Recently, an additional 28-acre parcel which includes the old limestone quarry was added bringing the total to 78.7 acres. Peregrine Falcons have claimed the upper limestone escarpment for their breeding site; Ravens had just fledged their young when the scouting party visited.

Ruth Botzow, a resident of Pownal, says "Quarry Hill is a special place and I've enjoyed being The Nature Conservancy's volunteer preserve steward there the last few years. I'm looking forward to the Conservancy's increased protection of rare plant communities in Pownal."

Woodford State Park

Woodford State Park was our Lunch stop and our afternoon site for botanizing and birding. The park is 400 acres and surrounds the 23-acre Adams Reservoir. It is adjacent to the 5,060-acre George Aiken Wilderness Area, which is part of the Green Mountain National Forest. Woodford State Park at 2400' is the highest elevation state park in Vermont. The forest is composed of spruce/fir and beech, maple and yellow birch.

Common Loon is on the reservoir. A small wetland near the access road provides excellent birding opportunities. A trail on the north side travels through northern hardwoods. Acidic conditions favor the growth of leatherleaf along the shoreline. A trail on the south side goes to a small peninsula with a fine tall specimen of the native *Rhododendron prinophyllum*, which was in full bloom on scouting.

FIELD TRIP 2:

**New England Tropical Conservancy,
Bennington**

On Thursday evening, we learned about the good work of the New England Tropical Conservancy. Our first stop of the day on this trip will be the 96-acre Norman and Selma Greenberg Conservation Reserve just 1.3 miles south of downtown Bennington. A gentle walk through a meadow gives views over a wetland with excellent birding and presents a mix of meadow wildflowers and native shrubs. Swamp milkweed grows near the path. Willow Flycatcher was seen and heard on scouting.

**Shaftsbury State Park, Healing Springs
Nature Trail, Shaftsbury**

Shaftsbury State Park is our Lunch stop and our afternoon site for botanizing and birding. It is 84 acres in size and the 0.75 mile long Healing Springs Nature Trail circumnavigates Lake Shaftsbury. It traverses a wetland with a boardwalk and an array of native shrubs. The trail continues and then gently climbs a hemlock wooded esker that is an excellent example of this glacial feature and is home to red and white oaks, American chestnut sprouts and a small patch of trailing arbutus. Across from the distant end of the trail, there is a wetland, which continues the theme of native (and some non-native) shrubs, many of which are in full bloom. A special boulder holds bulblet bladder fern and a large patch of walking fern.

**BIRD LIST 2009
(Compiled by Connie Youngstrom)**

- 1 Double-crested Cormorant
- 2 Great Blue Heron
- 3 Green Heron
- 4 Turkey Vulture
- 5 Canada Goose
- 6 Wood Duck
- 7 Mallard
- 8 Sharp-shinned Hawk
- 9 Red-tailed Hawk
- 10 Wild Turkey
- 11 Killdeer
- 12 Mourning Dove
- 13 Barred Owl
- 14 Ruby-throated Hummingbird
- 15 Belted Kingfisher
- 16 Yellow-bellied Sapsucker
- 17 Downy Woodpecker
- 18 Northern Flicker
- 19 Pileated Woodpecker
- 20 Olive-sided Flycatcher
- 21 Eastern Wood-Pewee
- 22 Alder Flycatcher
- 23 Willow Flycatcher
- 24 Least Flycatcher
- 25 Eastern Phoebe
- 26 Great Crested Flycatcher
- 27 Eastern Kingbird
- 28 Blue-headed Vireo
- 29 Warbling Vireo
- 30 Red-eyed Vireo
- 31 Blue Jay
- 32 American Crow
- 33 Tree Swallow
- 34 Cliff Swallow
- 35 Barn Swallow
- 36 Black-capped Chickadee
- 37 Tufted Titmouse
- 38 White-breasted Nuthatch
- 39 Brown Creeper
- 40 Veery
- 41 Hermit Thrush
- 42 Wood Thrush
- 43 American Robin

- 44 Gray Catbird
- 45 Cedar Waxwing
- 46 Yellow Warbler
- 47 Chestnut-sided Warbler
- 48 Magnolia Warbler
- 49 Black-throated Blue Warbler
- 50 Yellow-rumped Warbler
- 51 Black-throated Green Warbler
- 52 Blackburnian Warbler
- 53 Pine Warbler
- 54 Black-and-white Warbler
- 55 American Redstart
- 56 Ovenbird
- 57 Northern Waterthrush
- 58 Mourning Warbler
- 59 Common Yellowthroat
- 60 Canada Warbler
- 61 Scarlet Tanager
- 62 Chipping Sparrow
- 63 Savannah Sparrow
- 64 Song Sparrow
- 65 Swamp Sparrow
- 66 White-throated Sparrow
- 67 Dark-eyed Junco
- 68 Northern Cardinal

- 69 Rose-breasted Grosbeak
- 70 Indigo Bunting
- 71 Bobolink
- 72 Red-winged Blackbird
- 73 Common Grackle
- 74 Brown-headed Cowbird
- 75 Baltimore Oriole
- 76 Purple Finch
- 77 American Goldfinch
- 78 House Sparrow

PLANT LIST 2009
(Compiled by Dorothy Allard, Michael St. John and Debbie Benjamin)

Key:

- 1 Southern Vermont College, Bennington
 - 2 New England Tropical Conservatory, Norman and Selma Greenberg Reserve, Bennington
 - 3 Shaftsbury State Park, Shaftsbury
 - 4 Quarry Hill, North Pownal
 - 5 Woodford State Park, Woodford
- (* = non-native species)

LATIN NAME	COMMON NAME	PLACE
<i>Abies balsamifera</i>	balsam fir	5
<i>Acer negundo</i>	box elder	1, 4
<i>Acer pensylvanicum</i>	striped maple	1, 3, 4, 5
<i>Acer rubrum</i>	red maple	1, 5
<i>Acer saccharinum</i>	silver maple	2
<i>Acer saccharum</i>	sugar maple	1, 4, 5
<i>Acer spicatum</i>	mountain maple	4, 5
<i>Achillea millefolium</i> *	yarrow	2, 4
<i>Aegopodium podagraria</i> *	goutweed	2
<i>Agrimonia gryposepala</i>	agrimony	4
<i>Alnus incana</i> ssp. <i>rugosa</i>	speckled alder	2
<i>Anemone virginiana</i>	thimbleweed	4
<i>Anomodon rostratus</i>	moss	4
<i>Apocynum cannabinum</i>	Indian hemp	2
<i>Aquilegia canadensis</i>	columbine	4
<i>Aralia nudicaulis</i>	false sarsaparilla	1, 3, 5
<i>Arisaema triphyllum</i>	jack-in-the-pulpit	5
<i>Arisaema triphyllum</i> ssp. <i>stewardsonii</i>	northern Jack-in-the-pulpit	3
<i>Asarum canadense</i>	wild ginger	2

<i>Asclepias incarnata</i>	swamp milkweed	2, 3
<i>Asclepias quadrifolia</i>	four-leaved milkweed	4
<i>Asclepias syriaca</i>	milkweed	4
<i>Asplenium platyneuron</i>	ebony spleenwort	4
<i>Asplenium rhizophyllum</i>	walking fern	3
<i>Asplenium ruta-muraria</i>	wallrue	4
<i>Athyrium filix-femina</i>	lady fern	1, 4
<i>Aulacomnium heterostichum</i>	moss	4
<i>Bazzania trilobata</i>	Charlotte's favorite liverwort	5
<i>Berberis thunbergii</i> *	Japanese barberry	4
<i>Berberis vulgaris</i> *	common barberry	4
<i>Betula allegheniensis</i>	yellow birch	1, 5
<i>Betula lenta</i>	black birch	2
<i>Botrychium virginianum</i>	rattlesnake fern	4
<i>Bromus inermis</i> *	smooth broom	2
<i>Calamagrostis canadensis</i>	beaver grass	3
<i>Campanula rotundifolia</i>	harebell	4
<i>Carex arctata</i>	drooping woodland sedge	5
<i>Carex gynandra</i>	nodding sedge	5
<i>Carpinus caroliniana</i>	ironwood	4
<i>Carya cordiformis</i>	pignut hickory	4
<i>Carya ovata</i>	shagbark hickory	4
<i>Carya tomentosa</i>	mockernut hickory	4
<i>Castanea dentata</i>	American chestnut	3
<i>Celastrus orbiculatus</i>	Oriental bittersweet	3
<i>Chamaedaphne calyculata</i>	leatherleaf	5
<i>Cicuta maculata</i>	water hemlock	3
<i>Circaea lutetiana</i>	broadleaf enchanter's nightshade	4
<i>Clematis virginiana</i>	virgin's bower	4
<i>Clintonia borealis</i>	bluebead lily	1, 3, 5
<i>Coptis groenlandica</i>	goldthread	1, 3, 5
<i>Cornus alternifolia</i>	Pagoda dogwood	4
<i>Cornus canadensis</i>	Canada bunchberry	5
<i>Cornus racemosa</i>	gray dogwood	2, 4
<i>Cornus rugosa</i>	round-leaved dogwood	4
<i>Coronilla varia</i> *	crown vetch	2
<i>Corylus cornuta</i>	beaked hazelnut	4
<i>Cryptotaenia canadensis</i>	honestwort	4
<i>Cynanchum nigrum</i> *	black swallowwort	4
<i>Cypripedium acaule</i>	pink ladysipper	5
<i>Cystopteris bulbifera</i>	bulblet fern	3, 4
<i>Cystopteris fragilis</i>	fragile fern	4
<i>Dactylis glomerata</i> *	orchard grass	2
<i>Daucus carota</i> *	Queen Anne's lace	1, 2
<i>Dennstaedtia punctilobula</i>	hay-scented fern	5
<i>Desmodium glutinosum</i>	pointed-leaved tick trefoil	4

<i>Dicranum scoparium</i>	common broom moss	5
<i>Doellingeria umbellata</i>	whorled aster	5
<i>Drosera rotundifolia</i>	round-leaved sundew	5
<i>Dryopteris intermedia</i>	evergreen wood fern	4
<i>Dryopteris marginalis</i>	marginal wood fern	4
<i>Echium vulgare</i> *	viper's bugloss	4
<i>Eleagnus umbellata</i> *	autumn olive	2, 4
<i>Encalypta procera</i>	moss	4
<i>Entodon seductrix</i>	moss	4
<i>Epifagus virginiana</i>	beech drops	3
<i>Epigaea repens</i>	trailing arbutus	3
<i>Epipactis helleborine</i>	broadleaf helleborine	4, 5
<i>Equisetum arvense</i>	field horsetail	1, 3
<i>Equisetum hyemale</i>	scouring rush	3
<i>Erigeron annuus</i>	daisy fleabane	2
<i>Erigeron philadelphicus</i>	common fleabane	4
<i>Erigeron pulchellus</i>	Robin's plantain	4
<i>Eupatorium perfoliatum</i>	boneset	2
<i>Fagus americana</i>	American beech	3, 5
<i>Fraxinus nigra</i>	black ash	3
<i>Galium mollugo</i> *	wild madder	2
<i>Galium palustre</i>	marsh bedstraw	3
<i>Gaultheria procumbens</i>	wintergreen	3
<i>Geranium maculatum</i>	wild geranium	4
<i>Geum canadensis</i>	white Avens	4
<i>Geum rivale</i>	purple Avens	3
<i>Hamamelis virginiana</i>	witch hazel	3
<i>Huperzia lucidula</i>	shining clubmoss	5
<i>Hypnum imponens</i>	moss	5
<i>Ilex verticillata</i>	winterberry	3
<i>Iris versicolor</i>	blueflag	3, 5
<i>Helianthus</i> sp.	sunflower	4
<i>Heracleum maximum</i>	cow parsnip	2
<i>Hypericum perforatum</i> *	St. John's wort	1, 4
<i>Juniperus virginiana</i>	red cedar	4
<i>Knautia arvensis</i> *	field scabious	1, 2
<i>Lactuca biennis</i>	tall blue lettuce	4
<i>Lapsana communis</i> *	nipplewort	2
<i>Larix laricina</i>	tamarack	2
<i>Leucanthemum vulgare</i> *	oxeye daisy	1, 4
<i>Leucodon brachypus</i> var. <i>andrewsianus</i>	moss	5
<i>Lobelia spicata</i>	palespike lobelia	4
<i>Lonicera canadensis</i>	American fly honeysuckle	2, 3, 5
<i>Lonicera morrowii</i> *	Morrow's honeysuckle	2, 4
<i>Lotus corniculatus</i> *	birdsfoot trefoil	2
<i>Lyonia ligustrina</i>	maleberry	3

<i>Lysimachia quadrifolia</i>	whorled loosestrife	4
<i>Lysimachia nummularia</i> *	moneywort	2
<i>Lysimachia thyrsoiflora</i>	tufted loosestrife	3
<i>Lythrum salicaria</i> *	purple loosestrife	2
<i>Mainthemum canadense</i>	Canada mayflower	3, 5
<i>Maianthemum racemosum</i>	Solomon's plume	4
<i>Matteuccia struthiopteris</i>	ostrich fern	5
<i>Medeola virginiana</i>	Indian cucumber root	5
<i>Melilotus alba</i> *	white sweet clover	1, 2
<i>Mitchella repens</i>	partridgeberry	1, 2, 3
<i>Nasturtium officinale</i> *	watercress	3
<i>Nemopanthus mucronata</i>	mountain holly	5
<i>Oclemena acuminata</i>	whorled wood aster	3
<i>Onoclea sensibilis</i>	sensitive fern	1, 4
<i>Orthotrichum anomalum</i>	moss	4
<i>Osmorhiza claytonii</i>	sweet cicely	4
<i>Osmunda cinnamomea</i>	cinnamon fern	1, 3, 5
<i>Osmunda claytoniana</i>	interrupted fern	1, 3
<i>Osmunda regalis</i>	royal fern	3
<i>Ostrya virginiana</i>	hophornbeam	4
<i>Oxalis acetosella</i>	wood sorrel	5
<i>Oxalis stricta</i>	common yellow oxalis	4
<i>Parthenocissus quinquefolia</i>	Virginia creeper	4
<i>Pastinaca sativa</i> *	wild parsnip	2
<i>Penstemon digitalis</i>	white beardtongue	4
<i>Penstemon hirsutus</i>	hairy beardtongue	4
<i>Penstemon laevigatus</i>	eastern beardtongue	4
<i>Phegopteris connectilis</i>	long beechfern	5
<i>Picea rubens</i>	red spruce	5
<i>Pinus strobus</i>	white pine	1, 3, 4
<i>Plantago rugelii</i>	red-stemmed plantain	4
<i>Polypodium virginianum</i>	rock-cap polypody	4
<i>Polystichum acrostichoides</i>	Christmas fern	1, 2, 3, 4
<i>Populus deltoides</i>	cottonwood	4
<i>Potentilla fruticosa</i>	shrubby cinquefoil	3, 4
<i>Potentilla recta</i>	rough-fruited cinquefoil	4
<i>Phegopteris connectilis</i>	long beechfern	5
<i>Picea rubens</i>	red spruce	5
<i>Quercus alba</i>	white oak	3
<i>Quercus muehlenbergii</i>	chestnut oak	3
<i>Quercus rubra</i>	red oak	3, 4
<i>Ranunculus acris</i> *	tall buttercup	1, 2
<i>Rhamnus cathartica</i> *	common buckthorn	2, 4
<i>Rhizomnium punctatum</i>	woody mniium moss	5
<i>Rhododendron prinophyllum</i>	early azalea	3, 5
<i>Rhus aromatica</i>	fragrant sumac	4

<i>Ribes cynosbati</i>	prickly gooseberry	2
<i>Rosa multiflora</i> *	multiflora rose	2, 4
<i>Rubus allegheniensis</i>	blackberry	5
<i>Rubus occidentalis</i>	black raspberry	4
<i>Rudbeckia hirta</i> var. <i>pulcherrima</i>	black-eyed Susan	2
<i>Rumex crispus</i> *	curled dock	1, 2
<i>Sambucus canadensis</i>	elderberry	5
<i>Sanguinaria canadensis</i>	bloodroot	2
<i>Sanicula canadensis</i>	Canadian black snakeroot	4
<i>Silene vulgaris</i> *	bladder campion	2
<i>Solidago flexuosa</i>	zigzag goldenrod	4
<i>Sphagnum girgensohnii</i>	peat moss	5
<i>Spinulum annotinum</i>	bristly clubmoss	3
<i>Spiraea latifolia</i>	meadowsweet	5
<i>Spiraea tomentosa</i>	steeplebush	5
<i>Streptopus lanceolatus</i> var. <i>lanceolatus</i>	twisted stalk	5
<i>Tetraphis pellucida</i>	four-toothed moss	4, 5
<i>Thelypteris novaeboracensis</i>	New York fern	1, 5
<i>Thelypteris palustris</i>	marsh fern	3
<i>Thuidium delicatulum</i>	delicate fern moss	5
<i>Tilia americana</i>	basswood	4
<i>Toxicodendron radicans</i>	poison ivy	4
<i>Tragopogon pratensis</i> *	yellow goatsbeard	1, 2
<i>Trientalis borealis</i>	starflower	3
<i>Trifolium pratense</i> *	red clover	1, 2
<i>Trillium erectum</i>	red trillium	5
<i>Trillium undulatum</i>	painted trillium	5
<i>Tsuga canadensis</i>	hemlock	4
<i>Typha angustifolia</i>	narrow-leaved cattail	3
<i>Typha latifolia</i>	common cattail	3
<i>Ulmus americana</i>	American elm	4
<i>Uvularia sessilifolia</i>	wild oats	5
<i>Vaccinium oxycoccus</i>	small cranberry	5
<i>Valeriana officinalis</i> *	garden valerian	2
<i>Veronica anagallis-aquatica</i>	water speedwell	3
<i>Viburnum acerifolium</i>	maple-leaved Viburnum	3, 4
<i>Viburnum alnifolium</i>	hobblebush	5
<i>Viburnum lantanoides</i>	witch-hobble	5
<i>Viburnum lentago</i>	nannyberry	3
<i>Viburnum recognitum</i>	arrowwood	2, 3, 5
<i>Viola rotundifolia</i>	round-leaved violet	5
<i>Vitis riparia</i>	riverbank grape	4
<i>Xanthoxylum americanum</i>	prickly ash	4
<i>Zizia aurea</i>	golden Alexanders	4

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