# VERMONT BOTANICAL AND BIRD CLUB NEWSLETTER

JANUARY 2012

**2012 Annual Meeting Announcement**

**The 117th Annual Meeting of the Vermont Botanical and Bird Club will be held at Saint Michael's College in Colchester, Vermont on Thursday, June 14 – Sunday, June 17, 2012.**

This will be our first visit to this College with its traditional stone and brick architecture located in the Winooski River Valley region of western Vermont. Places that we may visit include: Winooski Valley Park District – Colchester Pond, Woodside Natural Area, Ethan Allen Park, Delta Park; sandplain forest habitat; local wildlife management areas; Lake Champlain shoreline habitat.

We will be staying in two-story Townhouse buildings that are arranged with a living room space, single rooms, semi-private baths, kitchen.

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**116th Annual Meeting, Castleton State College, June 9 -12, 2011**

Birding and Botanizing at Green Dump Hills and Slate Quarry, west shore of Lake Bomoseen
Saturday, June 11, 2011 photo: Deborah Benjamin

We enjoyed our visit to Rutland County in 2011: Green Dump Hills, Bomoseen State Park, Hubbardton River Clayplain Forest Natural Area, Limestone Quarry, West Rutland Marsh Important Birding Area, Schoolhouse Corner, Pleasant Street Powerline, West Rutland Recreation Center, Bicentennial Cobble. The Newsletter and Photo Gallery are on the website: www.vtbb.org

## EVENING PROGRAMS

**THURSDAY, JUNE 9, 2011, 7:00 PM:**

***Arabidopsis lyrata,* A Periglacial Flowering Plant,** by Assistant Professor of Biology, Deborah Alongi, Castleton State College

This evening, we learned about the research that Prof. Alongi and her three students are doing to learn more about the plant species *Arabidopsis lyrata*, lyre-leaved rock cress, and its two subspecies: *ssp. petraea* which grows in Europe and Asia; and *ssp. lyrata* which grows in North America. Both plants are in the Genus that includes *Arabidopsis thalliana*, a plant that has been studied a great deal from a genetics point of view because of its ease and rapidity of growth (2 ½ months from seed to seed) and its small genome size – it is the first vascular plant to have its genome sequenced.

The two species are presumed to have diverged about 3 – 6 mya which is prior to the last period of glaciation. The two species differ quite a bit in their growth habits: *A. thalliana i*s a short lived rosette that is self-compatible and grows on rocky, sandy loamy soils and only slightly tolerates competition from other plant species: *A. lyrata* is self-incompatible and forms stable discreet populations with individual plants living perhaps 15 years in inhospitable habitats such as rock faces, gravel bars, coastal rocky areas and scree slopes of mountains. *A. lyrata ssp. petraea* is the most prevalent plant growing on Iceland. It also grows in Sweden, Wales, Ireland, Norway and Scotland.

One area of study is the Spiterstulen Valley of central Norway near the Jotunheimen (The Home of Giants) National Park which is above treeline and near the tallest mountains in Norway. The glacial meltwater is milky colored, the shoreline of the Spiterstulen River is populated with lichens and mosses; and, as one hikes upslope to the glaciers' very edges, there are no vascular plants except *Arabidopsis lyrata*.

We looked at the C-S-R Triangle Theory developed by Phil Grimes in 1977 in which plants are placed on a matrix that measures three growth strategies: Competitor, Stress Tolerator, and Ruderal. A competitor is able to compete with many other species and is a common trait of rainforest species; a stress tolerator is able to tolerate stressful conditions such as low nutrients and low light levels; a ruderal is an opportunist which grows extremely fast in highly disturbed habitats. On this scale, *A. lyrata* falls very close to the S point and *A. thalliana* to the R point.

The highest genetic diversity of *A. lyrata petraea* occurs in central Europe – presumably from when the plants were pushed south by the last period of glaciation. By growing plants in a common garden at Castleton from seeds from four populations – North Carolina, Massachusetts, Ireland and Norway – Prof. Alongi and her students could apply different growth conditions and study the resulting vigor of the plants. All the plants grew faster in warmer conditions (68° F); but only the plants from the colder regions grew well in colder conditions ( 41° - 43° F).

As a result of their studies so far and studies that will continue this Summer in Massachusetts, New York, Ireland and Norway, Prof. Alongi and her students (Keith Lavoie, Darren Colomb and Crystal Golding) believe that *A. lyrata ssp. petraea* is a true periglacial species that has always lived in the type of conditions that occur at a glacier's edges: cool summers, high moisture, low light levels and low nutrients. Ongoing projects such as this one, which is supported by the National Environmental Research Council, will help us understand how plants adapt to climate change and specifically to warmer and drier conditions.

[As we enjoyed this evening's presentation, we could hear outside a rain deluge that is reminiscent of the climate in the Spiterstulen Valley and is a weather pattern that has been way too frequent this Summer in Vermont.]

**FRIDAY, JUNE 10, 2011, 7:00 PM:**

**Timber Rattlesnakes in Vermont,** by Doug Blodgett, Wildlife Biologist, Vermont Fish and Wildlife Department

The entire Vermont population of the Eastern Timber Rattlesnake, estimated at a few hundred animals, lives in western Rutland County in five towns: Bomoseen, Hubbardton, West Haven, Fair Haven and Castleton. This evening was the first presentation to the public about this amazing creature from research gathered by Doug Blodgett and Kyley Briggs in the first year of the Vermont Rattlesnake Research Study. The purpose of the study is to map critical habitats where snakes are known to exist, to gain insights on population dynamics and genetic diversity, and to conduct public outreach and education to foster tolerance of these somewhat feared members of our fauna.

Eastern Timber Rattlesnakes are at the northern end of their range. They existed in all of the original thirteen colonies. In New England, there are currently none left in Maine or Rhode Island; the very small numbers in Massachusetts and New Hampshire are not expected to persist; and there are a few still in Connecticut. The Vermont population seems to be stable.

For fully half the year from November to April, rattlesnakes are denning in talus slopes just below the frost line. In mid-April to May, they are emerging and egressing from the den. From mid-May – June, they are in transition, moving away from the denning sites to foraging sites. They eat about every 2 to 3 weeks and prey by ambush and envenomation on small rodents. From mid-June – early July, they will shed one or two times and each time add one rattle to their tail. Breeding occurs from late July – September. Fertilization is delayed in females until the following year when they will give birth in mid-August – September. From October – November the rattlesnakes move toward their den sites (ingression) and submerge to below the frost line - A long and patient yearly cycle.

In order to follow the rattlesnakes and learn more about their annual cycle and where they are likely to be, the plan is to collect 6 males and surgically implant radio transmitters that will be able to be picked up for 15 – 16 months. 49 other male snakes have been fitted with P.I.T. Tags (passive integrated transponders) that allow data to be gathered by passing a wand (held at the end of a pair of tongs) over the snake thereby eliminating the need to re-catch and stress the animal. Next year, non-gravid female snakes will be fitted with P.I.T. Tags to continue the study.

Vermont has two color phases of rattlesnake – about 8 – 10 black phase for every 1 yellow phase. The Milk Snake looks like the cryptically colored rattlesnake and has the habit of shaking its tail (which has no rattles) and making a noise; people reporting a rattlesnake outside of the five towns in Rutland County are probably mistaking this species for a rattlesnake. Rattlesnakes will slip away when approached and are not aggressive toward people. If cornered, however, the snake can execute a lightning speed strike which can reach one third to one half of the snake's total body length. When striking prey, the rattlesnake can decide to utilize one fang or two fangs or no fangs depending on the estimated size of the prey.

In order to tell if a snake is a male or a female, the biologist first looks at the tail – females have a pronounced constriction. A biologist can differentiate the male from the female by counting the anal scales at the vent (not recommended for the layperson !). Females have less than 21 scales; males have more than 23 scales. Rattlesnakes survive in Vermont and can live to 20 – 25 years. Females have one clutch of 3 – 8 young every 4 – 5 years. Neonates have about a 50% mortality rate in their first year.

The Orianne Society, founded in 2008, originally to conserve the Easter Indigo Snake (America's largest snake) has expanded its mission to work nationally and internationally to conserve rare reptiles and amphibeans including the rattlesnake.

**SATURDAY, JUNE 11, 2011:**

**Annual Business Meeting: 1787 Room Campus Center, Castleton State College – 7:30 PM**

**Secretary's Report:**

Debbie gave an update on the next Vermont Botanical and Bird Club Joint Bulletin that Arthur Gilman is editing. He has several nice articles and needs a bit more on birds. The plan is to have a Bulletin in 2012.

**Treasurer's Report:**

Treasurer, Charlotte Bill gave the Treasurer's Report. The balances are as of June 8, 2011.

1) Certificate of Deposit, Merchant Bank, Johnson, VT $10,637.16
2) Green Century Equity Fund, Green Century Funds, Indianapolis, IN $13,692.94
3) Checking Account, People's United Bank $ 6,366,51

The 2011 Scholarship Appeal raised $855.00 for the Current Year/Rollover Fund for a total balance of $1.063.29; and $420.00 for the Scholarship Endowment Fund for a total of $11,041.22.

The 2010 Annual Meeting had $8,092.04 in Expenses and $8,152.00 in Revenues for a positive balance of $59.96.

**June 2010 Resources Committee and Motion:**

The Motion that was passed at the June, 2010 Business Meeting allocated $3,000.00 to the Breeding Bird Atlas Project and $3,000.00 to the New Flora of Vermont [see January 2011 Newsletter].

The donation to the Vermont Breeding Bird Atlas at Vermont Center for Ecostudies was made July 26, 2011. Director Chris Rimmer wrote “On behalf of Roz Renfrew and all of us at Vermont Center for Ecostudies, I want to thank you sincerely for the Vermont Botanical and Bird Club's generous contribution of $3,000.00 towards publication of the Vermont Breeding Bird Atlas. Now past the midpoint of our third full year, we're heartened by the continued strong show of confidence from supporters like you. Your gift provides a great boost to maintain our momentum in 2010, and it edges us ever closer to publishing the Atlas, on which Roz is making steady progress. The B&B's support also helps sustain VCE's core mission “to advance wildlife conservation across the Americas through research, monitoring and citizen engagement.”

The New York Botanical Garden has been informed of the planned donation of $3,000.00; they will send an invoice when they are ready to receive the donation.

**Nominating Committee:**

Chair Sue Elliott read the Slate of Nominations:

| | |
|---|---|
| President | Deborah Benjamin |
| VP Plants | no candidate |
| VP Birds | Connie Youngstrom |
| Treasurer | Charlotte Bill |
| Secretary | Scott Bassage |

Marv Elliott moved that the Nominations be closed and that the slate of Officers be approved; Barbara Walling seconded. The vote was All in Favor.

Debbie said “It's a pleasure to work with a group of people – all of you – who work well together. Thank you.”

**Field Trip Reports – Plants, Birds:**

We shared our favorite plant and place :

| | | |
|---|---|---|
| FG | Bulblet Fern | Limestone Quarry |
| SH | grape vine | Green Dump Hills |
| BP | 1. assembling as a group; 2. four-leaved milkweed | |
| SE | Bicentennial Cobble – didn't know about | |
| DB | Ebony Spleenwort | Green Dump Hills |

ME Maidenhair Spleenwort Green Dump Hills
CY chinquapin oak Limestone Quarry
EM Bicentennial Cobble spectacular
BW Phragmites never seen back home
CB Woodsia obtusa Green Dump Hills
PB Rattlesnake Hawkweed Green Dump Hills
NL Walking Fern Limestone Quarry
RB Partridgeberry – two flowers > one fruit
AH Walking Fern

Connie thanked Sue for entering the Bird Reports into eBird. See also Bird Notes under Field Trips.

We had an audio bird quiz. Golden-winged Warbler, Prairie Warbler, Sora, Marsh Wren, Willow Flycatcher, Alder Flycatcher, Virginia Rail, Swamp Sparrow.

**2012 Meeting:**

Possibilities for next year's meeting were discussed. Debbie mentioned Vermont College of Fine Arts in Montpelier and St. Michael's College in Colchester. Quimby Country in Averill is a great place that allows one field trip to be on the premises with no driving; however, the other away field trip involves a great deal of driving to get to places such as Moose Bog. It would be nice to find a way to get to the Champlain Islands; the problem is with finding accomodations close by.

**Other Business:**

Charlotte Bill asked the members if there was any direction from members about the Club's finances. Barbara Walling suggested looking into a credit union as a stable way to invest. Marv Elliott suggested that the return of the Green Century Equity Fund be compared to one of the standard indexes – such as Standard and Poors 500 or the Vanguard 500 Index - to see how well it is doing.

**Adjourn:**

Charlotte Bill moved and Connie Youngstrom seconded that the meeting adjourn. The vote was All in Favor. The meeting adjourned at 8:45 PM.

**Slides by Members Show, following Annual Business Meeting**

Roger Bradley showed views of his farm in CT from early March that he found just walking around once in a while. Some early bloomers were fetterbush, spicebush, redbud, Japanese Jack-in-the-pulpit and Chinese wisteria. He was lucky to get pictures of two turkey buzzards on the ground picking through some recently plowed earth; and later, some wild turkeys in the south cornfield. He and Pam took some ½ day trips: one to Harvard Forest in Petersham, MA that had an interesting beaver dam; and one to Horse Island of the Thimble Islands in Long Island Sound and owned by Yale University in CT. He said that he attended Harvard and Yale in one year. Three enormous Hibiscus flowers: rose mallow about 10", *Hibiscus moscheutos*; swamp rose mallow, *H. palustris*; and crimson-eyed rose mallow about 12", *H. moscheutos forma peckii*. We also saw New York ironweed, *Vernonia novaboracensis*; white snakeroot, *Eupatorium rugosum*; showy goldenrod, *Solidago speciosa*. Many plants that he has grown over the years are from seed from the New York Rock Garden seed swap. We ended with a vase of cranberries: *Vaccinium macrocarpon*.

Fritz Garrison read a poem that he had written called "Who's Awake ?" about an experience he had in January listening to a Great Horned Owl outside in the nearby woods. A portion follows:

""… Pushing up an unwilling sash
against invisible icy bonds,
I thrust my head out.
And heard again
the nocturnal noise
of the Great Horned Owl's call.
"Who's Awake ?" "Me too"
With misty breath through an involuntary smile,
"I am!" I call back again in my head … ""

Marv Elliott showed slides of a trip that he and Sue took to North Dakota which has more national wildlife refuges than any other state. Ten Top Reasons to Visit North Dakota: Western Grebe

with young, Eared Grebes with hungry young on the back, Avocet swimming, Piping Plover in a muddy puddle, American White Pelicans swimming in synchronizaation, Cooper's Hawk that swooped and sent the two birders back into their camper, Lazuli Bunting, Nelson's Sparrow, Baird's Sparrow. Oh, yes and there are flowers too – prairie coneflower.

Debbie showed three short videos of three unexpected wildlife encounters in Eden. Two weeks ago, she was in the yard and looking at an abandoned tent caterpillar web nest in a young cherry from about 30 ' away and wondering if any wildlife uses the web. Suddenly, there was a bird, a female Blackburnian Warbler; and she (the bird) tugged at the webbing and eagerly wound up a ball that resembled cotton candy and flew off with it. She made several trips back to get more no doubt to add to her nest. Last Summer, Debbie joined Charlotte Bill and her CCV students who were studying the Natural history of Vermont for a visit to Ritterbush Pond in Eden. In the shallow water close to shore by the research dock, we saw two large brown bullhead (catfish) swimming in figure eights over a tight ball of hundreds of newly hatched 1" catfish fry in an effort to protect them from the bluegills that were interested in the young for lunch. And, back in the yard, we saw two parent Black-capped Chickadees fly into and out of a Bluebird nest box feeding what must have been quite a few hungry nestlings.

Everett showed pictures of boreal habitats in the Moose Bog region near where he has been doing a bird count for 20 years – bunchberry, usnea, red spruce bark, albino pink ladyslipper, tamarack, black spruce, balsam fir new growth and Rhodora. We heard about a visit to Amherst, MA and the story of a close encounter between domestic dogs and coyotes. From this year's meeting, we saw glossy buckthorn, Goldie's wood fern, and mitrewort. During the recent Spring flooding by the swollen Wonooski River of the parking area and recreation field behind the Waterbury state office building, state biologists put sandbags in the state laboratory as a precaution.

**HENRY POTTER SCHOLARSHIP STUDENTS**

This year, we enjoyed the company of a total of six students at the meeting: four college students and two elementary students.

Nancy Lewis – Community College of Vermont " For the last 15 years I have been working in education and recently with kids who were struggling in a traditional classroom setting. We built bridges along local hiking trails to make nature more accessible to all. I want to build more bridges and continue to access nature for more people."

Darren Collomb, Crystal Golding, and Keith Lavoie are students in Professor Deborah Alongi's botany class and joined us for the Thursday evening program. All four of them continued the study of *Arabadopsis* in the States and in Europe.

Jim Graves and Kathy Doyle of Green Mountain College in Poultney and their two sons – John and Daniel – joined the Saturday Field Trips to West Rutland Marsh and the Powerline Right-of-Way and saw lots of plants and birds. Daniel wrote: "I liked finding strawberries, watching the birds and taking a walk". John wrote: "I liked the boardwalk because it went into the marsh and into the birds habitat. I also liked the strawberries and the walk. I thought it was cool how the birds answered to the bird call tape."

**MEMBERS MEMORABLE MOMENTS**

1) Hey You ! Get in the tube !
2) I used to go there and misbehave.
3)It's a small step for a fern.
4) the kind of pleasure you shouldn't be enjoying..
5) Who's Awake ?
6) Deer Moose
7) If you wiggle your ears, they will see you.
8) Bring the frogs back; silence the crickets.
9) Pick No Carp On
10) the floating banana (Solanum dulcamara)

## FIELD TRIPS 2011

**A. NORTHWEST TRIP:**
**Friday: Liz Thompson, Mary Droege**
**Saturday: Anne Reed**

**1. Green Dump Hills, Lake Bomoseen**
Directly across from Edward Kehoe Boating Access on the west shore of Lake Bomoseen is an abandoned slate quarry with a host of ferns on the quarry face and wildflowers and ferns on a natural hill to the side and above the quarry under a dry oak-hickory-hophornbeam forest. There is *Carya glabra*, pignut hickory, here as well as more common *Carya ovata*, shagbark hickory. There are many *Asclepias quadrifolia*, four-leaved milkweed and *Hieracium venosum*, rattlesnake hawkweed.
**2. Bomoseen State Park** – Lunch at the Picnic Area on the shore of Lake Bomoseen
Picnic tables under *Quercus palustris,* pin oaks.
**3. Hubbardton River Clayplain Forest Natural Area , West Haven**
This stop affords great views of The Great Ledge which forms the western edge of the Taconics and of the Hubbardton River Clayplain Forest Restoration Area where a planting project to restore 165 acres of former farmland back into the rare Champlain Valley Clayplain Forest, a rare natural community, is in progress.
**4. Limestone Quarry, Whitehall, New York**
This site is contains an old limestone quarry with a sheer face. A woods road to the east allows one to hike up a short distance to the top which is karst or limestone that has been eroded by water. Unquarried moss-covered limestone outcrops and boulders are home to many species of ferns and flowers under a canopy of *Juniperus virginiana,* red cedar; *Quercus muhlenbergii,* yellow oak; *Carya cordiformis*, bitternut hickory and *Acer nigrum,* black maple.

**B. SOUTHEAST TRIP:**
**Friday, Saturday: Everett Marshall**
1. **West Rutland Marsh Important Birding Area (IBA), West Rutland**
The Marsh was formed as a result of the Vermont marble industry which discarded large quantities of sand along the Castleton River eventually slowing its flow. Cattails, sedges and grasses grew in the newly formed substrate and created one of the largest cattail marshes in Vermont - perfect habitat for marsh birds, including: Virginia Rail, Sora Rail, Common Moorhen, American Bittern and the very rare Least Bittern. A boardwalk allows a visitor to get a nice view of the marsh and its inhabitants against a backdrop of rounded green hills. The Rutland County Audubon Society conducts frequent walks at the Marsh.
**2. Schoolhouse Corner**
**3. Pleasant Street Powerline, West Rutland**
This place has a dry, easy hiking path on the side of a slope where we should see and hear Blue-winged Warbler, Golden-winged Warbler, Brewster's Warbler, Prairie Warbler and lots of Eastern Towhees in their preferred habitats of open land with a diverse shrubby habitat.
**4. West Rutland Recreational Center**
**5. Bicentennial Cobble, Clarendon**
This Dunham dolomite limestone cobble, with its rich talus slope, supports 33 species of native fern species, including *Dryopteris goldiana*, Goldie's wood fern and *Diplazium pycnocarpon*, narrow-leaved glade fern. There is a small swamp and the remains of a limestone kiln on the property. The Nature Conservancy conserved Bicentennial Cobble in 1976 with some financial assistance from the Vermont Botanical and Bird Club. It is managed by Castleton State College, which uses it as a botanical study site.

## BIRD NOTES 2011 (Connie Youngstrom)

The steep slope above the old quarry at Green Dump Hills offered a fine view across Lake Bomoseen while our party listened for birds while hunting for interesting plants. A respectable list of 23 bird species were tallied there - mostly woodland songbirds. On to the Hubbardton Clayplain Forest where we picked up grassland birds such as Bobolinks, an Eastern Meadowlark, and Barn Swallows. What a fascinating place the Limestone quarry was in Whitehall, N.Y. There we heard hardwood forest dwelling songbirds such as

Eastern Wood Pewee, Wood thrush, Scarlet Tanager and Black-and-White Warbler.

The following morning brought a huge change in weather, which had an effect on the numbers of bird species seen or heard. West Rutland Marsh always holds its special marsh dwelling birds and we were not disappointed despite the weather. American Bittern, Virginia Rail, Sora, Common Moorhen and Marsh Wrens delighted our group. The Pleasant Street Powerline is also a dependable spot for the species that prefer open shrubby habitat. There we had good looks at Indigo Buntings, Prairie Warblers, Eastern Towhees, and Field Sparrows. Bicentennial Cobble, or known locally as Henry's Cobble, after Henry Potter, botanist and fern expert, was our final stop for the day. While we studied the amazing array of ferns underfoot, we tallied 13 species of forest songbirds that included Great Crested Flycatcher, Rose-breasted Grosbeak, and the ever present Baltimore Oriole.

**BIRD LIST 2011**

American Bittern
Great Blue Heron
Turkey Vulture
Canada Goose
Mallard
Common Merganser
Osprey
Red-shouldered Hawk
Broad-winged Hawk
Red-tailed Hawk
American Kestrel
Virginia Rail
Sora
Common Moorhen
Ring-billed Gull
Herring Gull
Rock Pigeon
Mourning Dove
Black-billed Cuckoo
Ruby-throated Hummingbird
Yellow-bellied Sapsucker
Hairy Woodpecker
Northern Flicker
Eastern Wood-Pewee
Alder Flycatcher
Willow Flycatcher
Least Flycatcher
Eastern Phoebe
Great Crested Flycatcher
Eastern Kingbird
Warbling Vireo
Red-eyed Vireo
Blue Jay
American Crow
Common Raven
Tree Swallow
Northern Rough-winged Swallow
Cliff Swallow
Barn Swallow
Black-capped Chickadee
Tufted Titmouse
Red-breasted Nuthatch
White-breasted Nuthatch
Brown Creeper
House Wren
Marsh Wren
Blue-gray Gnatcatcher
Eastern Bluebird
Veery
Hermit Thrush
Wood Thrush
American Robin
Gray Catbird
European Starling
Cedar Waxwing
Blue-winged Warbler
Golden-winged Warbler
Yellow Warbler
Chestnut-sided Warbler
Magnolia Warbler
Pine Warbler
Blackburnian Warbler
Prairie Warbler
Black-and-White Warbler
American Redstart
Ovenbird
Louisiana Waterthrush
Common Yellowthroat
Scarlet Tanager
Eastern Towhee
Chipping Sparrow
Song Sparrow
Swamp Sparrow
White-throated Sparrow
Dark-eyed Junco
Northern Cardinal
Rose-breasted Grosbeak
Indigo Bunting
Bobolink
Red-winged Blackbird
Eastern Meadowlark
Common Grackle
Brown-headed Cowbird
Baltimore Oriole
Purple Finch
House Finch
American Goldfinch
House Sparrow

**PLANT LIST 2011 KEY**

**1. Green Dump Hills, Bomoseen**
**2. Bomoseen State Park, Bomoseen**
**3. Hubbardton River Clayplain Forest Natural Area, West Haven**
**4. Limestone Quarry, Whitehall, NY**
**5. West Rutland Marsh IBA, West Rutland**
**6. Pleasant Street Powerline, West Rutland**
**7. Bicentennial Cobble, Clarendon**

| | | |
|---|---|---|
| Acer negundo | box elder | 6 |
| Acer nigrum | black maple | 4 |
| Acer pensylvanicum | striped maple | 1 |
| Acer rubrum | red maple | 2 |
| Acer saccharum | sugar maple | 2, 7 |
| Adiantum pedatum | maidenhair fern | 4, 7 |
| Alnus incana | speckled alder | 5 |
| Amelanchier stolonifera | dwarf serviceberry | 1 |
| Amphicarpa bracteata | hog peanut | 4 |
| Anemone virginiana | thimbleweed | 1 |
| Antennaria sp. | pussytoes | 1 |
| Aquilegia canadensis | columbine | 4 |
| Arabis canadensis | sicklepod | 4 |
| Arabis laevigata | smooth rock cress | 1 |
| Arenaria (Minuartia) stricta | rock sandwort | 1, 4 |
| Asarum canadense | wild ginger | 4, 7 |
| Asclepias quadrifolia | four-leaved milkweed | 1, 4 |
| Asplenium platyneuron | ebony spleenwort | 1, 4 |
| Asplenium rhizophyllum | walking fern | 4 |
| Asplenium trichomanes | maidenhair spleenwort | 1 |
| Aster undulatus | clasping heart-leaved aster | 1 |
| Betula lenta | black birch | 1 |
| Betula papyrifera | paper birch | 1 |
| Betula populifolia | gray birch | 1 |
| Boehmeria cylindrica | false nettle | 4 |
| Campanula rotundifolia | harebell | 1 |
| Cardamine parviflora | small-flowered bitter cress | 1 |
| Cardamine pratensis var. palustris | cuckoo-flower | 5 |
| Carex disperma | sedge | 4 |
| Carex eburnea | sedge | 4 |
| Carex hitchcockiana | Hitchcock's sedge | 4, 7 |
| Carex pensylvanica | Pennsylvania sedge | 1 |
| Carex plantaginea | | 7 |
| Carex platyphylla | flat-leaved sedge | 4 |
| Carex rosea | rosy sedge | 4 |
| Carya cordiformis | bitternut hickory | 1, 4 |
| Carya glabra | pignut hickory | 1 |
| Carya ovata | shagbark hickory | 1, 3 |
| Caulophyllum thalictroides | blue cohosh | 7 |
| Celastrus orbiculatus | Asiatic bittersweet | 4 |
| Celtis occidentalis | hackberry | 4 |
| Ceonothus americanus | New Jersey tea | 1 |
| Chrysanthemum leucanthemum | oxeye daisy | 1, 4, 6 |
| Cicuta bulbifera | bulb-bearing water hemlock | 5 |
| Comandra umbellata | bastard toadflax | 1, 4 |

| | | |
|---|---|---|
| Cornus alternifolia | alternate-leaved dogwood | 7 |
| Cornus amomum | silky dogwood | 1, 3, 5, 6 |
| Cornus racemosa | grey dogwood | 3 |
| Cornus rugosa | round-leaved dogwood | 1 |
| Cornus sericea | red-osier dogwood | 3, 5 |
| Corydalis aurea | golden corydalis | 4 |
| Corylus cornuta | beaked hazelnut | 1 |
| Cystopteris bulbifera | bulblet fern | 4, 7 |
| Cystopteris fragilis | fragile fern | 1 |
| Cystopteris tenuis | lowland fragile fern | 1, 7 |
| Dactylis glomerata | orchard grass | 6 |
| Deparia acrostichoides | silvery glad fern | 7 |
| Deschampsia flexuosa | hair grass | 1 |
| Diervilla lonicera | bush honeysuckle | 1 |
| Diplazium pycnocarpon | narrow-leaved glade fern | 7 |
| Dryopteris goldiana | Goldie's wood fern | 7 |
| Dryopteris intermedia | evergreen wood fern | 1, 4 |
| Dryopteris marginalis | marginal wood fern | 1, 4 |
| Echium vulgare | viper's bugloss | 1 |
| Elymus trachycaulus | slender wheatgrass | 1 |
| Equisetum fluviatile | swamp horsetail | 5 |
| Eupatorium maculatum | spotted Joe-pye weed | 5 |
| Fragaria sp. | wild strawberry | 1 |
| Fraxinus americana | white ash | 1, 2, 3, 4, 7 |
| Galium circaezans | wild licorice | 1 |
| Galium mollugo | wild madder | 6 |
| Galium verum | yellow bedstraw | 4 |
| Geranium robertianum | herb Robert | 4, 7 |
| Hedyotis longifolia | bluets | 1 |
| Helianthus divaricatus | woodland sunflower | 1 |
| Helianthus strumosus | harsh sunflower | 6 |
| Hepatica americana | round-leaved hepatica1 | 1 |
| Hieracium aurantiacum | orange hawkweed | 6 |
| Hieracium pratense | king devil | 1, 4, 6 |
| Hieracium venosum | rattlesnake weed | 1 |
| Hydrophyllum virginianum | Virginia waterleaf | 7 |
| Hypericum perforatum | St. John's wort | 1, 4 |
| Impatiens pallida | pale touch-me-not | 4 |
| Iris versicolor | blue flag | 5 |
| Juglans cinerea | butternut | 1, 4 |
| Juniperus communis | common juniper | 1, 6 |
| Juniperus virginiana | eastern red cedar | 1, 4, 6 |
| Lactuca canadensis | wild lettuce | 1 |
| Laportea canadensis | wood nettle | 4, 7 |
| Leonurus cardiaca | motherwort | 4 |

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|---|---|---|
| Lonicera dioica | wild honeysuckle | 1 |
| Lonicera morrowii | Morrow's honeysuckle | 1, 4 |
| Lotus corniculatus | birdsfoot trefoil | 6 |
| Lysimachia quadrifolia | whorled loosestrife | 1 |
| Matteuccia struthiopteris | ostrich fern | 7 |
| Mitella diphylla | mitrewort | 4, 7 |
| Monarda fistulosa | wild bergamot | 6 |
| Nepeta cataria | catnip | 4 |
| Nuphar variegatum | yellow pond lily | 5 |
| Onoclea sensibilis | sensitive fern | 5, 7 |
| Orozopsis racemosa | rice grass | 4 |
| Osmorhiza claytonii | sweet cicely | 4, 7 |
| Ostrya virginiana | hop-hornbeam | 1, 4 |
| Parthenocissus virginiana | Virginia creeper | 1, 4 |
| Penstemon hirsutus | northeastern beard-tongue | 1, 6 |
| Phalaris arundinacea | reed canary grass | 3, 6 |
| Phragmites australis | common reed | 5, 6 |
| Phryma leptostachya | lopseed | 4 |
| Pinus strobus | white pine | 1 |
| Poa compressa | Canada bluegrass | 1 |
| Polygonatum pubescens | downy Solomon' seal | 1, 4 |
| Polygonum cilinode | fringed bindweed | 1 |
| Polypodium virginianum | polypody | 1, 4 |
| Polystichum acrostichoides | Christmas fern | 7 |
| Populus deltoides | eastern cottonwood | 6 |
| Populus grandidentata | big-toothed aspen | 1 |
| Populus tremuloides | quaking aspen | 6 |
| Potentilla anserina | silverweed | 4 |
| Potentilla arguta | tall cinquefoil | 1 |
| Prunus virginiana | choke-cherry | 1 |
| Quercus alba | white oak | 1 |
| Quercus bicolor | swamp white oak | 3 |
| Quercus macrocarpa | bur oak | 3 |
| Quercus muehlenbergii | cinquapin oak | 4 |
| Quercus palustris | pin oak | 2 |
| Quercus rubra | northern red oak | 1 |
| Rhamnus carthatica | common buckthorn | 4 |
| Rhus typhina | staghorn sumac | 1, 2 |
| Rosa carolina | Carolina rose | 1 |
| Rosa multiflora | multiflora rose | 6 |
| Rubus enslenii | southern dewberry | 1 |
| Rubus occidentalis | black raspberry | 1 |
| Rubus oderatus | flowering raspberry | 1 |
| Rumex acetosella | sheep sorrel | 1 |
| Rumex crispus | curly dock | 6 |

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|---|---|---|
| Rumex orbiculatus | great water dock | 5 |
| Sagittaria latifolia | common arrowhead | 5 |
| Sambucus pubens | red-berried elder | 3, 4 |
| Sanguinaria canadensis | bloodroot | 4 |
| Satureja vulgaris | wild basil | 1 |
| Saxifraga virginiensis | early saxifrage | 1, 4 |
| Scirpus pendulus | drooping sedge | 4 |
| Sisyrhinchium montanum | blue-eyed grass | 4 |
| Sium suave | water parsnip | 5 |
| Smilacina racemosa | false Solomon's seal | 1, 7 |
| Solanum dulcamara | bittersweet nightshade | 1 |
| Solidago caesia | blue-stemmed goldenrod | 1 |
| Solidago flexicaulis | zigzag goldenrod | 4 |
| Solidago rugosa | rough-stemmed goldenrod | 6 |
| Specularia perfoliata | Venus' looking glass | 1 |
| Spiraea alba var. latifolia | meadowsweet | 1, 5 |
| Spiraea tomentosa | steeplebush | 6 |
| Stellaria graminea | lesser stitchwort | 1 |
| Thelypteris palustris | marsh fern | 5 |
| Tilia americana | basswood | 4, 7 |
| Toxicodendron radicans | poison ivy | 1, 4, 7 |
| Tragopogon pratensis | yellow goatsbeard | 6 |
| Trifolium pratense | red clover | 6 |
| Triosteum aurantiacum | horse gentian | 4 |
| Tsuga canadensis | eastern hemlock | 1, 4 |
| Typha latifolia | common cattail | 5 |
| Ulmus americana | American elm | 2, 7 |
| Vaccinium angustifolium | low bush blueberry | 1 |
| Vaccinium pallidum | hillside blueberry | 1 |
| Verbascum thapsus | mullein | 1, 4 |
| Verbena hastata | blue vervain | 3 |
| Veronica arvensis | corn speedwell | 4 |
| Veronica officinalis | speedwell | 1 |
| Viburnum acerifolium | maple-leaved Viburnum | 1 |
| Viburnum dentatum | arrowwood | |
| Viburnum lentago | nannyberry | 3 |
| Viburnum rafinesquianum | downy arrowwood | 1, 7 |
| Vicia cracca | cow vetch | 3, 6 |
| Vitis aestivalis | summer grape | 1 |
| Vitis riparia | riverside grape | 1, 4 |
| Waldsteinia fragarioides | barren strawberry | 1 |
| Woodsia ilvensis | rusty woodsia | 1 |
| Woodsia obtusa | blunt-lobed | 1 |
| Zanthozylum americanum | prickly ash | 4 |

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