# VERMONT BOTANICAL AND BIRD CLUB NEWSLETTER

## FEBRUARY 2017

**2017 Annual Meeting Announcement**

**The 122nd Annual Meeting of the Vermont Botanical and Bird Club will be held on Thursday, June 15 – Sunday, June 18, 2017 at Quimby Country in Averill, Vermont.**

This wonderful place, located on Forest Lake and within walking distance of Great Averill Lake, is a large old lodge and several cabins (originally catering to fly-fishermen and family vacationers since 1895) nestled in the far Northeast Kingdom. We will enjoy birding and botanizing on the grounds and at locations nearby that will include boreal habitats, such as Moose Bog in Ferdinand and Conte National Wildlife Refuge in Brunswick and their characteristic northern species. The Club visited Quimby Country in 2005 for its 110th Annual Meeting and 2000 for its 105th Annual Meeting. See www.quimbycountry.com

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**121st Annual Meeting at Johnson State College, Johnson, Vermont June 16 – 19, 2016**

**Vermont Botanical and Bird Club at Johnson State College Saturday, June 18, 2016 photo: Peter Hope**

**Left Group of Five People: Sarah Jane Hills, Bryan Palfey, Ann Burcroff, Connie Youngstrom, Phillip Ballou. Back Row left to right: Charlotte Bill, Mike Chernesky, Everett Marshall, Deborah Benjamin, William Arnold, Ben Cohen (Student), Scott Bassage, Charlotte Hanna, Peter Hope. Middle Row left to right: Marvin Elliott, Sara Hand, Catherine Sells, Louanne Nielsen, Susan Brown, Lynne Arnold, Anne Hill. Front Row Kneeling left to right: David Anderson, Susan Elliott, Steven Lamonde (Student), Erin Buckley (Student), Whitney Burgess (Student). (26)**

**EVENING PROGRAMS**
**CINEMA IN STEARNS HALL 7:00 PM**

**THURSDAY, JUNE 16, 2016:**

**Exploring the Spatial and Functional Requirements of Forest-Interior Avian Corridors Relative to the Needs of a Terrestrial Umbrella Species,** by Steven A. Lamonde, Graduate of Johnson State College in Environmental Studies.

Steven Lamonde, recent graduate and one of four 2016 Scholarship Students, gave a talk about how he came to be interested in environmental science from early days growing up in Hingham, MA; to his undergraduate work at Johnson State College; with some comments about eBird; and his plan to attend Antioch University next Fall to pursue a masters degree in conservation biology with a focus on birds and the use of GIS.

As a child Steven "fell in love with all things natural" while exploring the ocean habitat of his home town. At the age of 9, he was already teaching his sisters everything he knew including a lesson in geology at the dining room table. In Middle School he became joined the South Shore Natural Science Program to study benthic macro-invertebrates. In High School, he studied white-tailed deer road crossings and through police reports he analyzed where deer and cars were colliding. He then produced a map for the town with recommendations of where to put deer crossing signs where they would do the most good.

At Johnson State College, he began studying to be an outdoor educator but shifted to more scientific analysis in environmental science. A course in GIS (Geographic Information Systems) with adviser Dr. Kevin Johnston set him on his course of study to ask: if we save habitat for one animal species will that also help many species of birds that live in the forest?

After reading all the available literature on the mammal species Bobcat, including chapter 7 from Sue Morse's book "Bobcat, Master of Survival", Steven created a model using ArcGIS to identify suitable habitats from the Vermont data set for land use patterns. He found that the Green Mountain National Forest, the main spine of the Green Mountains and the Northeast Kingdom were ideal locations. These are also very good places for forest interior bird species that avoid fragmented edges habitats, such as Cerulean Warbler, Black and White Warbler, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler and Ovenbird.

He then looked at connecting these areas with corridors of suitable habitat; and analyzed the cost relative to distance of moving within and between suitable habitats. He measured the average distance between 2 corridors - Bobcat and warbler - and found some correlation where conservation measures could be applied. He then looked at the $R^2$ value and found a value of 0.8687 which means that there was a strong linear correlation between paths. Bobcats and warblers may choose similar paths. After a good start on analysis, it remains necessary to ground test the results over time.

Steven then introduced the online birding tool called eBird which was first developed in 2002 by Cornell Laboratory of Ornithology and National Audubon Society to make it easy for birders to submit bird sightings to include species, date, length of time spent birding, and places where seen. The resulting data can be used by birders and researchers to see trends in bird populations in Vermont, across North America and all over the world.

Steven encourages everyone to challenge oneself to connect with nature and to enjoy those special intimate moments, such as staring into the eyes of a hummingbird as it hovers in front of you. In three years. he has increased his birding effort to include finding 67 species in 2014, up to 135 species in 2015, and then 153 species in 2016.

**FRIDAY, JUNE 17, 2016:**

**New Flora of Vermont,** by Arthur V. Gilman, Botanist and Environmental Consultant.

In December, 2015 the New York Botanical Garden published the long-awaited and much welcomed New Flora of Vermont by Arthur V. Gilman that represents 10 – 12 years of meticulous work looking at plant specimens in many herbaria and archives including Pringle Herbarium, New England Botanical Club Herbarium, Arnold Arboretum, Ames Orchid Herbarium, Dartmouth Herbarium, Washington D.C. Herbarium, Morton Arboretum and others. The result is the most up to date Flora by Family, Genera and Species of approximately 1400 native plant species and about 700 plant species from elsewhere that occur in Vermont.

The cover is a view from Smugglers' Notch Sub-alpine Cliffs in Cambridge, VT by Patti Greene-Swift. The Frontispiece illustration is a painting by Bobbi Angell of Rosa blanda, one of the author's favorite flowers.

We then enjoyed a series in taxonomic order of examples from simple club mosses to asters that present new discoveries and interesting findings that illustrate the dynamic nature of Vermont's natural landscape.

Among the ferns and fern allies we looked at the tiny Huperzia at the Belvidere Mountain asbestos mine; the newly discovered and also very small Isoetes viridimontanum at Haystack Pond, a high elevation small pond in Wilmington, that was only confirmed by W. Carl Taylor just after the final publication of the Flora; Botrychium rugulosum, wrinkled grapefern along ancient beaches of Lake Champlain; and the well-established Adiantum viridimontanum, Green Mountain Maidenhair Fern, also of Belvidere Mountain. Arthur and Don Avery worked very hard to write a key which appears for the first time in this Flora to distinguish the last species from its close relative, Adiantum aleuticum.

Some new plants have invaded and spread quickly, such as Hydrocharis morus-ranae, Frog's-bit, a monocot that was first observed by Liz Thompson in 1994 in Lake Champlain and, in10 years, it's floating leaved rosettes have colonized all of Lake Champlain.

Under the category Everybody Loves Orchids, we saw Cypripedium parviflorum var. makasin, smaller yellow lady's-slipper at an old limestone quarry in Dorset; and we learned to appreciate the ability of coralroots that are colonizing an old fungus lineage.

Some plants pose phenological questions as with Menispermum canadense, Moonseed, a vining plant for which its pollinator is not known. Serendipity plays a part in discovering “new” plants, such as Ranunculus auricomus, Goldie Locks Buttercup, which has been at the Fairbanks Museum in St. Johnsbury as a specimen collected from Concord, VT in 1920 and had remained unrecognized for 100 years. It is a plant new to Vermont and to the continental United States.

Arthur Haines wrote the key in the Flora for the species Crataegus, Hawthorne, a group of about 30 species in Vermont that is mostly known from 100 year old specimens for which there is very little recent observation. On the field trip to Valcour Bog today, we looked at Crataegus flabellata with broad-based leaves with recurved lobes, and pedicels with fine hairs and fruits that still showed 10 pink stamens.

Rosa sherardii, Scottish Rose, is pictured in an old photo of the Ryegate Town House. Cornus florida, Flowering Dogwood, was re-discovered at Blueberry Hill WMA in Castleton after nearly 100 years by members Sue and Marv Elliott.

In 2010, the Vermont Botanical and Bird Club at its 115th Annual Meeting at the Craftsbury Outdoor Center approved a $3,000.00 donation to the publication of this work that will serve the botanical community well for many years.

**SATURDAY, JUNE 18, 2016:**

**Annual Business Meeting, 7:00 PM**
**Cinema in Stearns Hall**
**Johnson State College**
**Johnson, Vermont**

followed by **Slides by Members Show**

**1. Secretary's Report**

Charles Gracie (Pete) Davis, Jr. Bequest.
Here is a Club Note from last year's Newsletter: "Charles Gracie Davis, Jr., known to most of us as Pete, passed away on May 1, 2015. He and his partner Lucille Beckman were regular attendees of the Vermont Botanical and Bird Club meeting until they moved away to Crested Butte, CO. Pete served as Club Treasurer in the mid-1990's and carried the Club through the lengthy process of receiving its 501 (c) (3) non-profit status. Over the Summer, President Deborah Benjamin learned that Pete had written the B&B Club into his Will. His daughter, Deborah Davis Holloway, of South Hero, is Executor of his estate and has established a Fidelity Charitable Fund in the Club's name for the Club to use in its Scholarship Current Year program. The total amount available in the Fund over the next several years is $10,000.00.

The Vermont Botanical and Bird Club is very grateful for his generous donation."

Maps and Meetings. Debbie put out extra maps from the North and South Field Trips for anyone to take. And she put out copies of a list of the B&B Club Meetings from the first meeting on July 4, 1895 at Grout's Mill to the present.

**2. Treasurer's Report**

Treasurer Charlotte Bill reported the balances of the Club's three accounts:

1) Merchants Bank CD
The CD will renew on November 9, 2015 into a One Year CD after the Flexible CD was no longer offered. It's balance is presently $6,161.12.

2) Green Century Equity Fund
Charlotte presented the history of the Club's investment since the year 2000 and reminded members that this investment contains no stocks in fossil fuels. It's balance as of June 13, 2015 is $19,781.37.

3) People's United Bank, Checking Account
The balance as of June 13, 2015 is $12,939.72. There are receipts from this meeting to deposit and a final bill from Johnson State College to be paid upon receipt.

The Scholarship Funds which reside in the three accounts on June 13, 2015 are:

| | |
|---|---|
| Current Year Rollover Fund | $1,188.29 |
| Endowment Fund | $13,320.19 |

The newly established Fidelity Charitable Fund, which is in the control of Deborah Davis Holloway of South Hero, Vermont who is the executor of the Estate of Charles Gracie (Pete) Davis, Jr., has had the following activity:

| | |
|---|---|
| Initial Amount | $10,000.00 |
| test check transfer (12/15/15) | - $50.00 |
| [ 07/05/16 payment to Current Year | - $500.00 ] |
| [ Balance after 2 payments | $9,450.00 ] |

The Annual Meeting at Goddard College realized $9,972.00 in receipts and incurred $9,009.61 in expenses for a net gain of $962.39.

After suspending the Business Meeting for a few minutes of celebration, the Club thanked Charlotte Bill for her outstanding service of sixteen years as the Club's Treasurer.

**3. Scholarship Report**

Secretary Scott Bassage said that we had a great group of four scholarship students this year and that the way that they mixed in with all of us and our activities gives us hope for the future. (See more about Henry Potter Scholarship Students later in this Newsletter.)

Charlotte Bill said that she has a story to tell about these four. Charlotte commuted to this year's meeting, so on her way home last evening she spotted the four students (who had gone out for an evening jog): three were standing stock still and one was sitting on the campus road half way down from Martinetti Hall with their binoculars trained on the edge of the road. Curious, she stopped and they said that they were watching the young fox that was had been born in a den in a culvert under the President's driveway – then two, then three were visible.

**4. Nominating Committee**

Peter Hope, Chair of the Nominating Committee, read the Slate of Officers:

| | |
|---|---|
| President | Deborah Benjamin |
| Vice-President Plants | Everett Marshall |
| Vice-President Birds | Connie Youngstrom |
| Treasurer | no candidate |
| Secretary | Scott Bassage |

Charlotte Hanna moved that the Secretary cast one unanimous ballot for the Slate. The members voted All in Favor.

**5. Field Trip Reports – Birds, Plants**

Lists of Plants and Birds occur later in this Newsletter.

**Birds 2016:**

Steven Lamonde presented the Vermont Daily Field Card that was prepared by Connie Youngstrom and Sue Elliott in taxonomic order that contains 80 species seen during the meeting and gave some highlights.

A pair of Common Loons with their two young chicks on Belvidere Pond were enjoyed each day; one day an immature Bald Eagle circled overhead causing the loons to display agitated behavior. On Johnson State College campus a pair of Merlins were observed on the morning bird walk as they perched near the tops of some white pines over by the pond. Chimney Swift scooped up bugs from the water's surface. Common Ravens could be heard as the young begged for food and then 5 birds total were seen together. The Saturday visit to Calavale Brook Wetland brought forth a Philadelphia Vireo after much patient playing of a recording helped separate this bird from a Red-eyed Vireo also in the area. The nests of Common Yellowthroat (young in nest) and Hermit Thrush (eggs in nest) were special at Belvidere Bog.

The compete Bird List 2016 occurs later in this Newsletter.

**Plants 2016:**

Everett Marshall called on Ben, Erin and Whitney to help lead the group in noting special plant observations.

Ben said that in Valcour Field, Arthur Gilman showed several species of willows – black, silky, and pussy; Arthur then introduced the difficult genus of hawthornes, Crataegus, as comprising as many as 30 species in Vermont, which took him 17 years to master all of them. Further along to Valcour Bog, calla lilies and goldthread drew interest as well as the pitcher plants in the bog itself.

In Smugglers' Notch, Erin said she loved the ferns and especially enjoyed mountain wood fern and fragile fern. At the Big Spring in Smugglers' Notch, we learned that Poa alsodes has cottony threads at the base of the seeds.

Whitney said that reviewing speckled alder at Calavale Brook Wetland was very helpful.

Erin and Whitney thought that seeing three-leaved false Solomon's seal next to southern twayblade was interesting, as the two plants resemble each other in Belvidere Bog. Ben thought that the sundew with its “tentacles” is an amazing plant.

At Babcock Preserve on Ritterbush Pond Whitney found lady fern intriguing, as Erin mentioned hay-scented fern and Ben recalled silvery glade fern. Steven said that he remembered silvery glade fern from his grandmother's collection of guide books.

Peter Hope said that it was nice to have white mandarin and rosy twisted-stalk growing side by side in Smugglers' Notch, as it was a great way to see the difference in leaf shape. All applauded all of the Scholarship Students for their involvement with learning, recording and describing their favorite plants and birds.

The complete Plant List 2016 occurs later in this Newsletter.

**6. 2017 Meeting Suggestions**

Places that were mentioned for the 2017 meeting include: Camp Ta-Kum-Ta in South Hero, North Hero House in North Hero, and Quimby Country in Averill which closed for business in 2016 but which may find a way to reopen in 2017.

**7. Other Business**

Everett Marshall encouraged the Club to think about ways that it could work with other like-minded organizations to support conservation effort especially regarding native plants.

**8. Adjourn**

Scott Bassage moved and Lynne Arnold seconded that the meeting adjourn. The vote was All in Favor. The meeting adjourned at 8:15 PM.

**SLIDES BY MEMBERS SHOW**

1. William “Tig” Arnold shared his pictures from the meeting of “anything that was flowering” while members called out the names: blackberry, ox-eye daisy, witherod, ragged robin, fan-leaved hawthorne, red-bellied elder, bunchberry, calla lily, pitcher plant, Canada violet, wand willow, Labrador tea, sheep laurel, common sundew, southern twayblade, bog candle. A different type of “flowering” was in the four blue eggs of a Hermit Thrush nest at Belvidere Bog.

2. Susan Elliott showed some Florida specialties such as Black Skimmers lined up in formal rows looking like penguins in Titusville in January. Black-bellied Whistling Ducks were seen in Gainesville, FL. A Brown Creeper appeared at their house; and a Saw-whet Owl nest was securely tucked into a nest box at West Rutland Marsh. Indigo Bunting in glowing blue color and Red-shouldered Hawk awaited patiently for the camera. And lastly, a Snowy Egret sat across from them at a picnic table in St. Petersburg, Florida.

3. Marvin Elliott showed the reward of walking to Lily Pond with Sue, getting lost and coming upon a Great Blue Heron rookery of about 8 – 10 nests. As they took in the view, this primitive looking bird glided in for a landing and, without any time to frame a picture, he got a great shot of a heron that looked like a shaman landing in a dead tree with wings spread. A Prothonotory Warbler, a bird from far south, appeared at Buckner Preserve and caused quite a stir among birders. Marv “finally got a good picture” of Ovenbird - “Look at the size of that eye”. He showed two MP4 video clips – one of a wood stork dancing and one of Black Skimmers bathing in a puddle at Merritt Island in Florida.

4. Charlotte Bill entertained us with plants, birds and people. At Calavale Brook Wetland, we saw witherod or wild raisin, song sparrow in speckled alder. At Belvidere Bog, members started to take on the stature of “Belvidere People” as they explored the carnivorous plants and had a close encounter with a deerfly. Peter Hope revealed mosquito larvae drowned in the watery vase-like base of a pitcher plant. At Ritterbush Pond in Babcock Nature Preserve we enjoyed silvery glade fern, Braun's Holly Fern by the culvert, and the rapidly tapering tips of the Goldie's Woodfern tips. A stop at a gravel pit had people searching for the possibility of a kingfisher nest hole _ How

many B&Ber's does it take to take a picture of the holes ?

5. Everett Marshall visited Puerto Rico with Nature Serve and showed a sample of habitats from beach to mountain and even some from underwater. In San Juan we saw the ever present Coccolobo tree on the beach, bougainvillea with its colorful bracts, and greater Antilles grackle. In the mountains, we saw an endemic butterfly, a bird of paradise, cecropia and bromeliads. Some dry forest habitat hosts cacti and termites. This island paradise is home to land crabs, pearly-eyed thrasher, many lizards and rainbow eucalyptus. We heard about roosters that begin crowing at 4:00 AM and saw the difference between male and female coconut shells.

6. Debbie Benjamin presented pictures of her visit to Valcour Bog ahead of the meeting with volunteer steward of the bog, Don Avery. Don shared a picture by Dorothy Allard of mistletoe which occurs in the bog, although we didn't find it this year. Debbie showed a fully formed but tiny pink lady's-slipper with her index finger for scale. She visited Smugglers' Notch in 1992 with a group including Everett Marshall, Peter Zika and Jerry Jenkins where they climbed high into the north cliffs to look back upon the large geological feature called Elephant's Head and took pictures from this rarely seen vantage point. We saw a map of Elephant's Head with climbing (not for the faint of heart !) routes delineated. On July 13, 1983 a jogger through Smugglers' Notch was an “ear” witness to the fracture and falling out of a 550 ton block of rock that sent trees and rocks crashing down that blocked RT 108. At home, Debbie shared four short videos of a broad-winged hawk that had perched on the cabin roof and offered many close-up views for several minutes while summer crickets and guitar music filled in the background.

7. Peter Hope showed Calystegia, a rare sandplain morning glory, that came into the Camp Johnson sandplain habitat two years after controlled burning occurred. A Gray Jay at Moose Bog didn't give him very long to grab the camera and take a quick picture. A cellphone and a hand lens brought Spiranthes lacera into focus on the Nulhegan River retreat – “It looks like a snowflake that is melting”. Serendipity brought a bumblebee in just as he took a picture of both the bee and turtlehead. Reflections in the Fall of red maple colors on the water's surface make an abstract painting where “wind and waves create brush stroking”. A group of students, including Ben, at Lily Pad Pond at Camp Johnson were collecting a 6 meter pollen core sample that goes back 12,000 years. We saw a wood frog “in my blue period”. At the McCrae Farm, a giant Silver Maple on the Winooski provided a backdrop for Peter to appear and disappear. He found a “quadrillium” painted trillium on the nature trail in Brighton State Park campground that sported 4 leaves, 4 sepals, 4 petals and 8 stamens (instead of the usual 3, 3, 3, and 6) with a four-lobed pistil. By zooming in on a columbine on the porch in full sunlight he showed us the nectar in the spurs. A beautiful pink lady's-slipper at Valcour Bog closed out the show – and by zooming in we got to see the Georgia O'Keefe version.

A very full evening was enjoyed by all as we walked back to our dorm under a mild evening sky.

**HENRY POTTER SCHOLARSHIPS**

The Club was very fortunate to have four scholarship students join us for this year's meeting – two returning from last year and two new this year.

Erin Buckley, a Junior at St. Michael's College, said about her experience last year that “I was inspired by our morning bird walks, afternoon adventures and numerous conversations throughout the weekend to continue my studies in the natural field”. “I am interested in natural sciences and ecology, but I would also like to work with communities or the general public to build a relationship between the land and us. My

hope is to work for either the government or for a non-profit that seeks to educate the public on ecosystem services and ways in which we can positively effect change on the land we walk on. I believe that education on the world around us will solve a lot of problems we face in our modern era of climate change. This summer I will be working at St. Michael's College in our new Permaculture Site" where "we hope to sell our food to the college community and the greater Burlington area".

Whitney Burgess, a Senior at St. Michael's College, said about attending last year's meeting "I found a new level of interest on the botanical level of ecology … and I found myself with an even greater desire to learn more about the birds that are present in Vermont's ecosystems". In her Senior year she demonstrated a high level of achievement. One was in presenting summaries for a class in Effects of Climate Change: 1) an article "Methane emissions from leaves of larch, birch, and oak seedlings grown at elevated $CO_2$ concentrations in Japan"; 2) her analysis of a report by Alan Betts on Climate Change in Vermont. She did an honors credit study near her family's home on "Tsuga canadensis and its impact on the Hinkum Pond watershed of Sudbury Vermont USA and the wildlife that inhabit that region". And she was one of 12 students chosen from 22 applications to attend Professor Peter Hope's Tropical Ecology course tour to Costa Rica to visit a mid-elevation cloud forest and a lower premontane rain forest.

Ben Cohen, from St Michael's College grew up in Hebron, CT where he spent summers looking for frogs and salamanders in the woods behind his house and hiking in Connecticut's state parks. "... investigating the natural world and absorbing as much as I can of it has become an even more important part of my life, and has been the main reason for choosing environmental science as my field of study. As a scientist and as a human being, I am continually trying to gain insight into how the universe works and what my place is in it". "Every person at some point or other finds him or herself wondering about why things seem the way they do. Many of us, in fact, find that we cannot help but ask these questions – the scientist, poet, philosopher, artist and theologian are all, in some way, students of nature and natural history. The sense of curiosity that each of us is born with is a calling to be an explorer, a lover, and student of the natural world".

Steven Lamonde, recent Graduate of Johnson State College grew up in Hingham, Massachusetts. He became a JSC START Scholar in his sophomore year with the National Science Foundation which provided research opportunities and an annual grant. He worked with Professor Kevin Johnston, an internationally recognized GIS expert, and used "suitability modeling" and "cost-distance analysis" to model bobcat behavior and design wildlife corridors for them throughout Vermont. Steven presented his thesis to the Vermont Geospatial Forum. He worked as a math and science tutor in Academic Support Services and helped establish the new "Serious about Science" Club on campus. In his Junior year he was inducted into Sigma XI – the international honor society of science and engineering. He will work as a research assistant this Summer with Prof. Johnston and then head off to Antioch University of New England for a masters degree in conservation biology with a focus on birds and the use of GIS to study them.

**MEMBERS MEMORABLE MOMENTS**

… a Blackburnian Warbler riding on a bobcat
… I was there with Cyrus Pringle
… the importance of serendipity
… sedges were made to key out
… what can I do to scare that eagle away ?
… those instincts are working
… the memory stuck with me for the first ½ hour
… it's good that sundew "tentacles" aren't bigger
… there are two teams of horses out there
… there are no bad plants
… miss mousey tree
… Clivus multrum
… Deborah's Grotto

**FIELD TRIPS:**

**I. NORTHERLY TRIP**

**1) Calavale Brook Wetland at Newton Valley Road, Long Trail State Forest, Belvidere**
From RT 15 in Johnson, head east; turn north onto 100C to Hyde Park; travel north on RT 100 to RT 118; travel west on RT 118 to our first stop – Calavale Brook Wetland.

This will be primarily a birding stop at the mouth of Calavale Brook that drains the west flank of Belvidere Mountain (elevation 3380'). We will walk along a former logging road that used to be Wagner Woodlands; the area became conserved in 1999 with the Atlas Timberlands Partnership and currently is part of the Long Trail State Forest. Binoculars and scopes are advisable; and it's fine to look at plants too!

**2) Belvidere Bog, Belvidere**

Belvidere Bog is a Dwarf Shrub Bog that merges into a Black Spruce Woodland Bog. We will explore the bog flora and carefully check on the nest of a Common Yellowthroat.

**3) Belvidere Pond/Grotto, Eden**

We will look for loons on Belvidere Pond from the boat accesses; and we will park opposite the Grotto to see *Platanthera dilatata*, bog candle orchid, and *Viola cucullata*, marsh blue violet.

**4) Babcock Nature Preserve, Eden, managed by Johnson State College**

Babcock Nature Preserve is a 1030 acre property belonging to the former provost of the Vermont State Colleges, Robert S. Babcock, that was first conserved in 1974 with help from The Nature Conservancy. Ritterbush Pond, elevation 1041', is a glacial cirque. We will walk around the pond to the old camp and a rock peninsula with northern woody shrubs.

**II. SOUTHERLY TRIP**

**1) Valcour Bog, Morristown, Stowe Land Trust**
From RT 15 in Johnson, head east to Morristown; at the roundabout, take the Bypass south to RT 100; turn left on Stancliff Road, turn right on Randolph Road, turn right on Gray Farm Road; a short dirt farm road to the left will take us to a field.

In 2007, The Nature Conservancy and the Stowe Land Trust established the 30 acre site which holds 18.5 acres of Valcour Bog and 10.6 acres of agricultural field as a buffer. This acquisition connects two existing conservation areas: Morristown Bog Natural Area to the west and Joe's Pond Conservation Area to the north. These sites, in addition to two areas east of RT 100 (Molly and Andromeda Bogs), were once at the edge of glacial Lake Champlain and hold a bog flora that is old and enduring.

On the way to the bog, we will circumnavigate the edge of the agricultural field; walk a bit out on a flat-topped esker of glacial gravel and sand and then descend down into the bog.

**2) Smugglers Notch State Park Picnic Area, Stowe**
We estimate Lunch will be at about 1:00 PM.

**3) Smugglers Notch, Sterling Pond Trail, Cambridge**

At the trail head to the Sterling Pond Trail, we will ascend about 30' up a masterful set of stone steps to a traverse to the north of the trail to a wet, drippy cliff outcrop with interesting plants including *Pinguicula vulgaris*, butterwort, and many species of ferns and wildflowers. This walk includes some hiking over wooded boulder talus.

**4) Smugglers Notch, Big Spring – time permitting** We will explore the wet seepy parts of this historical carriage horse watering spot.

**PLANT LIST 2016** By Everett Marshall

Special thanks to the Field Trip Leaders for excellent guidance:

Northerly Trip Friday, June 17, 2016 – Peter Hope, Professor, St. Michael's College
Saturday, June 18, 2016 – Everett Marshall, Natural Heritage Information Manager

Southerly Trip Friday, June 17, 2016 – Arthur Gilman, Botanist and Environmental Consultant
Saturday, June 18, 2016 – Annie Reed, Botanists/Ecologist

**Calavale Brook Wetland at Newton Valley Road, Long Trail State Forest, Belvidere**

| **Scientific Name** | **Common Name** | **Family** |
|---|---|---|
| Alnus incana | gray alder | Betulaceae |
| Cornus amomum | silky dogwood | Cornaceae |
| Maianthemum canadense | false lily-of-the-valley | Amaryllidaceae |
| Onoclea sensibilis | sensitive fern | Onocleaceae |
| Salix bebbiana | Bebb's willow | Salicaceae |
| Salix eriocephala | wand willow | Salicaceae |
| Salix pyrifolia | balsam willow | Salicaceae |
| Salix sericea | silky willow | Salicaceae |
| Trifolium repens | white clover | Fabaceae |
| Viburnum nudum var. cassinoides | wild raisin | Adoxaceae |
| Zizia aurea | golden Alexanders | Apiaceae |

**Belvidere Bog, Belvidere**

| Scientific Name | Common Name | Family |
|---|---|---|
| Acer rubrum | red maple | Anacardiaceae |
| Aronia melanocarpa | black chokeberry | Rosaceae |
| Carex limosa | mud sedge | Cyperaceae |
| Carex pauciflora | few-flowered sedge | Cyperaceae |
| Chamaedaphne calyculata | leatherleaf | Ericaceae |
| Eriophorum vaginatum | sheathed cotton-grass | Cyperaceae |
| Kalmia angustifolia | sheep laurel | Ericaceae |
| Kalmia polifolia | bog laurel | Ericaceae |
| Larix laricina | tamarack | Pinaceae |
| Maianthemum trifolium | three-leaved false Solomon's-seal | Amaryllidaceae |
| Neottia bifolia | southern twayblade | Orchidaceae |
| Osmundastrum cinnamomeum | cinnamon fern | Osmundaceae |
| Picea mariana | black spruce | Pinaceae |
| Rhododendron groenlandicum | labrador tea | Ericaceae |
| Sarracenia purpurea | pitcher-plant | Sarraceniaceae |
| Sphagnum angustifolium | Peatmoss | Shagnaceae |
| Sphagnum fuscum | Peatmoss | Shagnaceae |
| Sphagnum magellanicum | Peatmoss | Shagnaceae |
| Sphagnum russowii | Peatmoss | Shagnaceae |

**Belvidere Pond Seep, Eden**

| Scientific Name | Common Name | Family |
|---|---|---|
| Eleocharis sp. | Spike-rush species | Cyperaceae |
| Osmunda regalis | royal fern | Osmundaceae |
| Platanthera dilatata | tall white orchis | Orchidaceae |
| Viola cucullata | marsh blue violet | Violaceae |

**Babcock Nature Preserve and Ritterbush Pond, Eden**

| Scientific Name | Common Name | Family |
|---|---|---|
| Acer rubrum | red maple | Anacardiaceae |
| Acer saccharum | sugar maple | Anacardiaceae |
| Arisaema triphyllum var. triphyllum | Jack-in-the-pulpit | Araceae |
| Aronia melanocarpa | black chokeberry | Rosaceae |
| Betula alleghaniensis | yellow birch | Betulaceae |
| Chamaedaphne calyculata | leatherleaf | Ericaceae |
| Clintonia borealis | bluebead lily | Liliaceae |
| Corylus cornuta | beaked hazelnut | Betulaceae |
| Deparia acrostichoides | silvery glade fern | Athyriaceae |
| Diervilla lonicera | dwarf bush-honeysuckle | Caprifoliaceae |
| Dryopteris goldiana | Goldie's fern | Dryopteridaceae |
| Fraxinus americana | white ash | Oleaceae |
| Geum macrophyllum | large-leaved avens | Rosaceae |
| Huperzia lucidula | shining firmoss | Lycopodiaceae |
| Ilex mucronata | mountain holly | Aquifoliaceae |
| Ilex verticillata | winterberry | Aquifoliaceae |
| Kalmia angustifolia | sheep laurel | Ericaceae |
| Lactuca biennis | tall wild lettuce | Asteraceae |
| Laportea canadensis | wood nettle | Urticaceae |
| Milium effusum | wild millet | Poaceae |
| Parathelypteris noveboracensis | New York fern | Thelypteridaceae |
| Phegopteris connectilis | long beech fern | Thelypteridaceae |
| Pinus strobus | white pine | Pinaceae |
| Poa alsodes | woodland bluegrass | Poaceae |
| Polygonatum biflorum | great Solomon's-seal | Amaryllidaceae |
| Polygonatum pubescens | common Solomon's-seal | Amaryllidaceae |
| Polystichum braunii | Braun's holly fern | Dryopteridaceae |
| Pyrola elliptica | shinleaf | Ericaceae |
| Solidago caesia | blue-stemmed goldenrod | Asteraceae |
| Solidago rugosa | rough-leaved goldenrod | Asteraceae |
| Tiarella cordifolia | foam flower | Saxifragaceae |
| Tilia americana | basswood | Malvaceae |
| Tsuga canadensis | eastern hemlock | Pinaceae |
| Vaccinium myrtilloides | velvet-leaved blueberry | Ericaceae |
| Viburnum lantanoides | hobble-bush | Adoxaceae |
| Viburnum nudum var. cassinoides | wild raisin | Adoxaceae |

**Valcour Field, Stowe Land Trust, Morristown**

| Scientific Name | Common Name | Family |
|---|---|---|
| Crataegus flabellata | fan-leaved hawthorn | Rosaceae |
| Crataegus punctata | white haw | Rosaceae |
| Geum macrophyllum | large-leaved avens | Rosaceae |
| Lonicera morrowii | Morrow's honeysuckle | Caprifoliaceae |
| Lonicera tatarica | tartarian honeysuckle | Caprifoliaceae |
| Rhamnus cathartica | buckthorn | Rhamnaceae |
| Salix eriocephala | wand willow | Salicaceae |
| Salix nigra | black willow | Salicaceae |
| Salix purpurea | purple willow | Salicaceae |
| Salix sericea | silky willow | Salicaceae |
| Sambucus nigra var. canadensis | common elder | Adoxaceae |
| Veronica chamaedrys | germander speedwell | Plantaginaceae |
| Viburnum nudum | wild raisin | Adoxaceae |
| Viburnum opulus var. americanum | highbush cranberry | Adoxaceae |

**Valcour Bog, Stowe Land Trust, Morristown**

| Scientific Name | Common Name | Family |
|---|---|---|
| Abies balsamea | balsam fir | Pinaceae |
| Andromeda polifolia | bog-rosemary | Ericaceae |
| Caltha palustris | marsh-marigold | Ranunculaceae |
| Carex canescens | silvery sedge | Cyperaceae |
| Carex limosa | mud sedge | Cyperaceae |
| Carex oligocarpa | few-fruited sedge | Cyperaceae |
| Carex pauciflora | few-flowered sedge | Cyperaceae |
| Carex trisperma | three seeded sedge | Cyperaceae |
| Cypripedium acaule | moccasin flower | Orchidaceae |
| Drosera rotundifolia | common sundew | Droseraceae |
| Eriophorum vaginatum | sheathed cotton-grass | Cyperaceae |
| Eriophorum virginicum | tawny cotton-grass | Cyperaceae |
| Gaultheria hispidula | creeping snowberry | Ericaceae |
| Gaultheria procumbens | wintergreen | Ericaceae |
| Gaylussacia baccata | black huckleberry | Ericaceae |
| Ilex verticillata | winterberry | Aquifoliaceae |
| Kalmia angustifolia | sheep laurel | Ericaceae |
| Kalmia polifolia | bog laurel | Ericaceae |
| Larix laricina | tamarack | Pinaceae |
| Maianthemum canadense | false lily-of-the-valley | Amaryllidaceae |
| Maianthemum trifolium | three-leaved false Solomon's-seal | Amaryllidaceae |
| Picea mariana | black spruce | Pinaceae |
| Pinus strobus | white pine | Pinaceae |

| | | |
|---|---|---|
| Rhododendron groenlandicum | labrador tea | Ericaceae |
| Sarracenia purpurea | pitcher-plant | Sarraceniaceae |
| Sphagnum angustifolium | Peatmoss | Shagnaceae |
| Sphagnum fuscum | Peatmoss | Shagnaceae |
| Sphagnum magellanicum | Peatmoss | Shagnaceae |
| Sphagnum rubellum | Peatmoss | Shagnaceae |
| Vaccinium corymbosum | highbush blueberry | Ericaceae |
| Vaccinium macrocarpon | cranberry | Ericaceae |
| Vaccinium myrtilloides | velvet-leaved blueberry | Ericaceae |
| Vaccinium oxycoccos | dwarf cranberry | Ericaceae |

**Smugglers' Notch - Sterling Pond Trail, Big Spring - Cambridge**

| **Scientific Name** | **Common Name** | **Family** |
|---|---|---|
| Acer pensylvanicum | striped maple | Anacardiaceae |
| Acer saccharum | sugar maple | Anacardiaceae |
| Acer spicatum | mountain maple | Anacardiaceae |
| Betula alleghaniensis | yellow birch | Betulaceae |
| Betula cordifolia | heart-leaved paper birch | Betulaceae |
| Campanula rotundifolia | harebell | Campanulaceae |
| Clintonia borealis | bluebead lily | Liliaceae |
| Conioselinum chinense | hemlock-parsley | Apiaceae |
| Cystopteris fragilis | fragile fern | Cystopteridaceae |
| Drosera rotundifolia | common sundew | Droseraceae |
| Dryopteris campyloptera | mountain woodfern | Dryopteridaceae |
| Erythronium americanum | trout lily | Liliaceae |
| Galium circaezans | wild licorice | Rubiaceae |
| Galium trifidum | northern three-lobed bedstraw | Rubiaceae |
| Huperzia lucidula | shining firmoss | Lycopodiaceae |
| Impatiens pallida | pale jewelweed | Balsaminaceae |
| Laportea canadensis | wood nettle | Urticaceae |
| Nabalus altissimus | tall white lettuce | Asteraceae |
| Phegopteris connectilis | long beech fern | Thelypteridaceae |
| Pinguicula vulgaris | butterwort | Lentibulariaceae |
| Poa alsodes | woodland bluegrass | Poaceae |
| Polystichum braunii | Braun's holly fern | Dryopteridaceae |
| Ribes triste | swamp red currant | Grossulariaceae |
| Rubus idaeus | red raspberry | Rosaceae |
| Streptopus amplexifolius | white mandarin | Liliaceae |
| Streptopus lanceolatus | rosy twisted-stalk | Liliaceae |
| Thalictrum pubescens | tall meadow-rue | Ranunculaceae |
| Tiarella cordifolia | foam flower | Saxifragaceae |
| Trillium erectum | red trillium | Melanthiaceae |

**BIRD LIST 2016** By Connie Youngstrom

1. Canada Goose
2. Mallard
3. Ring-necked Duck
4. Wild Turkey
5. Common Loon
6. Great Blue Heron
7. Turkey Vulture
8. Bald Eagle
9. American Kestrel
10. Merlin
11. Killdeer
12. Rock Pigeon
13. Mourning Dove
14. Black-billed Cuckoo
15. Chimney Swift
16. Ruby-throated Hummingbird
17. Belted Kingfisher
18. Yellow-bellied Sapsucker
19. Downy Woodpecker
20. Hairy Woodpecker
21. Northern Flicker
22. Pileated Woodpecker
23. Alder Flycatcher
24. Willow Flycatcher
25. Least Flycatcher
26. Eastern Phoebe
27. Eastern Kingbird
28. Blue-headed Vireo
29. Warbling Vireo
30. Philadelphia Vireo
31. Red-eyed Vireo
32. Blue Jay
33. American Crow
34. Common Raven
35. Tree Swallow
36. Barn Swallow
37. Black-capped Chickadee
38. Red-breasted Nuthatch
39. White-breasted Nuthatch
40. Brown Creeper
41. Winter Wren
42. Eastern Bluebird
43. Veery
44. Hermit Thrush
45. American Robin
46. Grey Catbird
47. European Starling
48. Cedar Waxwing
49. Nashville Warbler
50. Northern Parula
51. Yellow Warbler
52. Chestnut-sided Warbler
53. Magnolia Warbler
54. Black-throated Blue Warbler
55. Yellow-rumped Warbler
56. Black-throated Green Warbler
57. Blackburnian Warbler
58. Pine Warbler
59. Black-and-white Warbler
60. American Redstart
61. Ovenbird
62. Northern Waterthrush
63. Common Yellowthroat
64. Canada Warbler
65. Chipping Sparrow
66. Savannah Sparrow
67. Song Sparrow
68. Swamp Sparrow
69. White-throated Sparrow
70. Dark-eyed Junco
71. Scarlet Tanager
72. Northern Cardinal
73. Rose-breasted Grosbeak
74. Indigo Bunting
75. Red-winged Blackbird
76. Common Grackle
77. Brown-headed Cowbird
78. Purple Finch
79. American Goldfinch
80. House Sparrow