VERMONT BOTANICAL & BIRD CLUB NEWSLETTER

APRIL 2007

2007 ANNUAL MEETING ANNOUNCEMENT

The 112th Annual Meeting of the Vermont Botanical and Bird Club will be held from Thursday, June 14 – Sunday, June 17, 2007 at Jay Peak Resort in Jay, Vermont. The Club last visited this region and stayed at Jay Peak Resort in 1992.

This far northern location in the midst of the Green Mountains offers fine opportunities for seeing plants and birds. Jay Peak mountain is the eighth tallest in Vermont at 3861'and is home to Vermont's endemic thrush the Bicknell's Thrush.

2006 MEETING HIGHLIGHTS

The 111th Annual Meeting of the Vermont Botanical and Bird Club began at 4:00 PM, Thursday, June 8 at Vermont Technical College in Randolph Center, Vermont and ended at 11:00 AM on Sunday, June 11, 2006 in the Southern Vermont Piedmont region of Vermont. The above photo is a panorama from the Fire Tower at Allis State Park in Brookfield. [photo by Dorothy Allard]

On Thursday evening, President Deborah Benjamin introduced this year's scholarship student: Erin Sigel, who is in the Masters Degree Program in Botany at the University of Vermont. We then enjoyed "Salamander Meanderings: Post-breeding Movements of Radio-tagged Jefferson and Spotted Salamanders" by Steve Faccio of VINS.

Friday dawned misty and fresh and the morning bird walk followed the road toward the Veteran's Cemetery. A red fox came out of the roadside vegetation, paused and then leaped high and pounced on prey.

Friday's North Field Trip was led by Annie Reed to Baker Pond, Allis State Park and the Fern Glade Fen all located in the town of Brookfield. And the South Trip was led by Debbie Benjamin to White River Ledges Natural Area in Pomfret and then on to Old City Falls and Buzzell Cemetery, both in Strafford. Friday evening, we enjoyed "The Back Forty: a Few Ways to Keep Growing Trees Instead of Houses" by Virginia Barlow and Ben Machin of Redstart Forestry in Corinth.

Saturday morning dawned with light to moderate rainfall. The campus was bathed in green. The morning bird walk headed toward the south campus and orchard. The North Trip was led by Peter Hope and the South Trip was led by Michael Lew-Smith. The day stayed steadily wet.

Saturday evening, the Business Meeting took place in Conant Hall. During the meeting, Club members remembered Dr. Fred Taylor who passed away in April. The meeting was followed by the Slides by Members Show.

EVENING PROGRAMS

THURSDAY, JUNE 8:

SALAMANDER MEANDERINGS: POST-BREEDING MOVEMENTS OF RADIO-TAGGED JEFFERSON AND SPOTTED SALAMANDERS

Steve Faccio is a conservation biologist at VINS (Vermont Institute of Natural Sciences) where he spends his time looking at long-term monitoring of forest songbirds and vernal pool amphibians. This evening, he presented the results of his research into the subterranean lives of Jefferson and spotted salamanders conducted in 2000 at Marsh-Billings-Rockefeller National Historical Park located in Woodstock, VT - a six-hundred acre preserve that is mostly forested and is managed to demonstrate sustainable forestry stewardship.

He chose two species of salamanders that have similar biological characteristics but exhibit different habitat preferences. Both Jefferson and spotted salamanders leave their upland winter underground tunnels and migrate to their vernal pools in very early spring. Jefferson salamanders migrate about 7 to 10 days before spotted salamanders (and wood frogs) as the last melting snows create high humidity and just before warm rains occur. Spotted salamanders are more widespread and breed in vernal pools, beaver ponds, and some permanent wetlands where predatory fish do not occur. Their populations are considered stable. Jefferson salamanders are locally restricted and are confined to woodland vernal pools and may be found in ridgetop areas but not in bottomlands. Their populations have seen declines in New England. Both species spend 11 months is upland habitats of mature forest with closed canopy.

The two questions that Steve set out to explore are: 1) how much land do Jefferson and spotted salamanders need surrounding their breeding pools? and 2) what kind of forest management practices based on biology are best for their continued breeding success?

To conduct his research he fitted 8 salamanders of each species with radio tags by surgically inserting a 1.75 gram unit about the size of a kidney bean into the abdomen of each animal as it left its breeding pool in the Park. He then followed the radio signals and plotted a total of 466 sitings throughout the summer and fall. At each spot, he looked at the general habitat characteristics in a 3-meter radius plot and measured % moss cover, % leaf litter, % bare ground and presence of trees and shrubs. He also looked in more detail at a one square meter plot where the salamander was found usually in a tunnel that was made by moles, voles, deer mice and white-footed mice. He measured leaf litter depth, tunnel orientation, coarse woody debris and took a soil sample.

On the average, the salamanders moved 111.9 meters from the pool in which they bred and layed eggs. One female traveled an astonishing 405 meters in about two days and two nights (all rainy). In addition to the importance of root boles, logs and stumps to the salamanders for resting, feeding and hiding, Steve discovered that pit/mound topography was also important. The mounds contained many animal tunnels and very little leaf litter; the pits were filled with leaf litter and provided a humid, moist environment.

In the process of tracking the movements of the 16 radio-tagged salamanders over the summer and into the fall, Steve was able to develop management recommendations for the Marsh-Billings Park. 95 % of the population remained within 157 meters (about 500') of the pool. Many wetland guidelines recommend a 50' buffer of forest to protect vernal pools. This is not enough to give the salamanders protection throughout their lives. He recommended that a 'Regional Life Zone' of 175 meters (about 575') around a pool where no logging occurs would be the best management advice. That means about 90 acres would be needed to protect the four breeding pools or about 38 – 40 acres to protect one breeding pool.

In the discussion that followed, we learned that salamanders do not necessarily return to their natal pool to breed but are faithful about returning to the pool where they first bred year after year. They almost always enter the pool from the same direction that they left the pool. It is known that spotted salamanders may live 20 – 30 years in the wild and so habitat stability over a long time is important to their survival.

The State of Maine has published a very good source of on the ground management tools for vernal pools titled "Forestry Habitat Management Guidelines for Vernal Pool Wildlife".

[See also: "Postbreeding Emigration and Habitat Use by Jefferson and Spotted Salamanders in Vermont" by Steven D. Faccio. *Journal of Herpetology*, vol. 37, no.3, pp. 479-489, 2003]

FRIDAY, JUNE 9:

THE BACK FORTY: A FEW WAYS TO KEEP GROWING TREES INSTEAD OF HOUSES

Ben Machin and Virginia Barlow, of Redstart Forestry in Corinth, conducted an interesting discussion about their work in forestry that includes good forest management, green certification and conservation as important tools in keeping land both productive and undeveloped. They are consulting foresters for the Marsh-Billings-Rockefeller National Historical Park. Virginia is editor of *Northern Woodlands* magazine which received the "Integrity in Conservation" award from the New England Society of American Foresters at their April 2006 meeting. The award is "presented to an individual or organization working with natural resources for adherence to principles and demonstration of high standards in the face of adversity".

Northern Woodlands' mission is "to encourage a culture of forest stewardship in the Northeast by increasing understanding of and appreciation for the natural wonders, economic productivity, and ecological integrity of the region's forests".

Vermont's forests have been managed in a number of ways throughout its history. In days past, forests were logged with the idea of using as much of the resource as possible and not a bit was wasted. The perception was that cleared land for agriculture was the highest use that one could put one's land to. Agricultural practices shifted through the nineteenth and twentieth centuries and much formerly cleared land has grown to forest for a second or third time. In the latter twentieth century and into the present one,

perceptions of logging have changed and now the goal of sustainable forestry is to leave as many trees as possible.

Vermont's Current Use Program or Use Value Appraisal allows landowners who enroll their property to have their forestland assessed at $140/acre as opposed to the current market value for forestland of from $800 - $2000 per acre. After the first year, the state reimburses the town for the difference in assessed value. The program represents one way in which landowners can afford to keep larger parcels of land. Another way to conserve forestland is to have a conservation easement written up. In either case, it is a good idea to have a forest management plan created that contains recommendations for gradual cutting of some trees to improve the overall quality of the forest.

New modern pressures affect Vermont forests. One pressure is to use whole tree harvesting to create the wood chip biomass that is then burned for electricity generation. Presently, there are two whole tree power plants in Vermont: one in Ryegate and the McNeal Plant in Burlington. Due to the proximity with Canada, many trainloads of wood chips are imported at $15/ton (compared to the U.S. cost of $35/ton) and come through St. Albans daily to feed the McNeal Plant. Ginny and Ben pointed out that there is a danger in thinking that the forest will produce endless amounts of wood for electricity or gasoline. This is especially true on sites that are nutrient poor, because many of the tree's nutrients are in the upper branches and leaves, parts of the tree that through traditional logging for pulp or wood products are left in the forest to rot.

The rise in concern about how forests are used and whether the uses are sustainable over time is being addressed through Green Certification. The Sustainable Forest Initiative is a program that is industry driven and addresses many concerns of sustainability. The Forest Stewardship Council is a program that is driven by third party conservation groups and provides certification to foresters who agree to follow certain guidelines. These guidelines include every step of the way from care in the crossing of streams during logging to the fair and equitable treatment of the work force to how the wood material is processed and marketed. The assurance to purchasers of wood products that have been produced through Green Certification is the satisfaction that the forests will continue to be productive over a long time.

New England's forests have a long history that includes a lot of change. Since the last episode of glaciation that left the landscape bare of all plant life, many generations of forest have grown and grown again to the present time. Through education and sustainable forest practices, the forests will continue to provide the aesthetic values of beauty and wildness that we all appreciate as well as the many wood products that we all use.

SATURDAY, JUNE 10, 2006

ANNUAL BUSINESS MEETING MINUTES

The Saturday Annual Business Meeting of the Vermont Botanical and Bird Club convened at 7:00 PM in Conant Hall.

Tribute to Dr. Fred Taylor (1910-2006)
President Deborah Benjamin noted the passing of Dr. Fred Herbert Taylor on Sunday, April 23, 2006 at age 95. "President Fred", as he was known to Club members from his term as President of the Club during the 1970's and into the early 1980's, was a lifelong student and teacher of botany. We enjoyed seeing a picture of President Fred taken by Richard Dickinson at the 1992 meeting at Jay Peak that also included members Frank Thorne and Margaret and John Dye as we celebrated several stages of his life.

Fred Taylor had a deep-seated sense of humor. During the 1992 meeting, he gave a talk about the 'Early Days' of the Vermont Botanical Club and the Vermont Bird Club. He showed pictures of many members and said: "History is about people. We'll look at slides of people some of whom are no longer with us. This is not a sad thing because to see them is to remember we were all happy together". Next, he commented about human nature: "Did you ever notice that when people are on trails they get all tightly packed together so that they have to maneuver around one another? Then when they get into open space they go in a single line?"

He was born in Groton, Massachusetts and grew up on his grandfather's market garden farm. He graduated from the University of Massachusetts when it was named Massachusetts Agricultural College and then went on to a doctoral program in botany at Harvard University. While taking a course from Dr. Merritt Lyndon Fernald, the teacher recognized Fred's plant illustrations and invited him to do some illustrations for Gray's Manual of Botany.

Dr. Taylor came to the University of Vermont in 1943 and became well known for his research at the Proctor Maple Research Laboratory and retired as Professor of Botany in 1976. Teaching was his true love and he is remembered gratefully and fondly by his many students. He prided himself on being able to know every student in his large introductory classes and was fond of tracking their progress long after they left the university. Every year he grew he grew large quantities of pumpkins and gourds on Win Way's farm in North Hero and was known for his prize-winning harvest displays at the Champlain Valley Fair, the University of Vermont Botany Department and the Shelburne Farms Harvest Day.

He participated in Barbara Jordan's Fitness and Aging Class at UVM from 1985 to 2006 and agreed with the comment by Frederic Ameil: "To know how to grow old is the Master Work of wisdom and one of the most difficult chapters in the great art of living."

Dr. Fred edited the Vermont Botanical and Bird Club Joint Bulletins no. 19, June 1956 and no. 20, November, 1986.

[includes items from Burlington Free Press, 4/25/06]

1. Secretary's Report

Debbie read some of the highlights of last year's meeting at Quimby Country.

Secretary Lynn Ocone distributed the record of past Bulletins and a record of the Annual Meetings for all to see. There are some gaps in information about where the Club met especially in the 1950'sand 1960's.

Lynn then presented the Club Brochure with its cover illustration by Betsy Brigham and passed around enough copies for everyone to take three and give them to friends. The Brochure contains a panel to clip and fill out for new members and it contains the Club's website as well as other information.

2. Treasurer's Report

Treasurer Charlotte Bill presented a thorough 2-page summary of the Club's financial accounts.

The Certificate of Deposit at the Merchant's Bank has a current balance of $5,526.01 and earns an interest rate of 2.96 % (3% APY). It is the type of CD that may be withdrawn from or added to without penalty.

In the Club's Green Century Equity Fund there is a balance as of 6/7/06 of $12,424.52. The Club's Checking Account at the Chittenden Bank has a balance as of 6/10/06 of $9,794.52. The bill for this meeting at Vermont Technical College will

be invoiced and paid in July and will come out of this balance.

Charlotte then gave a summary of the two Scholarship Funds. In the Current Year/Rollover Fund on 6/10/06 there is $1,873.29. The Current Year/Rollover 2006 appeal brought in $640.00. In the Scholarship Endowment Fund on 6.10.06 there is $5,572.50

The 2005 meeting at Quimby Country had a total expense of $9,419.19.

Charlotte said that she would be stepping down this year as Treasurer after six years. The Club Officers will meet and consider who might next be willing to be Treasurer. Debbie thanked Charlotte for her six years of dedication in preparing and presenting the numbers in a complete and concise manner.

3. Scholarship Report

Vice-President of Plants Dorothy Allard reported that she sent letters to Vermont high schools and high school science teachers and she sent emails to Vermont colleges. Information about our scholarship program is also posted on the website. The plan is to someday offer a scholarship to a high school student and a half-scholarship to a teacher or parent to accompany the student. Charlotte said that a teacher attending our meeting could qualify for a credit toward teacher re-licensing and certification.

Lynne Arnold said that one nice thing about scholarship students is that “we can learn from them”.

4. Bulletin Report

Peter Hope said that he had some material from members for the next Bulletin and that he would like to receive more material. The last Bulleting was published in 2002. Material may be sent to Peter at St. Michael’s College. Email: phope@smcvt.edu . Peter said that the current Newsletter form is much more detailed than it used to be when it started in 1973 and was more conversational in style. Cathy Paris edited the Newsletter in 1986 and 1987 and Debbie Benjamin has edited it since 1988.

4a. Club Website

Fritz Garrison said that he continues to add information the Club website as it is available. He will post the Club Brochure and would welcome thoughts and images from members.

4b. Club Bulletins

Tig Arnold is presently scanning the Club Bulletins into a computer format and is making them available to be seen on the website. It would be good if someone could help in scanning the older editions for spelling. Fritz said that a .pdf file could be viewed by a user but that the text would not be searchable. This is another ongoing project that over time will add historical interest to the website.

Debbie Benjamin thanked Richard Dickinson for bringing and sharing Club pictures from his many years of looking through the lens and capturing us all at past meetings. Thank you Richard.

Special thanks go to John Sullivan for bringing some natural history books from his collection and placing them out for members to help themselves. Thank you John.

5. Nominating Committee

Fritz Garrison, Chair of the Nominating Committee, presented the slate of nominations.

President	Deborah Benjamin
Vice-President Plants	Dorothy Allard
Vice-President Birds	Connie Youngstrom
Treasurer	to be appointed

Secretary Lynn Ocone

Peter Hope moved and Marty Hansen seconded that the Secreatary be instructed to cast one ballot for the slate of Officers. All approved. The Officers will meet and search for a temporary Treasurer.

6. Field Trip Reports

Plants:
Vice-President Dorothy Allard gave a digital presentation of some of the special plants seen during the meeting and some that were observed from scouting two weeks ago.

She showed a lovely panorama view of Vermont from the top of the Fire Tower at Allis State Park. Showy orchis was in bloom for us at Old City Falls and the cemetery site. She showed a close up of a dragonfly exuvia that appeared to be examining the perigynia of a sedge as closely as we were examining it. Even invasive species can be beautiful as was the bush honeysuckle next to the native *Viburnum lentago* at Baker Pond.

The abundance of ferns at the Fern Glade on the way to the Fen was amazing: narrow-leaved glade fern, silvery glade fern and Goldie's wood fern not to be outdone by the northern bog orchid and hundreds of showy ladyslipper just ready to burst into bloom. The daisy-leaved grapefern at White River Ledges grew noticeably from the first day to the second day of our visiting it.

The ram's head ladyslipper at the cemetery site had slipped beyond its prime, but Dorothy captured its splendor from scouting and shared its beauty with us.

Birds:

Vice-President Connie Youngstrom read from the VINS checklist of birds and although the weather quieted the birds a bit this year in terms of numbers, we were able to see many birds in memorable situations. Canada geese with young at Baker Pond were cautiously unconcerned by our presence at Baker Pond. Bryan said that there were four beautiful killdeer eggs between 1st and 2nd base on the ball field. A Savannah sparrow sang incessantly from the roof of the dugout.

The Fen was a great place for birds including winter wren, hermit thrush low in the vegetation, parula warbler and magnolia warbler.

The experience of seeing several blackburnian warblers from the Fire Tower at Allis State Park in the tops of spruce trees as we looked down upon them "was enough to hook anybody" on birding.

Even during a very wet Saturday morning bird walk, indigo bunting was beautiful in the orchard.

Tig Arnold moved and Sue Shea seconded that the meeting adjourn.

HENRY POTTER SCHOLARSHIP STUDENT

We are pleased to have welcomed Erin Sigel of the University of Vermont to the meeting this year. In her own words this is her field of study:

"In September of 2005, I joined Dr. David Barrington's Fern Systematics lab in the Department of Botany at the University of Vermont after graduating with a degree in Environmental Conservation from the University of New Hampshire. My interests stem from the disciplines of ecology, biogeography, and phylogeny of flowering plants and ferns. For my Masters thesis, I have chosen to study the ecology and evolutionary biology of *Dryopteris campyloptera*, the mountain wood fern. The mountain wood fern and its progenitor the glandular wood fern, *Dryopteris intermedia var. intermedia*, are endemic to northeastern North America and are prevalent in Vermont. I hope to shed light on the altitudinal distribution of the

species, with special attention to morphological characteristics that vary with elevation. Specifically, I will investigate whether indusial glandularity is a phenotypically plastic trait or characteristic of distinct ecotypes. It is my goal to clarify the relationship between these species that have been historically confused by amateurs and taxonomists. Eventually, as a career, I would like a professorship teaching and researching plant systematics, or to work as a herbarium curator."

Thank you, Erin, for joining us this year and good luck with your studies.

SLIDES BY MEMBERS
SATURDAY EVENING

After the business meeting we enjoyed seeing slides of members' favorite things.

Roger Bradley showed native wildflowers many of which grow in his garden in Somers, CT during April and May. .Many are familiar where most of us live: early saxigrage , both hepaticas, Dutchman's breeches, Spring beauty, columbine, partridgeberry, blue cohosh and foamflower. He also showed some special forms of these good friends: the double flowered form of bloodroot called multiplex with a close-up, bicolor birdfoot violet, and the white form of ragged robin or cuckoo-flower. He wound up his show with a picture of the ivory-billed woodpecker specimen at the Springfield Museum that was collected in April of 1909.

Peter Hope showed slides of plants, people and a little music. Invasive goutweed in the Winooski floodplain carpets the floodplain forest near St. Michael's College. Close-ups of Dianthus showed water droplets clinging to one fork of the stigma and of Goldie's wood fern showed the scales in detail. Some pictures from the meeting at Quimby Country showed the group lunching by the trail to Moose Bog and Seth Donlon holding a frog in a mosquito net. He also showed the three violin bows that he was considering and gave a brief historical look at the three violins that he has played so far. His show ended with a fireworks display at Richmond.

Tig Arnold showed slides from home, near his workplace and from this year's meeting. The carving on the trunk of beech trees was over 100 years old. Great-horned owls nested in the yard and we enjoyed seeing their 2 downy young. Sights from this year's meeting showed many ferns and flowers and various forms of water. Memories are still fresh of maidenhair fern, long beech fern, daisy-leaved grape fern, narrow-leaved glade fern, northern bog orchid and orchids at the Fern Glade Fen. Water lent itself to the photogenic qualities of ostrich fern, red osier dogwood, the rich slope of wet ferns in the Fern Glade and Club members in the rain.

Dorothy showed pictures from a bryophyte meeting outside of Portsmouth, Ohio that she attended. We saw American columbo, apple moss, a black rat snake, gray's sedge, white-tipped moss, shooting star and Indian paintbrush. In a prairie glade, we saw prairie dock, hoary puccoon, wood betony and Jacob's ladder.

We returned to our rooms feeling that only a short while ago it had been Thursday afternoon and that another Club meeting had filled our experiences with many fond memories.

MEMBERS' MEMORABLE COMMENTS

Phillip Ballou suggested that the Fire Tower at Allis State Park be renamed Blackburnian Tower after the several blackburnian warblers were seen there on Friday. As Gale Lawrence put it: "there are possibly six altogether, non-competitive male blackburnian warblers" and later that "they were a life high point not just a trip high point". Marty Hansen and Barbara agreed that the Braun's holly fern at the Fern Glade Fen was "the plant of the day" and that it was just "oozing with richness". Charlotte Bill said "Holy

Moley" upon seeing the narrow-leaved glade fern. Peter Hope said upon seeing the boulder that was festooned with mitrewort, maidenhair spleenwort, fragile fern and Goldie's wood fern up the slope from the richness of the Fern Glade: "When the time comes, you can turn me into fern fodder right here".

FIELD TRIPS

NORTH TRIP:

1. Baker Pond, Brookfield

This was primarily a birding stop at a small pond, typical of the region. We walked a short way around the pond and explored its shrubby edge.

Members at Baker Pond Reflecting on its Beauty
Roger, Pam, Lynn, Phillip and Gale
Photo by Mike MacCaskey

2. Allis State Park, Brookfield

Our lunch stop was at the Picnic Area at Allis State Park. This 487-acre park is named after Wallace Allis who willed his Bear Mountain Farm to the State of Vermont to be developed as a campground and recreational area in 1931. A Fire Tower affords spectacular views in all directions of Central Vermont. Mountains to the North include - Camel's Hump and Mt. Mansfield; to the South - Killington, Pico and Ascutney; to the East - the White Mountains of New Hampshire; and to the West - Abraham, Lincoln and Ellen.

3. Fern Glade Fen, Brookfield

On the way to the fen we walked along a small stream that runs between two narrow ridges that form a notch. The woods here are Rich Northern Hardwood Forest with large populations of Goldie's woodfern, *Dryopteris goldiana*, and narrow-leaved glade fern, *Diplazium pycnocarpon*. The soil is rich, dark black and moist. The walking is level and occasionally damp. We crossed a barely perceptible watershed divide and continued on to the fen itself. Fern Glade Fen is a small (1.5 acre) Rich Fen that sits in a depression between two wooded hills. Its topographic position just below a watershed divide is similar to that of several other Vermont fens; and therefore, its watershed is quite small. pH values of the surface water are directly influenced by bedrock and range from 6.1 – 6.4. The fen is bordered by a shrub zone including pussy willow, *Salix discolor*, and red-osier dogwood, *Cornus sericea*. Showy ladyslipper, *Cypripedium reginae*, should be in bud and bog candle orchid, *Platanthera dilatata*, should be in bloom. The open, central portion of the fen has two main communities. The first is dominated by fen sedge, *Carex interior*, blue flag iris, *Iris versicolor*, and bog goldenrod, *Solidago uliginosa*, and includes marsh fern, *Thelypteris palustris*, and beaked sedge, *Carex rostrata*. Pointed bog feather-moss, *Calliergonella cuspidata* is the dominant moss. The second community is dominated by forbs rather than sedges, including star-flowered Solomon's seal, *Smilacina stellata*, and cattail, *Typha latifolia*. Here the dominant mosses are marsh comb-moss, *Helodium blandowii* and marsh thread moss, *Aulacomnium palustre*. Scattered throughout the fen are shrubby hummocks of hoary willow, *Salix candida*, where creeping raspberry, *Rubus pubescens*, and blue flag iris, *Iris versicolor*, are common.

SOUTH TRIP:

1. White River Ledges Natural Area, Pomfret

Photo by Mike MacCaskey

A 187-acre preserve, the White River Natural Area was purchased by The Nature Conservancy in 1998. It is located within the Southern Vermont Piedmont biophysical region. It includes Northern Hardwood Forest, Rich Northern Hardwood Forest, Floodplain Forest (along the river) and Calcareous Riverside Seep (also along the river shore). We visited the first two natural communities as we followed the Lotte Perutz Trail which starts out with a short steep hike up a dry hillside and then forms a 1.6-mile loop. The trailhead is at 520' in elevation and the highest point along the loop is 791'. At the height of land, sheep were pastured until recently. White pines are evident as the land is reverting to forest. One-flowered pyrola, *Moneses uniflora*, and checkered rattlesnake plantain, *Goodyera tesselata*, grow in the dry soils up top. A flora of rich woods lines the slopes where calcareous water perculates through and includes columbine, *Aquilegia canadensis*, and maidenhair fern, *Adiantum pedatum*. Beware of poison ivy, *Toxicodendron radicans*, at the road edges.

2. Old City Falls, Strafford

This was our lunch stop. There is a spectacular woodland falls with several cascades and pools and rock walls up to 50 - 80' high. The bedrock is Waits River Formation of the Devonian age and is quite limy in places. Some of us hiked down a short, steep path to get closer to the falls. The rich soils support many ferns and wildflowers, and interesting bryophytes adorn the rocks and trees near the stream.

3. Buzzell Cemetery, Strafford

Buzzell Cemetery and the nearby woods comprise an historical and contemporary site for several orchid species: ram's head ladyslipper, *Cypripedium arietinum*, Hooker's orchid, *Platanthera hookeri*, showy orchis, *Galearis spectabilis*, large round-leaved orchid, *Platanthera orbiculata*, and large yellow ladyslipper, *Cypripedium calceolus var. pubescens*. The remaining legible portion of a tombstone reveals that Joseph Buzzell died on August 26, 1854 at the age of 82. The Buzzell family operated a sawmill. According to a local resident, Taylor Valley once had 28 homes and now has 3 or 4. The area is unique, has stands of old hardwoods and became reforested earlier than much of the region. We explored the edges of Taylor Valley Road and Dow Road and the nearby woods.

Anne, Marty, Ann, Barbara, Gale
Photo by Dorothy Allard

PLANT LIST 2006

Key to Locations:

1. White River Ledges Natural Area – Lotte Perutz Trail, Pomfret
2. White River Ledges Natural Area – seepage on Connecticut River, Pomfret
3. Crossover Road seepage approach to Fern Glade Fen, Brookfield
4. Fern Glade Fen, Brookfield
5. Buzzell Cemetery, Strafford
6. Baker Pond, Brookfield
7. Old City Falls, Strafford

Abies balsamea	Balsam Fir	6
Acer pensylvanicum	Striped Maple	1,5,6
Acer rubrum	Red Maple	4,5,6
Acer saccharum	Sugar Maple	1,6,7
Acer spicatum	Mountain Maple	1,5,7
Actaea alba	White Baneberry	3,7
Actaea rubra	Red Baneberry	3
Adiantum pedatum	Maidenhair Fern	1,3,7
Agrostis stolonifera var. palustris	Creeping Bentgrass	6
Amelanchier laevis	Smooth Shadbush	6
Anomodon attenuatus	Common Tree-apron Moss	3,7
Anomodon rostratus	Velvet Tree-apron Moss	1
Apios americana	Groundnut	2
Aquilegia canadensis	Columbine	1
Arabis glabra	Tower-mustard	6
Aralia nudicaulis	Wild Sarsaparilla	1,5,6
Arisaema triphyllum	Jack-in-the-pulpit	1,3,5,7
Asarum canadense	Wild Ginger	2,3
Asclepias syriaca	Common Milkweed	1
Asplenium trichomanes	Maidenhair Spleenwort	3
Aster acuminatus	Acuminate Aster	7
Aster cordifolius	Heart-leaved Aster	1,7
Aster macrophyllus	Large-leaved Aster	2
Athyrium filix-femina	Lady Fern	3
Atrichum angustatum	Narrow-leaved Catherinea Moss	1
Aulacomnium palustre	Marsh Thread Moss	4
Berberis thunbergii	Japanese Barberry	1
Betula papyrifera	Paper Birch	1,7
Betula populifolia	Gray Birch	6
Botrychium matricariifolium	Daisy-leaved Moonwort	1
Bryum lisae var. cuspidatum	Small-mouthed Thread Moss	6
Bryum pseudotriquetrum	Marsh Bryum	
Calamagrostis canadensis	Common Bluejoint Grass	4
Calliergon giganteum	Giant Spoon Moss	4
Calliergon stramineum	Pale Spoon Moss	4
Calliergonella cuspidata	Pointed Bog Feather-moss	4

Caltha palustris	Marsh Marigold	4
Campylium hispidulum	False Willow Moss	2
Campylium stellatum	Starry Campylium	4
Cardamine concatenata	Cut-leaf Toothwort	1,3
Cardamine diphylla	Two-leaved Toothwort	3
Carex arctata	Arching Sedge	5,6,7
Carex aurea	Pumpkin Sedge	2
Carex comosa	Britsly Sedge	6
Carex echinata	Little Prickly Sedge	6
Carex flava	Yellow Sedge	3,4
Carex garberi	Garber's Sedge	2
Carex hystericina	Porcupine Sedge	4
Carex interior	Inland Sedge	4
Carex laxiflora	Loosely Flowered Sedge	1
Carex lurida	Lurid Sedge	6
Carex plantaginea	Plantain-leaved Sedge	1
Carex platyphylla	Broad-leaved Sedge	1
Carex prairea	Prairie Sedge	4
Carex scabrata	Rough-stemmed Sedge	3
Carex spicata	Spiked Sedge	6
Carex torta	Twisted Sedge	6
Carex utriculata	Bladder Sedge	4
Carpinus caroliniana	Ironwood	7
Carya ovata	Shagbark Hickory	1
Caulophyllum thalictroides	Blue Cohosh	3
Chelone glabra	Turtlehead	4
Chrysosplenium americanum	Golden Saxifrage	4
Cicuta bulbifera	Bulblet Water-hemlock	4,6
Climacium dendroides	Common Tree Moss	2
Clintonia borealis	Bluebead Lily	5
Conocephalum conicum	Great Scented Liverwort	2,7
Cornus alternifolia	Alternate-leaved Dogwood	1,6,7
Cornus sericea	Red Osier Dogwood	2,4,6
Corylus cornuta	Beaked Hazelnut	1,5,6
Cypripedium arietinum	Ram's Head Lady's-slipper	5
Cypripedium reginae	Showy Lady's-slipper	4
Cystopteris bulbifera	Bulblet Fern	3,7
Dactylis glomerata	Orchard Grass	6
Dennstaedtia punctilobula	Hay-scented Fern	1
Deparia acrostichoides	Silvery Glade Fern	1,3
Dicranella heteromalla	Common Dicranella	6
Diplazium pycnocarpon	Narrow-leaved Glade Fern	3
Drepanocladus aduncus	Common Sickle Moss	4
Drosera rotundifolia	Round-leaved Sundew	4
Dryopteris cristata	Crested Wood Fern	4
Dryopteris goldiana	Goldie's Wood Fern	3

Dryopteris intermedia	Intermediate Wood Fern	1,3,6
Dryopteris marginalis	Marginal Wood Fern	17
Elaeagnus umbellata	Autumn Olive	1
Eleocharis acicularis	Needle Spikerush	6
Eleocharis tenuis	Slender Spikerush	6
Equisetum sylvaticum	Wood Horsetail	3
Erigeron philadelphicus	Philadelphia Fleabane	6
Eriophorum viridicarinatum	Green-keeled Cottongrass	4
Erythronium americanum	Trout Lily	3
Eupatorium perfoliatum	White Boneset	4
Eupatorium rugosum	White Snakeroot	1
Fagus grandifolia	American Beech	1,3,6,7
Fragaria virginiana	Common Strawberry	1,2,4
Fraxinus americana	White Ash	1,6,7
Frullania eboracensis	Common Frullania	2
Galearis spectabilis	Showy Orchis	5,7
Galium palustre	Marsh Bedstraw	4
Galium triflorum	Three-flowered Bedstraw	1
Gaultheria hispidula	Creeping Snowberry	4
Geranium robertianum	Herb Robert	3
Geum rivale	Water Avens	3,4
Glyceria striata	Fowl Mannagrass	6
Goodyera tesselata	Rattlesnake Plantain	1
Gymnocarpium dryopteris	Common Oak Fern	3,5,7
Haplohymenium triste	Rock Thread Moss	7
Helodium blandowii	Marsh Comb Moss	4
Houstonia caerulea	Bluets	1
Hydrocotyle americana	Pennywort	4
Hypnum lindbergii	Clay Pigtail Moss	2
Hypnum pallescens	Stump Pigtail Moss	1
Impatiens capensis	Orange Jewelweed	3,6
Iris versicolor	Blue Flag	4,6
Juncus effusus	Common Rush	6
Laportea canadensis	Wood Nettle	3
Lathyrus latifolius	Everlasting Pea	6
Lemna minor	Duckweed	6
Lobelia kalmii	Common Duckweed	4
Lonicera canadensis	Canada Honeysuckle	5,7
Lonicera morrowii	Morrow's Honeysuckle	1,6
Lonicera tatarica	Tatarian Honeysuckle	6
Lycopodium clavatum	Staghorn Clubmoss	1
Lycopodium lucidulum	Shining Clubmoss	5
Maianthemum canadense	Canada Mayflower	1,5,6
Marchantia polymorpha	Money Liverwort	4
Matteucia struthiopteris	Ostrich Fern	1,2,3,5
Meesia triquetra	Triangular Swan Moss	3*

Mitchella repens	Partridge Berry	5,6
Mitella diphylla	Common Miterwort	1,3,7
Mnium ambiguum	North Star Moss	1
Mnium stellare	Pale Star Moss	1
Moneses uniflora	One-flowered Pyrola	1
Myrica gale	Sweet Gale	6
Nowellia curvifolia	Nowellia	1
Onoclea sensibilis	Sensitive Fern	1,3
Osmorhiza calytonii	Common Sweet Cicely	1
Osmunda cinnamomea	Cinnamon Fern	3,4,6
Osmunda claytoniana	Interrupted Fern	1,3,5
Osmunda regalis	Royal Fern	4,7
Ostrya virginiana	Hophornbeam	1
Parnassia glauca	Grass of Parnassus	2
Phegopteris connectilis	Narrow Beech Fern	1,5
Philinotis fontana	Fountain Apple Moss	2,3*
Picea rubens	Red Spruce	6,7
Pinus strobus	White Pine	1
Plagiomnium ciliare	Toothed Mnium Moss	1,2
Plagiomnium cuspidatum	Woodsy Mnium	1
Plagiomnium ellipticum	Marsh Magnificent Moss	4
Platanthera aquilonis	Northern Green Orchid	4
Platygyrium repens	Copper Lustrous Moss	1
Pleurozium schreberi	Big Red Stem	1,6
Pohlia wahlenbergii	Wahlenberg's Thread Moss	2
Polygonatum pubescens	Small Solomon's-seal	1,5
Polystichum acrostichoides	Christmas Fern	1,3,7
Polystichum braunii	Braun's Holly Fern	3
Polytrichum commune	Common Haircap Moss	1
Populus grandidentata	Big-toothed Aspen	7
Porella platyphylla	Tree Porella	3
Preissia quadrata	Red Marchantia	2
Prunus serotina	Black Cherry	1,5,6
Prunus virginiana	Chokecherry	1,6
Pteridium aquilinum	Bracken Fern	1,6,7
Ptilidium pulcherrimum	Common Palmate Liverwort	1
Pyrola elliptica	Common Shinleaf	1,7
Quercus rubra	Red Oak	1
Radula complanata	Flat-leaved Liverwort	1,3
Ranunculus sp.	Buttercup	1
Rhamnus alnifolia	Alder-leaved Buckthorn	4
Rhamnus cathartica	Common Buckthorn	6
Rhodobryum ontariense	Rose Moss	7
Rhus radicans	Poison Ivy	1
Rhytidiadelphus triquetrus	Shaggy Moss	1
Ribes hirtellum	Northern Gooseberry	4

Rubus idaeus	Red Raspberry	6
Salix candida	Hoary Willow	4
Salix discolor	Common Pussy Willow	4
Salix eriocephala	Wooly-headed Willow	6
Saxifraga pensylvanica	Swamp Saxifrage	4
Saxifraga virginiensis	Early Saxifrage	7
Senecio aureus	Golden Ragwort	4
Senecio obovatus	Round-leaved Ragwort	2
Smilacina racemosa	Common False Solomon's Seal	5,6,7
Smilacina stellata	Starry False Solomon's Seal	4
Solidago caesia	Blue-stemmed Goldenrod	7
Solidago flexicaulis	Zigzag Goldenrod	5
Solidago rugosa	Rough-stemmed Goldenrod	6
Solidago uliginosa	Bog Goldenrod	4
Spiraea alba	Meadowsweet	6
Streptopus roseus	Rose Twisted-stalk	5
Taraxicum officinale	Common Dandelion	1,2
Tetraphis pellucida	Four-toothed Moss	1
Thalictrum pubescens	Tall Meadow-rue	4
Thelypteris novae-boracensis	New York Fern	6
Thelypteris palustris	Marsh Fern	4
Tiarella cordifolia	Foamflower	1,7
Tilia americana	Basswood	1
Tofieldia glutinosa	False Asphodel	2
Trientalis borealis	Starflower	6
Trillium erectum	Stinking Benjamin	5,7
Tsuga canadensis	Eastern Hemlock	1,7
Typha latifolia	Broad-leaved Cattail	4,6
Ulota crispa	Curled Leaf Moss	1
Uvularia sessilifolia	Wild Oats	7
Vaccinium myrtilloides	Velvet-leaf Blueberry	6
Viburnum cassinoides	Northern Wild-raisin	6
Viburnum lentago	Nannyberry	6
Viburnum opulus	Highbush Cranberry	6
Viola cucullata	Marsh Blue Violet	4
Viola pubescens	Stemmed Yellow Violet	1
Zizia aurea	Golden Alexanders	2,3

BIRD LIST 2006

Blackburnian Warbler at Allis State Park
Photo by Mike MacCaskey

1. American Bittern
2. Great Blue Heron
3. Green Heron
4. Turkey Vulture
5. Canada Goose
6. Mallard
7. Osprey
8. Broad Winged Hawk
9. American Kestrel
10. Ruffed Grouse
11. Wild Turkey
12. Killdeer
13. Wilson's Snipe
14. Rock Dove
15. Mourning Dove
16. Black-billed Cuckoo
17. Chimney Swift
18. Ruby-throated Hummingbird
19. Belted Kingfisher
20. Yellow-bellied Sapsucker
21. Downy Woodpecker
22. Hairy Woodpecker
23. Northern Flicker
24. Pileated Woodpecker
25. Eastern Wood-Pewee
26. Alder Flycatcher
27. Least Flycatcher
28. .Eastern Phoebe
29. Great Crested Flycatcher
30. Eastern Kingbird
31. Blue-headed Vireo
32. Warbling Vireo
33. Red-eyed Vireo
34. Blue Jay
35. American Crow
36. Common Raven
37. Tree Swallow
38. Bank Swallow
39. Barn Swallow
40. Black-capped Chickadee
41. Tufted Titmouse
42. Red-breasted Nuthatch
43. White-breasted Nuthatch
44. Brown Creeper
45. House Wren
46. Winter Wren
47. Golden-crowned Kinglet
48. Eastern Bluebird
49. Veery
50. Hermit Thrush
51. Wood Thrush
52. American Robin
53. Gray Catbird
54. Brown Thrasher
55. European Starling
56. Cedar Waxwing
57. Nashville Warbler
58. Northern Parula
59. Yellow Warbler
60. Chestnut-sided Warbler
61. Magnolia Warbler
62. Black-throated Blue Warbler

63 Yellow-rumped Warbler
64 Black-throated Green Warbler
65 Blackburnian Warbler
66 Pine Warbler (possible)
67 Black-and-white Warbler
68 American Redstart
69 Ovenbird
70 Northern Waterthrush
71 Mourning Warbler
72 Common Yellowthroat
73 Scarlet Tanager
74 Chipping Sparrow
75 Savannah Sparrow
76 Song Sparrow
77 Swamp Sparrow
78 White-throated Sparrow
79 Dark-eyed Junco
80 Northern Cardinal
81 Rose- breasted Grosbeak
82 Indigo Bunting
83 Bobolink
84 Red-winged Blackbird
85 Eastern Meadowlark
86 Common Grackle
87 Baltimore Oriole
88 Purple Finch
89 House Finch
90 American Goldfinch
91 House Sparrow

Common Snipe on Campus
Photo by Mike MacCaskey

Savannah Sparrow at Ball Field
Photo by Mike MacCaskey

Dragonfly Exuviae (not a bird)
Photo by Dorothy Allard

CLUB BROCHURE

We are pleased to present the Club Brochure. The illustration is by Betsy Brigham and the layout and design is by Tom Daley of Sylvan Designs. Below is the cover and some of the information inside.

Vermont Botanical

And Bird Club

Winter Wren, *Troglodytes troglodytes* on Yellow Birch, *Betula alleghaniensis*, with Bunchberry, *Cornus canadensis*

Illustration by Betsy Brigham, 2004

History. In 1895, the Vermont Botanical Club originated at Torrey Meadow in Stratton, Vermont in order to study the flora of Vermont. In 1902, The Vermont Bird Club formed to foster the knowledge of birds in Vermont. In 1915, the two clubs merged and the Vermont Botanical and Bird Club was formed. The Club's mission is to document the flora and avifauna of Vermont through its annual meeting and to promote education through its scholarship program.

Activities. Each June the Vermont Botanical and Bird Club holds a 3-day annual meeting at a different region in Vermont. Events include all day field trips to interesting botanical and birding locations and evening presentations on natural science by invited educators, naturalists and ecologists.

Scholarships. As part of its dual mission, the Vermont Botanical and Bird Club invites qualified students in natural science to apply for a scholarship to attend the annual meeting. The experience of attending the annual meeting introduces students to the biological diversity of the state and to many people with a wide range of expertise in the natural sciences.

Publications. The Vermont Botanical and Bird Club publishes a Newsletter once a year that describes in detail the annual June meeting. Every 3 – 5 years, the Club publishes its Joint Bulletin which includes articles with historical and contemporary interest by botanists, wildlife biologists, educators and members.

For more information, please visit our website: www.vtbb.org