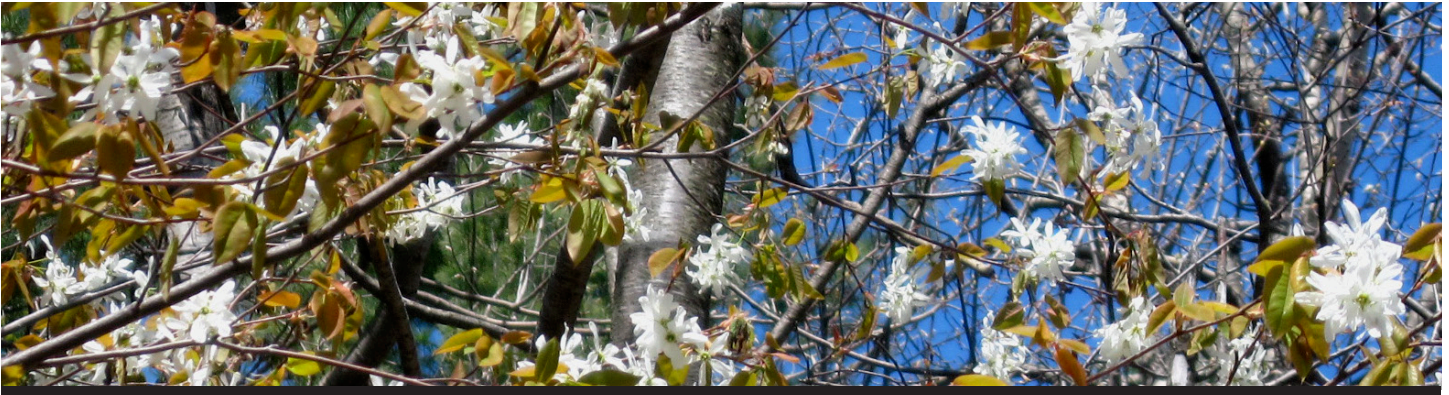


CONNECTIONS

THE NEWSLETTER OF COLD HOLLOW TO CANADA FOREST LINK



SPRING 2014

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WORKING TOGETHER TOWARDS RESILIENCY

By Charlie Hancock

Greetings Friends and welcome to the Spring 2014 edition of *Connections*, the quarterly newsletter for Cold Hollow to Canada. The sap's finally running, and even on the colder days the sun feels warm again. Pretty soon buds will be popping and the skis will be stowed away again until next year. Hopefully you've had a great winter and fun plans for spring.

I think we can all agree that the weather dominated much of our conversation this winter, between ice storms and polar vortexes our eyes have never strayed far from the forecast. In this context, it seems strange to broach the topic of global warming, but as the days lengthen and the mercury starts to rise again that's just what we're doing here at CHC. In this issue of *Connections* we'll focus on the changing climate, and what it means for the future of our forests and, by extension, our human communities that depend on them. As part of our Landowner Cooperative project—launched this past year in Enosburg and first detailed in the Spring 2012 newsletter—Cold Hollow to Canada will be conducting Climate Change Resiliency assessments on participating ownerships. This work is modeled on a new document from

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CHC STEERING COMMITTEE

Bakersfield:
Mary Schwartz and
Forrest Dunnivant

Enosburg:
Nancy Patch and
Ward Heneveld

Fletcher:
Corey Brink

Montgomery:
Charlie Hancock,
Chair

Richford:
Bill McGroarty and
Lenny Tamulonis

PHOTOS: JOANNE WAZNY



Vermont's *Department of Forest, Parks and Recreation* meant to assist landowners in developing mitigation strategies to enhance resiliency of our forests in the face of changes on the horizon.

In addition to the piece on climate change, inside you'll find an article on Vermont's Working Lands Enterprise Initiative, which is also working to strengthen the resiliency of our working landscape in the face of a changing world. This partnership includes over 220 organizations—including CHC—working together to sustain the

productivity of our forestry and farming sectors and conserve the working landscape by encouraging entrepreneurial innovation.

With this issue we're also announcing CHC's 2014 Spring gathering, with a morning of field walks on a variety of topics, and an afternoon of amazing speakers, followed up by a potluck supper and a chance to catch up with friends from the CHC community. We hope you can join us (full agenda for the day inside).

Happy Equinox!

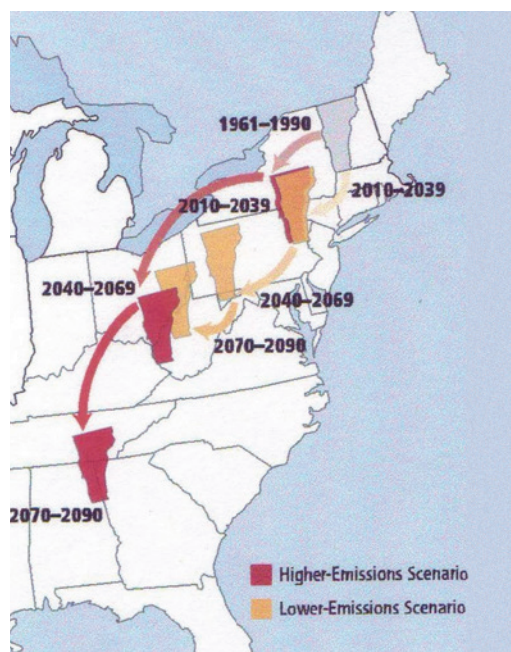
– The CHC Steering Committee



JOANNE WAZNY

CLIMATE CHANGE AND OUR FORESTS

By Nancy Patch



- **Current:** Temperatures have increased 1.8°F since 1970, with winter rising faster.
- **Projected:** Average temperatures are projected to rise 9°F to 13°F in winter by late-century.
- **Current:** Precipitation has increased 15-20% over the past 50 years with 67% of this falling in heavy precipitation events.
- **Projected:** Winter precipitation will increase on the order of 20-30% with less snow - more rain.
- **Projected:** Short-term summer droughts are projected to occur 2x as often

FROM UNION OF CONCERNED SCIENTISTS
CONFRONTING CLIMATE CHANGE IN THE NORTHEAST
(NECIA 2007)

The effects of climate change on our forests are happening now and will be increasing in the coming decades depending on how pro-active we can be to change the amount of carbon we put into the atmosphere. “Since the start of the industrial revolution humans have burned through enough fossil fuels to add 365 billion tons to the atmosphere. Each year we add another 9 billion tons or so. As a result of this, the concentration of carbon dioxide in the air today is higher than at any point in the last 800,000 years, and probably higher than in the last several million years.” (Kolbert). Emissions are high and show no evidence of slowing down. “If current trends continue, carbon dioxide concentrations will roughly double what they were in pre-industrial days by 2050.” (Kolbert) This high emissions scenario projects Vermont’s climate to be as warm as Tennessee by the end of the century. We don’t really know exactly what this will mean for our forests, but we do know that plants cannot migrate on their own at that exceptionally fast rate, and we can expect the results will

be extremely bad. We also do not know exactly which plants and animals will be able to survive this changing climate. Scientists are calling this future forest the “novel forest” as it will be new but as yet unknown. It will certainly be different but because of the complex ecological systems that are found in nature it is too difficult for us at this time to make accurate predictions. General models however are being used to make predictions that have been born out in recent times. It is readily apparent that a scenario of lower/declining emissions could make a big difference in the health of our forests. In either case it is imperative that we think about climate change as we manage our forests today.

Some of the effects of climate change on plant reproduction will be caused by a change in soil moisture, time of frost, changes in freezing and thawing, and a longer growing season. Trees like sugar maple have been identified as a climate change loser in these scenarios while hickories and oaks are considered winners. We are lucky in Vermont as compared to New York and New

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Hampshire because our soils and bedrock have a greater limestone component which sugar maple thrives on. It is highly likely that sugar maple will continue to be a component in our forest in the coming centuries, but there will be greater stress and it will be found in areas that are the richest sites. Sugar maple is already known as a “Goldilocks tree.” It wants it just right. Other stresses caused by climate change include improved growing conditions for invasive species which can take over our forests, and for increased storms which can cause erosion, flooding, wind throw and ice accumulation. Harvesting operations will be greatly affected by increased wet weather coming in the form of heavier and more frequent storms, and wetter, warmer winters. Vermont already has problems with logging equipment working on wet ground, and it is going to get worse. We need to build roads and erosion controls to handle these changing conditions.

The Department of Forests, Parks and Recreation has just prepared a document “Creating and maintaining Resilient Forests in Vermont: Adapting Forests to Climate Change.” The focus of this document is to assist landowners and land managers in using strategies and approaches that can mitigate the effects of climate change. The most effective mitigation strategy is to increase the complexity of the existing forest. We need to encourage more complexity because a complex system is a healthy system that can better self-adapt to changing conditions. A complex forest has a diversity of both plant and animal species. For example our Northern Hardwood forest community can have up to 11 principle trees species, 6 shrub species, and 35 herbaceous species. The greatest diversity of species should be maintained and encouraged to establish when managing a forest. Many of Vermont’s existing forests are young by the standards of a mature forest. We clear cut 80% of our forests in Vermont by the mid 1800’s, and they have slowly grown back, been cut and grown back again. In the meantime we have lost tons of soil to erosion. Because these young forests are simple rather than complex, like a very old forest would be, foresters and landowners

should use management strategies that enhance forest complexity so that our young forests function more like much older forests.

Complexity is more than just species, structural complexity is also important. A forest under stress from storms and increased disturbance needs to be able to respond quickly to these disturbances, so a complex vertical and horizontal structure is important. Vertical diversity is defined by the layers in the forest from ground level plants, shrubs, regeneration (seedlings and saplings), midstory (poles-small trees) and overstory (medium to larger trees). Desired regeneration should be part of the forest so when older trees die there is a replacement stand waiting in the wings and which can keep out invasive species. These younger trees need to be protected from over-browsing by herbivores. Large older trees, dead standing trees, and large woody material on the ground add to the vertical structure of the forest. Horizontal diversity means there’s a change in density across the landscape; a dense stand of trees adjacent to a more open stand of trees is one example.

Landscape level diversity is also very important to the health of our forests. Keeping large forest blocks unfragmented and connected across fragmenting features such as roads or fields is necessary. In these conserved forest blocks and connectivity zones the effects of climate change may be mitigated if the best sites to serve as refugia are identified and redundant natural communities across the landscape are protected. Keeping Forests as Forests is the best way to allow our forests to self-adapt. However, society still *must* make large political and social change if we are to prevent the worst of the worst from happening including the potential for ecological collapse and mass extinction. The hope is that change is still a possibility and we can personally make lifestyle changes. We can also pressure our governments to change policy for minimizing and preventing further carbon inputs and to switch to renewable energy sources. It is, up to us.

Kolbert, Elizabeth; *The Sixth Extinction*, 2014, Henry Holt and Company, page 113

THE WORKING LANDS PARTNERSHIP'S SECOND SUMMIT DECEMBER 17, 2013

By Ward Heneveld

Vermonters have always had to respond to two often conflicting challenges as they seek a living from our land, the state's most valuable resource. First, the land needs to be productive enough to sustain us; and, second, how we use the land has to ensure that it will remain productive for and supportive of people and animals that come after us. These challenges are felt acutely these days. Recognizing that this is a time of pressure on the land and of opportunity to strengthen Vermont's rural economy, the non-partisan Vermont Working Landscape Partnership was started in 2009 to support farm, forest and value-added land development for the future (<http://vtworkinglands.org>). Its membership now includes over 600 individuals and 220 organizations with a stated vision that aims to "support

local agriculture and forestry, grow and attract farm and forest entrepreneurs, and conserve Vermont's Working Landscape far into the future." The Partnership's work has implications for Cold Hollow to Canada's goals and activities.

On December 17, 2013, at the Vermont Technical College, the Vermont Council on Rural Development (VCRD) facilitated the second statewide Summit on the Future of Vermont's Working Landscape. I attended to learn about this effort and to see how well it is balancing the challenges of increasing the land's economic productivity with sustaining the land for the future. I came away impressed at the caring entrepreneurial innovation that is going on throughout the state.



JOANNE WAZYNY

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In his opening comments Governor Shumlin pointed out that the Partnership's state-supported Working Lands Enterprise Initiative (<http://workinglands.vermont.gov>) is the only new program started by his administration. The Initiative has provided over \$1 million in grants to entrepreneurs whose businesses are based on agriculture and forestry. The opening plenary panel that followed included eleven successful forestry and farming entrepreneurs who make cheese, apple products, furniture, wood pellets, and other wood products. The next round of concurrent panels on policy addressed climate impacts and opportunities on working lands, overcoming regulatory barriers, improving water quality, fair taxation, the forest products industry, and the five-college Vermont Higher Education Food Systems agreement to provide complementary course offerings on everything from food production to consumption. After lunch the sessions on practice were on working lands energy development, the Farm to Plate initiative, innovations in value-added forest products, food system centers, the use of digital tools in farm and forest, marketing, and tourism. Each group then reported its results to all the attendees, and the Executive Director of VCRD Paul Costello and Chris Graff reflected on where the state is now in this cooperative venture.

My knowledge and optimism about Vermont's working lands grew significantly by attending the conference. The event was full of bright, dedicated people working with care to create successful



JOANNE WAZNY

businesses. They are producing useful, and often elegant, products through processes that respect our land and forests. Until going to this event, I thought that most small businesses using the land and conservationists who want to protect it, such as CHC, were working mostly in isolation from each other. Now I know that there is a fledgling "community of practice" for sharing and reflection on the long-term economic productivity and the health of the working landscape. However, I was slightly disappointed that there was not more discussion of stewardship and conservation issues in the panels, and I don't think any panels dealt with the practice of good stewardship. Perhaps this is in part because there were few representatives from entrepreneurial conservation organizations similar to CHC. This dialogue will continue. Let's be part of it.

2014 COLD HOLLOW TO CANADA PARTY!!!

SPRING
2014

SATURDAY MAY 17TH

Starts at **Noon** and goes through a delicious pot luck dinner.

WHERE

We will start in **Montgomery Center at the Town Hall**, across from USPO.

Join us for a fun time. We have some great walks and speakers lined up for the day.

AGENDA

12:00 Meet for car pool to field trips.

All walks are moderate in intensity but wear good woods boots. Each walk will be limited to around 20 people. *Please RSVP for the walk of your choice to: charliehanco@gmail.com.*

1. Jim Andrews (state herpetologist from Middlebury College) and Nancy Patch (VTFR county forester) will lead a walk on Nancy's land in Enosburgh to seek out frogs, salamanders, snakes and turtles. We will visit ponds, beaver impoundments, and vernal pools as well as see some recent active and passive management to improve wildlife habitat.
2. Bridget Butler (the bird diva herself) and Charlie Hancock (North Woods Consulting forester and President of CHC) will lead a walk through a Montgomery Forest to see and hear birds as they are passing through or settling down to mate for the season, and to see a recent timber harvest with discussion on forest songbird management.
3. Beth Daut (private consulting forester for Vermont Land Trust) and Sandy Wilmot (VTFR forest health specialist) will lead a walk in Richford on VLT land to discuss resilient forest management and conservation. *Note: A "Keeping Track" transect passes through this property.*

Return to Montgomery Town Hall by 3:00

3:00 to 3:30 Socialize

GUEST SPEAKERS

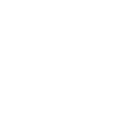
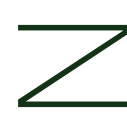
3:30 to 4:15 Amphibians and Reptiles in The CHC region: Jim Andrews

4:15 to 5:00 Forest Resiliency and Climate Change: Sandy Wilmot

5:00 to 5:45 Forest Ecology and Cold Hollow to Canada update: Nancy Patch

6:00 to 7:00 or so Pot Luck and socialize

Please bring a dish of your choosing and your beverage of choice.



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REPTILES AND AMPHIBIANS IN THE COLD HOLLOW TO CANADA REGION

By Jim Andrews

UVM Adjunct Herpetology Professor, Coordinator of the Vermont Reptile and Amphibian Atlas



JOANNE WAZNY

I will be visiting on May 17th for the Cold Hollow to Canada Annual Party. In the early afternoon I will be leading one of the field trips in an effort to find and discuss local reptiles and amphibians and then later in the afternoon I will be giving a presentation titled Selected Reptiles and Amphibians of the Cold Hollow to Canada corridor. I hope you will join me.

Since 1994 I have been coordinating an effort to map the distribution of reptiles and amphibians in Vermont in a way that involves local residents and increases local knowledge of and stewardship for Vermont's reptiles and amphibians. Thousands of participants have contributed valuable information on the reptiles and amphibians they see in their area. This has resulted in steadily improving distribution maps and conservation information on all of our snakes, turtles, lizard (only one), frogs, and salamanders. To see our current maps or check out other natural history information on this taxonomic group please do visit our website at VtHerpAtlas.org.

This last fall we finished a hit list of common species that we need improved documentation for. For every town in Vermont we now can tell you what common reptiles and amphibians have not yet been reported in any form, what species have been reported but we still need photo documentation for, and how likely those species are to be found in each town.

This searchable list will soon be up on our website (VtHerpAtlas.org).

Many people assume that a well-known species such as a Snapping Turtle has been completely documented in Vermont and that a report of a sighting, or a photo is not significant enough to forward to us here at The Atlas. As a result, we continue to have data gaps that you could easily help fill. For example, we have no reports or photos of Snapping Turtles from both Montgomery and Belvidere. We have no photo documentation of Painted Turtles or reports of any kind for American Bullfrogs from Montgomery, Richford, or Waterville. We also have no current reports or photos of Common Garter-snakes from Belvidere or Waterville. We would love your help in filling in these data gaps. Simply snapping a picture and sending it along with the date and specific location is all that is needed. I have attached the complete list of needed documentation for common species from the seven Cold Hollow to Canada towns. Of course we always want to hear about sightings of any of our more unusual reptiles and amphibians.

I hope to see you on May 17th and even if you can't make it, I would love to receive a photo from you of one of these species (old or new) so that we can remove them from our hit list.

CONNECTIONS



COMMON NAME	NEEDED TOWNS	STATUS & NEEDS	LIKELIHOOD
DeKay's Brownsnake	Bakersfield	Need report and photo	Possible
Gray Treefrog	Bakersfield	Need report and photo	Possible
N. Dusky Salamander	Bakersfield	Have report, need photo	Certain
N. Leopard Frog	Bakersfield	Need report and photo	Probable
Red-bellied Snake	Bakersfield	Have report, need photo	Certain
Ring-necked Snake	Bakersfield	Have report, need photo	Certain
Spring Peeper	Bakersfield	Have report, need photo	Certain
Common Gartersnake	Belvidere	Need report and photo	Almost Certain
DeKay's Brownsnake	Belvidere	Need report and photo	Unlikely
Gray Treefrog	Belvidere	Need report and photo	Possible
Milksnake	Belvidere	Need report and photo	Possible
N. Leopard Frog	Belvidere	Need report and photo	Possible
Pickrel Frog	Belvidere	Have report, need photo	Certain
Red-bellied Snake	Belvidere	Need report and photo	Almost Certain
Ring-necked Snake	Belvidere	Need report and photo	Possible
Snapping Turtle	Belvidere	Need report and photo	Almost Certain
Spring Peeper	Belvidere	Need report and photo	Almost Certain
American Toad	Enosburg	Have report, need photo	Certain
DeKay's Brownsnake	Enosburg	Need report and photo	Possible
Gray Treefrog	Enosburg	Have tape, could use photo	Certain
Milksnake	Enosburg	Need report and photo	Probable
N. Leopard Frog	Enosburg	Have report, need photo	Certain
Ring-necked Snake	Enosburg	Need report and photo	Possible
Spring Peeper	Enosburg	Have report, need photo	Certain
N. Leopard Frog	Fletcher	Need report and photo	Probable
N. Two-lined Salamander	Fletcher	Need report and photo	Almost Certain
American Bullfrog	Montgomery	Need report and photo	Probable
DeKay's Brownsnake	Montgomery	Need report and photo	Unlikely
E. Red-backed Salamander	Montgomery	Have report, need photo	Certain
Milksnake	Montgomery	Need report and photo	Possible
Painted Turtle	Montgomery	Need report and photo	Possible
Ring-necked Snake	Montgomery	Need report and photo	Possible
Snapping Turtle	Montgomery	Need report and photo	Almost Certain
Spotted Salamander	Montgomery	Have report, need photo	Certain
Spring Peeper	Montgomery	Have report, need photo	Certain
American Bullfrog	Richford	Need report and photo	Probable
DeKay's Brownsnake	Richford	Need report and photo	Unlikely
Eastern Newt	Richford	Have report, need photo	Certain
Gray Treefrog	Richford	Have report, need photo	Certain
Milksnake	Richford	Need report and photo	Possible
Painted Turtle	Richford	Have report, need photo	Certain
Spotted Salamander	Richford	Have report, need photo	Certain
Wood Frog	Richford	Have report, need photo	Certain
American Bullfrog	Waterville	Need report and photo	Almost Certain
Common Gartersnake	Waterville	Historic report, need new report and photo	Almost Certain
DeKay's Brownsnake	Waterville	Need report and photo	Unlikely
Gray Treefrog	Waterville	Need report and photo	Possible
Milksnake	Waterville	Need report and photo	Possible
N. Leopard Frog	Waterville	Need report and photo	Possible
Painted Turtle	Waterville	Have report, need photo	Certain
Red-bellied Snake	Waterville	Have report, need photo	Certain
Ring-necked Snake	Waterville	Need report and photo	Possible
Spotted Salamander	Waterville	Have report, need photo	Certain



UPCOMING EVENTS

BAKERSFIELD CONSERVATION COMMISSION

Meets the last Monday of every month at 1:00 PM in the Town Hall Building, 40 East Bakersfield Rd, Bakersfield.

ENOSBURGH CONSERVATION COMMISSION

Meets the fourth Monday of every month at 7:30 PM at the Cold Hollow Career Center, 184 Missisquoi St., Enosburg Falls.

MONTGOMERY CONSERVATION COMMISSION

Meets the first Wednesday of every month from 5:30 to 7:30 PM at the Montgomery Town Office, 98 Main St (VT Route 118), Montgomery Center.

RICHFORD CONSERVATION COMMISSION

Meets the fourth Wednesday of the month at 5:00 PM in the upstairs conference room of the Arvin A. Brown Public Library, 88 Main St, Richford.

WILD AND SCENIC RIVER STUDY COMMITTEE

Meets the third Thursday of every month from 7:00 PM to 9:00 PM. Locations vary so visit www.vtwsr.org for up-to-date information.

COLD HOLLOW TO CANADA STEERING COMMITTEE

Meets the third Monday of each month from 6:00 to 8:00 PM at the Cold Hollow Career Center in Enosburg Falls or Bakersfield Library. We rotate the location, so please let us know if you'll be joining us. It'd be great to see you there.

Fungi

Friday, March 21
Northwoods Stewardship Center
7:30pm – 9:00pm
Cost \$10

In collaboration with the Old Stone House Museum, we are happy to host Lawrence Millman, who will introduce polypores—among the most interesting of all fungi. Some can live for 79 years, some smell like anise, and others can tip the scales at 300 pounds. Come and celebrate these denizens of our New England Forests. You can reserve your spot by e-mailing events@northwoodscenter.org or call 802-723-6551 ext 115.

Fungi Mushroom Walk

Saturday, March 22
Northwoods Stewardship Center
1:00pm – 4:00pm

Cost: \$25 (\$5 discount for those who attend both Fungi Presentations, and Old Stone House members)

Contrary to popular belief, not all mushrooms go south for the winter. Many thrive under logs. Others can freeze and rehydrate several times. Still others survive by undergoing the fungal equivalent of hibernating. On this winter mushroom walk, you might find as many as 50 different fungal species! Please come prepared with snowshoes and warm layers. Extra snowshoes are available. Please register by March 15. You can reserve your spot by e-mailing events@northwoodscenter.org or call 802-723-6551 ext 115.

Missisquoi River Public Forum

Monday, March 24th
5:30 – 7:30
Swanton Municipal Complex
Friends of Northern Lake Champlain
denisefnlc@gmail.com
802-355-0694

Annual Tyler Place Event & Silent Auction

Thursday, May 22nd
5:00 – 9:00
Friends of Northern Lake Champlain
denisefnlc@gmail.com
802-355-0694

**Don't forget to check coldhollowtocanada.org for updated Upcoming Events*