



2019 – Year in Review

Much has happened at the Hawthorne Valley Farmscape Ecology Program, which is currently composed of biologist Dylan Cipkowski, anthropologist Anna Duhon, technician Kendrick Fowler, botanist Claudia Knab-Vispo and wildlife ecologist Conrad Vispo.

In addition to the research and outreach described below, we have taken first steps towards converting the Creekhous into an eventual “field station,” which will serve not only as a continued base for our research and educational programs, but also as a space that attracts visitors through intriguing, stimulating exhibits and workshops. The Vispo family has moved out of the building and the upper floor is now dedicated to office/lab space for our growing staff and collections. Throughout the year, we have gone on several learning journeys to a variety of museums, and consulted with groups and individuals to begin envisioning the kind of public space, activities, and exhibits most appropriate for the space available and for the audience we hope to serve. We decided to focus our efforts in the coming year on the creation of a butterfly house, on a 3D topographic model of Columbia County onto which we can project stories, and on making the native plant garden more accessible.

Experimental Agroecology/”Habitat Farming”

We continued and expanded the experimental agroecology work with the creation and monitoring of beneficial on-farm habitats in collaboration with the Xerces Society and USDA/NRCS. At the Hudson Valley Farm Hub, this initiative currently includes 4.5 acres of Native Meadow Trials (established in 2017 and monitored since then) and a recently seeded ten-acre native wildflower meadow. Here at Hawthorne Valley Farm, it includes small perennial wildflower plantings, two beetle banks, and a hedgerow composed mostly of native plants. We also recently collaborated with the Columbia Land Conservancy and



Agroecology Experiment at the Hudson Valley Farm Hub, comparing the performance of squash growing next to different on-farm habitats, for example a native wildflower meadow.

landscape architect Jamie Purinton to create pollinator and grassland bird habitat at the Overmountain Conservation Area. This year, we conducted our first experiment to directly measure the impact of beneficial habitats on crop yield. The results surprised us and have us planning next year's experiments to refine our insights. Well-documented examples of beneficial on-farm habitats are not only intended to improve the synergies between farm production and nature conservation, but also serve as demonstration, inspiration, and learning. We also just completed our fourth year of long-term insect monitoring.

Applied Farmscape Ecology Research Collaborative at the Hudson Valley Farm Hub

As part of our work with the Hudson Valley Farm Hub, we coordinate – together with our Farm Hub colleague Anne Bloomfield – the ongoing ecology research on this 1,200+ acre farm which recently transitioned to organic management. The research collaborative includes investigators not only from the Farmscape Ecology Program and the Farm Hub, but also Hudsonia Ltd., SUNY New Paltz, Bard College, the University of New England, and SUNY Cobleskill. As this list implies, many students have been involved in this research, and we hope they are being introduced to another way of thinking about agriculture. This ongoing research focuses on the interaction of agricultural production and semi-wild habitats. What are the positive and negative interactions? It includes study of aquatic, soil, and above-ground habitats, and looks at organisms from microbes to insects to plants to birds and turtles.



Some researchers from the Applied Farmscape Ecology Research Collaborative: Will Yandik, Shafiqul Chowdhury, Anne Bloomfield, Claudia Knab-Vispo, Tejaswee Neupane, Conrad Vispo, Hannah Herrick, Erik Kiviat, and Noah Perlut.

Progress of the Seasons Project

The main effort around this project was preparing a jointly authored paper on our work for submission to a scientific journal. The paper analyzes the historical phenology data we uncovered (available in our [historical phenology browser](http://www.hvfarmscape.org/cms/)¹) along with modern phenology data to identify the impact of temperature change on the phenology of a number of different species in locations throughout New York State. Preliminary results were presented at the Northeast Natural History Conference.

¹ <http://www.hvfarmscape.org/cms/>



The Rainbow Scarab is our largest and most colorful dung beetle. Most dung beetle species around here are small and black.

Biodiversity Information for Columbia County

We contributed to the *Columbia County Natural Resource Inventory*, authored by Gretchen Stevens and published by the Columbia Land Conservancy in late 2018. We also continued to identify countless insects and build our reference collections and regional species lists for native bees, ants, butterflies, moths, dragonflies, hover flies, parasitoid wasps, and ground

beetles. These lists are available in the [biodiversity section](#)² of our website. Rachel Wood, a visiting researcher from Kansas, spent two months with us documenting the dung beetles on five farms in the County, building a reference collection, and training us how to identify this little-studied group of beetles. At the end of her stay, she gave a well-received [presentation](#)³ of her findings.

Sound Maps

This year, with the help of Jules Madey, FEP intern Molly Fava, and the folks at the Cornell Bioacoustics Lab, our sound mapping made a major step forward. As you might recall, a couple of years back we began experimenting with making sound maps of singing insects. This year, Jules designed and manufactured twenty portable DIY, programmable recorders. These allowed us to make 20 simultaneous, hourly recordings and create [24 hour ‘animations’ of sound across the landscape](#).⁴ Over the next year, we are hoping to find funding for making another 50 – 75 of these units, tools we would use to map aspects of biodiversity across a larger landscape and as installation art of a sort to help the public become more aware of their ecological surroundings.

² <https://www.hvfarmscape.org/biodiversity-columbia-county>

³ https://www.hvfarmscape.org/sites/default/files/dung_beetle_talk_rachel_stone_july_3_2019.pdf

⁴ <https://www.hvfarmscape.org/sound-maps>

Ecological and Cultural Field Guide to the Habitats of Columbia County

We continued to work steadily towards the 2021 publication of our field guide. We will shortly have the first 10 chapters finalized and laid out by the designer, with another five chapters on the way. It has proved slower going than we anticipated, as there is so much information to share about the habitats in our landscape. It should be a richly detailed and illustrated book when completed! A selection of chapter drafts (which are still not quite perfect!) can be previewed [here](#).⁵

Outreach

Finally, we offered another year of outreach and provided training and opportunities for ecological research to interns, high school and university students, and volunteers. We regularly shared our insights and experiences in presentations (including day-long sessions on *Farming with Nature* at the Northeast Natural History Conference and the Ashokan Center, a presentation on *Habitat Farming* at the Biodynamic Conference, as well as

presentations here at the Creekhouse on topics ranging from Dung Beetles, to Sound Maps, to Habitat Farming), workshops (including three evening events on moths and, sometimes, bats, and a twilight event on the native meadow trials), guided ecology walks (15 well-received public walks throughout the year), and on social media (Facebook and Instagram). We are also facilitating an after-school ecology club for high school students here at Hawthorne Valley Waldorf School. We served as a community resource, responding to inquiries from farmers, landowners, land trusts, conservation advisory councils, and the public at large.



Participants at an Ecology Walk at Hawthorne Valley Farm learn about leaf shape and arrangement in different tree species.



This beautiful Smooth Green Grass Snake was discovered by one of the participants on an ecology walk.

⁵ <https://www.hvfarmscape.org/living-land-field-guide-our-virtual-workshop>

Staff, Interns, Volunteers

This year, Dylan Cipkowski received his Masters degree (Antioch University) for research completed as part of the Farmscape Ecology Program and was promoted from FEP technician to biologist. Erin Allen (a SUNY Albany student) completed her Masters based on work with us at the Farm Hub. A visiting researcher Rachel Wood conducted an independent project on dung beetles. Our two interns Jackie Edgett and Molly Fava have moved on to their next adventures. Molly, after extending her summer internship into December to allow her to work on the sound maps, has now accepted a position as a stewardship coordinator at a Land Trust in Michigan. Jackie, who is still finishing her undergraduate studies at UMass Lowell, is applying for graduate schools.

Looking Ahead

During the remaining winter months, we will focus on writing the field guide and on realizing first elements of our Field Station vision. Funded by a generous donor and his own donated time, Markley Boyer, an independent museums and institutions professional, plans to collaborate with us to create a prototype of a “Projection Augmented Relief Model”. This is a 3D landscape model equipped with a projector that can display stories we create over its surface.

We are also working towards the summer launch of a Butterfly House. Our educational events will include a multi-session butterfly workshop offered jointly with the Columbia Land Conservancy and a variety of other stimulating public programs, including old favorites, such as a winter botany workshop, spring flower walks, and a bat and moths night. During the field season, we will be engaged in ecological monitoring, new agroecology experiments, further development of the sound mapping project, and a variety of biological inventory/mapping projects.



American Lady is one of the native butterflies we plan to display in the butterfly house.

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We thank Dale MacDonald, Markley Boyer, and the many other people who have enthusiastically helped us envision the Field Station, and more generally the continued evolution of our Program, by contributing resources, time, and ideas. Much appreciation goes also to the lovely group of volunteers who have helped with weeding and planting, collecting seeds, mapping stone walls, and fundraising.

Finally, a big thank you to FEP's interns and part-time co-workers, as well as the staff both here at Hawthorne Valley and at the Hudson Valley Farm Hub who helped with many aspects of the research and outreach.



A Beetle Bank in the Corner Garden at Hawthorne Valley Farm provides flowers for pollinators during the summer and shelter for overwintering bees, ground beetles, and spiders in the winter. These beneficials will re-colonize the vegetable beds on either side of the perennial beetle bank during the next season.