

QUIET CORNER

BROUGHT TO YOU BY THE YALE SCHOOL FORESTS

About the QUIET CORNER INITIATIVE

The Quiet Corner Initiative (QCI) supports local livelihoods, sustainable forest management, and rural economic development by building relationships between local landowners, conservation and forestry professionals, and the students and faculty of the Yale School of Forestry & Environmental Studies. Thank you to our alumni and the rest of the Yale community for their support.

A note from the QUIET CORNER INITIATIVE MANAGER

Happy Spring!

This was a busy fall and winter for QCI! We had record enrollment in the Management Plans course in fall 2018, with 21 students writing plans for 9 landowners covering nearly 700 acres. The majority of these landowners were in the Still River sub-watershed, with one in Bigelow Brook and one in Lebanon Brook. Since our inception in 2011, our students have now written management plans for 43 landowners covering approximately 4,000 acres.

In December we hosted a workshop on winter tree identification and forest ecology, and in January, our always popular, recurring horse-logging and portable sawmill workshop, with QCI landowner Denis Day, and Sam Rich from We-Li-Kit Farm. We were also thrilled to host our first ever winter seminar this February, focused on the science of climate change. Check out our feature on it in this newsletter.

Our student researchers and apprentice foresters are getting excited about moving to the forest camp for the summer and we have a great set of research seminars, workshops, and environmental films lined up for the summer. Check out our save the dates for those events. I look forward to seeing you there!

Jess Wikle
Quiet Corner Initiative Manager
Yale School Forests

Climate Change in the Quiet Corner

QUIET CORNER INITIATIVE'S FIRST-EVER WINTER SEMINAR BRINGS THE IMPACTS OF A WARMING WORLD TO NORTHEASTERN CONNECTICUT

Brendan Boepple, MEM '19, Quiet Corner Initiative Coordinator

On Thursday, February 21, more than 60 residents from the Quiet Corner joined QCI for a "climate forum" that featured three Yale faculty members who study climate change and the associated impacts on land, air, and water resources. Building on QCI's successful summer seminar series, the climate event was the first winter seminar.

During the panel talk, held in the Union Town Hall, attendees heard presentations from Mark Bradford, a professor of soils and ecosystem ecology at the Yale School of Forestry & Environmental Studies (F&ES), Xuhui Lee, Sara Shallenberger Brown Professor of Meteorology at F&ES, and Peter Raymond, a professor of ecosystem ecology at F&ES.

The Yale researchers guided the attendees through the modeling, influences, and impacts of a changing climate. Raymond traced the history of research on the anthropogenic impacts of climate change, connecting readings of ancient conditions found at the Vostok ice core record in East Antarctica to the modern atmospheric observations collected at the Mauna Loa Observatory in Hawaii.

Taking the audience from a global to a local scale, Lee explained the intricacies of climate modeling and the current effects of heat islands on urban residents. He also detailed his ongoing research that utilizes bike sharing co-ops to deploy temperature sensors throughout cities with the goal of protecting human health.

Narrowing in even further, Bradford outlined the impacts of a warming climate on an often-overlooked resource, soil. He expressed his

frustration with sensationalized interpretations of a changing climate, but also explained what particularly "keeps him up at night" – the potential effects of temperature change on soil carbon and productivity. The impacts of a warming climate on the planet's smallest organisms could have substantial repercussions for ecosystems and agriculture alike. As areas experience less below-freezing conditions and shorter winters, insects below ground increase their respiration and thus their activity. This leads to increased decomposition of carbon stored in soils, which is slowly transferred into the atmosphere. In addition to the negative impacts from increased concentrations of global greenhouse gases, this increased decomposition from microorganisms also results in diminished soil productivity.

During a question and answer session, audience members inquired about the policies of the current administration and global efforts to reduce carbon concentrations in the atmosphere, expressing anxiety over whether the necessary emissions reduction targets could be reached. Local impacts were also a concern as residents asked questions about the future of agriculture and what a changing climate might mean for farms in the area.

QCI hopes the gathering will be the first of many that contribute to an ongoing discussion about climate change in the Quiet Corner and the first in a series of winter seminars. Potential future topics include forest health, impacts to local watersheds, agriculture and wildlife connectivity.



Photo: Austin Dziki

THE QCI NEWSLETTER IS BROUGHT TO YOU BY

The Yale School Forests
360 Prospect Street
New Haven, CT 06511

CONTENT BY

Jess Wikle, Quiet Corner Initiative Manager, MFS '18;
Brendan Boepple, MEM '19;
Laura Green, Naturalist Program Fellow & Research
Coordinator, MF '18;
Kimi Zamuda, MESC '19.

LAYOUT BY

Yale School Forests

The Yale School Forests
Quiet Corner Initiative
360 Prospect Street
New Haven, CT 06511



Research Spotlight: Mammals in the Quiet Corner

Kimi Zamuda, *MESc '19*

My research, conducted over the past year, broadly examines how land use and forest management impacts where several mammal species occur in and around Yale Myers Forest. My focus was on medium size, middle of the food chain animals—often called mesocarnivores or mesopredators—including raccoons, bobcats, fishers, foxes, and coyotes. With the loss of apex predators, like wolves and mountain lions, and humans altering and removing habitat, many of these mesopredators have experienced changes in number and distribution. This has many ecological, social and economic implications—from changes in predation to increasing wildlife-livestock conflict. Understanding where these animals occur is of increasing interest to



scientists, conservationists and land managers.

My study seeks to understand which variables, from tree canopy cover to the density of public roads, influence where these mammal species occur, and does this change over different seasons? From April 2018 to March 2019, I had 55 camera traps at sites within Yale Myers Forest and on 12 private landowners' properties (fields). My goal for the study is that the results will better inform effective conservation and management practices for these species on public and private lands.

I feel fortunate to have worked in Yale Myers and the Quiet Corner over the past year and a half. In addition to better knowing the critters of the area, I got to know the forest and experience firsthand how it changes throughout the year. I am also grateful for QCI and landowners I worked with for my research. Initially a secondary goal of this study was to provide information about which species were occurring on each landowner's property and



their seasonal presence. Quickly it was clear that many landowners, with camera traps of their own, knew which animals were on their property. Being new to Connecticut and the northeast, talking early on with the landowners about their wildlife encounters and stories was invaluable to my understanding of the area and the species I was studying. In the end, I likely gained more knowledge from the landowners than I can provide to them—making their participation in my study all the more generous. Hopefully the results will lead to some new insight regarding local species and at the very least, provide beautiful pictures that document the amazing animals in the Quiet Corner.

January 2019 Horse Logging and Portable Sawmill Workshop



Going with the Flow: Following Nutrients through Plants, Bugs, and Soil in Old Fields

Laura Green, *Naturalist Program Fellow & Research Coordinator, MF '18*

Looking out across a meadow of goldenrods and tall grasses in late summer, we can pause to appreciate the colorful patchwork of yellows and greens gleaming in the sun. But in and among those gracefully arcing stems is a complex world of invertebrates, plants, and soil, all eating and being eaten, cycling and recycling. The fundamental processes that define the food webs of our familiar fields, such as the decomposition of plant matter into soil or the growth of grasshoppers, depend on the availability of energy, in the form of carbon, and nutrients like nitrogen. How do these flows of energy and nutrients respond to changes in the dynamics of the food web? How do plants respond to the munching of grasshoppers, and how do grasshoppers respond to the looming threat of a spider predator? Researchers have been picking apart these questions through ongoing experiments in the old fields at Yale-Myers Forest.

Previous studies, including many by Yale researchers in the Schmitz lab, have fo-

cus on these interactions at the relatively small scale of individual pots of plants, and grasshopper enclosures. This work has found clear feedbacks in the flow of energy and nutrients between predators, herbivores, plants, and soil. But what happens when we scale up to consider the much larger system of the entire field, including both above- and below-ground food webs? To answer this question, Rob Buchkowski (MESC '14, PhD '19), along with Dr. Os Schmitz and Dr. Mark Bradford, conducted study investigating the flow of nitrogen through above-ground and below-ground (or soil) food webs in an old field at Yale-Myers Forest. They tracked the movement of nitrogen from the growth of plants under stress from grasshopper herbivory, through decomposition by invertebrates and microorganisms in the soil, and back into another generation of plants. Their paper, which was published in the *Journal of Ecology* this spring, found that flow of nitrogen through the field at Yale-Myers differed from

what prior greenhouse experiments would predict. Unlike in numerous prior studies, they found that herbivory-induced differences in the nutrient content of plants, once mediated by decomposition in the soil, did not result in changes in new generation of plants growing in that soil. In other words, there was not feedback between changes in the above- and below-ground food webs.

What accounts for this difference? Buchkowski and his co-authors find that the size of the stores of nitrogen in the soil, which can come in a number of different forms that influence their availability to plants and decomposers, serve as a buffer against the changes in the aboveground food web. This pool of nutrients in the below-ground food web is substantial enough to absorb the impacts of above-ground animal activity on plant growth. These results highlight the importance of considering scale and our broader environment as we try to illuminate the many tangles in the web of our world. Just as no man is an island, so too is no goldenrod growing in an old field!

For a link to the paper referenced, please email Laura (laura.green@yale.edu).

----- SAVE THE DATE - SUMMER 2019 -----

QCI SUMMER WORKSHOPS

June 3 - Soils and Geology

June 5 - Land Use History

June 6 - Bird Identification

June 12 - Plant ID

June 14 - Ecology Research

July 25 - Mushroom ID

August 14 - Silvopasture (at Hidden Blossom Farm)

QCI ENVIRONMENTAL FILMS 2019

June 19 - Food Inc.

July 17 - Plastic Paradise: The Great Pacific Garbage Patch

July 31 - King Corn

Check your inbox for updates on future workshops. E-mail quietcorner@yale.edu to sign up for our mailing list.

ADDRESS 

Yale-Myers Camp
150 Centre Pike
Eastford, CT 06242

2019 YALE-MYERS FOREST SUMMER SEMINAR SERIES

June 12 - Wolf Trees

History, Ecology, Conservation
Michael Gaige

June 26 - Bees in the Trees

Pollinators and the early spring flowering canopy
Kass Urban-Mead

July 10 - Frozen Frogs in Hot Water

Can evolutionary adaptation counteract climate change?
A. Andis

July 24 - Untangling the Red Maple Paradox

How does red maple regenerate so successfully in Connecticut's forests?
Laura Ostrowsky

Laura Ostrowsky

All seminars begin at 7pm. Join us for refreshments before at 6:30pm.

Get a Management Plan for Your Land

Consider working with Yale F&ES forestry students to have a management plan prepared for your property. The plans include ecological and historical assessments of the forests of your backyard, and can be tailored to each land owner's needs. Plans can include management recommendations addressing sustainable wood lot practices, silvopasture, or other ecological activities.

Getting a management plan is an opportunity to crystalize your land management and conservation goals, and have free professional-grade advice on ways to achieve them. It is also a chance for Yale F&ES foresters to put their educations into practice.

INTERESTED, OR HAVE QUESTIONS?

Please contact Quiet Corner Initiative Manager, Jess Wikle, at: jessica.wikle@yale.edu.

Stay Connected

Contact QCI at: quietcorner@yale.edu

For more information about the Yale School Forests' Quiet Corner Initiative, please visit our website at: qci.yale.edu

Or follow us on facebook at: "Yale School Forests"